

DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Wichita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

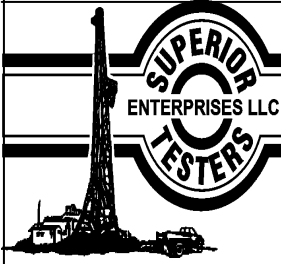
Start Date: 2013.12.09 @ 09:05:00

End Date: 2013.12.09 @ 17:07:00

Job Ticket #: 18472 DST #: 1

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

Printed: 2013.12.09 @ 17:30:21



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 18472

DST#: 1

Test Start: 2013.12.09 @ 09:05:00

GENERAL INFORMATION:

Formation: **Teronto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:52:30

Time Test Ended: 17:07:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-48-Scott City

Interval: 3874.00 ft (KB) To 3942.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 3942.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 120.01 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.09

End Date: 2013.12.09

Last Calib.: 2013.12.09

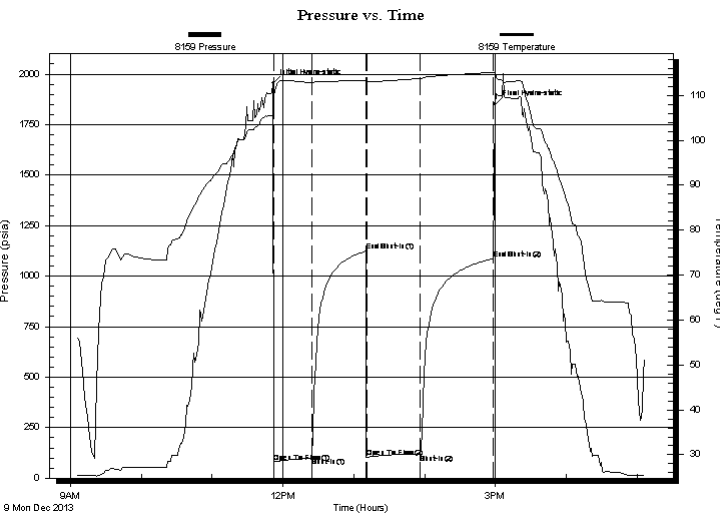
Start Time: 09:05:00

End Time: 17:07:00

Time On Btm: 2013.12.09 @ 11:51:30

Time Off Btm: 2013.12.09 @ 14:59:30

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 2 1/2 inches into water in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 1 1/4 into water in 45 minutes
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

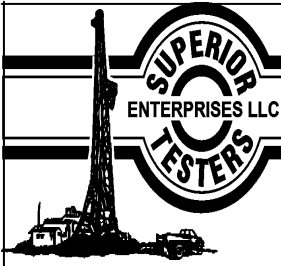
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1955.10	105.68	Initial Hydro-static
1	79.90	110.21	Open To Flow (1)
33	101.00	112.83	Shut-In(1)
79	1123.59	113.41	End Shut-In(1)
80	103.78	113.10	Open To Flow (2)
125	120.01	113.79	Shut-In(2)
187	1086.83	115.12	End Shut-In(2)
188	1850.92	115.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Spot Oil on top mud 1%oil 99%mud	0.59
0.00		0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18472

DST#: 1

ATTN: Adam Eldani

Test Start: 2013.12.09 @ 09:05:00

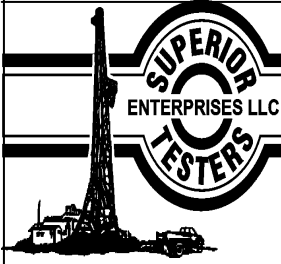
Tool Information

Drill Pipe:	Length: 3744.00 ft	Diameter: 3.80 inches	Volume: 52.52 bbl	Tool Weight:	1000.00 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:	65000.00 lb
			<u>Total Volume: 53.11 bbl</u>	Tool Chased	6.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial	43000.00 lb
Depth to Top Packer:	3874.00 ft			Final	43000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	68.00 ft				
Tool Length:	96.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		

Tool Comments: tool chased 6 feet /on location 6:00a pick up tool 9:05a

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3851.00	
Hydraulic Tool	5.00			3856.00	
Jars	6.00			3862.00	
Safety Joint	2.00			3864.00	
Packer	5.00			3869.00	28.00 Bottom Of Top Packer
Packer	5.00			3874.00	
Anchor	4.00			3878.00	
Change Over Sub	0.75			3878.75	
Drill Pipe	31.50			3910.25	
Change Over Sub	0.75			3911.00	
Anchor	26.00			3937.00	
Recorder	1.00		Inside	3938.00	
Recorder	1.00		Outside	3939.00	
Bullnose	3.00			3942.00	68.00 Bottom Packers & Anchor

Total Tool Length: 96.00



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18472

DST#: 1

ATTN: Adam Eldani

Test Start: 2013.12.09 @ 09:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 58.00 sec/qt

Water Loss: 6.00 in³

Resistivity: ohm.m

Salinity: 2100.00 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: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	Spot Oil on top mud 1%oil 99%mud	0.590
0.00		0.000

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

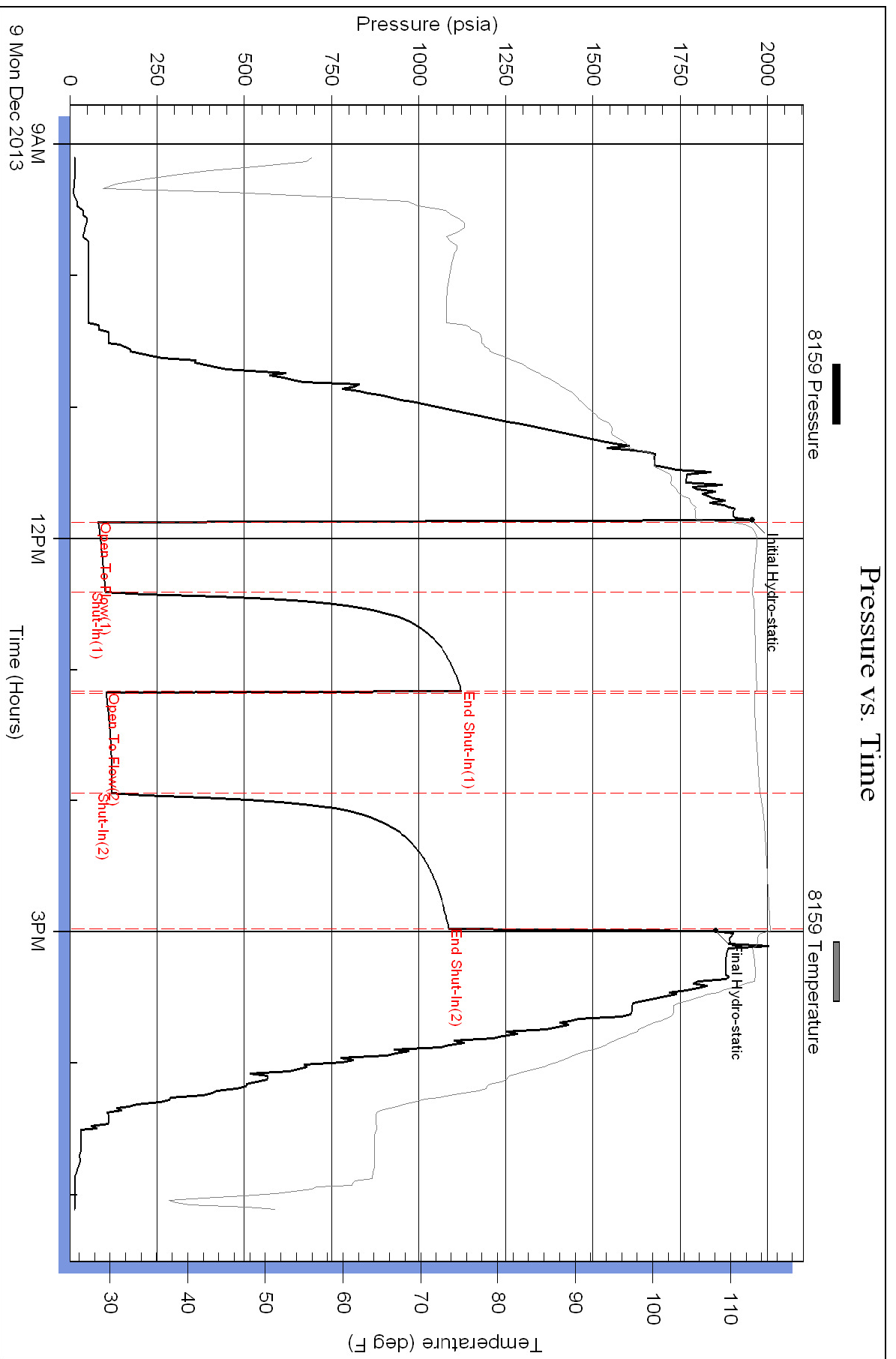
Num Gas Bombs: 0

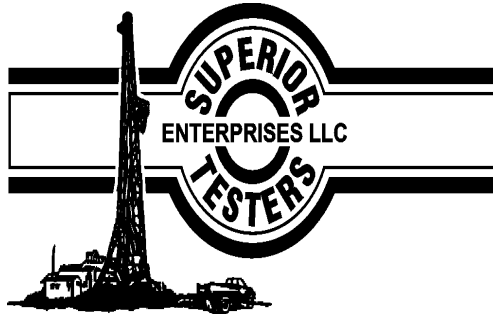
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: tool chased 6 feet to bottom /





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Wichita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

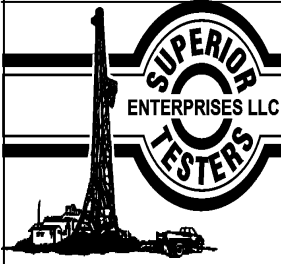
Start Date: 2013.12.10 @ 00:45:00

End Date: 2013.12.10 @ 08:02:30

Job Ticket #: 18473 DST #: 2

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

Printed: 2013.12.10 @ 08:20:56



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 18473

DST#: 2

Test Start: 2013.12.10 @ 00:45:00

GENERAL INFORMATION:

Formation: **Lansng**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:05:00

Time Test Ended: 08:02:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-56

Interval: 3934.00 ft (KB) To 3964.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 3964.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8400

Press@RunDepth: 65.26 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.10 End Date: 2013.12.10

Last Calib.: 2013.12.10

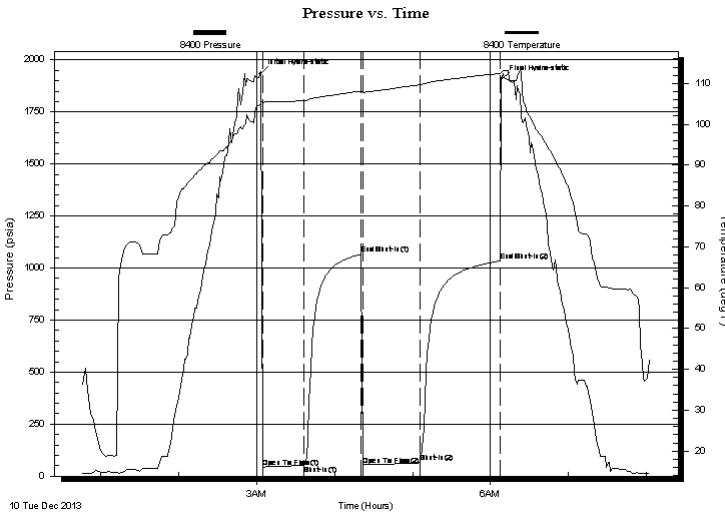
Start Time: 00:45:00 End Time: 08:02:30

Time On Btm: 2013.12.10 @ 03:03:00

Time Off Btm: 2013.12.10 @ 06:08:30

TEST COMMENT: 1st Opening 30 Minutes-Weak Blow built 1 1/2 inchs into w water in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opeing 45 Minutes-Weak blow built 3/4 inch into
 2nd Shut-in 60 Minutes-No blow back

PRESSURE SUMMARY



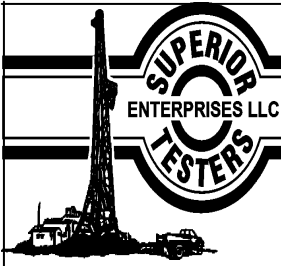
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1932.78	104.80	Initial Hydro-static
2	44.39	105.42	Open To Flow (1)
33	51.83	105.80	Shut-In(1)
77	1066.03	108.14	End Shut-In(1)
79	54.38	107.80	Open To Flow (2)
123	65.26	109.65	Shut-In(2)
185	1034.14	112.45	End Shut-In(2)
186	1906.49	112.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	mud	0.12

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 18473

DST#: 2

Test Start: 2013.12.10 @ 00:45:00

GENERAL INFORMATION:

Formation: **Lansng**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:05:00

Time Test Ended: 08:02:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-56

Interval: 3934.00 ft (KB) To 3964.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 3964.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 1033.44 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.10

End Date: 2013.12.10

Last Calib.: 2013.12.10

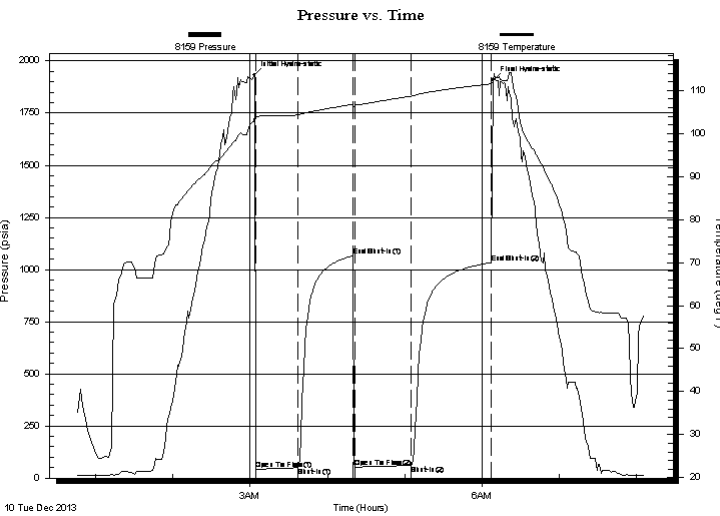
Start Time: 00:45:00

End Time: 08:07:00

Time On Btm: 2013.12.10 @ 03:03:00

Time Off Btm: 2013.12.10 @ 06:08:30

TEST COMMENT: 1st Opening 30 Minutes-Weak Blow built 1 1/2 inchs into w water in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opeing 45 Minutes-Weak blow built 3/4 inch into
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

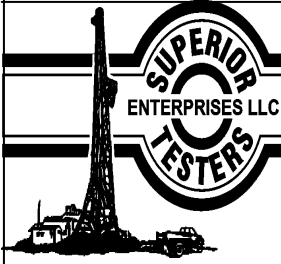
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1930.58	103.14	Initial Hydro-static
2	41.55	103.89	Open To Flow (1)
34	51.19	104.34	Shut-In(1)
77	1065.64	106.80	End Shut-In(1)
78	52.04	106.57	Open To Flow (2)
122	60.66	108.67	Shut-In(2)
184	1033.44	111.54	End Shut-In(2)
186	1906.69	111.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	mud	0.12

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18473

DST#:2

ATTN: Adam Eldani

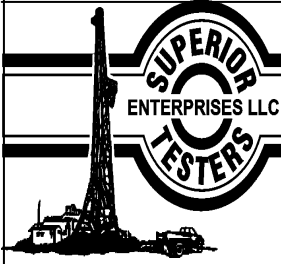
Test Start: 2013.12.10 @ 00:45:00

Tool Information

Drill Pipe:	Length: 3799.00 ft	Diameter: 3.80 inches	Volume: 53.29 bbl	Tool Weight:	1000.00 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:	60000.00 lb
			<u>Total Volume: 53.88 bbl</u>	Tool Chased	6.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3934.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	58.00 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			3911.00	
Hydraulic Tool	5.00			3916.00	
Jars	6.00			3922.00	
Safety Joint	2.00			3924.00	
Packer	5.00			3929.00	28.00 Bottom Of Top Packer
Packer	5.00			3934.00	
Anchor	25.00			3959.00	
Recorder	1.00		Inside	3960.00	
Recorder	1.00		Outside	3961.00	
Bullnose	3.00			3964.00	30.00 Bottom Packers & Anchor
Total Tool Length:	58.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18473

DST#:2

ATTN: Adam Eldani

Test Start: 2013.12.10 @ 00:45:00

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: 58.00 sec/qt

Cushion Volume:

bbl

Water Loss: 6.00 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 2100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
25.00	mud	0.123

Total Length: 25.00 ft Total Volume: 0.123 bbl

Num Fluid Samples: 0

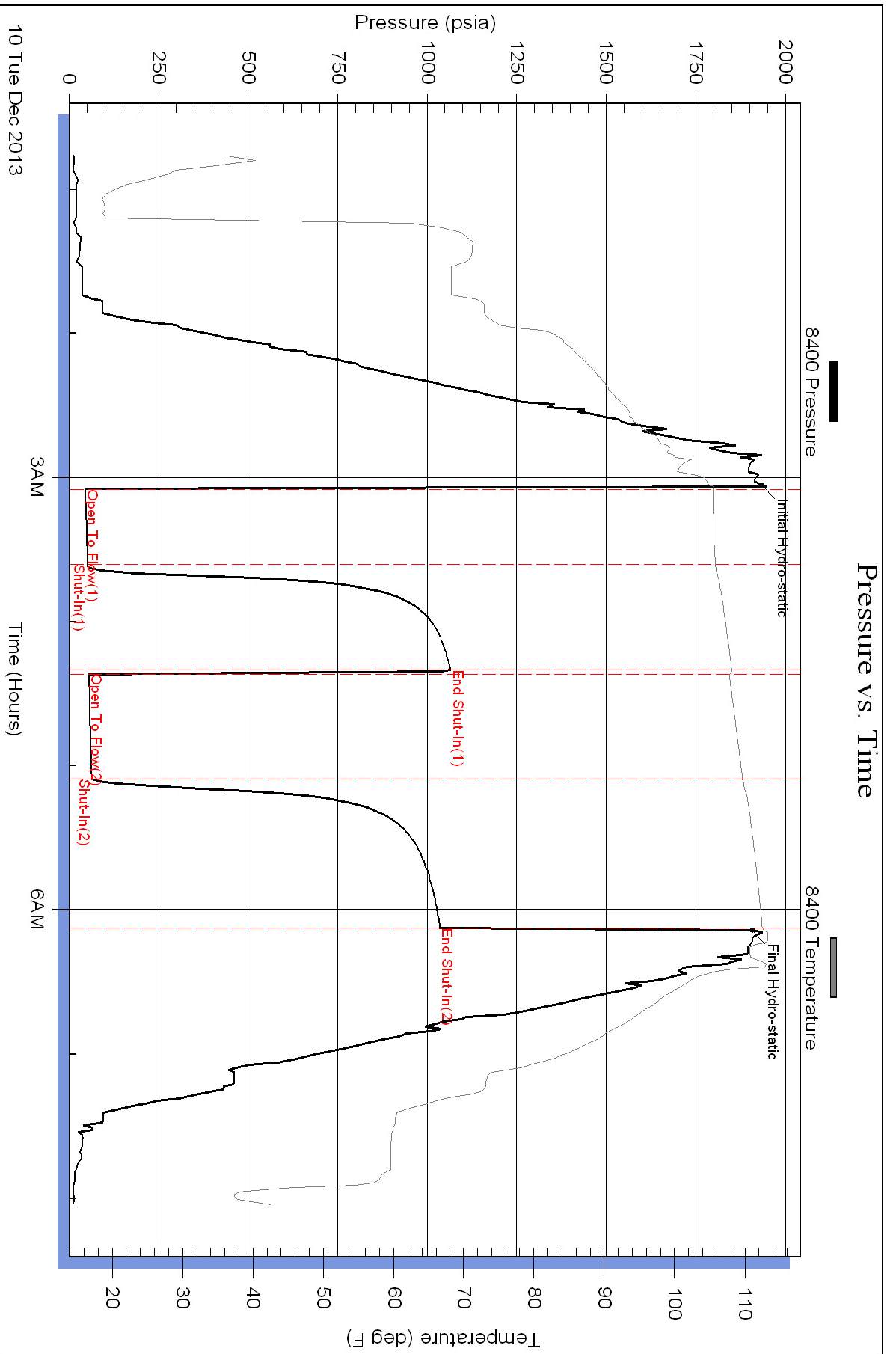
Num Gas Bombs: 0

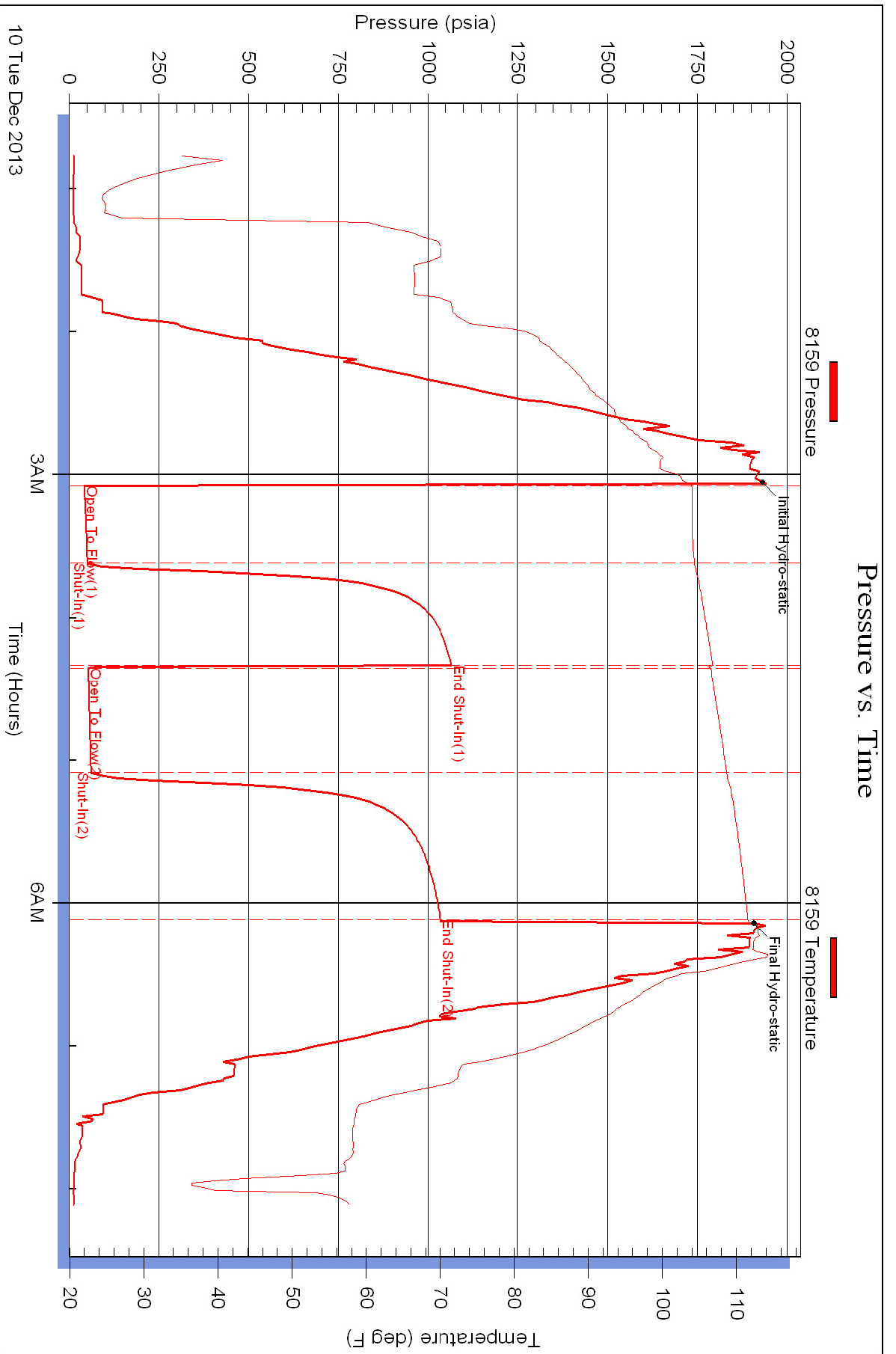
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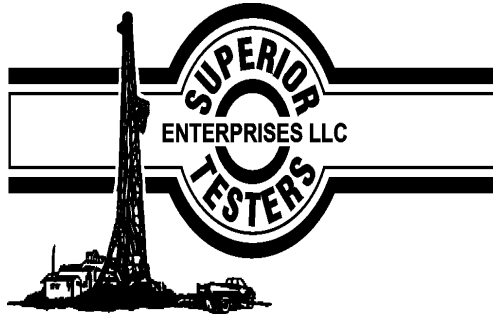
Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Wichita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

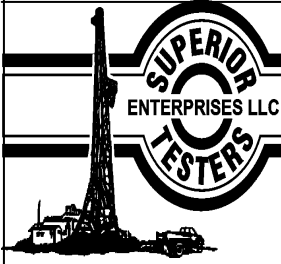
Start Date: 2013.12.10 @ 19:50:00

End Date: 2013.12.11 @ 03:23:00

Job Ticket #: 18474 DST #: 3

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

Printed: 2013.12.11 @ 12:34:03



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 18474

DST#: 3

Test Start: 2013.12.10 @ 19:50:00

GENERAL INFORMATION:

Formation: **Lansing E,F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:36:00

Time Test Ended: 03:23:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 3968.00 ft (KB) To 4025.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 603.91 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.10

End Date:

2013.12.11

Last Calib.: 2013.12.11

Start Time: 19:51:00

End Time:

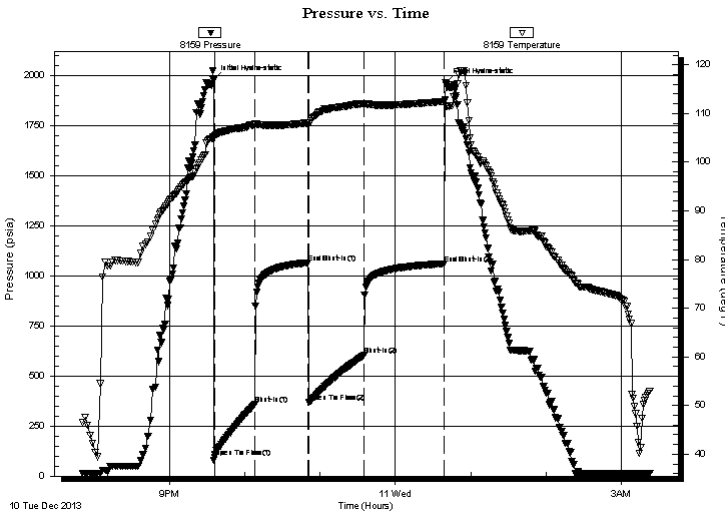
03:23:00

Time On Btm: 2013.12.10 @ 21:35:00

Time Off Btm: 2013.12.11 @ 00:40:00

TEST COMMENT: 1st Opening 30 Minutes-Strong blow built bottom of bucket in 5 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Strong blow built bottom of bucket in 45 minutes
 2nd Shut-in 60 Minutes-No blow back

PRESSURE SUMMARY



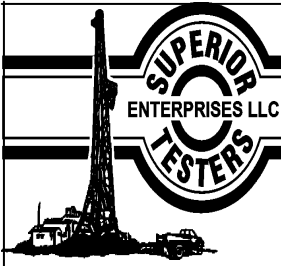
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1979.55	105.13	Initial Hydro-static
1	94.32	105.36	Open To Flow (1)
33	358.36	107.76	Shut-In(1)
76	1067.16	108.06	End Shut-In(1)
77	367.98	108.08	Open To Flow (2)
120	603.91	112.02	Shut-In(2)
184	1061.89	112.48	End Shut-In(2)
185	1965.16	111.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	mud w ater 15% mud 85% w ater	2.27
960.00	w ater 5% mud 95% w ater	13.47
0.00	chlorides 18,000	0.00

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 18474

DST#: 3

Test Start: 2013.12.10 @ 19:50:00

GENERAL INFORMATION:

Formation: **Lansing E,F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:36:00

Time Test Ended: 03:23:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 3968.00 ft (KB) To 4025.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 5.00 ft

Serial #: 8400

Press@RunDepth: 1062.05 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.10

End Date: 2013.12.11

Last Calib.: 2013.12.11

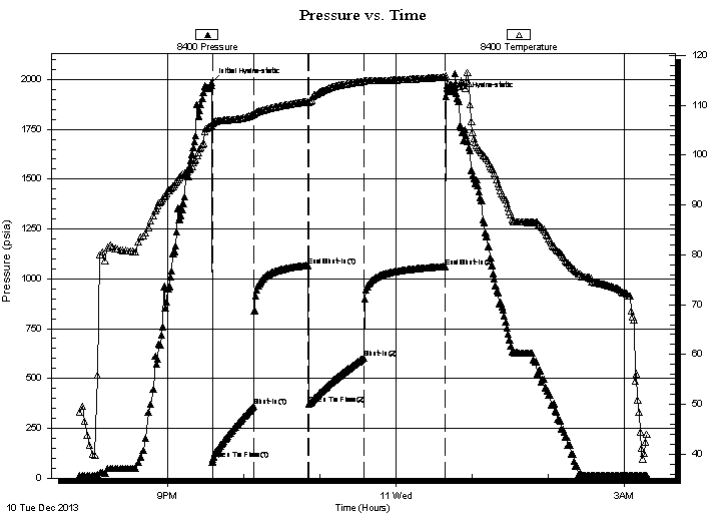
Start Time: 19:51:00

End Time: 03:17:30

Time On Btm: 2013.12.10 @ 21:35:00

Time Off Btm: 2013.12.11 @ 00:39:30

TEST COMMENT: 1st Opening 30 Minutes-Strong blow built bottom of bucket in 5 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Strong blow built bottom of bucket in 45 minutes
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

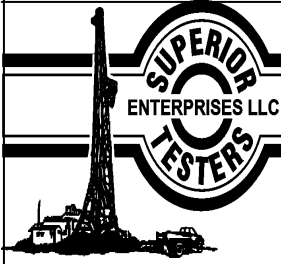
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1986.34	105.98	Initial Hydro-static
1	94.73	106.57	Open To Flow (1)
33	360.49	108.17	Shut-In(1)
76	1067.51	110.80	End Shut-In(1)
77	370.04	110.57	Open To Flow (2)
120	603.98	114.84	Shut-In(2)
184	1062.05	115.67	End Shut-In(2)
185	1915.18	115.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	mud w ater 15% mud 85% w ater	2.27
960.00	w ater 5% mud 95% w ater	13.47
0.00	chlorides 18,000	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18474

DST#: 3

ATTN: Adam Eldani

Test Start: 2013.12.10 @ 19:50:00

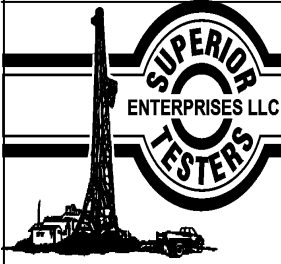
Tool Information

Drill Pipe:	Length: 3836.00 ft	Diameter: 3.80 inches	Volume: 53.81 bbl	Tool Weight:	1000.00 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:	65000.00 lb
			<u>Total Volume: 54.40 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	49000.00 lb
Depth to Top Packer:	3968.00 ft			Final	54000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	57.00 ft				
Tool Length:	85.00 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			3945.00	
Hydraulic Tool	5.00			3950.00	
Jars	6.00			3956.00	
Safety Joint	2.00			3958.00	
Packer	5.00			3963.00	28.00 Bottom Of Top Packer
Packer	5.00			3968.00	
Anchor	2.00			3970.00	
Change Over Sub	0.75			3970.75	
Drill Pipe	31.50			4002.25	
Change Over Sub	0.75			4003.00	
Anchor	17.00			4020.00	
Recorder	1.00		Inside	4021.00	
Recorder	1.00		Outside	4022.00	
Bullnose	3.00			4025.00	57.00 Bottom Packers & Anchor

Total Tool Length: 85.00



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18474

DST#: 3

ATTN: Adam Eldani

Test Start: 2013.12.10 @ 19:50:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.80 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
240.00	mud w ater 15% mud 85% w ater	2.273
960.00	w ater 5% mud 95% w ater	13.466
0.00	chlorides 18,000	0.000

Total Length: 1200.00 ft Total Volume: 15.739 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

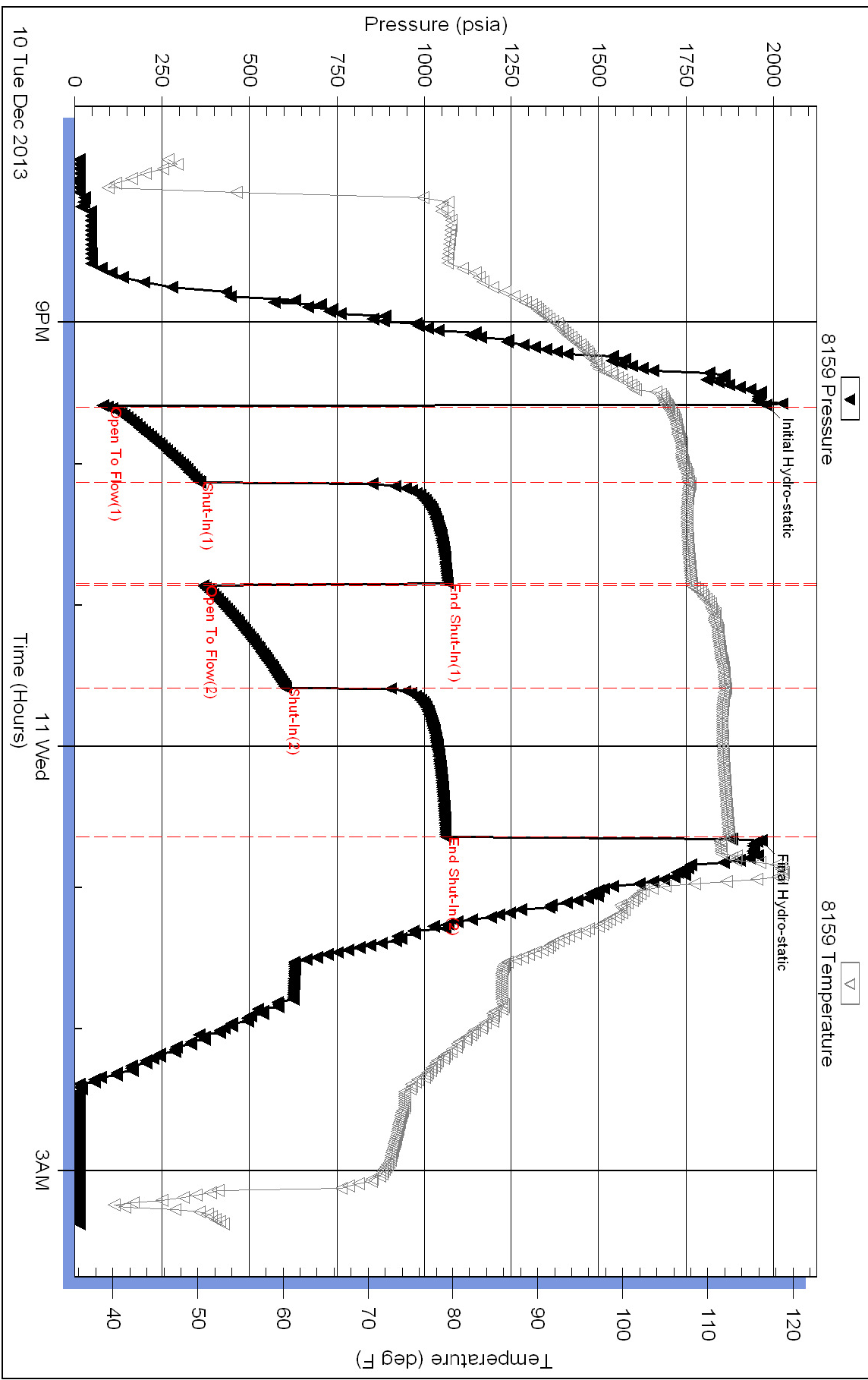
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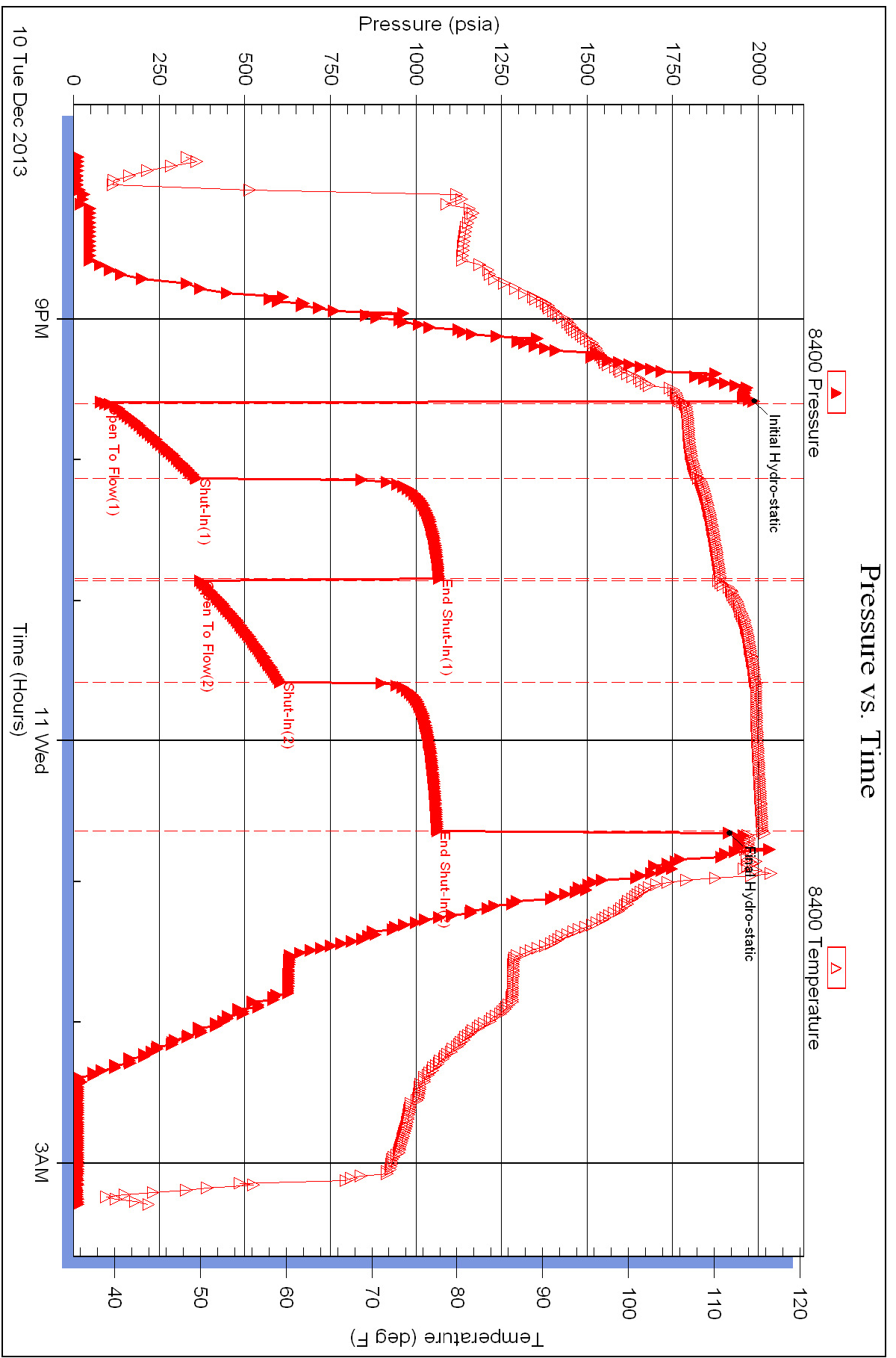
Laboratory Name:

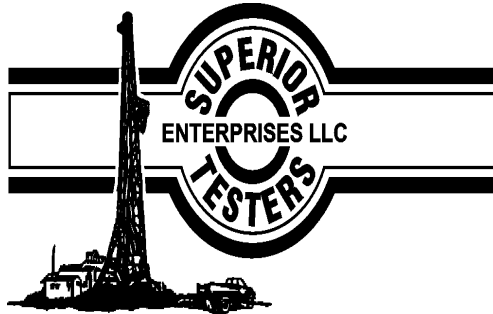
Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Wichita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

Start Date: 2013.12.11 @ 17:13:00

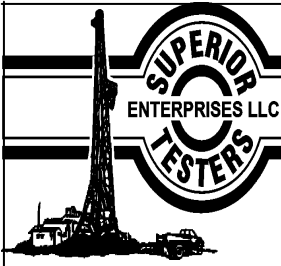
End Date: 2013.12.12 @ 00:18:30

Job Ticket #: 18475 DST #: 4

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

Printed: 2013.12.12 @ 00:33:37

Ritchie Exploration L.L.C
2-16s-31w Scott
Win 2C-3D #1
DST # 4
Lansing
2013.12.11



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 18475

DST#: 4

Test Start: 2013.12.11 @ 17:13:00

GENERAL INFORMATION:

Formation: **Lansing**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:24:00

Time Test Ended: 00:18:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4087.00 ft (KB) To 4124.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4124.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8400

Press@RunDepth: 47.42 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.11

End Date:

2013.12.12

Last Calib.:

2013.12.12

Start Time: 17:13:00

End Time:

00:18:30

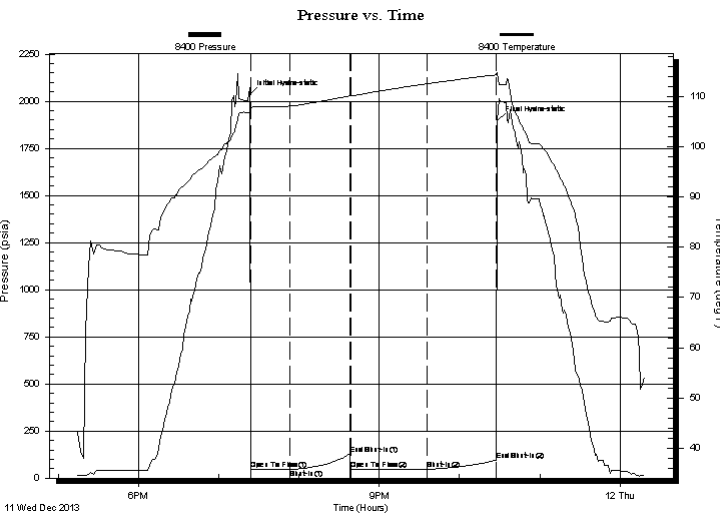
Time On Btm:

2013.12.11 @ 19:23:00

Time Off Btm:

2013.12.11 @ 22:28:30

TEST COMMENT: 1st Opening 30 Minutes-Werak b low built 1 inch into w ater in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 1/4 inch into w ater in 45 minutes
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

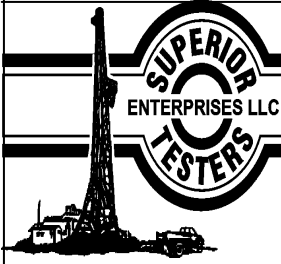
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2035.99	107.31	Initial Hydro-static
1	46.05	107.78	Open To Flow (1)
30	46.35	108.16	Shut-In(1)
75	128.53	110.15	End Shut-In(1)
76	47.01	110.15	Open To Flow (2)
133	47.42	112.61	Shut-In(2)
185	95.47	114.39	End Shut-In(2)
186	1897.84	114.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	spot oil mud 5%oil 95%mud	0.01

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 18475

DST#: 4

Test Start: 2013.12.11 @ 17:13:00

GENERAL INFORMATION:

Formation: **Lansing**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:24:00

Time Test Ended: 00:18:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4087.00 ft (KB) To 4124.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4124.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 94.99 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.11

End Date:

2013.12.12

Last Calib.:

2013.12.12

Start Time: 17:13:00

End Time:

00:18:30

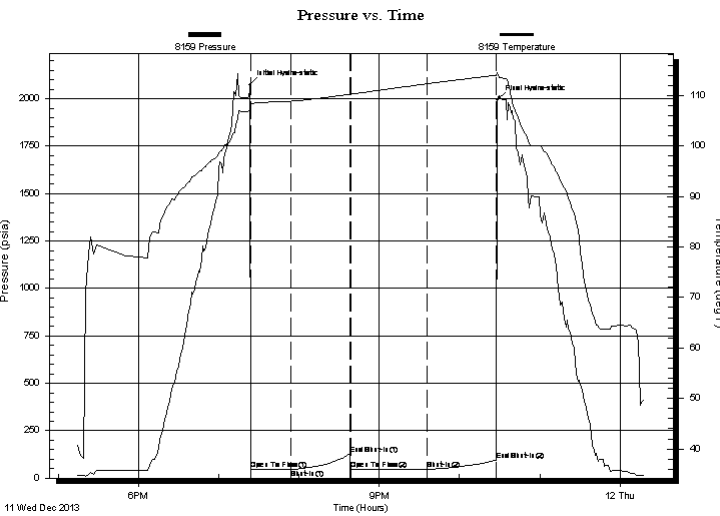
Time On Btm:

2013.12.11 @ 19:23:00

Time Off Btm:

2013.12.11 @ 22:28:30

TEST COMMENT: 1st Opening 30 Minutes-Werak b low built 1 inch into w ater in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 1/4 inch into w ater in 45 minutes
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

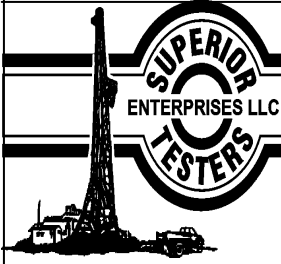
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2074.49	107.34	Initial Hydro-static
1	45.51	108.21	Open To Flow (1)
31	46.01	108.86	Shut-In(1)
75	127.87	110.23	End Shut-In(1)
76	46.80	110.24	Open To Flow (2)
133	47.49	112.29	Shut-In(2)
185	94.99	113.99	End Shut-In(2)
186	1992.92	114.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	spot oil mud 5%oil 95%mud	0.01

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18475

DST#: 4

ATTN: Adam Eldani

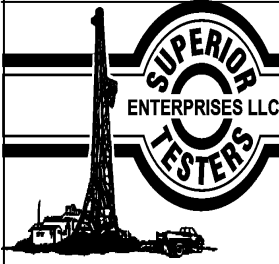
Test Start: 2013.12.11 @ 17:13:00

Tool Information

Drill Pipe:	Length: 3964.00 ft	Diameter: 3.80 inches	Volume: 55.60 bbl	Tool Weight: 1000.00 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: 65000.00 lb
			<u>Total Volume: 56.19 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	4087.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	65.00 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			4064.00	
Hydraulic Tool	5.00			4069.00	
Jars	6.00			4075.00	
Safety Joint	2.00			4077.00	
Packer	5.00			4082.00	28.00 Bottom Of Top Packer
Packer	5.00			4087.00	
Anchor	32.00			4119.00	
Recorder	1.00	8400	Inside	4120.00	
Recorder	1.00		Outside	4121.00	
Bullnose	3.00			4124.00	37.00 Bottom Packers & Anchor
Total Tool Length:	65.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 18475

DST#: 4

ATTN: Adam Eldani

Test Start: 2013.12.11 @ 17:13:00

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: 53.00 sec/qt

Cushion Volume:

bbl

Water Loss: 5.60 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 2900.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	spot oil mud 5%oil 95%mud	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

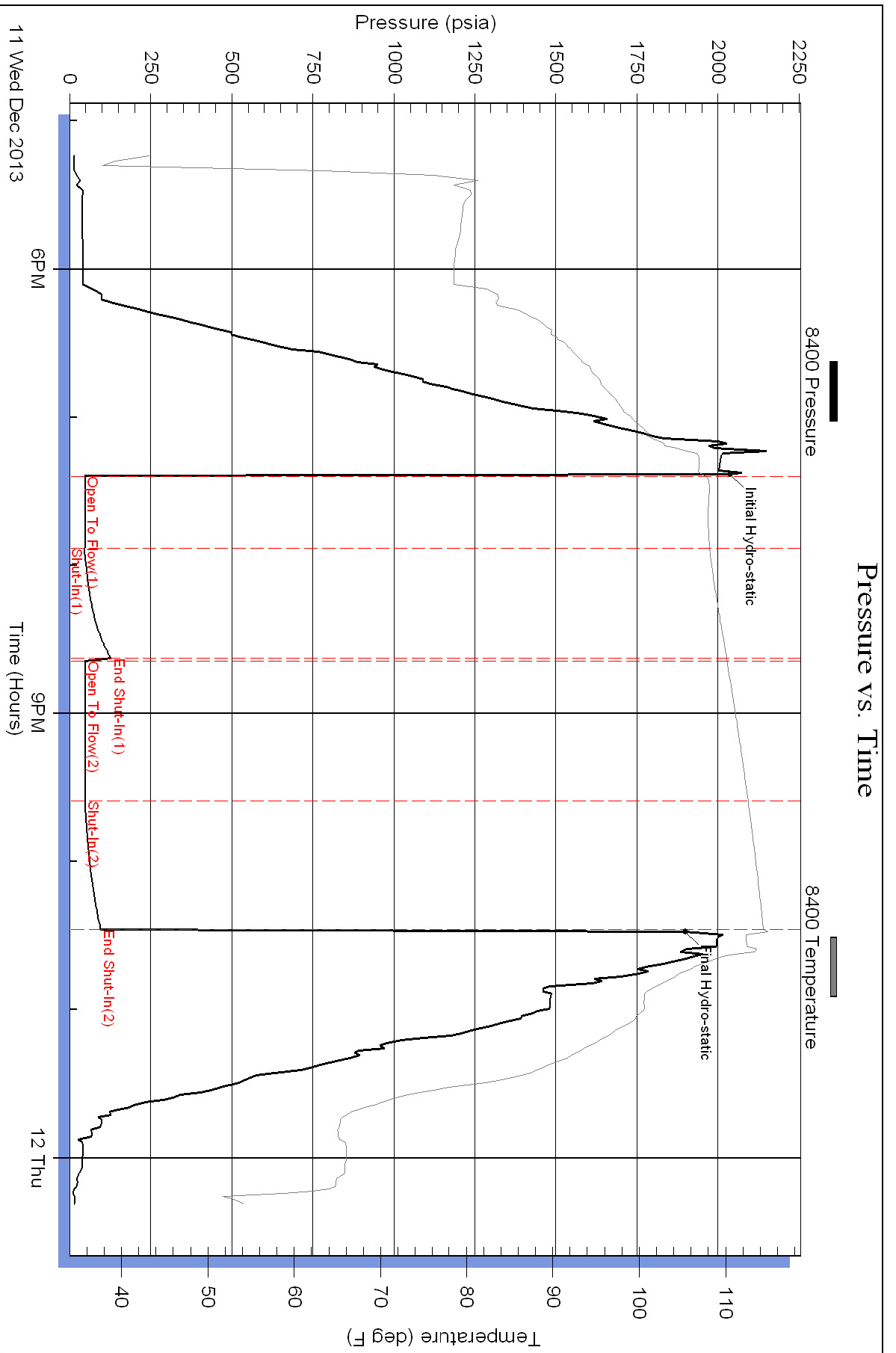
Num Gas Bombs: 0

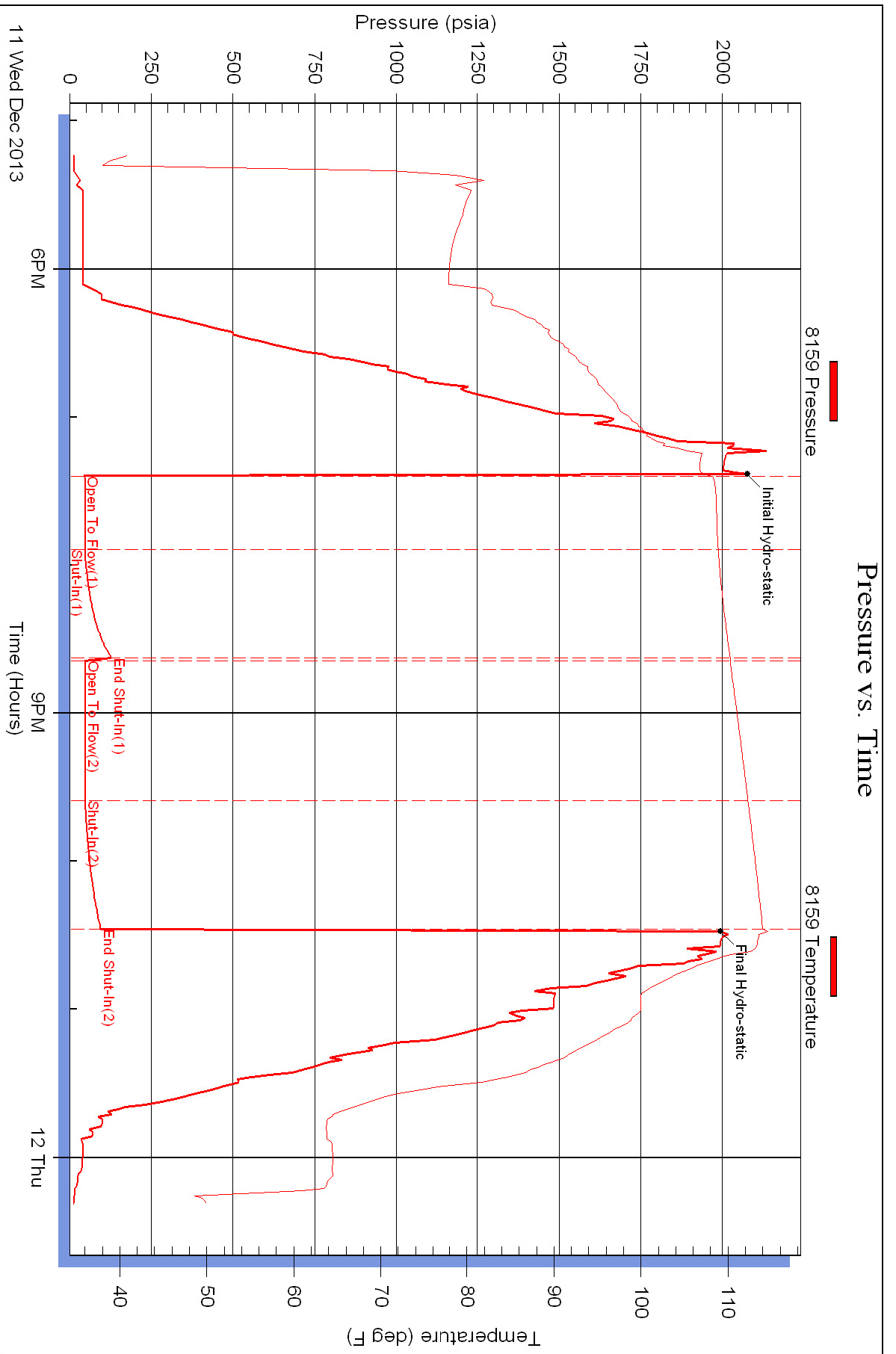
Serial #:

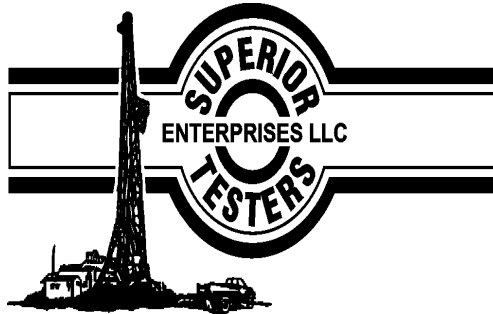
Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Wichita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

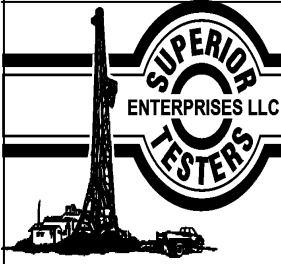
Start Date: 2013.12.12 @ 10:35:00

End Date: 2013.12.12 @ 16:59:00

Job Ticket #: 17027 DST #: 5

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

Printed: 2013.12.12 @ 17:11:16



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17027

DST#: 5

Test Start: 2013.12.12 @ 10:35:00

GENERAL INFORMATION:

Formation: **Lansing**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:11:00

Time Test Ended: 16:59:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4120.00 ft (KB) To 4160.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4160.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8400

Press@RunDepth: 64.32 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.12

End Date: 2013.12.12

Last Calib.: 2013.12.12

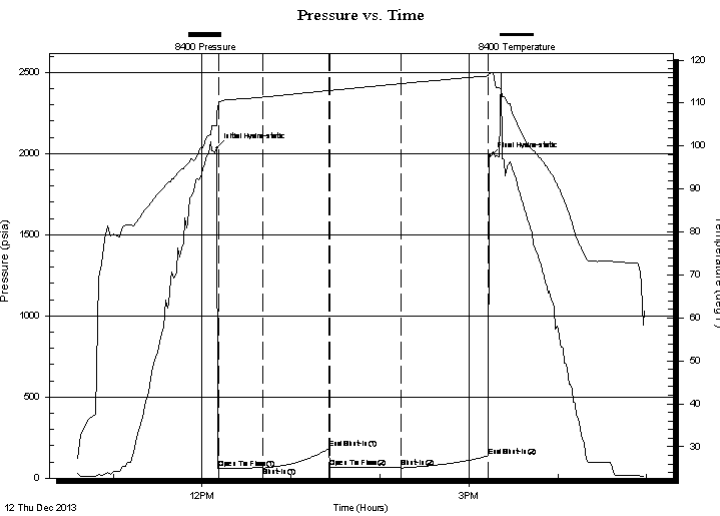
Start Time: 10:35:00

End Time: 16:59:00

Time On Btm: 2013.12.12 @ 12:10:00

Time Off Btm: 2013.12.12 @ 15:14:00

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 1 3/4 inch into bucket in 30 minutes chased tool 4 feet
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 1/2 inch into water
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

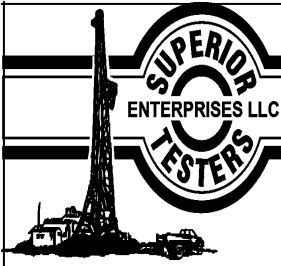
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2034.47	107.49	Initial Hydro-static
1	62.72	109.77	Open To Flow (1)
31	63.64	111.38	Shut-In(1)
76	183.46	112.97	End Shut-In(1)
77	63.83	112.95	Open To Flow (2)
124	64.32	114.54	Shut-In(2)
183	137.65	116.34	End Shut-In(2)
184	1982.12	116.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	spot oil mud 2%oil99%mud	0.05

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17027

DST#: 5

Test Start: 2013.12.12 @ 10:35:00

GENERAL INFORMATION:

Formation: **Lansing**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:11:00

Time Test Ended: 16:59:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4120.00 ft (KB) To 4160.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4160.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 134.76 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.12

End Date: 2013.12.12

Last Calib.: 2013.12.12

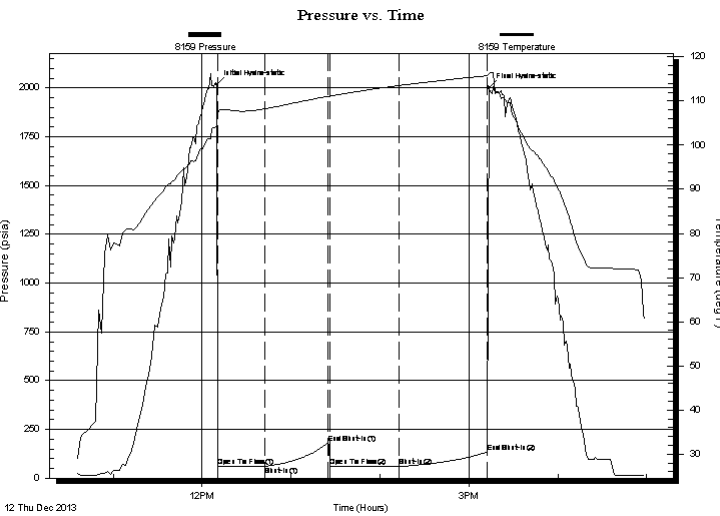
Start Time: 10:35:00

End Time: 16:59:00

Time On Btm: 2013.12.12 @ 12:09:30

Time Off Btm: 2013.12.12 @ 15:13:30

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 1 3/4 inch into bucket in 30 minutes chased tool 4 feet
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 1/2 inch into water
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

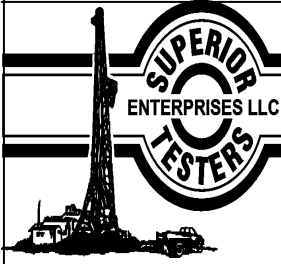
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2019.80	104.37	Initial Hydro-static
1	60.17	107.17	Open To Flow (1)
33	60.62	108.25	Shut-In(1)
76	179.56	111.08	End Shut-In(1)
77	61.47	111.10	Open To Flow (2)
124	62.22	113.52	Shut-In(2)
183	134.76	115.74	End Shut-In(2)
184	2002.52	116.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	spot oil mud 2%oil99%mud	0.05

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17027

DST#: 5

ATTN: Adam Eldani

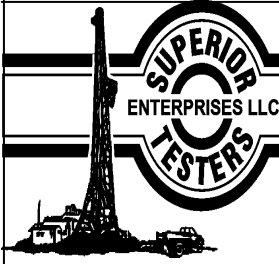
Test Start: 2013.12.12 @ 10:35:00

Tool Information

Drill Pipe:	Length: 3997.00 ft	Diameter: 3.80 inches	Volume: 56.07 bbl	Tool Weight: 1000.00 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: 100000.0 lb
			<u>Total Volume: 56.66 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4120.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: tool chased 4 feet to bottom

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			4097.00	
Hydraulic Tool	5.00			4102.00	
Jars	6.00			4108.00	
Safety Joint	2.00			4110.00	
Packer	5.00			4115.00	28.00 Bottom Of Top Packer
Packer	5.00			4120.00	
Anchor	35.00			4155.00	
Recorder	1.00	8400	Inside	4156.00	
Recorder	1.00	8159	Outside	4157.00	
Bullnose	3.00			4160.00	40.00 Bottom Packers & Anchor
Total Tool Length:	68.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17027

DST#: 5

ATTN: Adam Eldani

Test Start: 2013.12.12 @ 10:35:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 49.00 sec/qt

Water Loss: 5.40 in³

Resistivity: ohm.m

Salinity: 2700.00 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: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	spot oil mud 2%oil99%mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

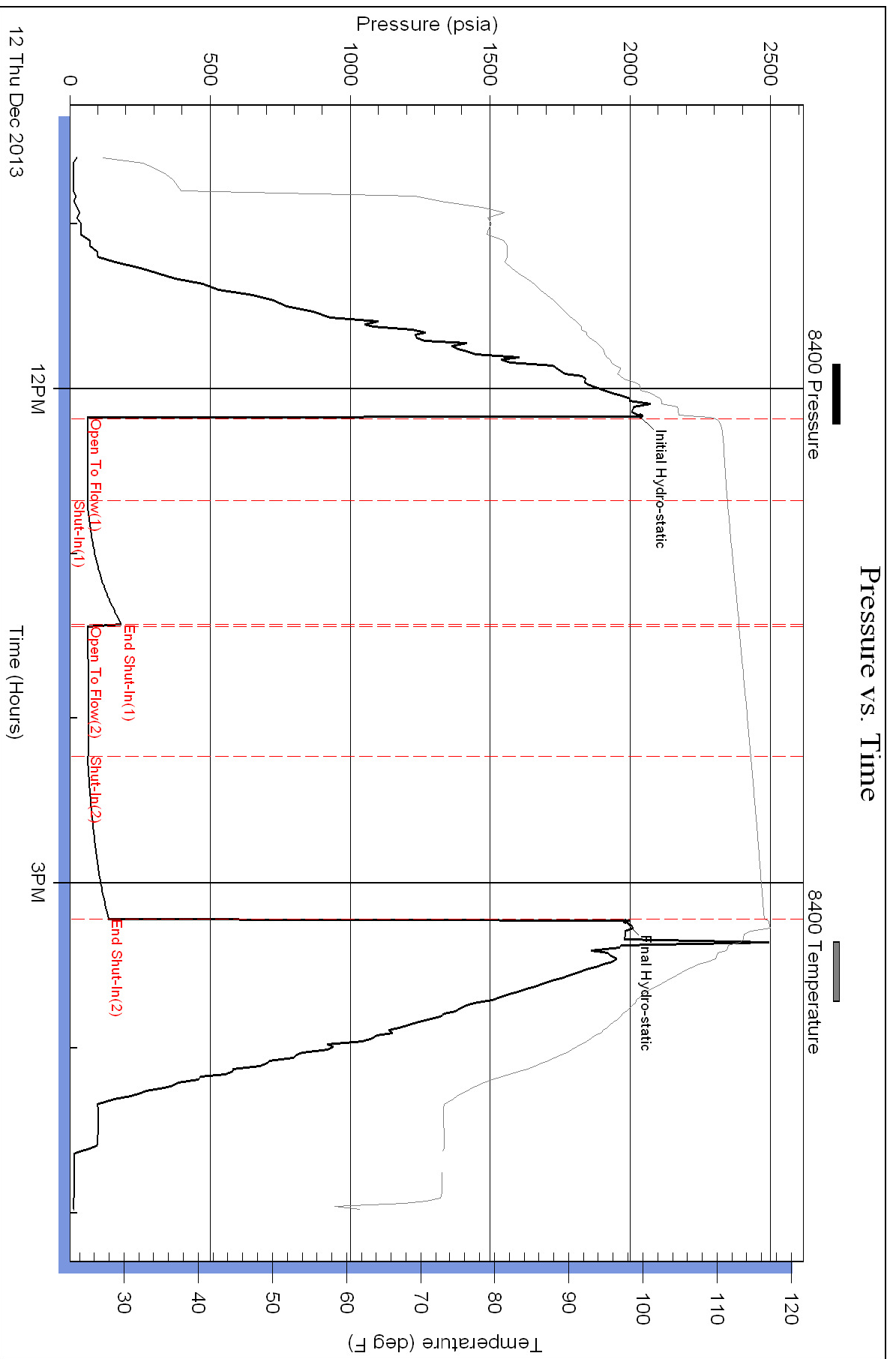
Num Gas Bombs: 0

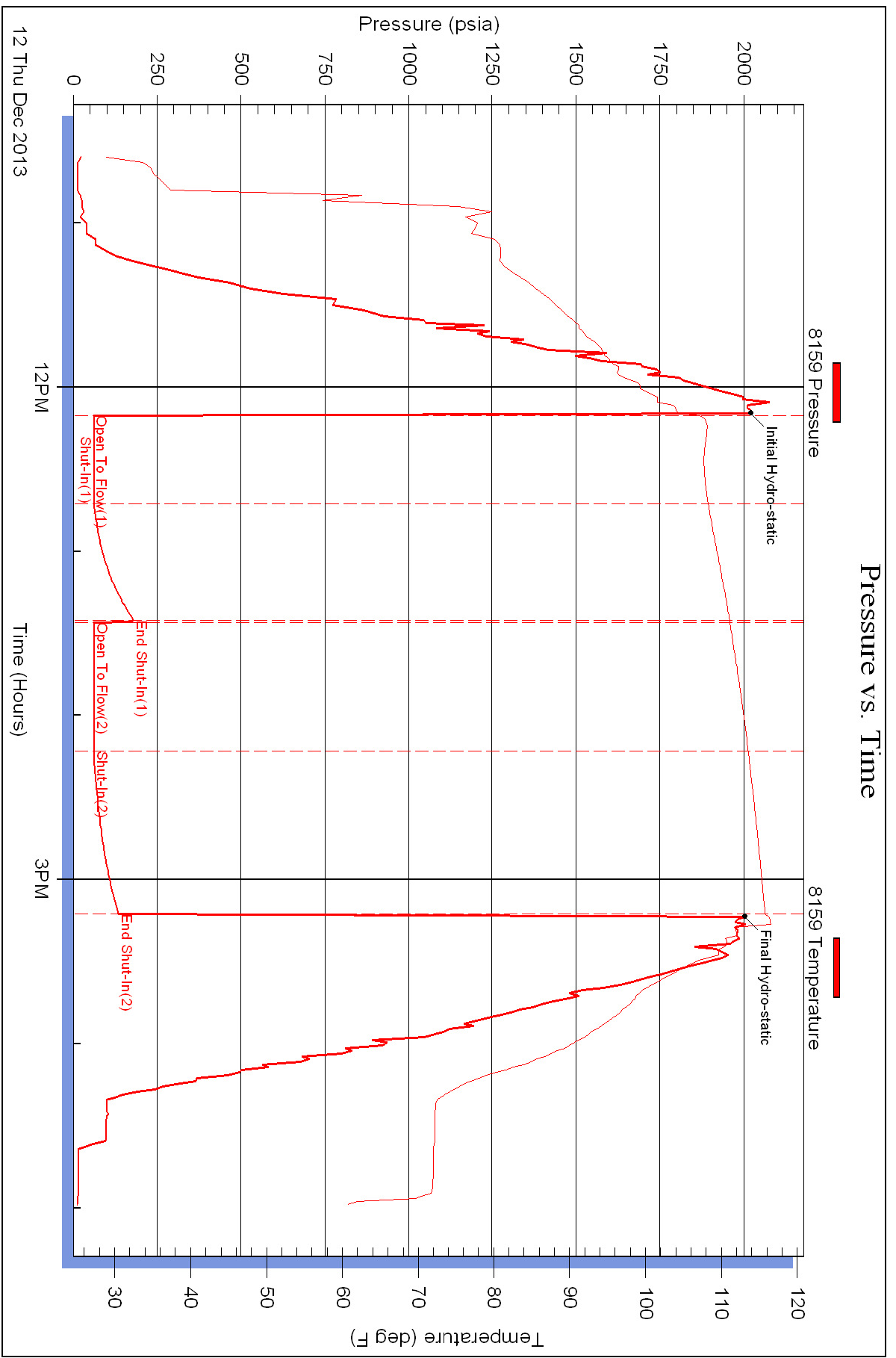
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Wichita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

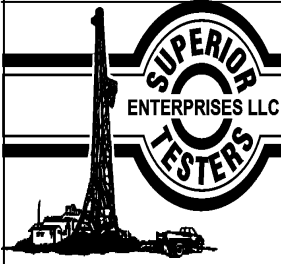
Start Date: 2013.12.13 @ 12:00:00

End Date: 2013.12.13 @ 19:03:30

Job Ticket #: 17028 DST #: 6

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

Printed: 2013.12.13 @ 07:15:11



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17028

DST#: 6

Test Start: 2013.12.13 @ 12:00:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:06:30

Time Test Ended: 19:03:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4154.00 ft (KB) To 4184.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4184.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8400

Press@RunDepth: 45.09 psia @ ft (KB)

Capacity: psia

Start Date: 2013.12.13

End Date: 2013.12.13

Last Calib.: 1899.12.30

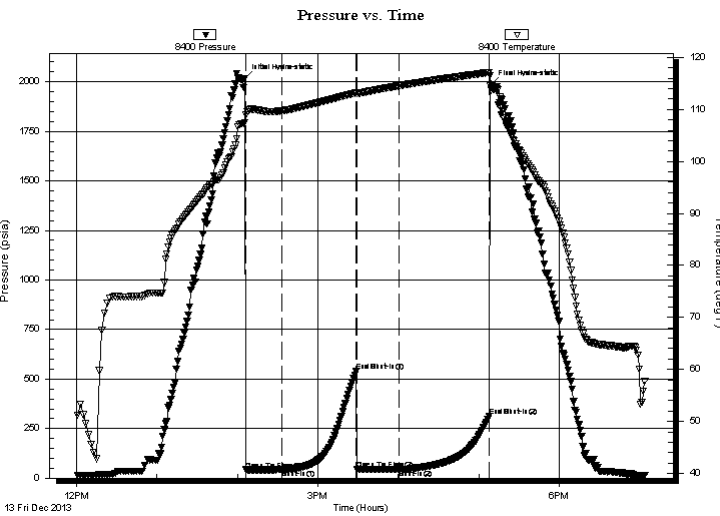
Start Time: 12:00:00

End Time: 19:03:30

Time On Btm: 2013.12.13 @ 14:05:30

Time Off Btm: 2013.12.13 @ 17:09:00

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 1/2 inch i to bucket in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak surface blow did not build
 2nd Shut-in No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2016.88	107.47	Initial Hydro-static
1	41.85	108.97	Open To Flow (1)
28	42.98	109.75	Shut-In(1)
83	538.44	113.20	End Shut-In(1)
84	44.42	113.05	Open To Flow (2)
115	45.09	114.56	Shut-In(2)
182	311.68	117.13	End Shut-In(2)
184	1985.10	113.73	Final Hydro-static

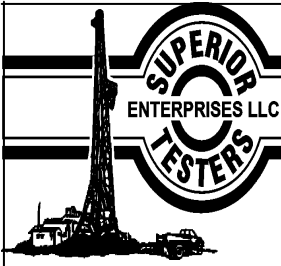
Recovery

Length (ft)	Description	Volume (bbl)
5.00	spot oil mud 1%oil99%mud	0.02

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17028

DST#:6

Test Start: 2013.12.13 @ 12:00:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:06:30

Time Test Ended: 19:03:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4154.00 ft (KB) To 4184.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4184.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 312.26 psia @ ft (KB)

Capacity: psia

Start Date: 2013.12.13

End Date: 2013.12.13

Last Calib.: 1899.12.30

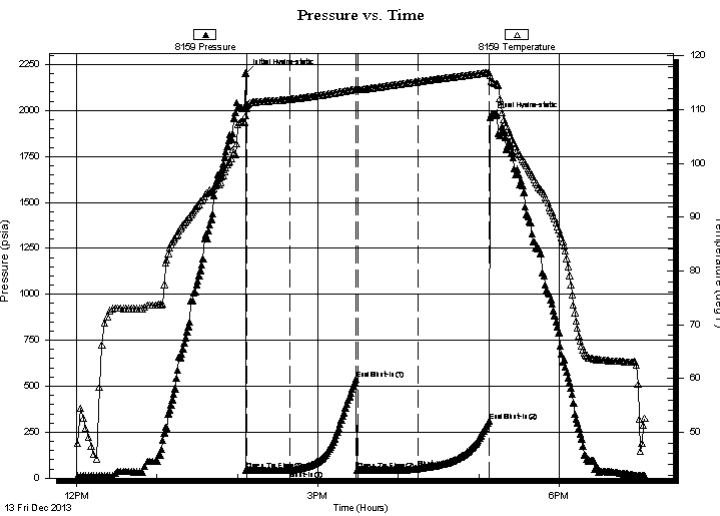
Start Time: 12:00:00

End Time: 19:04:00

Time On Btm: 2013.12.13 @ 14:06:00

Time Off Btm: 2013.12.13 @ 17:08:30

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 1/2 inch i to bucket in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak surface blow did not build
 2nd Shut-in No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2202.58	108.92	Initial Hydro-static
1	41.50	110.71	Open To Flow (1)
33	43.77	111.92	Shut-In(1)
83	538.50	113.81	End Shut-In(1)
84	44.57	113.68	Open To Flow (2)
129	51.94	115.19	Shut-In(2)
182	312.26	116.93	End Shut-In(2)
183	1963.70	116.34	Final Hydro-static

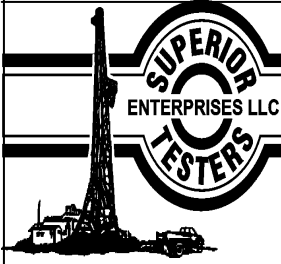
Recovery

Length (ft)	Description	Volume (bbl)
5.00	spot oil mud 1%oil99%mud	0.02

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17028

DST#: 6

ATTN: Adam Eldani

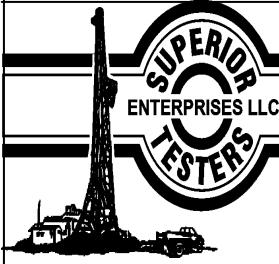
Test Start: 2013.12.13 @ 12:00:00

Tool Information

Drill Pipe:	Length: 4027.00 ft	Diameter: 3.80 inches	Volume: 56.49 bbl	Tool Weight: 1000.00 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: 60000.00 lb
			<u>Total Volume: 57.08 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	4154.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	58.00 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			4131.00	
Hydraulic Tool	5.00			4136.00	
Jars	6.00			4142.00	
Safety Joint	2.00			4144.00	
Packer	5.00			4149.00	28.00 Bottom Of Top Packer
Packer	5.00			4154.00	
Anchor	25.00			4179.00	
Recorder	1.00	8400	Inside	4180.00	
Recorder	1.00	8159	Outside	4181.00	
Bullnose	3.00			4184.00	30.00 Bottom Packers & Anchor
Total Tool Length:	58.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17028

DST#: 6

ATTN: Adam Eldani

Test Start: 2013.12.13 @ 12:00:00

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: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 5.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 2700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	spot oil mud 1%oil99%mud	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

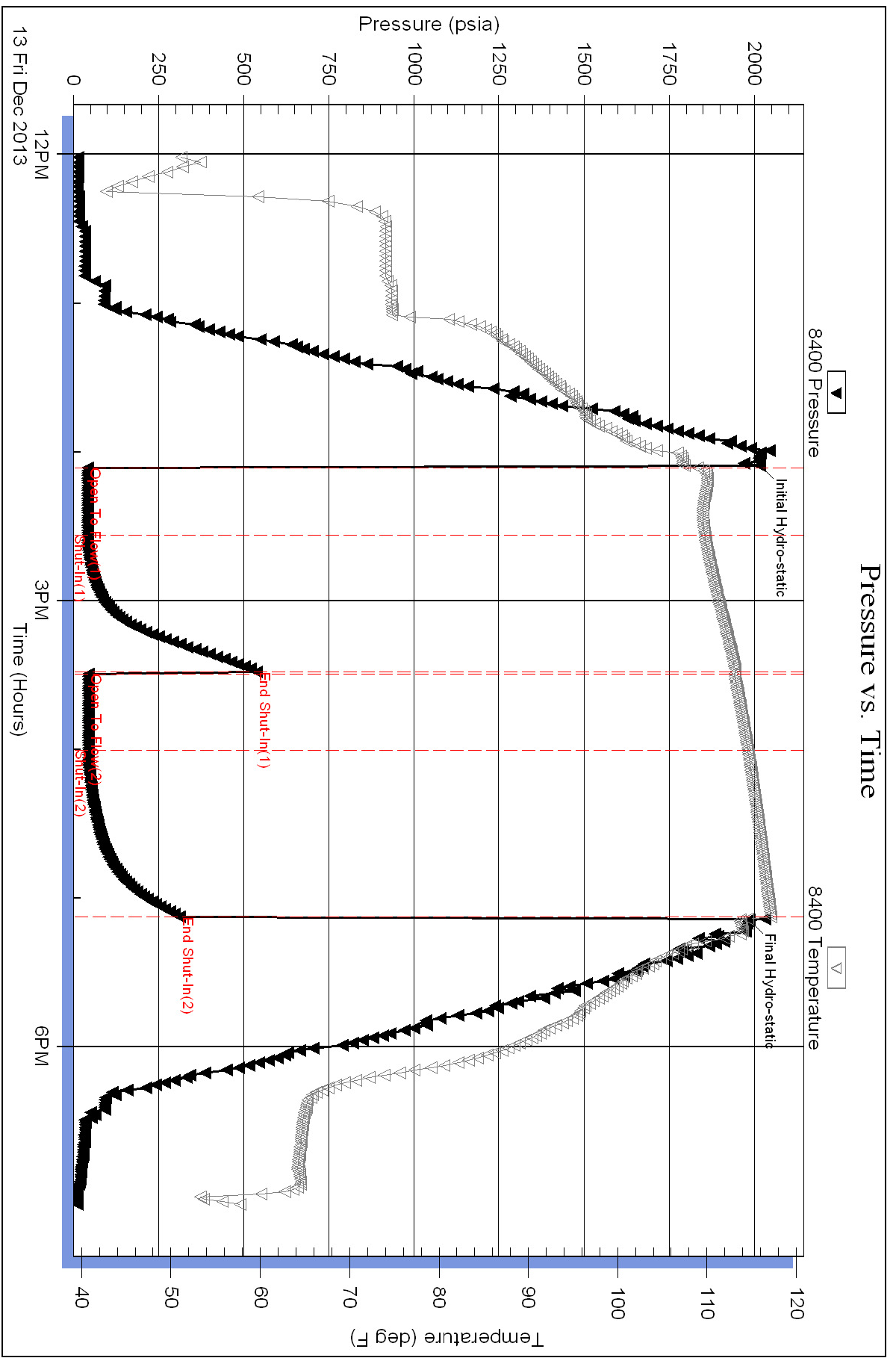
Num Gas Bombs: 0

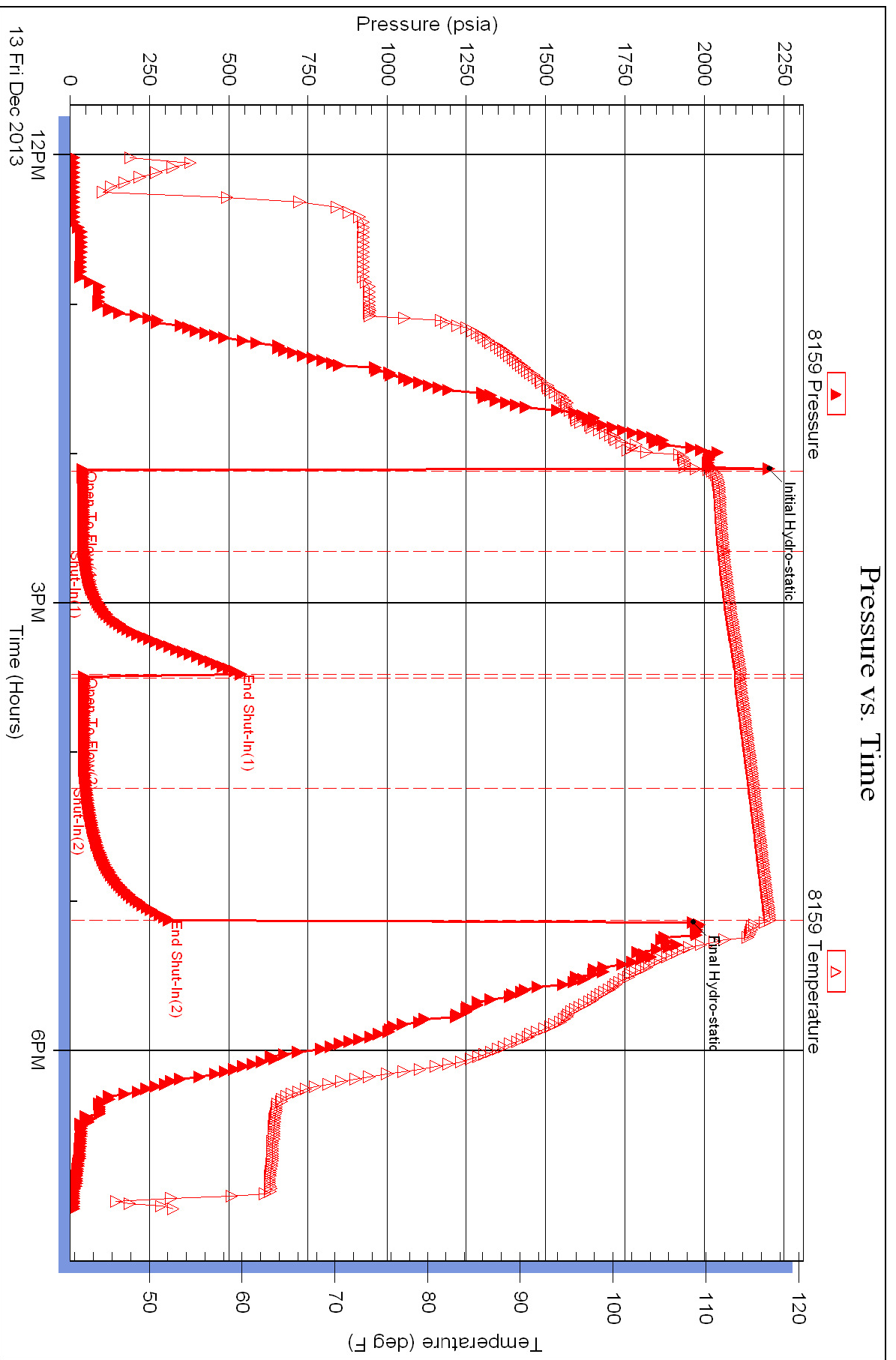
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Witchita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

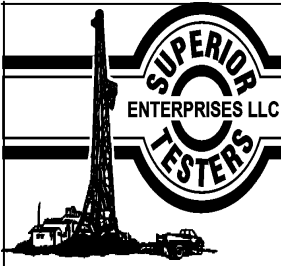
Start Date: 2013.12.13 @ 17:57:00

End Date: 2013.12.14 @ 01:12:00

Job Ticket #: 17029 DST #: 7

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

Printed: 2013.12.14 @ 01:32:23



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17029

DST#: 7

Test Start: 2013.12.13 @ 17:57:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:04:30

Time Test Ended: 01:12:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4182.00 ft (KB) To 4255.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4255.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8400

Press@RunDepth: 100.40 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.13

End Date:

2013.12.14

Last Calib.:

2013.12.14

Start Time: 17:57:00

End Time:

01:12:00

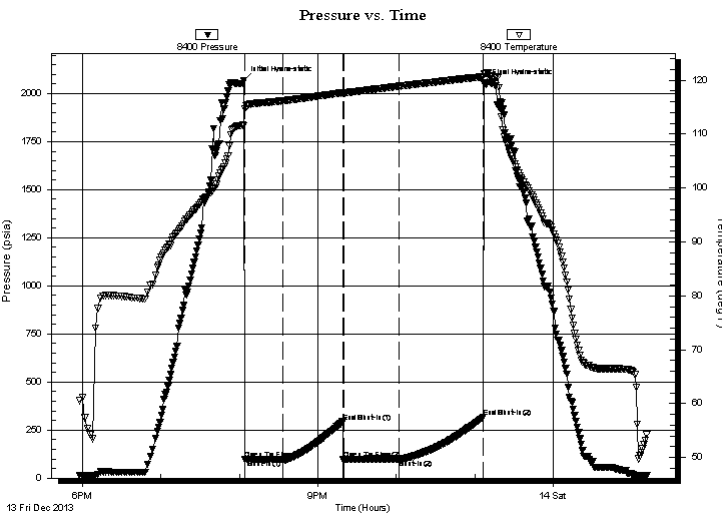
Time On Btm:

2013.12.13 @ 20:03:30

Time Off Btm:

2013.12.13 @ 23:08:00

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 1 inch into bucket w water in 30 minutes tool chased 10 feet to bottom
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-No blow flushed tool good surge did not build
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

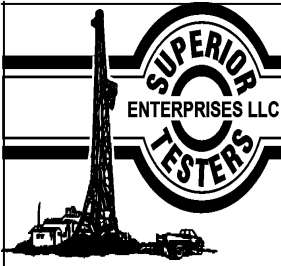
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2066.32	111.50	Initial Hydro-static
1	97.15	114.78	Open To Flow (1)
30	96.98	116.16	Shut-In(1)
76	292.56	117.67	End Shut-In(1)
77	98.29	117.61	Open To Flow (2)
119	100.40	118.88	Shut-In(2)
183	316.78	120.65	End Shut-In(2)
185	2051.07	121.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	mud	0.30

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17029

DST#: 7

Test Start: 2013.12.13 @ 17:57:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:04:30

Time Test Ended: 01:12:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4182.00 ft (KB) To 4255.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4255.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 314.85 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.13

End Date:

2013.12.14

Last Calib.: 2013.12.14

Start Time: 17:57:00

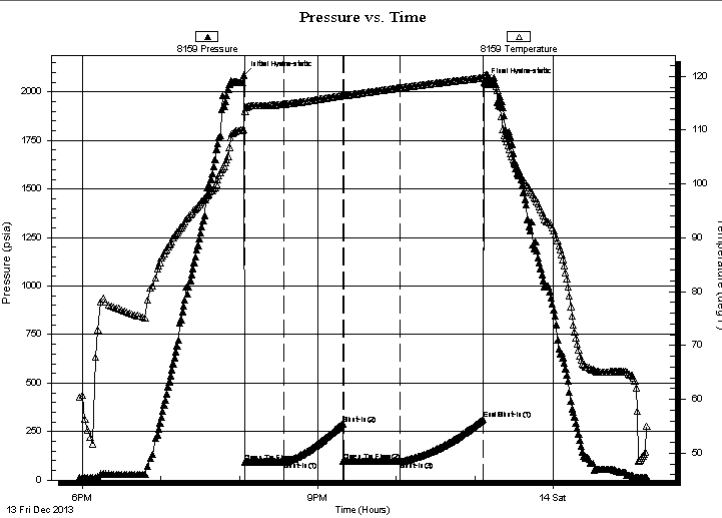
End Time:

01:12:00

Time On Btm: 2013.12.13 @ 20:03:30

Time Off Btm: 2013.12.13 @ 23:07:30

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 1 inch into bucket w water in 30 minutes tool chased 10 feet to bottom
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-No blow flushed tool good surge did not build
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

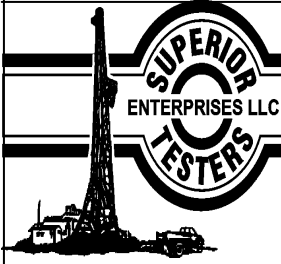
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2086.62	110.07	Initial Hydro-static
1	93.72	113.38	Open To Flow (1)
31	95.09	114.81	Shut-In(1)
76	290.62	116.43	Shut-In(2)
77	95.47	116.40	Open To Flow (2)
120	98.53	117.87	Shut-In(3)
183	314.85	119.72	End Shut-In(1)
184	2050.78	120.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	mud	0.30

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17029

DST#: 7

ATTN: Adam Eldani

Test Start: 2013.12.13 @ 17:57:00

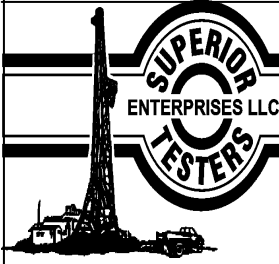
Tool Information

Drill Pipe:	Length: 4059.00 ft	Diameter: 3.80 inches	Volume: 56.94 bbl	Tool Weight: 1000.00 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: 90000.00 lb
			<u>Total Volume: 57.53 bbl</u>	Tool Chased 10.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	4182.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	73.00 ft			
Tool Length:	101.00 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			4159.00	
Hydraulic Tool	5.00			4164.00	
Jars	6.00			4170.00	
Safety Joint	2.00			4172.00	
Packer	5.00			4177.00	28.00 Bottom Of Top Packer
Packer	5.00			4182.00	
Anchor	5.00			4187.00	
Change Over Sub	0.75			4187.75	
Drill Pipe	31.50			4219.25	
Change Over Sub	0.75			4220.00	
Anchor	30.00			4250.00	
Recorder	1.00		Inside	4251.00	
Recorder	1.00		Outside	4252.00	
Bullnose	3.00			4255.00	73.00 Bottom Packers & Anchor

Total Tool Length: 101.00



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17029

DST#: 7

ATTN: Adam Eldani

Test Start: 2013.12.13 @ 17:57:00

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: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.20 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	mud	0.295

Total Length: 60.00 ft Total Volume: 0.295 bbl

Num Fluid Samples: 0

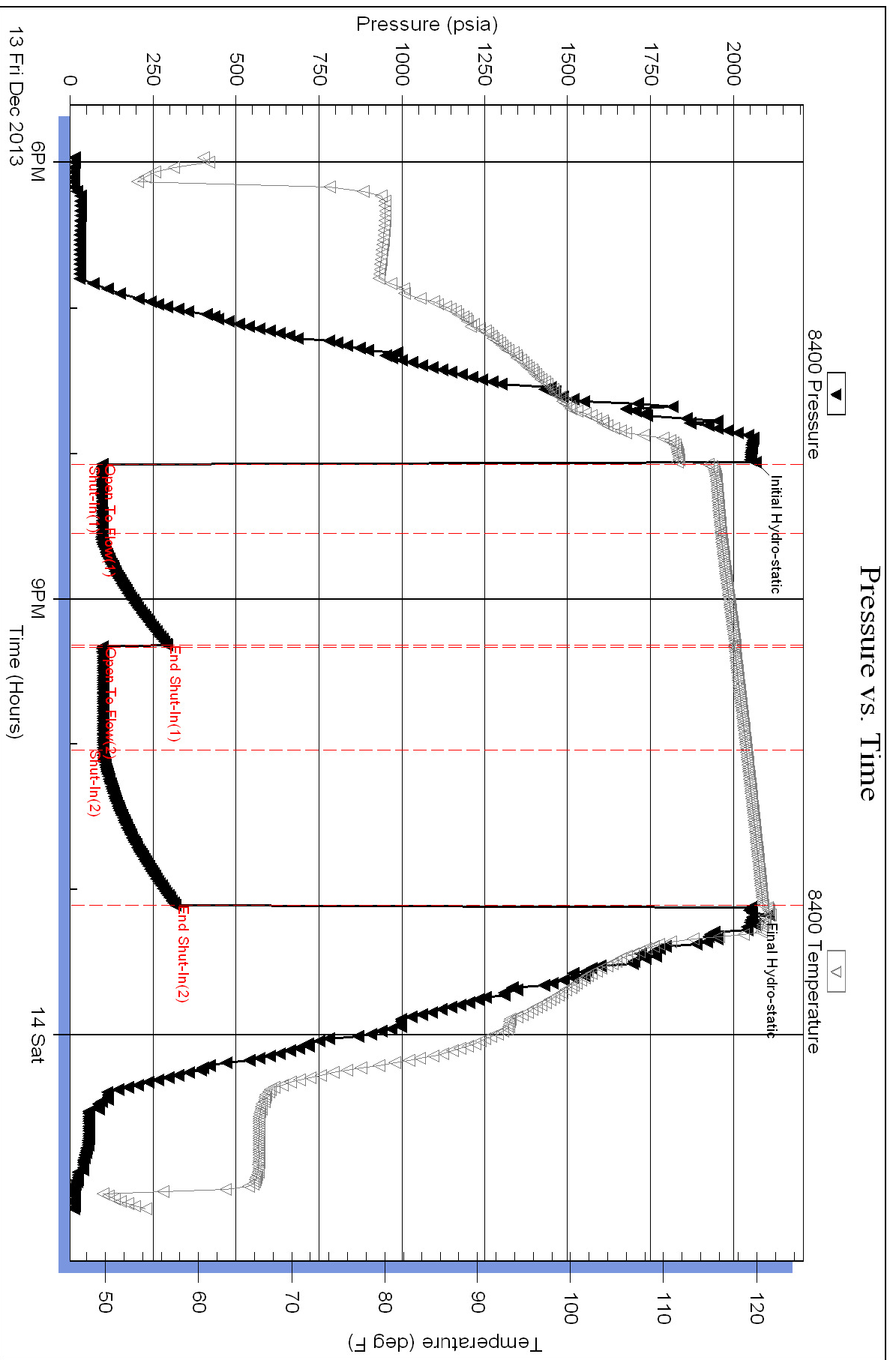
Num Gas Bombs: 0

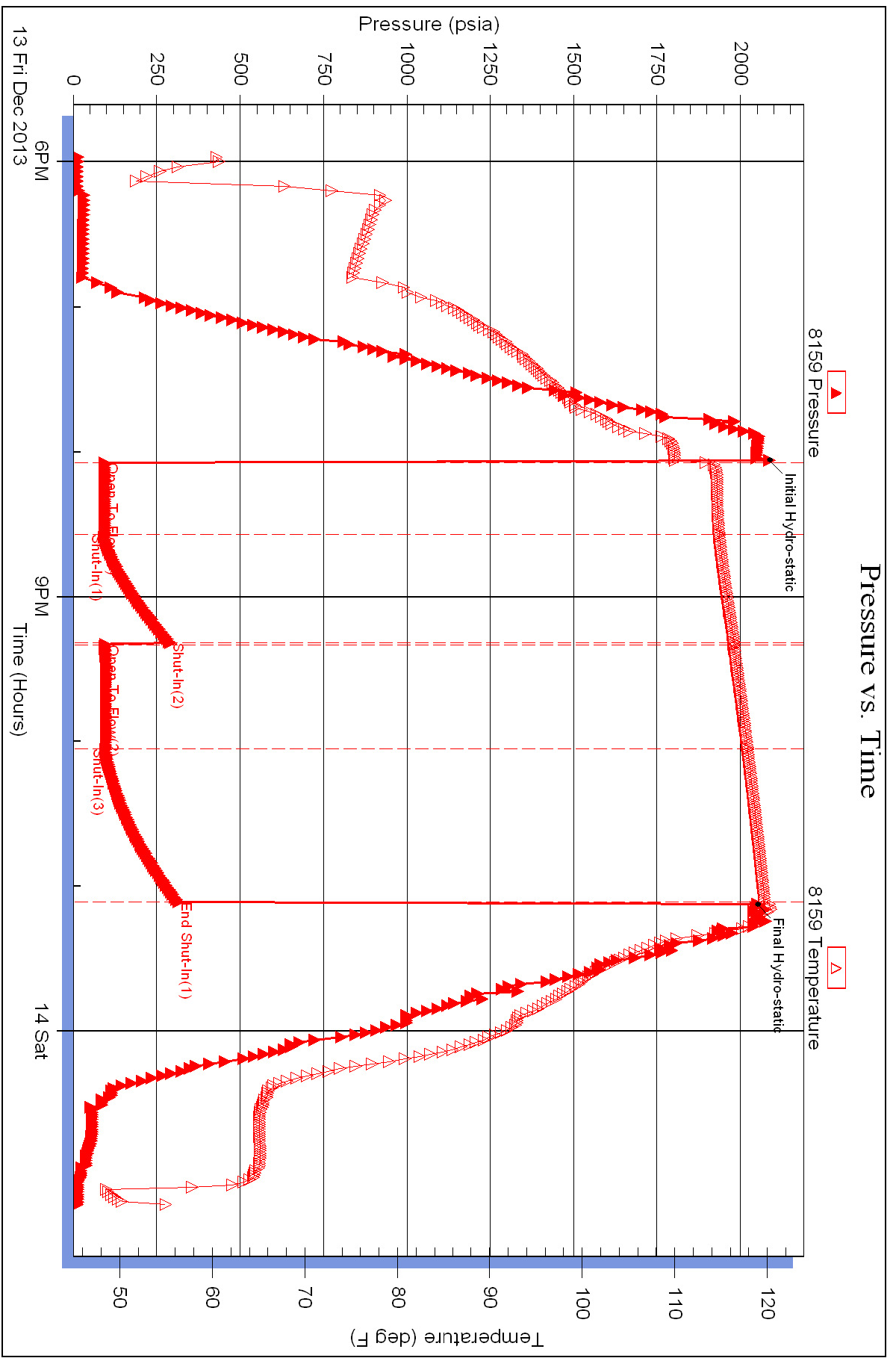
Serial #:

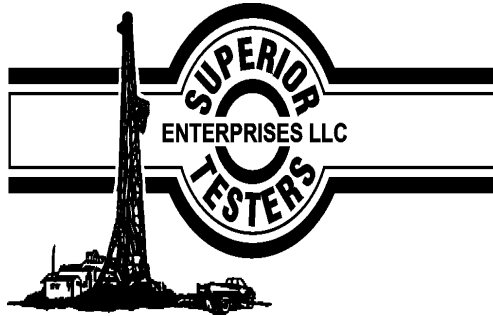
Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Wichita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

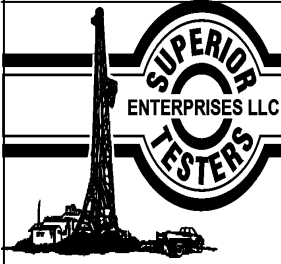
Start Date: 2013.12.14 @ 21:35:00

End Date: 2013.12.15 @ 04:39:30

Job Ticket #: 17030 DST #: 8

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

Printed: 2013.12.15 @ 04:56:49



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17030

DST#: 8

Test Start: 2013.12.14 @ 21:35:00

GENERAL INFORMATION:

Formation: **Pawnee, Ft Scott, C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:34:30

Time Test Ended: 04:39:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4267.00 ft (KB) To 4414.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4414.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8400 Inside

Press@RunDepth: 112.33 psia @ 4410.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.14

End Date:

2013.12.15

Last Calib.:

2013.12.15

Start Time: 21:35:00

End Time:

04:39:30

Time On Btm:

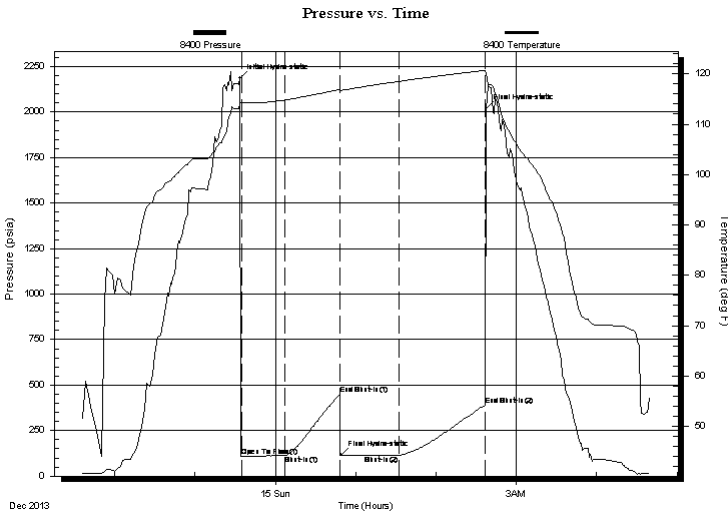
2013.12.14 @ 23:33:30

Time Off Btm:

2013.12.15 @ 00:49:00

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 2 inches into water in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 1/2 inch into water in 45 minutes
 2nd Shut-in 60 Minutes-No blow back

PRESSURE SUMMARY



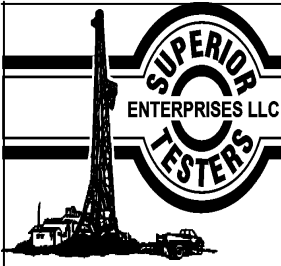
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2184.65	114.10	Initial Hydro-static
1	110.54	114.25	Open To Flow (1)
34	112.33	114.78	Shut-In(1)
75	448.95	116.84	End Shut-In(1)
76	114.73	116.74	Final Hydro-static
119	115.77	118.51	Shut-In(2)
183	390.11	120.68	End Shut-In(2)
184	2018.89	120.20	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
7.00	mud	0.03

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17030

DST#: 8

Test Start: 2013.12.14 @ 21:35:00

GENERAL INFORMATION:

Formation: **Pawnee, Ft Scott, C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:34:30

Time Test Ended: 04:39:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4267.00 ft (KB) To 4414.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4414.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 390.15 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.14

End Date: 2013.12.15

Last Calib.: 2013.12.15

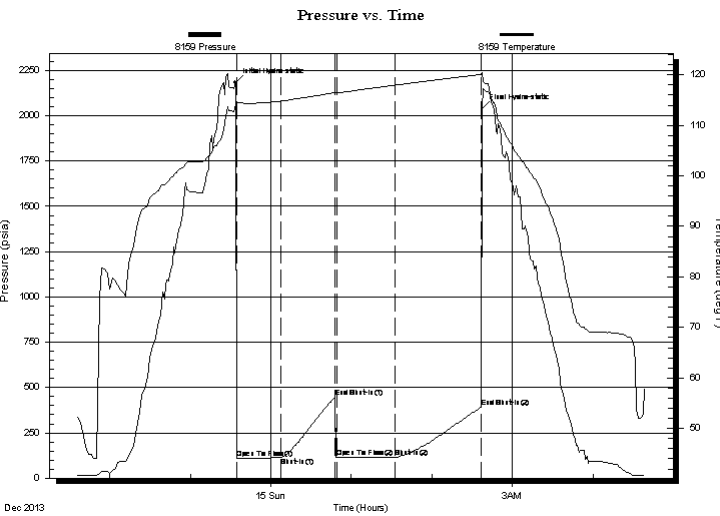
Start Time: 21:35:00

End Time: 04:39:00

Time On Btm: 2013.12.14 @ 23:33:30

Time Off Btm: 2013.12.15 @ 02:37:30

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 2 inches into water in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 1/2 inch into water in 45 minutes
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

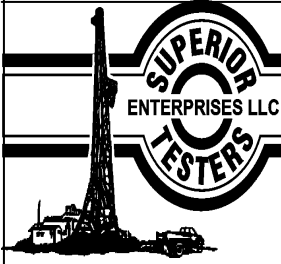
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2183.09	114.15	Initial Hydro-static
1	109.10	114.40	Open To Flow (1)
34	112.76	114.81	Shut-In(1)
75	449.36	116.48	End Shut-In(1)
76	113.98	116.41	Open To Flow (2)
119	116.07	117.95	Shut-In(2)
183	390.15	120.06	End Shut-In(2)
184	2040.43	120.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
7.00	mud	0.03

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17030

DST#: 8

ATTN: Adam Eldani

Test Start: 2013.12.14 @ 21:35:00

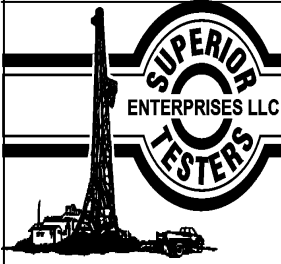
Tool Information

Drill Pipe:	Length: 4124.00 ft	Diameter: 3.80 inches	Volume: 57.85 bbl	Tool Weight: 1000.00 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: 70000.00 lb
			Total Volume: 58.44 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	4267.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	147.00 ft			
Tool Length:	175.00 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			4244.00	
Hydraulic Tool	5.00			4249.00	
Jars	6.00			4255.00	
Safety Joint	2.00			4257.00	
Packer	5.00			4262.00	28.00 Bottom Of Top Packer
Packer	5.00			4267.00	
Anchor	0.00			4267.00	
Change Over Sub	0.75			4267.75	
Drill Pipe	95.50			4363.25	
Change Over Sub	0.75			4364.00	
Anchor	45.00			4409.00	
Recorder	1.00	8400	Inside	4410.00	
Recorder	1.00		Outside	4411.00	
Bullnose	3.00			4414.00	147.00 Bottom Packers & Anchor

Total Tool Length: 175.00



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17030

DST#: 8

ATTN: Adam Eldani

Test Start: 2013.12.14 @ 21:35:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 54.00 sec/qt

Water Loss: 8.00 in³

Resistivity: ohm.m

Salinity: 2800.00 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
7.00	mud	0.034

Total Length: 7.00 ft Total Volume: 0.034 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8400

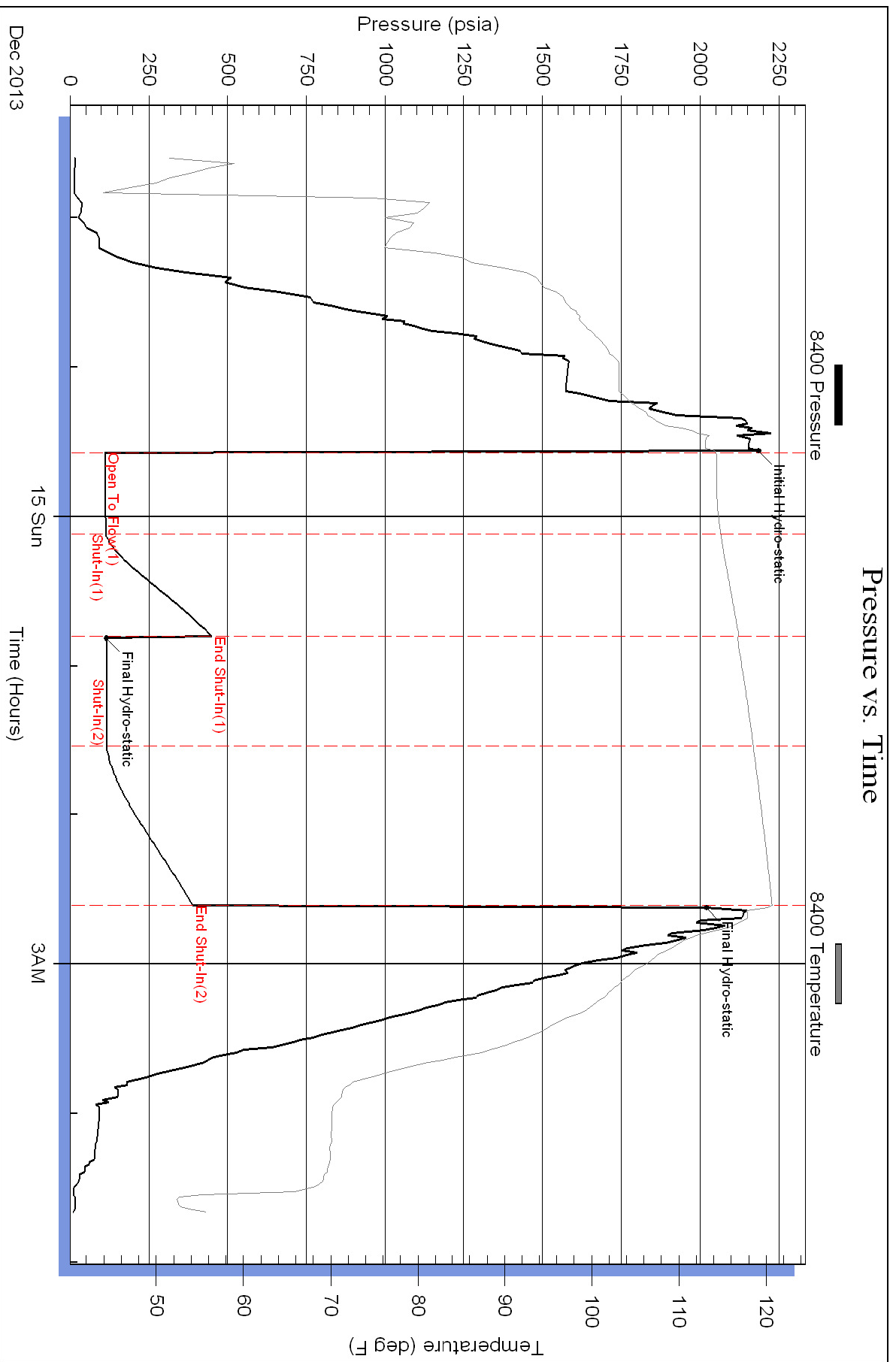
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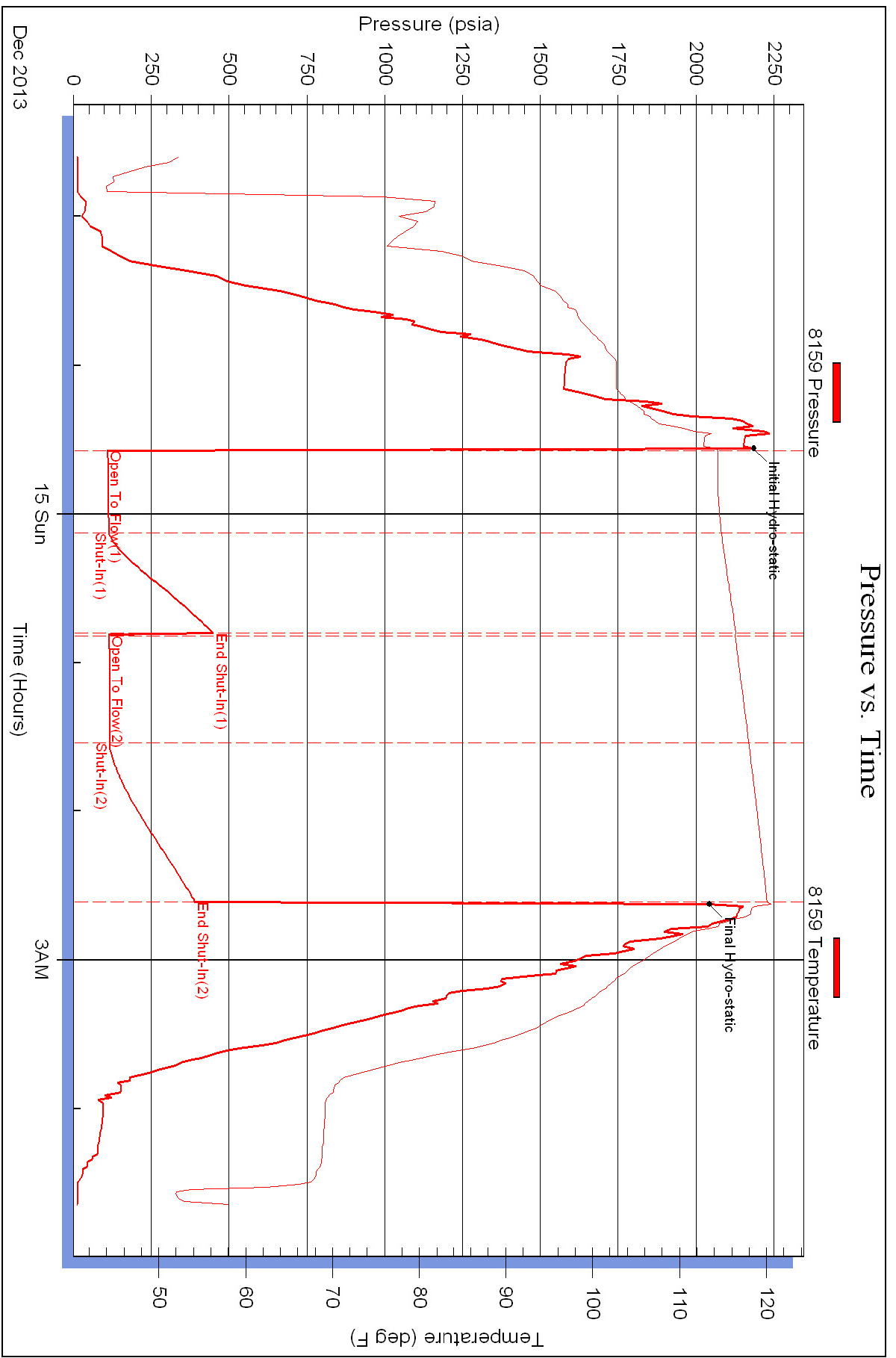
Ritchie Exploration L.L.C

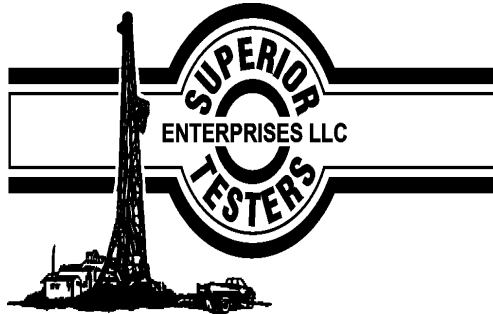
Win 2C-3D #1

DST Test Number: 8

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration L.L.C**

8100 E 22nd St N #700 Witchita KS
67278+3188

ATTN: Adam Eldani

Win 2C-3D #1

2-16s-31w Scott

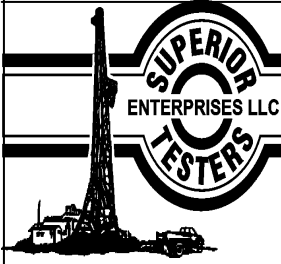
Start Date: 2013.12.15 @ 20:26:00

End Date: 2013.12.16 @ 02:57:00

Job Ticket #: 17031 DST #: 9

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

Printed: 2013.12.16 @ 03:13:02



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17031

DST#:9

Test Start: 2013.12.15 @ 20:26:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:50:00

Time Test Ended: 02:57:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4488.00 ft (KB) To 4535.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4535.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8400

Press@RunDepth: 121.07 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.15

End Date: 2013.12.16

Last Calib.: 2013.12.16

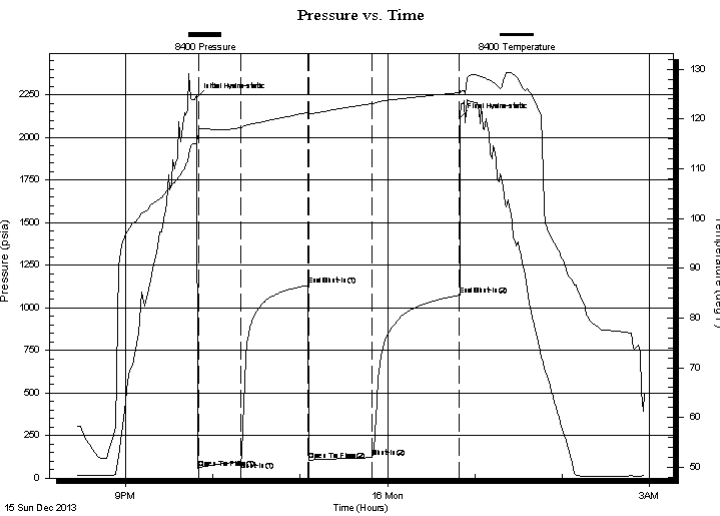
Start Time: 20:26:00

End Time: 02:57:00

Time On Btm: 2013.12.15 @ 21:49:00

Time Off Btm: 2013.12.16 @ 00:50:00

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 4 inches into water in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 3 1/2 inches into water in 45 minutes
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

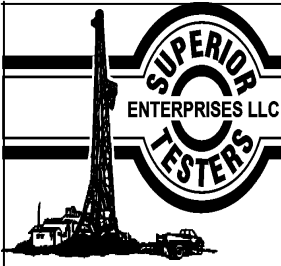
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2234.45	115.71	Initial Hydro-static
1	59.83	117.52	Open To Flow (1)
30	98.06	118.25	Shut-In(1)
76	1131.19	121.26	End Shut-In(1)
77	103.41	120.97	Open To Flow (2)
121	121.07	123.08	Shut-In(2)
180	1073.03	125.27	End Shut-In(2)
181	2117.71	125.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	spot oil mud 1%oil 99%mud	0.59
30.00	spot oil mud 3 %oil 97%mud	0.42

Gas Rates

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



DRILL STEM TEST REPORT

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

ATTN: Adam Eldani

Job Ticket: 17031

DST#:9

Test Start: 2013.12.15 @ 20:26:00

GENERAL INFORMATION:

Formation:

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:50:00

Time Test Ended: 02:57:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Scott City-48

Interval: 4488.00 ft (KB) To 4535.00 ft (KB) (TVD)

Reference Elevations: 2872.00 ft (KB)

Total Depth: 4535.00 ft (KB) (TVD)

2867.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8159

Press@RunDepth: 1074.08 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.12.15

End Date: 2013.12.16

Last Calib.: 2013.12.16

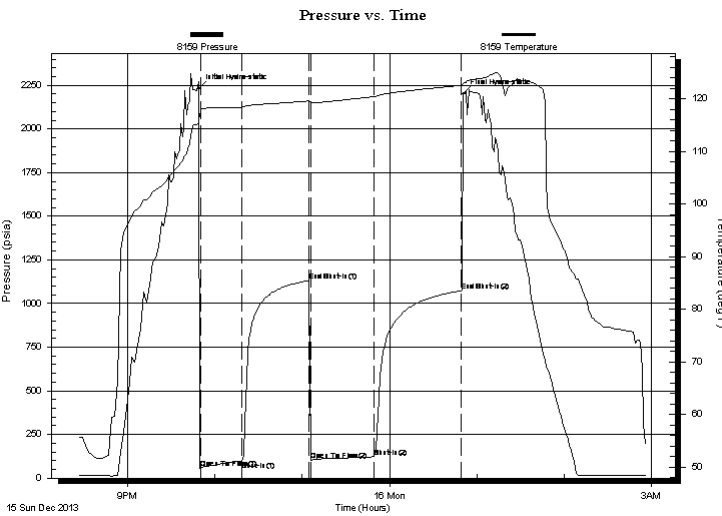
Start Time: 20:26:00

End Time: 02:57:00

Time On Btm: 2013.12.15 @ 21:49:00

Time Off Btm: 2013.12.16 @ 00:50:30

TEST COMMENT: 1st Opening 30 Minutes-Weak blow built 4 inches into water in 30 minutes
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 45 Minutes-Weak blow built 3 1/2 inches into water in 45 minutes
 2nd Shut-in 60 Minutes-No blow back



PRESSURE SUMMARY

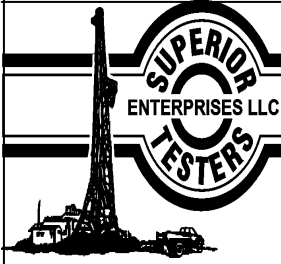
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2228.63	116.23	Initial Hydro-static
1	58.17	117.72	Open To Flow (1)
30	98.05	118.46	Shut-In(1)
76	1131.22	119.64	End Shut-In(1)
77	103.14	119.32	Open To Flow (2)
121	122.08	120.46	Shut-In(2)
180	1074.08	122.59	End Shut-In(2)
182	2200.91	122.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	spot oil mud 1%oil 99%mud	0.59
30.00	spot oil mud 3 %oil 97%mud	0.42

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17031

DST#:9

ATTN: Adam Eldani

Test Start: 2013.12.15 @ 20:26:00

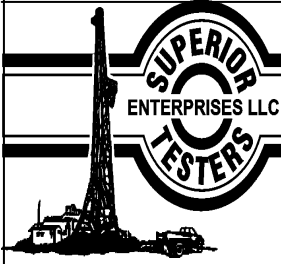
Tool Information

Drill Pipe:	Length: 4349.00 ft	Diameter: 3.80 inches	Volume: 61.01 bbl	Tool Weight: 1000.00 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: 90000.00 lb
			<u>Total Volume: 61.60 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4488.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	47.00 ft			
Tool Length:	75.00 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			4465.00	
Hydraulic Tool	5.00			4470.00	
Jars	6.00			4476.00	
Safety Joint	2.00			4478.00	
Packer	5.00			4483.00	28.00 Bottom Of Top Packer
Packer	5.00			4488.00	
Anchor	42.00			4530.00	
Recorder	1.00		Inside	4531.00	
Recorder	1.00		Outside	4532.00	
Bullnose	3.00			4535.00	47.00 Bottom Packers & Anchor
Total Tool Length:	75.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration L.L.C

2-16s-31w Scott

8100 E 22nd St N #700 Wichita KS 67278+3188

Win 2C-3D #1

Job Ticket: 17031

DST#:9

ATTN: Adam Eldani

Test Start: 2013.12.15 @ 20:26:00

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: 46.00 sec/qt

Cushion Volume: bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psia

Salinity: 3100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	spot oil mud 1%oil 99%mud	0.590
30.00	spot oil mud 3 %oil 97%mud	0.421

Total Length: 150.00 ft Total Volume: 1.011 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

