



DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company Inc**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Oelkers-Werth #1-5

5-16s-19w Rush,KS

Start Date: 2016.08.12 @ 17:10:00

End Date: 2016.08.12 @ 22:53:00

Job Ticket #: 65107 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.08.16 @ 15:05:14

Downing Nelson Oil Company Inc
5-16s-19w Rush,KS
Oelkers-Werth #1-5
DST # 1
Plattsmouth
2016.08.12



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65107

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.08.12 @ 17:10:00

GENERAL INFORMATION:

Formation: **Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:33:00

Time Test Ended: 22:53:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3189.00 ft (KB) To 3229.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3229.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6999

Inside

Press@RunDepth: 238.50 psig @ 3225.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.12

End Date:

2016.08.12

Last Calib.:

2016.08.12

Start Time:

17:10:05

End Time:

22:52:59

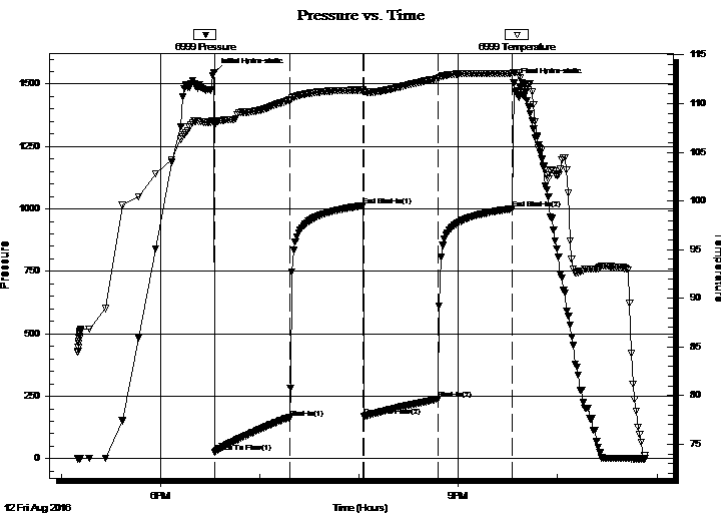
Time On Btm:

2016.08.12 @ 18:32:30

Time Off Btm:

2016.08.12 @ 21:33:30

TEST COMMENT: I.F. 45 Minutes BOB in 30 minutes
I.S.I. 45 Minutes No blow back
F.F. 45 Mintues BOB in 30 minutes
F.S.I. 45 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1546.54	108.25	Initial Hydro-static
1	26.08	108.01	Open To Flow (1)
46	164.03	110.36	Shut-In(1)
90	1012.73	111.40	End Shut-In(1)
91	170.67	111.22	Open To Flow (2)
135	238.50	112.57	Shut-In(2)
180	1000.36	113.06	End Shut-In(2)
181	1503.67	113.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
465.00	MW with show of oil Mud10% Water 90%	4.85

Gas Rates

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



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Job Ticket: 65107

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.08.12 @ 17:10:00

GENERAL INFORMATION:

Formation: **Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:33:00

Time Test Ended: 22:53:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3189.00 ft (KB) To 3229.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3229.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8960 Outside

Press@RunDepth: 998.21 psig @ 3226.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.12

End Date:

2016.08.12

Last Calib.:

2016.08.12

Start Time: 17:10:05

End Time:

22:52:29

Time On Btm:

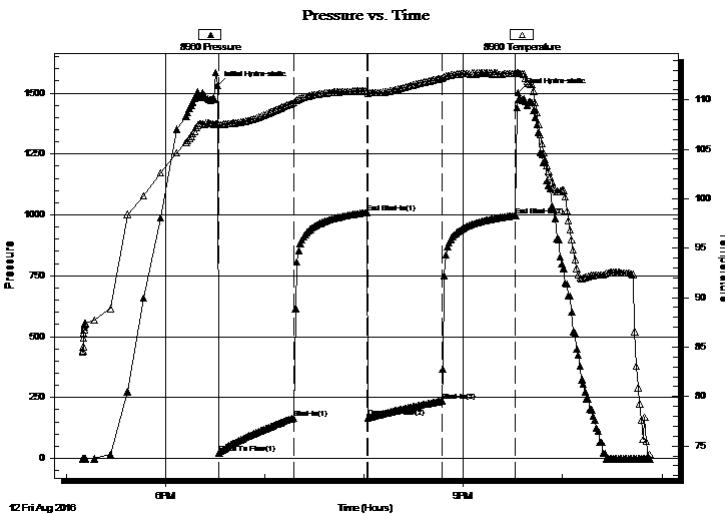
2016.08.12 @ 18:31:30

Time Off Btm:

2016.08.12 @ 21:33:00

TEST COMMENT: I.F. 45 Minutes BOB in 30 minutes
I.S.I. 45 Minutes No blow back
F.F. 45 Mintues BOB in 30 minutes
F.S.I. 45 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1532.09	107.71	Initial Hydro-static
1	21.31	107.47	Open To Flow (1)
46	163.98	109.72	Shut-In(1)
90	1010.55	110.91	End Shut-In(1)
91	167.14	110.64	Open To Flow (2)
136	236.60	112.18	Shut-In(2)
180	998.21	112.65	End Shut-In(2)
182	1501.64	112.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
465.00	MW with show of oil Mud10% Water 90%4.85	

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65107

DST#: 1

ATTN: Marc Dow ning

Test Start: 2016.08.12 @ 17:10:00

Tool Information

Drill Pipe:	Length: 2873.00 ft	Diameter: 3.80 inches	Volume: 40.30 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 317.00 ft	Diameter: 3.00 inches	Volume: 2.77 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 43.07 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3189.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	40.00 ft				
Tool Length:	60.00 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			3174.00	
Hydraulic tool	5.00			3179.00	
Top Packer	5.00			3184.00	
Packer	5.00			3189.00	20.00 Bottom Of Top Packer
Anchor	35.00			3224.00	
Recorder	1.00	6999	Inside	3225.00	
Recorder	1.00	8960	Outside	3226.00	
Bullnose	3.00			3229.00	40.00 Anchor Tool

Total Tool Length: 60.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65107

DST#: 1

ATTN: Marc Downing

Test Start: 2016.08.12 @ 17:10:00

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:

53000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.94 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
465.00	MW with show of oil Mud10% Water 90%	4.848

Total Length: 465.00 ft Total Volume: 4.848 bbl

Num Fluid Samples: 0

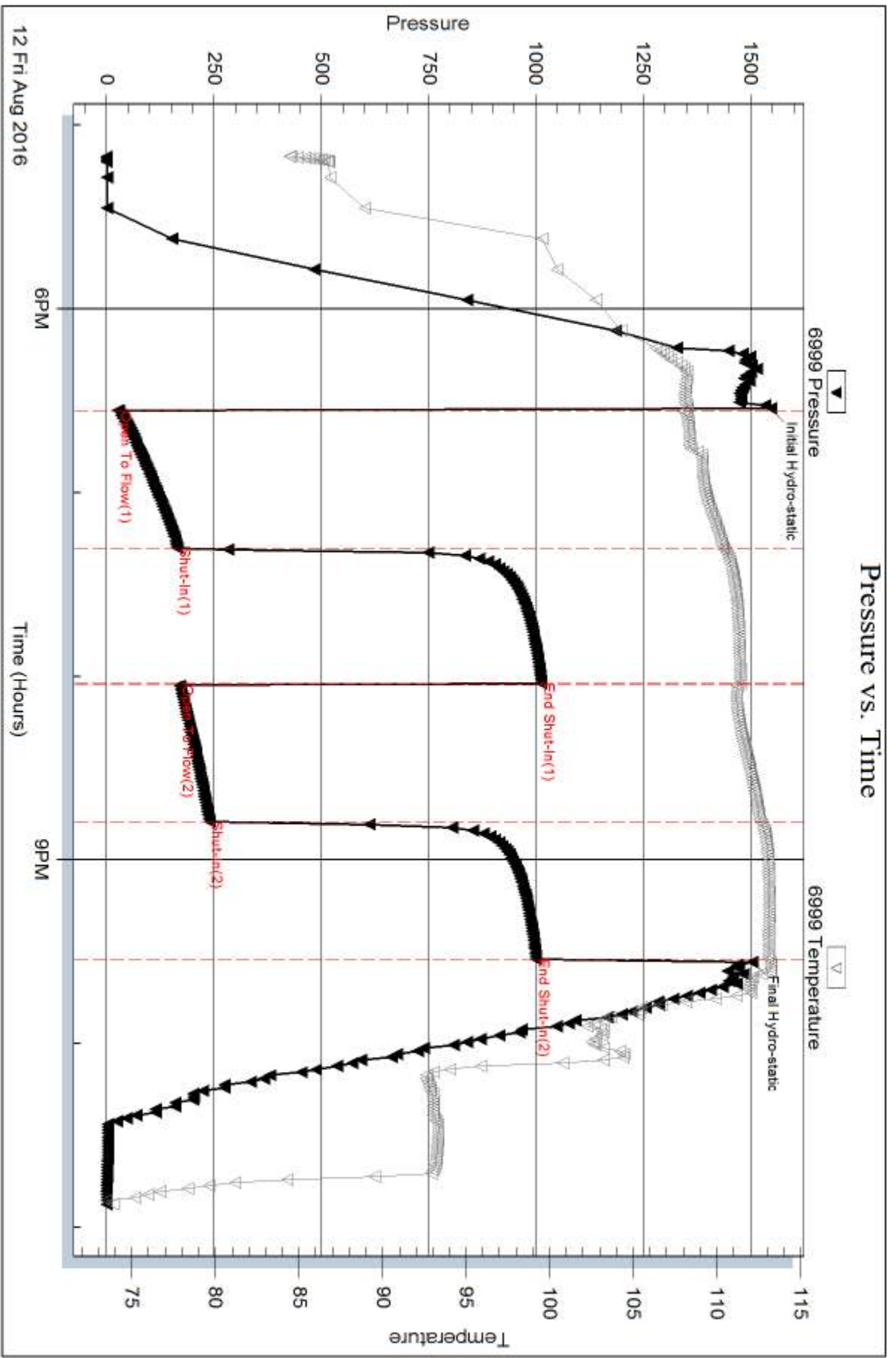
Num Gas Bombs: 0

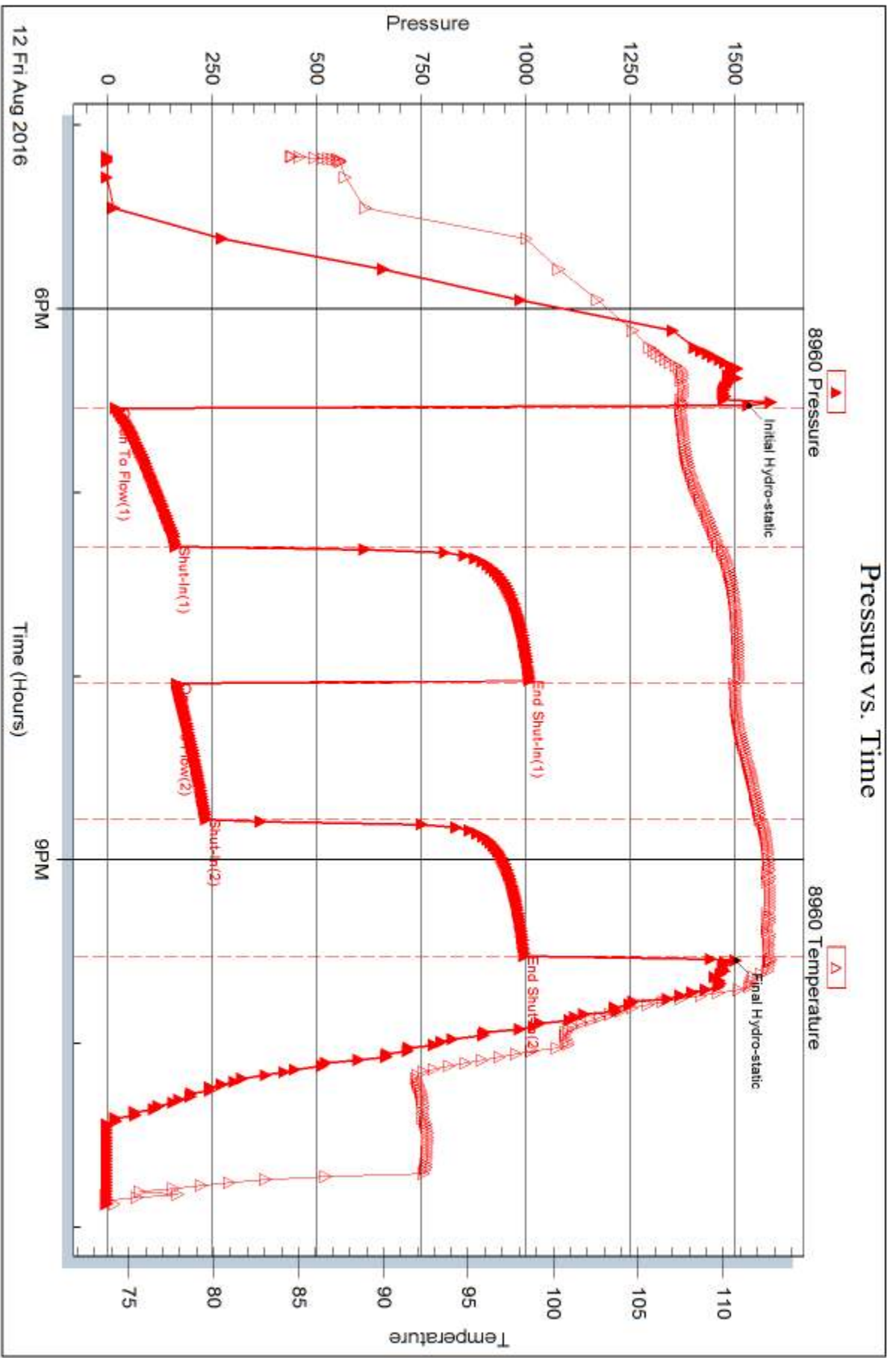
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery resist. .147 @ 74 deg







DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company Inc**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Oelkers-Werth #1-5

5-16s-19w Rush,KS

Start Date: 2016.08.13 @ 09:16:00

End Date: 2016.08.13 @ 15:28:30

Job Ticket #: 65108 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.08.16 @ 15:04:49



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65108

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.08.13 @ 09:16:00

GENERAL INFORMATION:

Formation: **LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:43:30

Time Test Ended: 15:28:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3335.00 ft (KB) To 3360.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3360.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6999 Inside

Press@RunDepth: 45.75 psig @ 3356.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.13

End Date:

2016.08.13

Last Calib.: 2016.08.13

Start Time: 09:16:05

End Time:

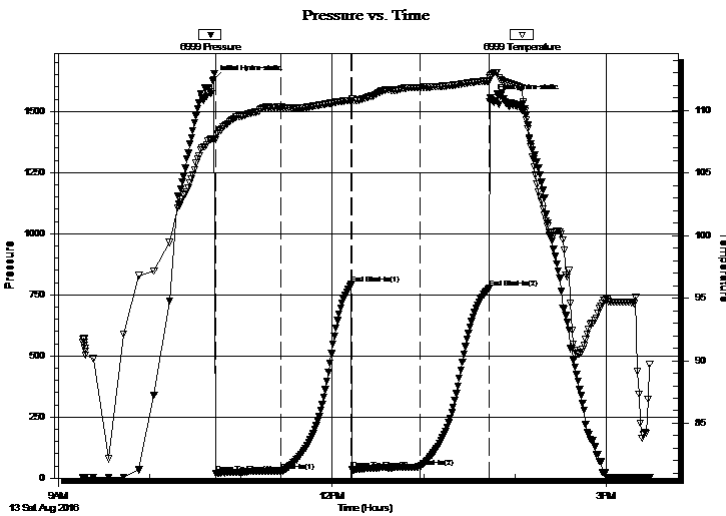
15:28:29

Time On Btm: 2016.08.13 @ 10:42:00

Time Off Btm: 2016.08.13 @ 13:44:00

TEST COMMENT: I.F. 45 Minutes BOB in 29 minutes
I.S.I 45 Minutes No blow back
F.F. 45 Minutes BOB in 10 minutes
F.S.I. 45 Mintues No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1629.67	107.74	Initial Hydro-static
2	18.41	107.65	Open To Flow (1)
45	30.03	110.25	Shut-In(1)
91	792.93	110.79	End Shut-In(1)
91	37.57	110.92	Open To Flow (2)
136	45.75	111.82	Shut-In(2)
181	776.43	112.34	End Shut-In(2)
182	1554.53	112.77	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
75.00	GCOM Gas 10% Mud 30% Oil 60%	0.66
0.00	390 feet of gas in pipe	0.00

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65108

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.08.13 @ 09:16:00

GENERAL INFORMATION:

Formation: **LKC C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:43:30

Time Test Ended: 15:28:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3335.00 ft (KB) To 3360.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3360.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8960 Outside

Press@RunDepth: 775.51 psig @ 3357.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.13

End Date:

2016.08.13

Last Calib.:

2016.08.13

Start Time: 09:16:05

End Time:

15:27:59

Time On Btm:

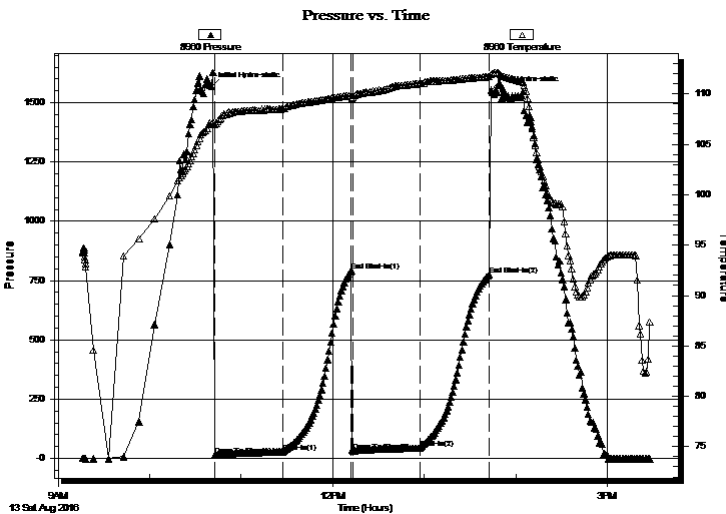
2016.08.13 @ 10:40:30

Time Off Btm:

2016.08.13 @ 13:43:30

TEST COMMENT: I.F. 45 Minutes BOB in 29 minutes
I.S.I. 45 Minutes No blow back
F.F. 45 Minutes BOB in 10 minutes
F.S.I. 45 Mintues No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1566.63	107.02	Initial Hydro-static
2	13.37	106.92	Open To Flow (1)
47	27.48	108.52	Shut-In(1)
92	792.49	109.85	End Shut-In(1)
93	28.51	109.69	Open To Flow (2)
137	43.60	111.02	Shut-In(2)
182	775.51	111.70	End Shut-In(2)
183	1552.81	111.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
75.00	GCOM Gas 10% Mud 30% Oil 60%	0.66
0.00	390 feet of gas in pipe	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65108

DST#: 2

ATTN: Marc Dow ning

Test Start: 2016.08.13 @ 09:16:00

Tool Information

Drill Pipe:	Length: 3029.00 ft	Diameter: 3.80 inches	Volume: 42.49 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 317.00 ft	Diameter: 3.00 inches	Volume: 2.77 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	58000.00 lb
			<u>Total Volume: 45.26 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	51000.00 lb
Depth to Top Packer:	3335.00 ft			Final	51000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	25.00 ft				
Tool Length:	45.00 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			3320.00	
Hydraulic tool	5.00			3325.00	
Top Packer	5.00			3330.00	
Packer	5.00			3335.00	20.00 Bottom Of Top Packer
Anchor	20.00			3355.00	
Recorder	1.00	6999	Inside	3356.00	
Recorder	1.00	8960	Outside	3357.00	
Bullnose	3.00			3360.00	25.00 Anchor Tool

Total Tool Length: 45.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65108

DST#: 2

ATTN: Marc Downing

Test Start: 2016.08.13 @ 09:16:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 49.00 sec/qt
Water Loss: 8.74 in³
Resistivity: ohm.m
Salinity: 4000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
75.00	GCOM Gas 10% Mud 30% Oil 60%	0.656
0.00	390 feet of gas in pipe	0.000

Total Length: 75.00 ft Total Volume: 0.656 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

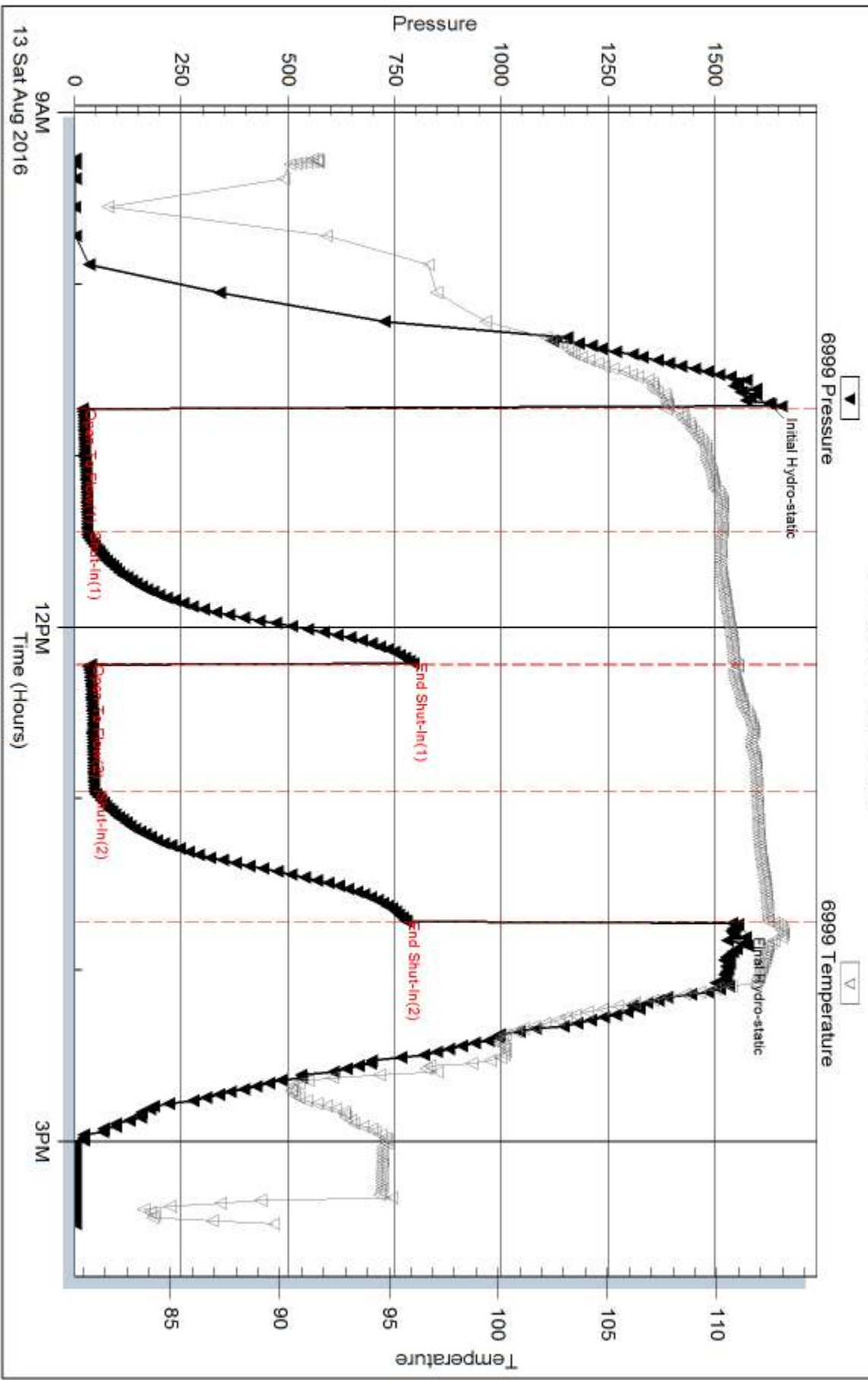
Serial #:

Laboratory Name:

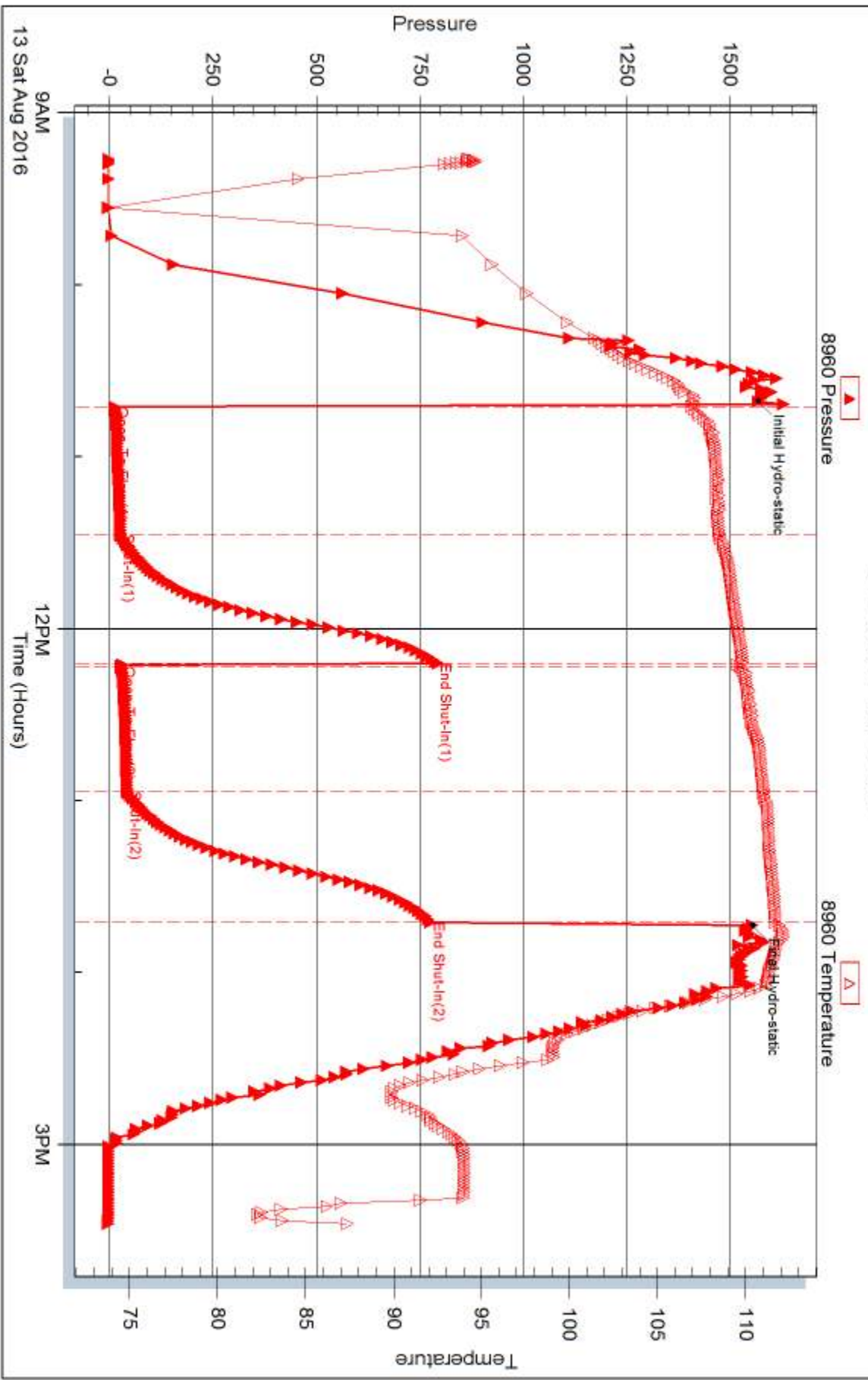
Laboratory Location:

Recovery Comments:

Pressure vs. Time



Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company Inc**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Oelkers-Werth #1-5

5-16s-19w Rush,KS

Start Date: 2016.08.13 @ 23:11:00

End Date: 2016.08.14 @ 05:07:00

Job Ticket #: 65109 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.08.16 @ 14:58:14



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65109

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.08.13 @ 23:11:00

GENERAL INFORMATION:

Formation: **LKC D&E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:29:30

Time Test Ended: 05:07:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3361.00 ft (KB) To 3400.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3400.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6999 Inside

Press@RunDepth: 72.26 psig @ 3396.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.13

End Date:

2016.08.14

Last Calib.:

2016.08.14

Start Time: 23:11:05

End Time:

05:06:59

Time On Btm:

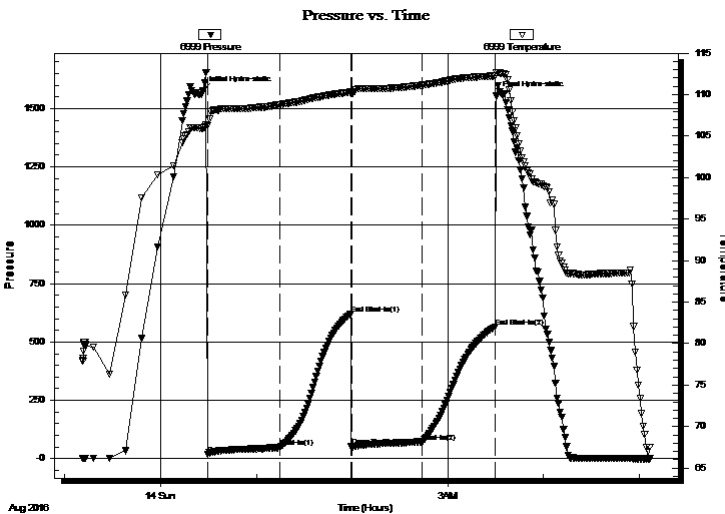
2016.08.14 @ 00:26:30

Time Off Btm:

2016.08.14 @ 03:30:30

TEST COMMENT: I.F. 45 Minutes BOB in 14 1/2 minutes
I.S.I. 45 Mintues No blow back
F.F. 45 Minutes BOB in 6 1/2 minutes
F.S.I. 45 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1575.31	105.97	Initial Hydro-static
3	19.27	106.24	Open To Flow (1)
48	47.70	108.77	Shut-In(1)
93	620.12	110.29	End Shut-In(1)
94	51.38	110.17	Open To Flow (2)
138	72.26	111.13	Shut-In(2)
183	565.15	112.25	End Shut-In(2)
184	1553.69	112.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	GHMCO Gas 5% Mud 45% Oil 50%	1.08
0.00	620 feet of gas in pipe	0.00

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

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5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65109

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.08.13 @ 23:11:00

GENERAL INFORMATION:

Formation: **LKC D&E**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:29:30

Time Test Ended: 05:07:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3361.00 ft (KB) To 3400.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3400.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8960 Outside

Press@RunDepth: 563.86 psig @ 3397.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.13

End Date:

2016.08.14

Last Calib.:

2016.08.14

Start Time: 23:11:05

End Time:

05:06:29

Time On Btm:

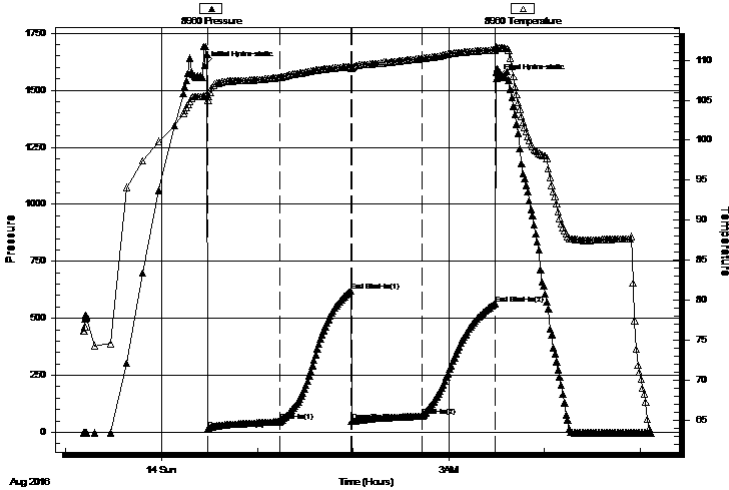
2016.08.14 @ 00:27:00

Time Off Btm:

2016.08.14 @ 03:30:00

TEST COMMENT: I.F. 45 Minutes BOB in 14 1/2 minutes
I.S.I. 45 Mintues No blow back
F.F. 45 Minutes BOB in 6 1/2 minutes
F.S.I. 45 Minutes No blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1608.38	105.47	Initial Hydro-static
2	14.31	104.99	Open To Flow (1)
47	46.96	107.86	Shut-In(1)
92	619.23	109.24	End Shut-In(1)
92	48.17	109.00	Open To Flow (2)
137	71.58	110.22	Shut-In(2)
182	563.86	111.28	End Shut-In(2)
183	1553.09	111.52	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	GHMCO Gas 5% Mud 45% Oil 50%	1.08
0.00	620 feet of gas in pipe	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65109

DST#: 3

ATTN: Marc Dow ning

Test Start: 2016.08.13 @ 23:11:00

Tool Information

Drill Pipe:	Length: 3029.00 ft	Diameter: 3.80 inches	Volume: 42.49 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 317.00 ft	Diameter: 3.00 inches	Volume: 2.77 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	66000.00 lb
			<u>Total Volume: 45.26 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	51000.00 lb
Depth to Top Packer:	3361.00 ft			Final	51000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	39.00 ft				
Tool Length:	59.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3346.00	
Hydraulic tool	5.00			3351.00	
Top Packer	5.00			3356.00	
Packer	5.00			3361.00	20.00 Bottom Of Top Packer
Anchor	34.00			3395.00	
Recorder	1.00	6999	Inside	3396.00	
Recorder	1.00	8960	Outside	3397.00	
Bullnose	3.00			3400.00	39.00 Anchor Tool

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65109

DST#: 3

ATTN: Marc Downing

Test Start: 2016.08.13 @ 23:11:00

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: 8.76 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	GHMCO Gas 5% Mud 45% Oil 50%	1.084
0.00	620 feet of gas in pipe	0.000

Total Length: 124.00 ft Total Volume: 1.084 bbl

Num Fluid Samples: 0

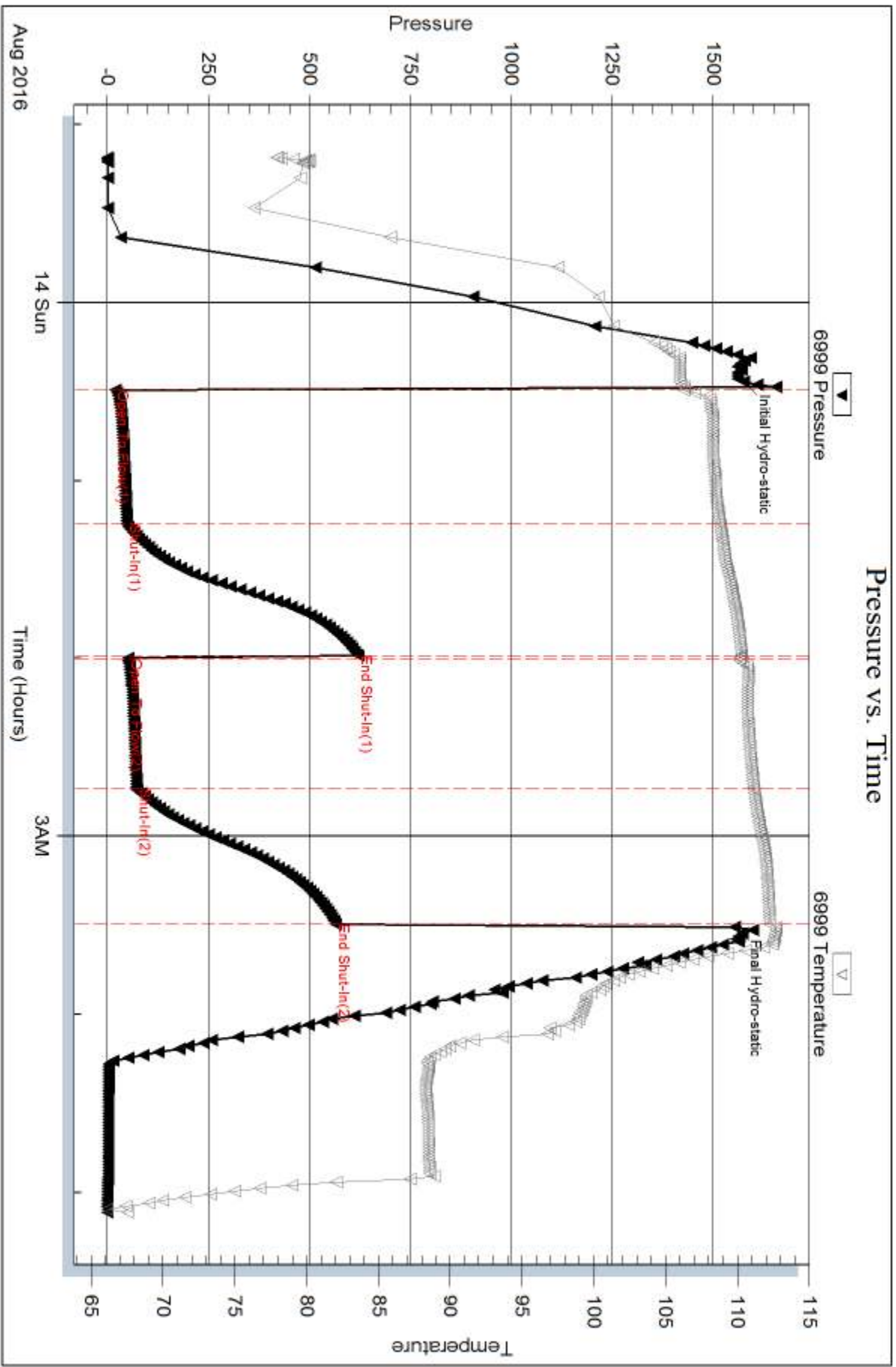
Num Gas Bombs: 0

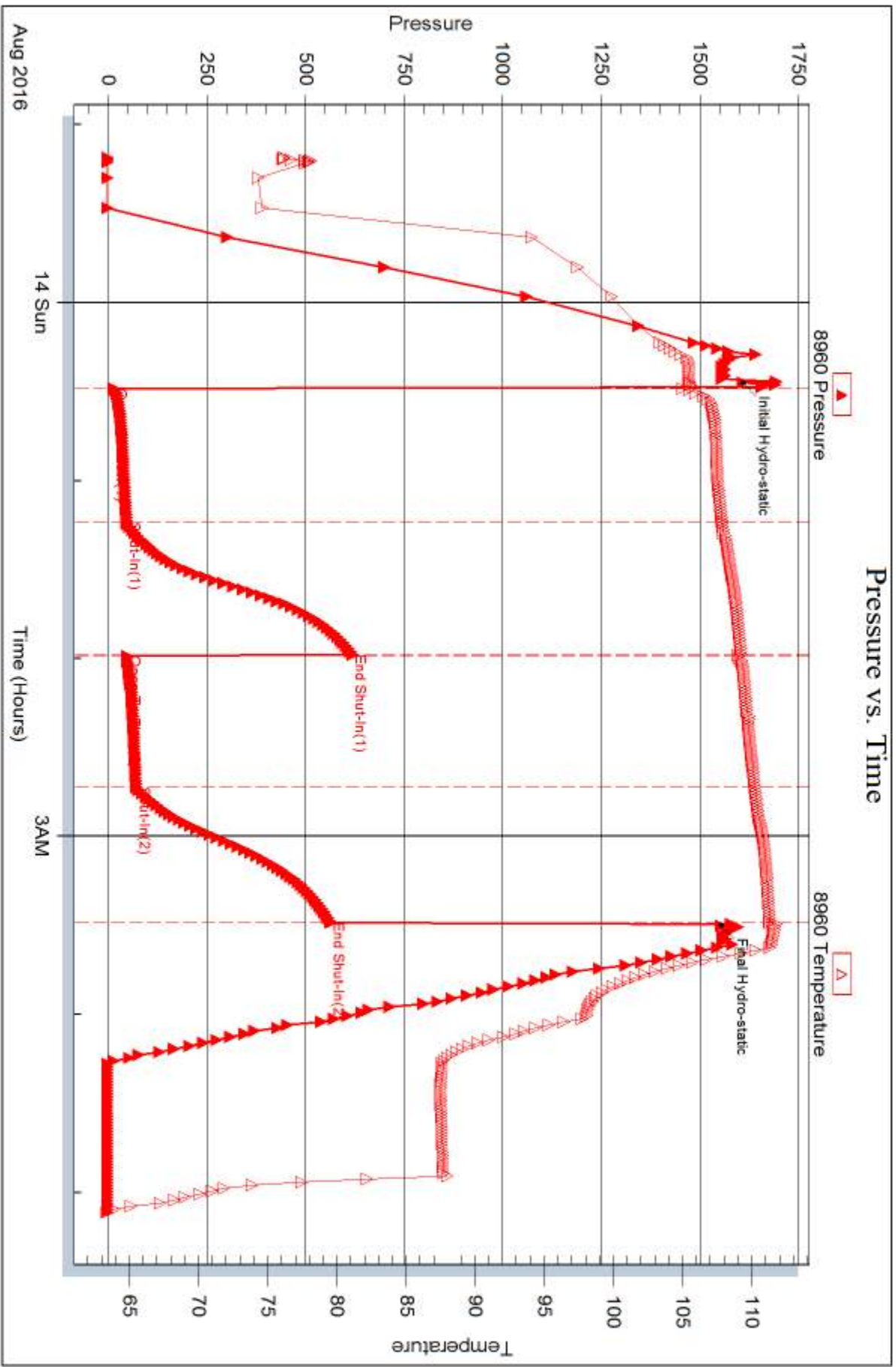
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company Inc**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Oelkers-Werth #1-5

5-16s-19w Rush,KS

Start Date: 2016.08.14 @ 16:57:00

End Date: 2016.08.14 @ 22:40:00

Job Ticket #: 65110 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.08.16 @ 14:54:59



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Downing Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65110

DST#: 4

ATTN: Marc Downing

Test Start: 2016.08.14 @ 16:57:00

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:15:30

Time Test Ended: 22:40:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3443.00 ft (KB) To 3475.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3475.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6999 Inside

Press@RunDepth: 73.32 psig @ 3471.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.14

End Date:

2016.08.14

Last Calib.:

2016.08.14

Start Time:

16:57:05

End Time:

22:39:59

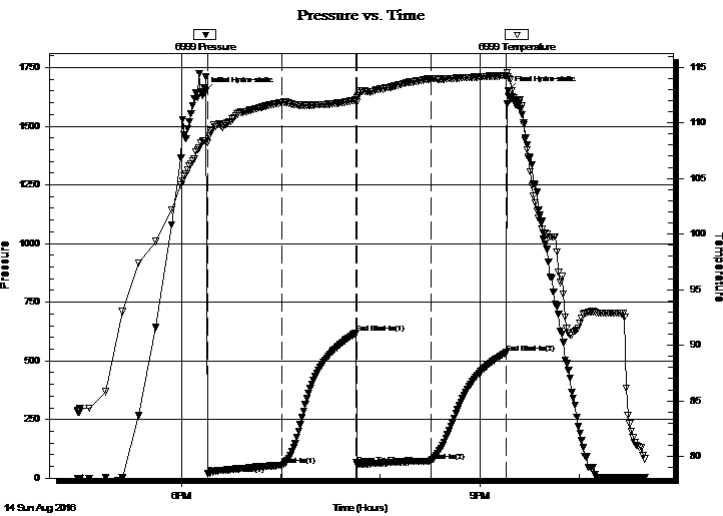
Time On Btm:

2016.08.14 @ 18:14:00

Time Off Btm:

2016.08.14 @ 21:17:00

TEST COMMENT: I.F. 45 Minutes Blow built to 5"
I.S.I. 45 Minutes No blow back
F.F. 45 Minutes Blow built to 4"
F.S.I. 45 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1645.17	108.42	Initial Hydro-static
2	17.76	108.19	Open To Flow (1)
47	53.97	111.83	Shut-In(1)
91	618.10	112.03	End Shut-In(1)
92	57.81	112.29	Open To Flow (2)
137	73.32	113.96	Shut-In(2)
182	534.67	114.25	End Shut-In(2)
183	1649.50	114.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	OCM Oil 15% Mud 85%	1.08

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65110

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.08.14 @ 16:57:00

GENERAL INFORMATION:

Formation: **LKC H**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:15:30

Time Test Ended: 22:40:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3443.00 ft (KB) To 3475.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3475.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8960 Outside

Press@RunDepth: 533.51 psig @ 3472.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.14

End Date:

2016.08.14

Last Calib.:

2016.08.14

Start Time:

16:57:05

End Time:

22:39:29

Time On Btm:

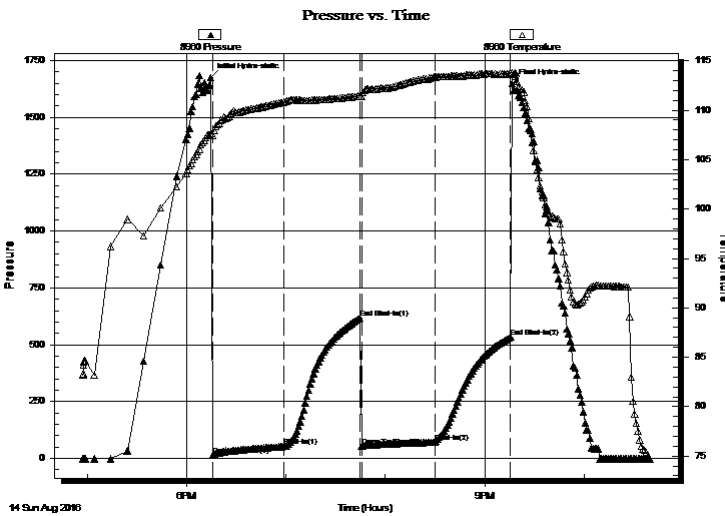
2016.08.14 @ 18:14:30

Time Off Btm:

2016.08.14 @ 21:16:30

TEST COMMENT: I.F. 45 Minutes Blow built to 5"
I.S.I. 45 Minutes No blow back
F.F. 45 Minutes Blow built to 4"
F.S.I. 45 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1676.56	107.61	Initial Hydro-static
1	15.02	107.48	Open To Flow (1)
44	51.62	110.83	Shut-In(1)
90	616.86	111.43	End Shut-In(1)
91	54.45	111.36	Open To Flow (2)
136	71.32	113.35	Shut-In(2)
181	533.51	113.74	End Shut-In(2)
182	1649.42	113.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	OCM Oil 15% Mud 85%	1.08

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65110

DST#: 4

ATTN: Marc Dow ning

Test Start: 2016.08.14 @ 16:57:00

Tool Information

Drill Pipe:	Length: 3123.00 ft	Diameter: 3.80 inches	Volume: 43.81 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 317.00 ft	Diameter: 3.00 inches	Volume: 2.77 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 46.58 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial	51000.00 lb
Depth to Top Packer:	3443.00 ft			Final	51000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	32.00 ft				
Tool Length:	52.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3428.00	
Hydraulic tool	5.00			3433.00	
Top Packer	5.00			3438.00	
Packer	5.00			3443.00	20.00 Bottom Of Top Packer
Anchor	27.00			3470.00	
Recorder	1.00	6999	Inside	3471.00	
Recorder	1.00	8960	Outside	3472.00	
Bullnose	3.00			3475.00	32.00 Anchor Tool

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65110

DST#: 4

ATTN: Marc Downing

Test Start: 2016.08.14 @ 16:57:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
124.00	OCM Oil 15% Mud 85%	1.084

Total Length: 124.00 ft Total Volume: 1.084 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

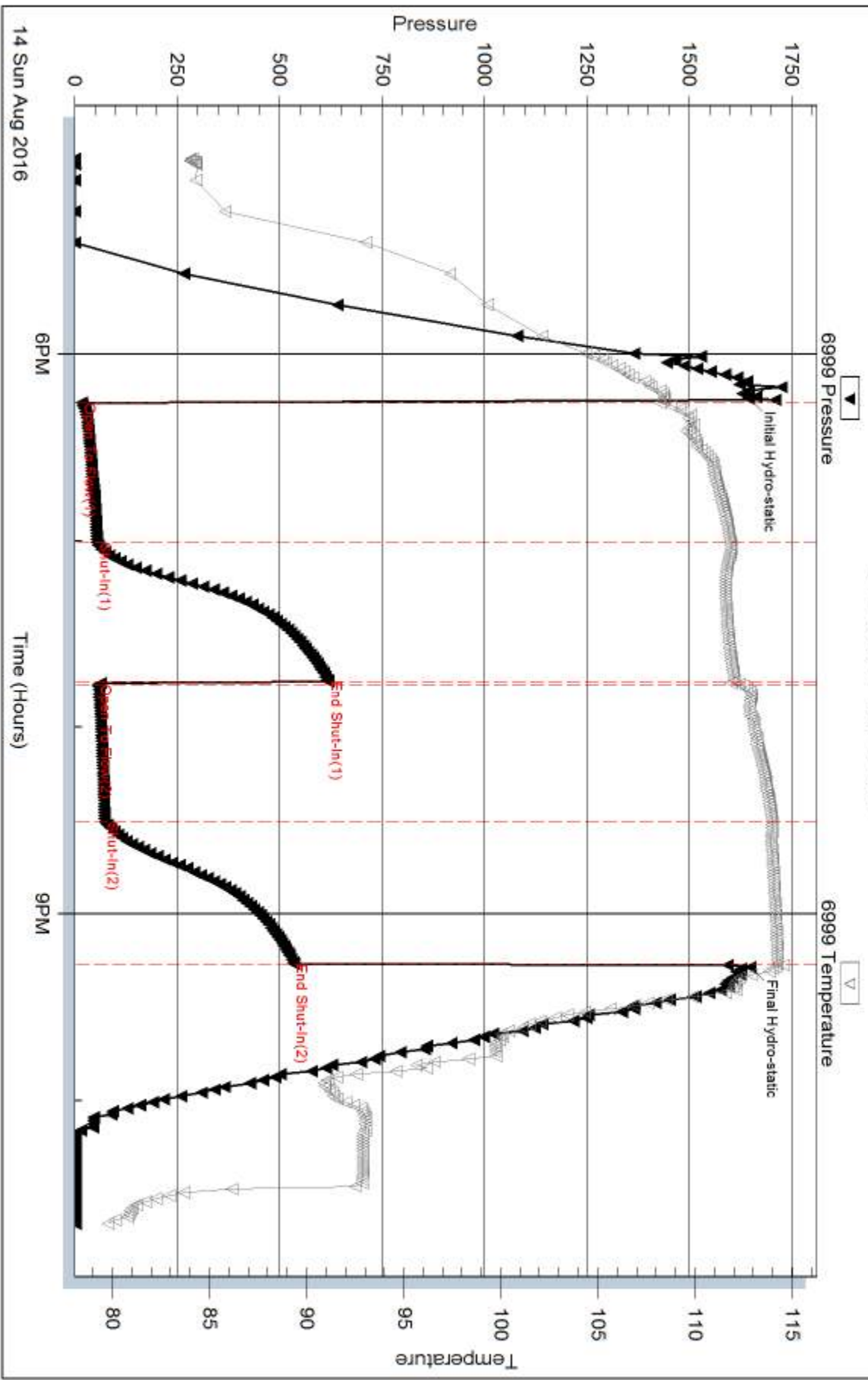
Serial #:

Laboratory Name:

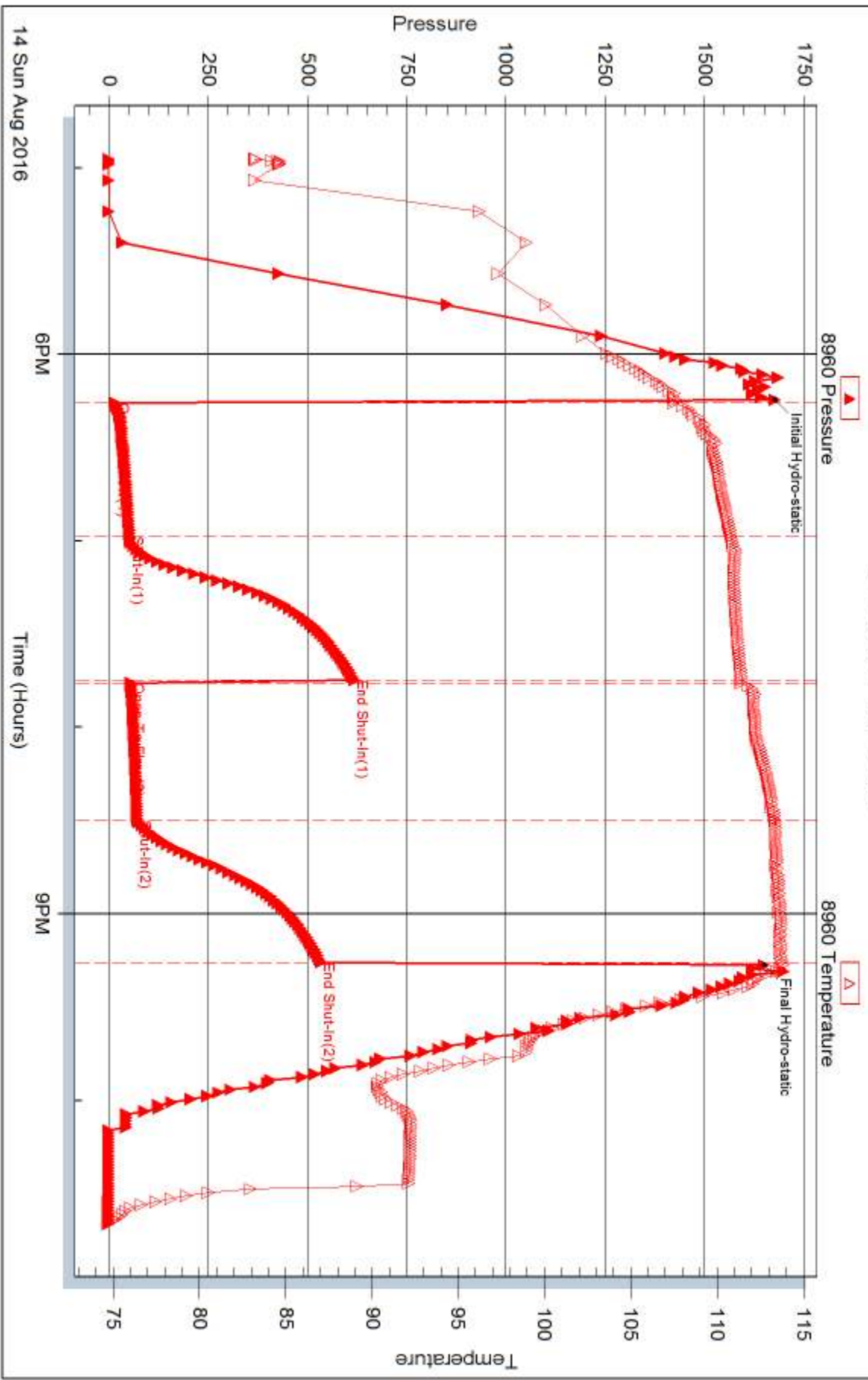
Laboratory Location:

Recovery Comments:

Pressure vs. Time



Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Downing Nelson Oil Company Inc**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

Oelkers-Werth #1-5

5-16s-19w Rush,KS

Start Date: 2016.08.15 @ 16:47:00

End Date: 2016.08.15 @ 22:29:30

Job Ticket #: 65111 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.08.16 @ 14:24:31



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65111

DST#: 5

ATTN: Marc Dow ning

Test Start: 2016.08.15 @ 16:47:00

GENERAL INFORMATION:

Formation: **Reagan Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:19:30

Time Test Ended: 22:29:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3632.00 ft (KB) To 3654.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3654.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6999 Inside

Press@RunDepth: 249.01 psig @ 3650.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.15

End Date:

2016.08.15

Last Calib.:

2016.08.15

Start Time:

16:47:05

End Time:

22:29:29

Time On Btm:

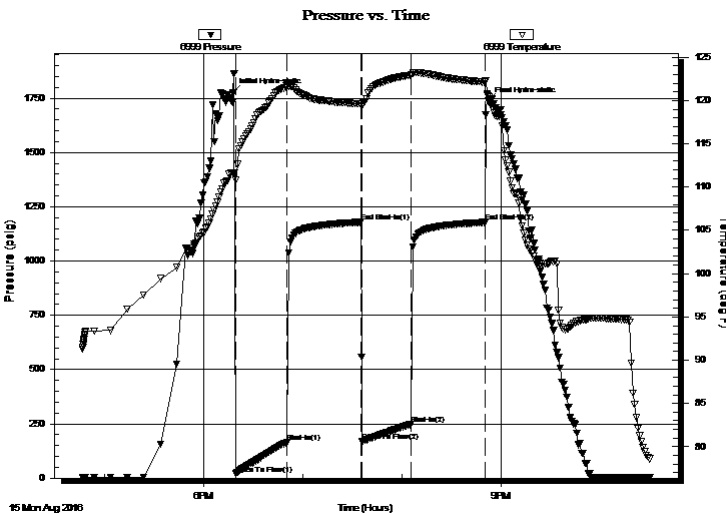
2016.08.15 @ 18:18:00

Time Off Btm:

2016.08.15 @ 20:52:00

TEST COMMENT: I.F. 30 Minutes BOB in 17 minutes
I.S.I 45 Minutes No blow back
F.F. 30 Minutes BOB in 17 minutes
F.S.I. 45 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1773.61	111.59	Initial Hydro-static
2	19.72	110.78	Open To Flow (1)
33	163.19	121.56	Shut-In(1)
77	1179.06	119.60	End Shut-In(1)
78	169.76	119.59	Open To Flow (2)
108	249.01	122.94	Shut-In(2)
152	1178.49	122.12	End Shut-In(2)
154	1736.38	120.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
527.00	MW Mud 10% Water 90%	5.72

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65111

DST#: 5

ATTN: Marc Dow ning

Test Start: 2016.08.15 @ 16:47:00

GENERAL INFORMATION:

Formation: **Reagan Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:19:30

Time Test Ended: 22:29:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Sw inney

Unit No: 72

Interval: 3632.00 ft (KB) To 3654.00 ft (KB) (TVD)

Reference Elevations: 2040.00 ft (KB)

Total Depth: 3654.00 ft (KB) (TVD)

2032.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8960 Outside

Press@RunDepth: 1176.44 psig @ 3651.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.08.15

End Date:

2016.08.15

Last Calib.:

2016.08.15

Start Time: 16:47:05

End Time:

22:28:59

Time On Btm:

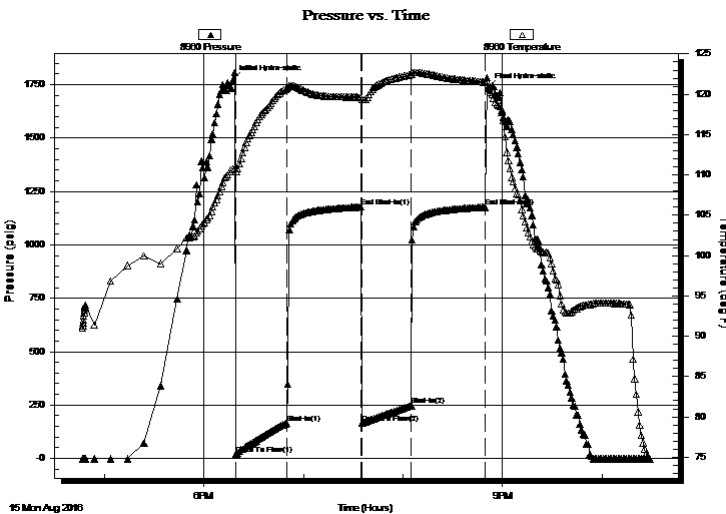
2016.08.15 @ 18:17:30

Time Off Btm:

2016.08.15 @ 20:51:30

TEST COMMENT: I.F. 30 Minutes BOB in 17 minutes
I.S.I 45 Minutes No blow back
F.F. 30 Minutes BOB in 17 minutes
F.S.I. 45 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1771.21	110.70	Initial Hydro-static
2	19.70	110.44	Open To Flow (1)
33	163.64	120.69	Shut-In(1)
77	1177.28	119.61	End Shut-In(1)
78	166.12	119.31	Open To Flow (2)
108	247.30	122.41	Shut-In(2)
152	1176.44	121.52	End Shut-In(2)
154	1735.48	120.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
527.00	MW Mud 10% Water 90%	5.72

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65111

DST#: 5

ATTN: Marc Dow ning

Test Start: 2016.08.15 @ 16:47:00

Tool Information

Drill Pipe:	Length: 3310.00 ft	Diameter: 3.80 inches	Volume: 46.43 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 317.00 ft	Diameter: 3.00 inches	Volume: 2.77 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	66000.00 lb
			<u>Total Volume: 49.20 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	52000.00 lb
Depth to Top Packer:	3632.00 ft			Final	54000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	22.00 ft				
Tool Length:	42.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3617.00	
Hydraulic tool	5.00			3622.00	
Top Packer	5.00			3627.00	
Packer	5.00			3632.00	20.00 Bottom Of Top Packer
Anchor	17.00			3649.00	
Recorder	1.00	6999	Inside	3650.00	
Recorder	1.00	8960	Outside	3651.00	
Bullnose	3.00			3654.00	22.00 Anchor Tool

Total Tool Length: 42.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing Nelson Oil Company Inc

5-16s-19w Rush,KS

PO Box 1019
Hays KS 67601

Oelkers-Werth #1-5

Job Ticket: 65111

DST#: 5

ATTN: Marc Downing

Test Start: 2016.08.15 @ 16:47:00

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:

25000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
527.00	MW Mud 10% Water 90%	5.717

Total Length: 527.00 ft Total Volume: 5.717 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

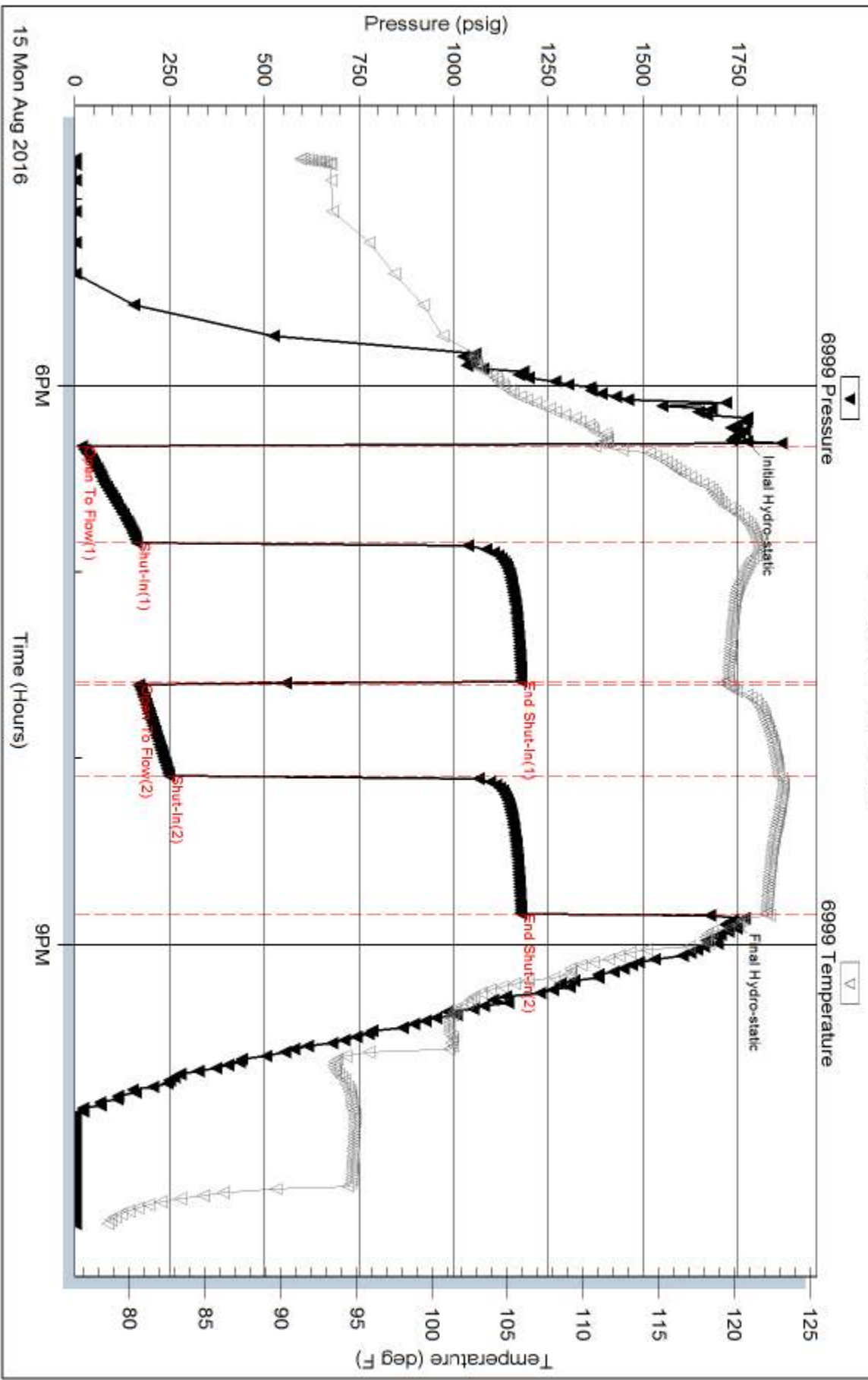
Serial #:

Laboratory Name:

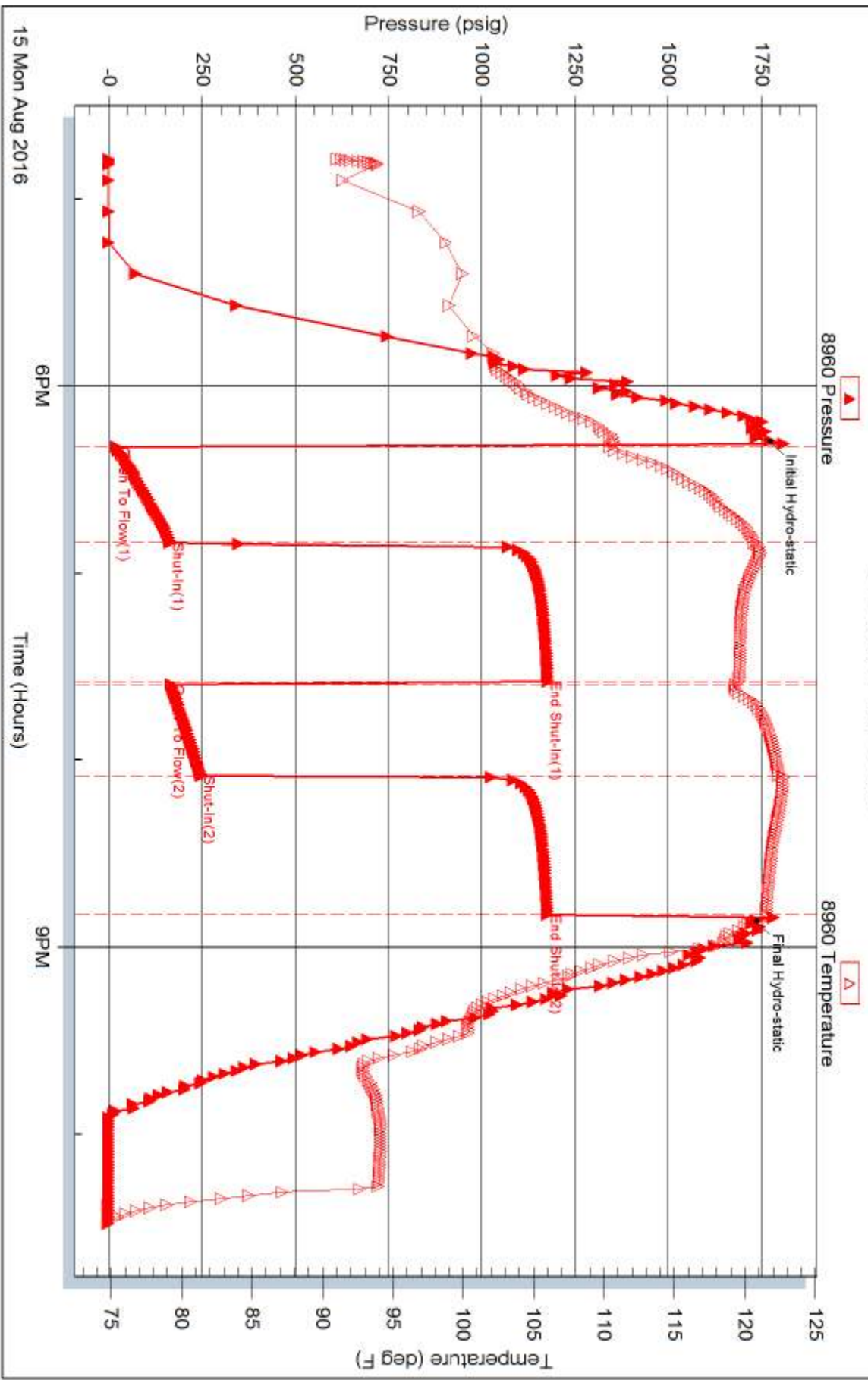
Laboratory Location:

Recovery Comments: Recovery Resistivity .24 ohms @ 77 degrees

Pressure vs. Time



Pressure vs. Time





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65107**

Well Name & No. Oelkers-Worth Unit 1-5 Test No. 1 Date 12 Aug 16
 Company Downing Nelson Oil Company Incorporated Elevation 2040 KB 2032 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 2
 Location: Sec. 5 Twp. 16S Rge. 14W Co. Rush State KS

Interval Tested 3189-3229 Zone Tested Plattsmouth
 Anchor Length 40 Drill Pipe Run 28182873 Mud Wt. 8.7
 Top Packer Depth 3184 Drill Collars Run — Vis 49
 Bottom Packer Depth 3189 Wt. Pipe Run 317 WL 8.0
 Total Depth 3229 Chlorides 3000 ppm System LCM 2#

Blow Description I.F. Blow built to bottom of bucket in 30 minutes
I.S.I No blow back

F.F. Blow built to bottom of bucket in 30 minutes

F.S.I No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>465</u>	<u>Muddy Water w/ show of oil</u>			<u>90%</u>	<u>10%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 465 BHT 113 Gravity — API RW .147 @ 74 ° F Chlorides 53000 ppm

(A) Initial Hydrostatic 1546 Test 1050 T-On Location 4:44 pm
 (B) First Initial Flow 26 Jars — T-Started 5:10 pm
 (C) First Final Flow 164 Safety Joint — T-Open 6:32 pm
 (D) Initial Shut-In 1012 Circ Sub — T-Pulled 9:32 pm
 (E) Second Initial Flow 170 Hourly Standby — T-Out 10:52 pm
 (F) Second Final Flow 238 Mileage 40 30
 (G) Final Shut-In 1000 Sampler —
 (H) Final Hydrostatic 1503 Straddle —

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1080
 MP/DST Disc't —

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1080

Approved By _____ Our Representative [Signature]

TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65108**

Well Name & No. Oelkers-Weith Unit 1-5 Test No. 2 Date 13 Aug 16
 Company Downing Nelson Oil Company Inc. Elevation 2040 KB 2032 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 2
 Location: Sec. 5 Twp. 16S Rge. 19W Co. Rush State KS

Interval Tested 3335-3360 Zone Tested Lansing Kansas City 201 C
 Anchor Length 25 Drill Pipe Run 3029 Mud Wt. 9.1
 Top Packer Depth 3330 Drill Collars Run — Vis 49
 Bottom Packer Depth 3335 Wt. Pipe Run 317 WL 8.8
 Total Depth 3360 Chlorides 4000 ppm System LCM 2#

Blow Description I.F. Blow built to bottom of bucket in 29 minutes
I.S.I no blow back

FF. Blow built to bottom of bucket in 10 minutes

F.S.I no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>75</u>	<u>Gas cut Muddy Oil</u>	<u>10</u>	<u>60</u>	<u>30</u>	<u>—</u>
<u>390</u>	<u>Gas in pipe</u>	<u>100</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Rec Total 465 BHT 113 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1629</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>8:37 am</u>
(B) First Initial Flow <u>18</u>	<input type="checkbox"/> Jars <u>—</u>	T-Started <u>9:16 am</u>
(C) First Final Flow <u>30</u>	<input type="checkbox"/> Safety Joint <u>—</u>	T-Open <u>10:42 am</u>
(D) Initial Shut-In <u>792</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>1:42 pm</u>
(E) Second Initial Flow <u>37</u>	<input type="checkbox"/> Hourly Standby <u>—</u>	T-Out <u>3:28 pm</u>
(F) Second Final Flow <u>45</u>	<input checked="" type="checkbox"/> Mileage <u>40</u> <u>30</u>	Comments <u>—</u>
(G) Final Shut-In <u>776</u>	<input type="checkbox"/> Sampler <u>—</u>	<u>—</u>
(H) Final Hydrostatic <u>1554</u>	<input type="checkbox"/> Straddle <u>—</u>	<input type="checkbox"/> Ruined Shale Packer <u>—</u>

Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer <u>—</u>	<input type="checkbox"/> Ruined Packer <u>—</u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer <u>—</u>	<input type="checkbox"/> Extra Copies <u>—</u>
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder <u>—</u>	Sub Total <u>0</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby <u>—</u>	Total <u>1080</u>
	<input type="checkbox"/> Accessibility <u>—</u>	MP/DST Disc't <u>—</u>
	Sub Total <u>1080</u>	

Approved By — Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65109**

Well Name & No. Delkers-Werth Unit 1-5 Test No. 3 Date 13 Aug 16
 Company Downing Nelson Oil Company Inc. Elevation 2040 KB 2032 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 2
 Location: Sec. 5 Twp. 16S Rge. 19W Co. Rush State KS

Interval Tested 3361-3400 Zone Tested Lansing/Kansas City zones D+E
 Anchor Length 39 Drill Pipe Run 3029 Mud Wt. 9.1
 Top Packer Depth 3356 Drill Collars Run — Vis 49
 Bottom Packer Depth 3361 Wt. Pipe Run 317 WL 8.8
 Total Depth 3400 Chlorides 4000 ppm System LCM 2#

Blow Description I.F. Blow to bottom of bucket in 14 1/2 minutes
I.S.I. no blow back

F.F. Blow to bottom of bucket in 6 1/2 minutes

F.S.I. no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>Gas cut Muddy Oil</u>	<u>5</u>	<u>50</u>	<u>45</u>	<u>—</u>
<u>620</u>	<u>Gas in pipe</u>	<u>100</u>	<u>—</u>	<u>—</u>	<u>—</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 744 BHT 112 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1575 Test 1050 T-On Location 11:05 pm
 (B) First Initial Flow 19 Jars _____ T-Started 11:11 pm
 (C) First Final Flow 47 Safety Joint _____ T-Open 12:29 am
 (D) Initial Shut-In 620 Circ Sub _____ T-Pulled 3:29 am
 (E) Second Initial Flow 51 Hourly Standby _____ T-Out 5:07 am
 (F) Second Final Flow 72 Mileage 40 30 Comments _____
 (G) Final Shut-In 565 Sampler _____
 (H) Final Hydrostatic 1553 Straddle _____

Initial Open 45 Shale Packer _____
 Initial Shut-In 45 Ruined Packer _____
 Final Flow 45 Extra Packer _____
 Final Shut-In 45 Extra Recorder _____
 Sub Total 1080 Extra Copies _____
 Total 1080 MP/DST Disc't _____
 Sub Total 1080

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65110**

Well Name & No. Oelkers-Weirh Unit 1-5 Test No. 41 Date 14 Aug 16
 Company Downing Nelson Oil Company Inc. Elevation 2040 KB 2032 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 2
 Location: Sec. 5 Twp. 16S Rge. 19W Co. Rush State KS

Interval Tested 3443-3475 Zone Tested Lansing/Kansas City zone H
 Anchor Length 32 Drill Pipe Run 3123 Mud Wt. 9.0
 Top Packer Depth 3438 Drill Collars Run — Vis 38
 Bottom Packer Depth 3443 Wt. Pipe Run 317 WL 10.8
 Total Depth 3475 Chlorides 8000 ppm System LCM 2#

Blow Description I.F. Blow built to 5 inches
I.S.I. no blow back
F.F. Blow built to 4 inches
F.S.I. no blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>Oil cut mud</u>	<u>15</u>			<u>85</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 124 BHT 114 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1645 Test 1050 T-On Location 4:22 pm
 (B) First Initial Flow 17 Jars _____ T-Started 4:57 pm
 (C) First Final Flow 53 Safety Joint _____ T-Open 6:16 pm
 (D) Initial Shut-In 618 Circ Sub _____ T-Pulled 8:16 pm
 (E) Second Initial Flow 57 Hourly Standby _____ T-Out 10:40 pm
 (F) Second Final Flow 73 Mileage 40 30 Comments _____
 (G) Final Shut-In 534 Sampler _____
 (H) Final Hydrostatic 1649 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1080
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1080

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65111**

Well Name & No. Oelkers-Werth Unit 1-5 Test No. 5 Date 15 Aug 16
 Company Downing Nelson Oil Company Inc Elevation 2040 KB 2032 GL
 Address PO Box 1019 Hays Kansas 67601
 Co. Rep / Geo. Marc Downing Rig Discovery Rig 2
 Location: Sec. 5 Twp. 16S Rge. 19W Co. Rush State KS

Interval Tested 3632-3654 Zone Tested Reagan Sand
 Anchor Length 22 Drill Pipe Run 3310 Mud Wt. 9.4
 Top Packer Depth 3628 Drill Collars Run — Vis 45
 Bottom Packer Depth 3632 Wt. Pipe Run 317 WL 10.4
 Total Depth 3654 Chlorides 6000 ppm System LCM 1.5 #

Blow Description I.F. Blow built to bottom of bucket in 17 minutes
I.S.I. No blow back
F.F. Blow built to bottom of bucket in 17 minutes
F.S.I. No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>527</u>	<u>Muddy Water</u>		<u>90</u>	<u>10</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 527 BHT 122 Gravity 1050 API RW .24 @ 77 °F Chlorides 25000 ppm

- (A) Initial Hydrostatic 1773 Test 1050 T-On Location 3:35 pm
- (B) First Initial Flow 19 Jars _____ T-Started 4:47 pm
- (C) First Final Flow 163 Safety Joint _____ T-Open 6:20 pm
- (D) Initial Shut-In 1179 Circ Sub _____ T-Pulled 8:50 pm
- (E) Second Initial Flow 169 Hourly Standby _____ T-Out 10:29 pm
- (F) Second Final Flow 249 Mileage 40 30 Comments _____
- (G) Final Shut-In 1178 Sampler _____
- (H) Final Hydrostatic 1736 Straddle _____ Ruined Shale Packer _____
- Initial Open 30 Extra Packer _____ Ruined Packer _____
- Initial Shut-In 45 Extra Recorder _____ Extra Copies _____
- Final Flow 30 Day Standby _____ Sub Total 0
- Final Shut-In 45 Accessibility _____ Total 1080
- Sub Total 1080 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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