



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc

250 N Water Ste 300
Wichita Ks 67202

ATTN: Scott Robinson

Hagen # 1-12

12-12-20-Ellis-Ks

Job Ticket: 041681

DST#: 1

Test Start: 2011.02.18 @ 12:28:57

GENERAL INFORMATION:

Formation: **Oread/Lansing A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:26:57

Time Test Ended: 20:28:27

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 38

Interval: 3361.00 ft (KB) To 3480.00 ft (KB) (TVD)

Reference Elevations: 2143.00 ft (KB)

Total Depth: 3480.00 ft (KB) (TVD)

2138.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8354

Inside

Press @ Run Depth: 280.97 psig @ 3364.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.02.18

End Date:

2011.02.18

Last Calib.:

2011.02.18

Start Time: 12:28:58

End Time:

20:28:27

Time On Btm:

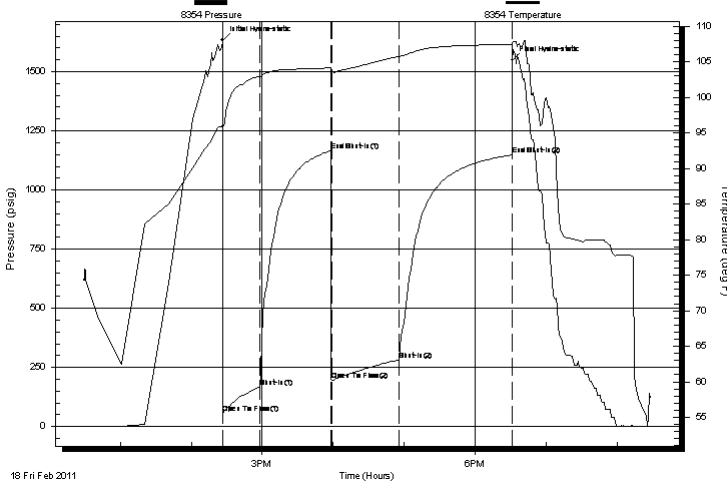
2011.02.18 @ 14:26:27

Time Off Btm:

2011.02.18 @ 18:31:27

TEST COMMENT: IF-Strong B-B in 4 min
IS-Strong B-B in 18 min
FF-Strong B-B in 6 min
FS-Strong B-B in 9 min

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1632.35	96.16	Initial Hydro-static
1	57.66	95.74	Open To Flow (1)
31	166.64	102.88	Shut-In(1)
92	1166.95	104.15	End Shut-In(1)
93	196.63	103.74	Open To Flow (2)
149	280.97	105.73	Shut-In(2)
245	1148.42	107.47	End Shut-In(2)
245	1548.36	107.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
185.00	OCgsyM 5g 20%o 75%m	2.32
120.00	OCgsyM 10%g 40%o 50%m	1.68
375.00	CGsyO 20%g 80%o	5.26
0.00	1485 GIP	0.00

Gas Rates

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



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FLUID SUMMARY

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Hagen # 1-12

250 N Water Ste 300
Wichita Ks 67202

12-12-20-Ellis-Ks

Job Ticket: 041681

DST#: 1

ATTN: Scott Robinson

Test Start: 2011.02.18 @ 12:28:57

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
185.00	OCCsyM 5g 20%o 75%m	2.322
120.00	OCCsyM 10%g 40%o 50%m	1.683
375.00	CCsyO 20%g 80%o	5.260
0.00	1485 GIP	0.000

Total Length: 680.00 ft

Total Volume: 9.265 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

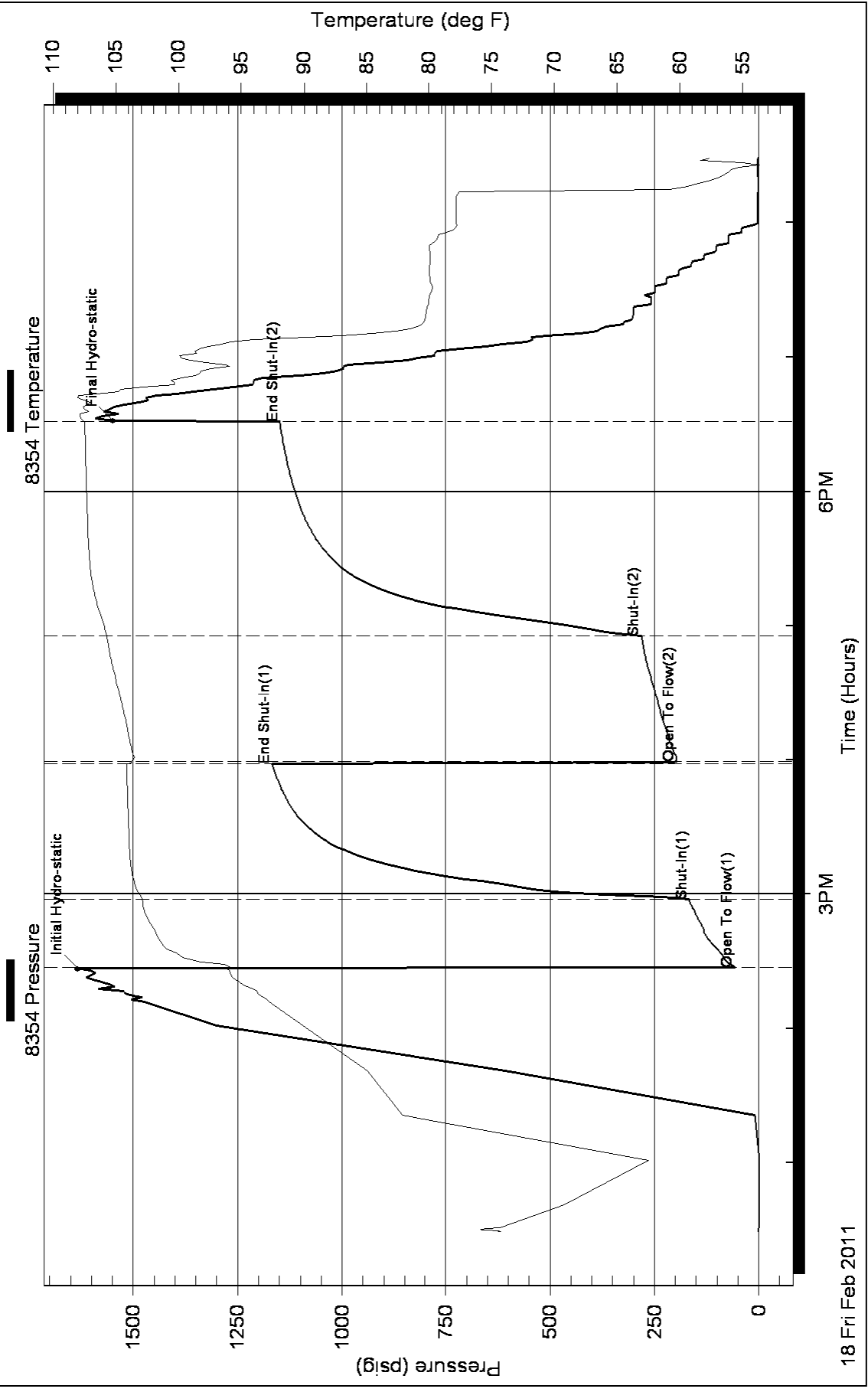
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





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DRILL STEM TEST REPORT

Murfin Drilling Co Inc

250 N Water Ste 300
Wichita Ks 67202

ATTN: Scott Robinson

Hagen # 1-12

12-12-20-Ellis-Ks

Job Ticket: 041682

DST#: 2

Test Start: 2011.02.19 @ 04:20:25

GENERAL INFORMATION:

Formation: **C-D LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:55:25

Time Test Ended: 10:10:55

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 38

Interval: 3480.00 ft (KB) To 3530.00 ft (KB) (TVD)

Reference Elevations: 2143.00 ft (KB)

Total Depth: 3530.00 ft (KB) (TVD)

2138.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8354 Inside

Press @ RunDepth: 37.31 psig @ 3483.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.02.19

End Date:

2011.02.19

Last Calib.:

2011.02.19

Start Time: 04:20:26

End Time:

10:10:55

Time On Btm:

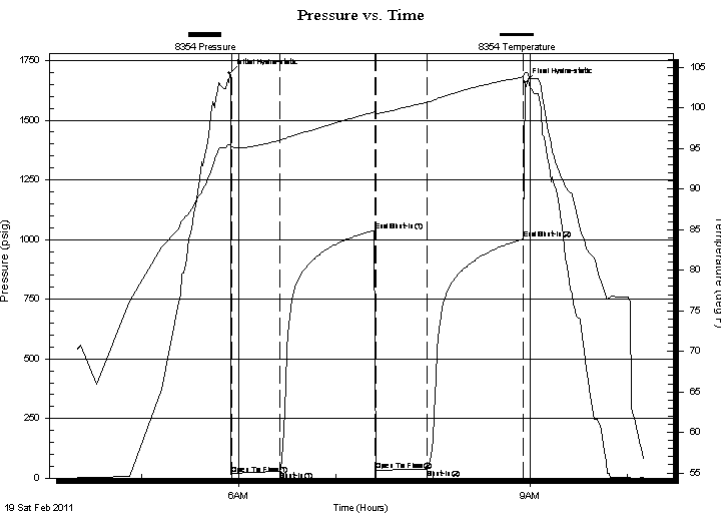
2011.02.19 @ 05:54:25

Time Off Btm:

2011.02.19 @ 08:56:55

TEST COMMENT: IF-Weak steady 1/4" blow

FF-Weak steady surface blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1696.62	95.53	Initial Hydro-static
1	17.71	95.02	Open To Flow (1)
31	27.59	96.01	Shut-In(1)
90	1037.95	99.52	End Shut-In(1)
91	32.76	99.32	Open To Flow (2)
122	37.31	100.73	Shut-In(2)
182	1002.33	103.84	End Shut-In(2)
183	1658.92	104.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Drig Mud	0.36

Gas Rates

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



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FLUID SUMMARY

Murfin Drilling Co Inc

Hagen # 1-12

250 N Water Ste 300
Wichita Ks 67202

12-12-20-Ellis-Ks

Job Ticket: 041682

DST#: 2

ATTN: Scott Robinson

Test Start: 2011.02.19 @ 04:20:25

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
45.00	Drig Mud	0.358

Total Length: 45.00 ft Total Volume: 0.358 bbl

Num Fluid Samples: 0

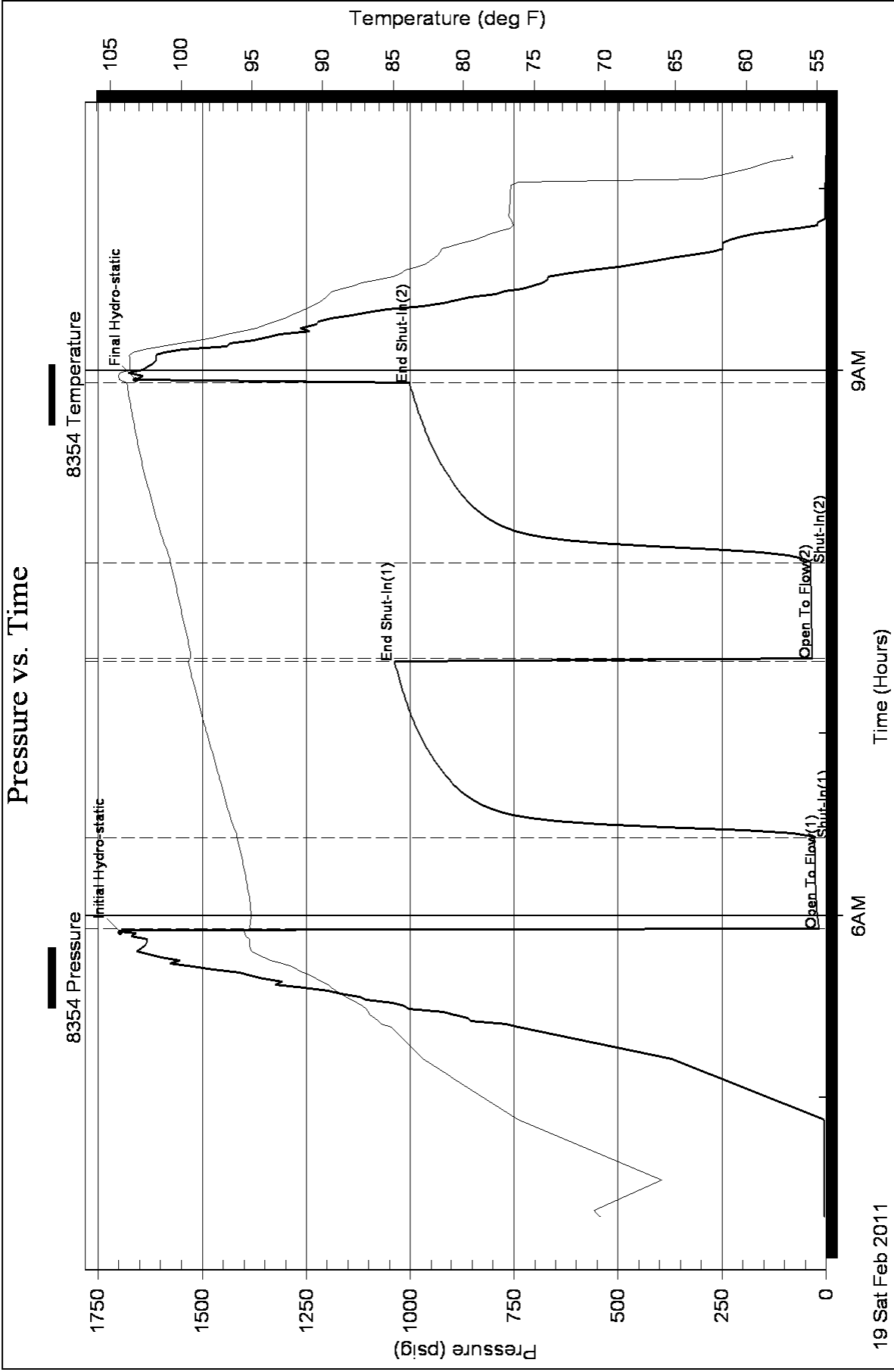
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





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DRILL STEM TEST REPORT

Murfin Drilling Co Inc

250 N Water Ste 300
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ATTN: Scott Robinson

Hagen # 1-12

12-12-20-Ellis-Ks

Job Ticket: 041683

DST#: 3

Test Start: 2011.02.19 @ 15:40:01

GENERAL INFORMATION:

Formation: **E-F LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:14:01

Time Test Ended: 21:30:31

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 38

Interval: 3525.00 ft (KB) To 3552.00 ft (KB) (TVD)

Total Depth: 3552.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2143.00 ft (KB)

2138.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8354 Inside

Press @ Run Depth: 30.83 psig @ 3527.00 ft (KB)

Start Date: 2011.02.19

End Date:

2011.02.19

Start Time: 15:40:02

End Time:

21:30:31

Capacity: 8000.00 psig

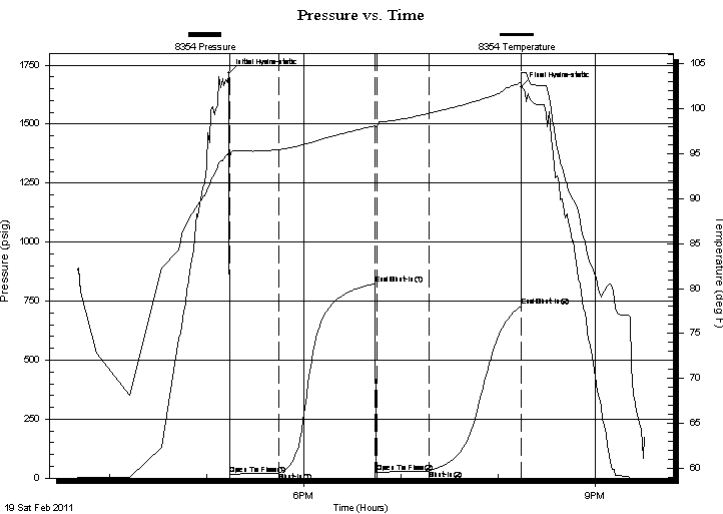
Last Calib.: 2011.02.19

Time On Btm: 2011.02.19 @ 17:13:31

Time Off Btm: 2011.02.19 @ 20:14:31

TEST COMMENT: IF-Weak steady 1/4" blow

FF-Weak steady surface blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.32	95.12	Initial Hydro-static
1	16.15	94.37	Open To Flow (1)
31	22.66	95.44	Shut-In(1)
91	823.55	98.09	End Shut-In(1)
92	25.74	97.99	Open To Flow (2)
124	30.83	99.45	Shut-In(2)
181	729.13	102.85	End Shut-In(2)
181	1657.51	103.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Drig Mud	0.10
1.00	CO	0.00

Gas Rates

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



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FLUID SUMMARY

Murfin Drilling Co Inc

Hagen # 1-12

250 N Water Ste 300
Wichita Ks 67202

12-12-20-Ellis-Ks

Job Ticket: 041683

DST#: 3

ATTN: Scott Robinson

Test Start: 2011.02.19 @ 15:40:01

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.00 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5700.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Drig Mud	0.098
1.00	CO	0.005

Total Length: 21.00 ft Total Volume: 0.103 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

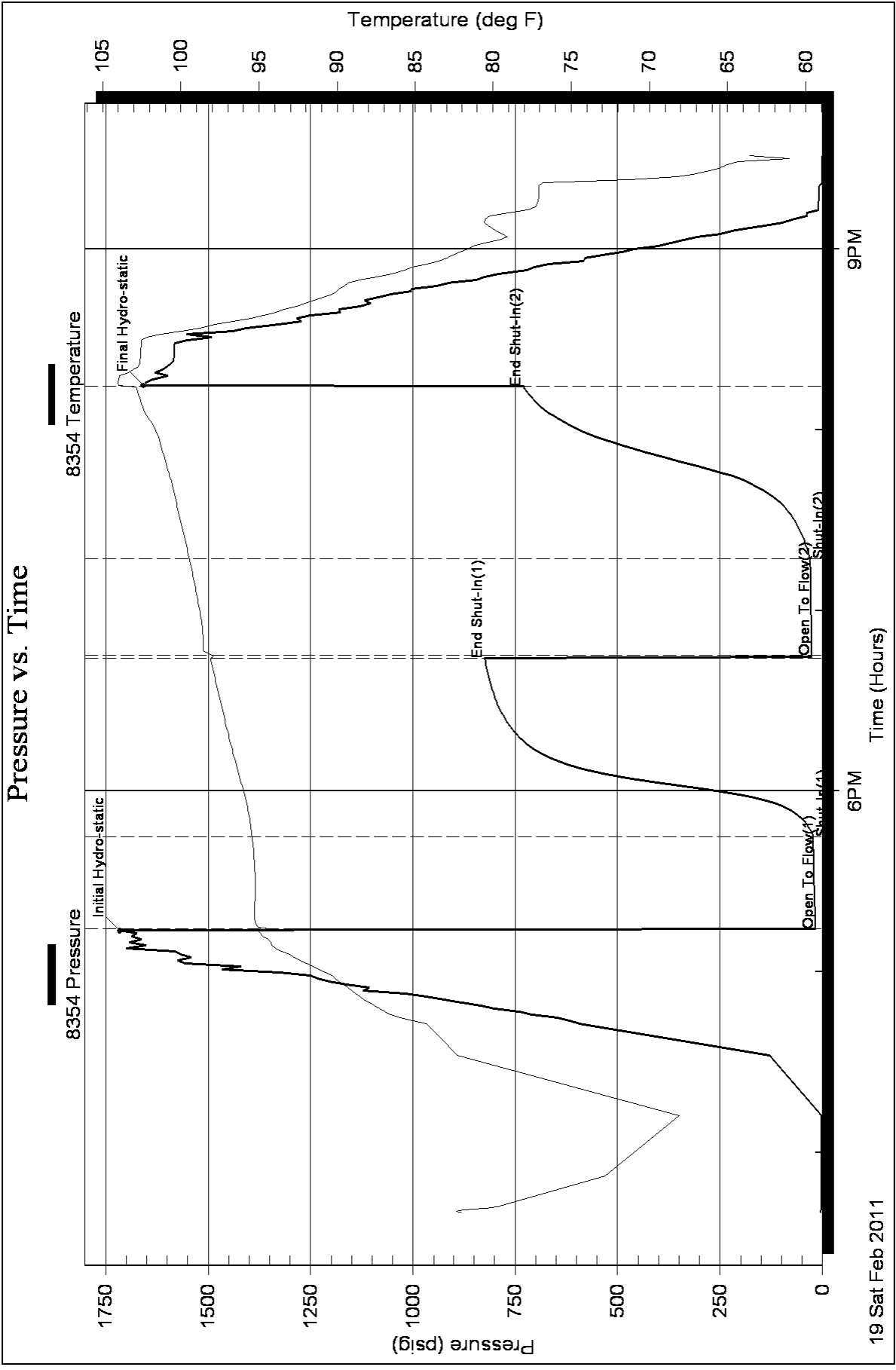
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





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Murfin Drilling Co Inc

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Wichita Ks 67202

ATTN: Scott Robinson

Hagen # 1-12

12-12-20-Ellis-Ks

Job Ticket: 041684

DST#: 4

Test Start: 2011.02.20 @ 04:54:18

GENERAL INFORMATION:

Formation: **G-H LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:28:28

Time Test Ended: 10:45:48

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 38

Interval: 3548.00 ft (KB) To 3614.00 ft (KB) (TVD)

Reference Elevations: 2143.00 ft (KB)

Total Depth: 3614.00 ft (KB) (TVD)

2138.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8354 Inside

Press @ Run Depth: 30.15 psig @ 3551.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.02.20

End Date:

2011.02.20

Last Calib.:

2011.02.20

Start Time: 05:04:18

End Time:

10:45:48

Time On Btm:

2011.02.20 @ 06:28:18

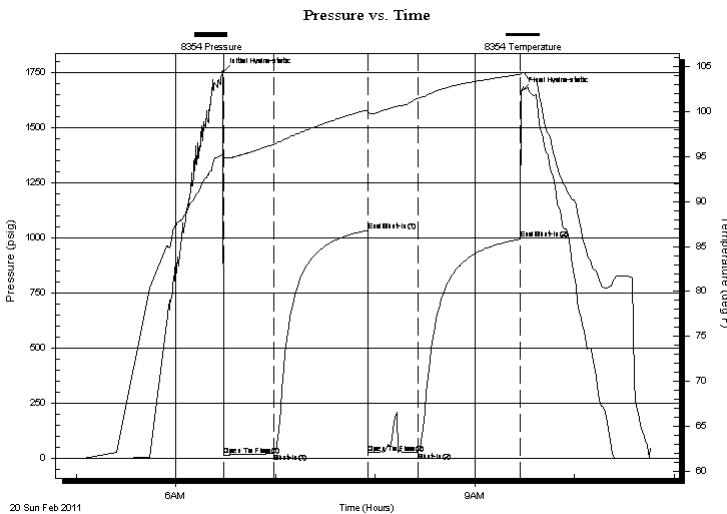
Time Off Btm:

2011.02.20 @ 09:27:48

TEST COMMENT: IF-Weak steady surface blow

FF-No blow { Plugging]

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1750.31	95.22	Initial Hydro-static
1	15.88	94.65	Open To Flow (1)
31	21.88	96.38	Shut-In(1)
87	1033.73	100.18	End Shut-In(1)
88	25.86	99.87	Open To Flow (2)
118	30.15	101.46	Shut-In(2)
179	994.51	104.14	End Shut-In(2)
180	1664.27	104.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Drig Mud	0.05

Gas Rates

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



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Murfin Drilling Co Inc

Hagen # 1-12

250 N Water Ste 300
Wichita Ks 67202

12-12-20-Ellis-Ks

Job Ticket: 041684

DST#: 4

ATTN: Scott Robinson

Test Start: 2011.02.20 @ 04:54:18

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.00 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5700.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Drig Mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

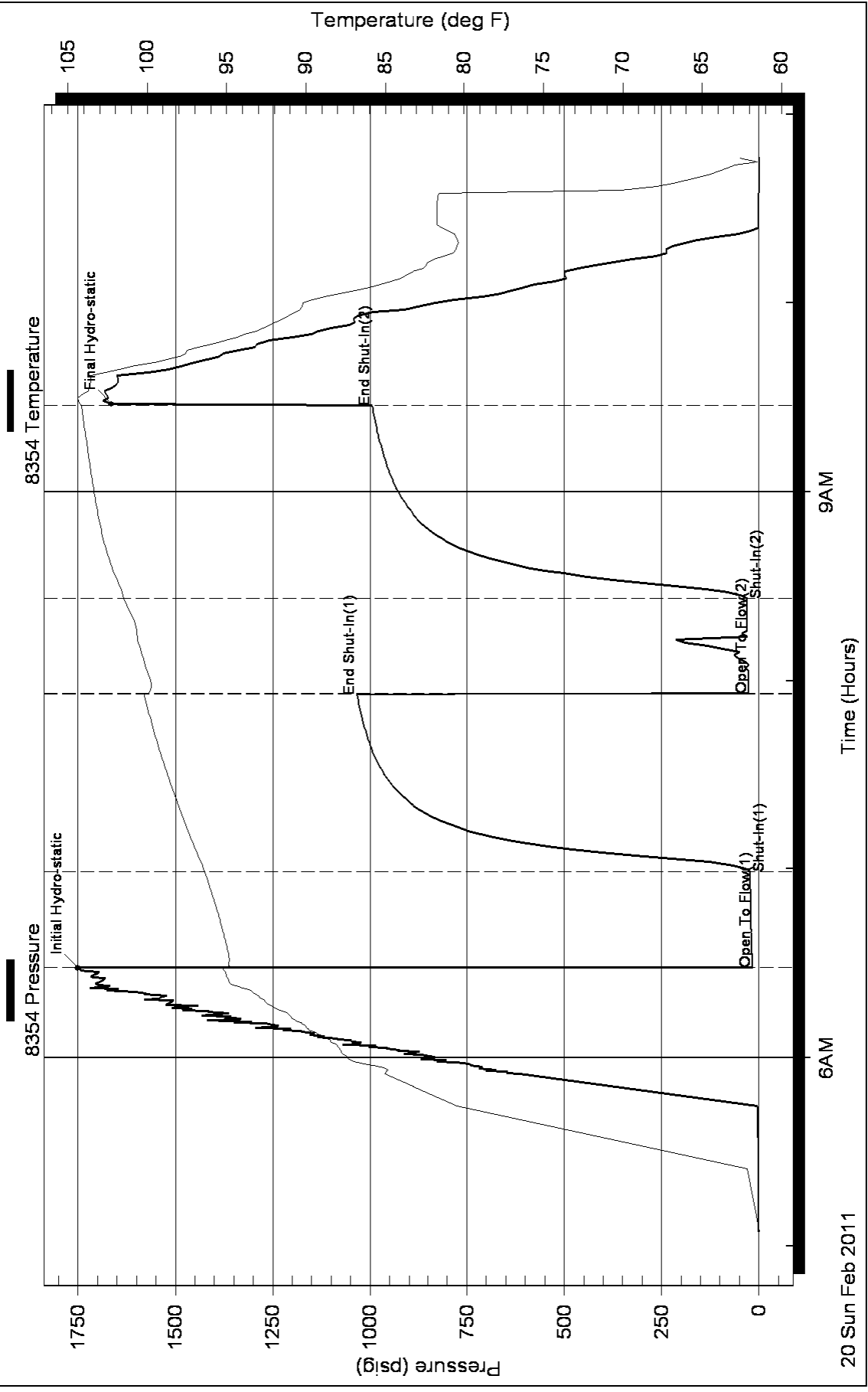
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





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Murfin Drilling Co Inc

250 N Water Ste 300
Wichita Ks 67202

ATTN: Scott Robinson

Hagen # 1-12

12-12-20-Ellis-Ks

Job Ticket: 041685

DST#: 5

Test Start: 2011.02.20 @ 19:50:03

GENERAL INFORMATION:

Formation: **I-J-K LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:29:33

Time Test Ended: 02:00:33

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 38

Interval: 3612.00 ft (KB) To 3680.00 ft (KB) (TVD)

Reference Elevations: 2143.00 ft (KB)

Total Depth: 3680.00 ft (KB) (TVD)

2138.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8354 Inside

Press @ Run Depth: 22.82 psig @ 3615.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2011.02.20

End Date:

2011.02.21

Last Calib.: 2011.02.21

Start Time: 20:00:03

End Time:

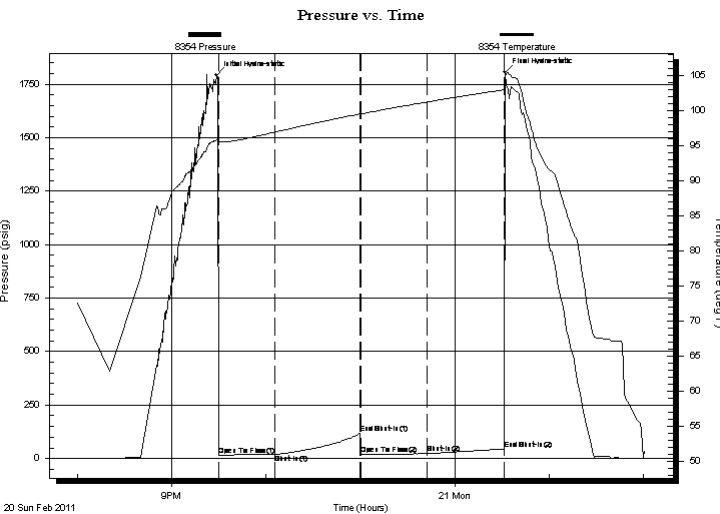
02:00:33

Time On Btm: 2011.02.20 @ 21:28:13

Time Off Btm: 2011.02.21 @ 00:31:33

TEST COMMENT: IF-Weak steady 1/4" blow

FF-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1792.41	95.74	Initial Hydro-static
2	16.44	95.10	Open To Flow (1)
38	18.99	96.90	Shut-In(1)
92	116.04	99.50	End Shut-In(1)
92	20.41	99.47	Open To Flow (2)
134	22.82	101.19	Shut-In(2)
183	45.11	102.93	End Shut-In(2)
184	1805.24	104.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Drig Mud w/show of oil in tool	0.07

Gas Rates

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



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

Hagen # 1-12

250 N Water Ste 300
Wichita Ks 67202

12-12-20-Ellis-Ks

Job Ticket: 041685

DST#: 5

ATTN: Scott Robinson

Test Start: 2011.02.20 @ 19:50:03

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:

bbbl

Water Loss: 7.20 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Drig Mud w/show of oil in tool	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

