

## DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co., Inc.**

PO Box 372  
Hays Ks 67601

ATTN: Marc Downing

**1-13-20 Ellis, Ks**

**Pfeifer Unit 1-1**

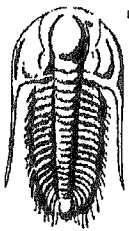
Start Date: 2010.09.27 @ 19:54:31

End Date: 2010.09.28 @ 02:40:01

Job Ticket #: 40409                      DST #: 1

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

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**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co. Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis, Ks**

Job Ticket: 40409

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2010.09.27 @ 19:54:31

### GENERAL INFORMATION:

Formation: **Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:56:01

Time Test Ended: 02:40:01

Test Type: Conventional Bottom Hole

Tester: Brett Dickinson

Unit No: 47

Interval: **3379.00 ft (KB) To 3420.00 ft (KB) (TVD)**

Reference Elevations: 2154.00 ft (KB)

Total Depth: 3420.00 ft (KB) (TVD)

2146.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8319**

**Inside**

Press@RunDepth: 86.07 psig @ 3385.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.09.27

End Date:

2010.09.28

Last Calib.: 2010.09.28

Start Time: 19:54:36

End Time:

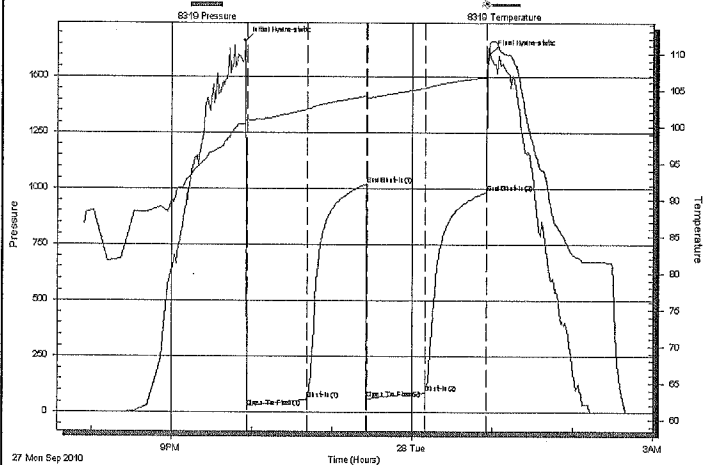
02:40:00

Time On Btm: 2010.09.27 @ 21:54:31

Time Off Btm: 2010.09.28 @ 00:58:31

**TEST COMMENT:** IF-9 in blow  
ISI-No blow  
FF-2.25 in blow  
FSI-No blow

Pressure vs. Time



### PRESSURE SUMMARY

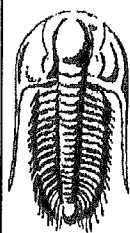
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1661.83         | 100.49       | Initial Hydro-static |
| 2           | 22.29           | 101.01       | Open To Flow (1)     |
| 47          | 58.02           | 102.39       | Shut-In(1)           |
| 91          | 1020.59         | 104.19       | End Shut-In(1)       |
| 92          | 60.73           | 103.97       | Open To Flow (2)     |
| 136         | 86.07           | 105.30       | Shut-In(2)           |
| 182         | 985.52          | 106.79       | End Shut-In(2)       |
| 184         | 1604.69         | 111.39       | Final Hydro-static   |

### Recovery

| Length (ft) | Description    | Volume (bbl) |
|-------------|----------------|--------------|
| 135.00      | SMCW 85%W 15%M | 1.62         |
| 15.00       | Free Oil       | 0.21         |
| 0.00        | 30ft GIP       | 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 Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 40409

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2010.09.27 @ 19:54:31

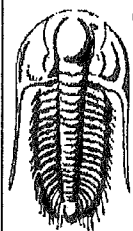
### Tool Information

|                            |                    |                       |                   |                                    |
|----------------------------|--------------------|-----------------------|-------------------|------------------------------------|
| Drill Pipe:                | Length: 3356.00 ft | Diameter: 3.80 inches | Volume: 47.08 bbl | Tool Weight: 2500.00 lb            |
| Heavy Wt. Pipe:            | Length: ft         | Diameter: 2.70 inches | Volume: - bbl     | Weight set on Packer: 25000.00 lb  |
| Drill Collar:              | Length: 30.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl  | Weight to Pull Loose: 65000.00 lb  |
|                            |                    | Total Volume:         | - bbl             | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:       | 27.00 ft           |                       |                   | String Weight: Initial 46000.00 lb |
| Depth to Top Packer:       | 3379.00 ft         |                       |                   | Final 47000.00 lb                  |
| Depth to Bottom Packer:    | ft                 |                       |                   |                                    |
| Interval betw een Packers: | 41.00 ft           |                       |                   |                                    |
| Tool Length:               | 61.00 ft           |                       |                   |                                    |
| Number of Packers:         | 2                  | Diameter: 6.75 inches |                   |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3360.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3365.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3370.00    |                               |
| Packer           | 4.00        |            |          | 3374.00    | 20.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3379.00    |                               |
| Stubb            | 1.00        |            |          | 3380.00    |                               |
| Perforations     | 4.00        |            |          | 3384.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3385.00    |                               |
| Recorder         | 0.00        | 8319       | Inside   | 3385.00    |                               |
| Recorder         | 0.00        | 6719       | Inside   | 3385.00    |                               |
| Blank Spacing    | 31.00       |            |          | 3416.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3417.00    |                               |
| Bullnose         | 3.00        |            |          | 3420.00    | 41.00 Bottom Packers & Anchor |

**Total Tool Length: 61.00**



**TRILOBITE**  
**TESTING, INC**

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Dow ning-Nelson Oil Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 40409

**DST#: 1**

ATTN: Marc Dow ning

Test Start: 2010.09.27 @ 19:54:31

### 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:

160000 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.97 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

| Length<br>ft | Description    | Volume<br>bbl |
|--------------|----------------|---------------|
| 135.00       | SMCW 85%W 15%M | 1.620         |
| 15.00        | Free Oil       | 0.210         |
| 0.00         | 30ft GIP       | 0.000         |

Total Length: 150.00 ft

Total Volume: 1.830 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

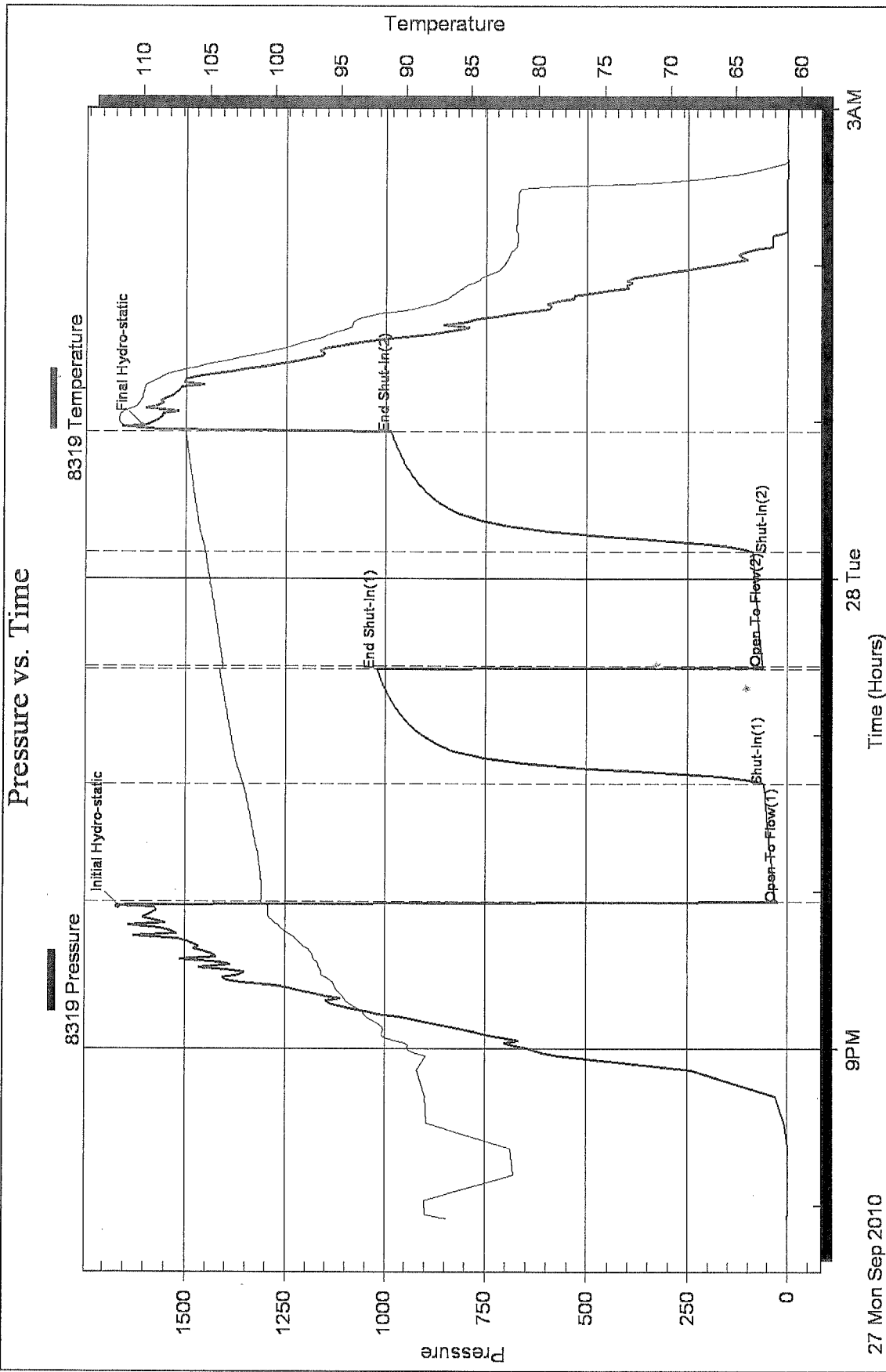
Serial #:

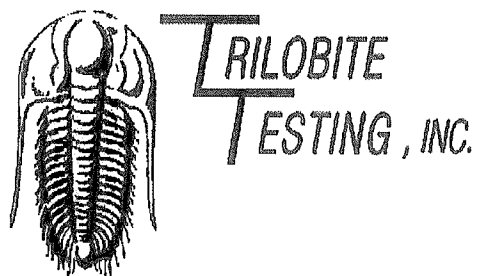
Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.Inc.**

PO Box 372  
Hays Ks 67601

ATTN: Marc Downing

**1-13-20 Ellis,Ks**

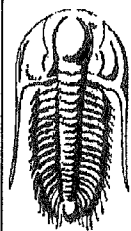
**Pfeifer Unit 1-1**

Start Date: 2010.09.28 @ 12:17:47

End Date: 2010.09.28 @ 18:38:17

Job Ticket #: 40410      DST #: 2

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

ATTN: Marc Dow ning

Job Ticket: 40410

**DST#: 2**

Test Start: 2010.09.28 @ 12:17:47

### GENERAL INFORMATION:

Formation: **KC "C,D"**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 13:53:17

Time Test Ended: 18:38:17

Test Type: **Conventional Bottom Hole**

Tester: **Brett Dickinson**

Unit No: **47**

Interval: **3475.00 ft (KB) To 3524.00 ft (KB) (TVD)**

Total Depth: **3524.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2154.00 ft (KB)**

**2146.00 ft (CF)**

**KB to GR/CF: 8.00 ft**

**Serial #: 8319**

**Inside**

Press@RunDepth: **45.48 psig @ 3481.00 ft (KB)**

Start Date: **2010.09.28**

End Date: **2010.09.28**

Capacity: **8000.00 psig**

Last Calib.: **2010.09.29**

Start Time: **12:17:52**

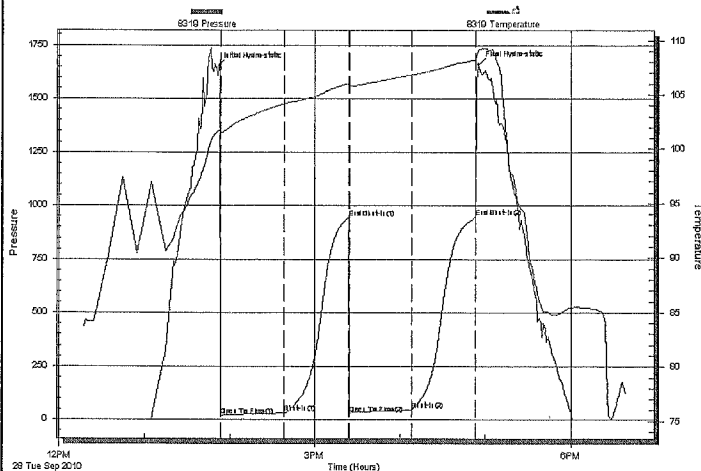
End Time: **18:38:16**

Time On Btm: **2010.09.28 @ 13:50:17**

Time Off Btm: **2010.09.28 @ 16:55:17**

TEST COMMENT: IF-3 in blow  
ISI-No blow  
FF-BOB in 32min  
FSI-No blow

Pressure vs. Time



### PRESSURE SUMMARY

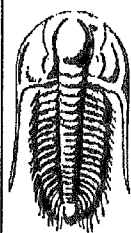
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1648.47         | 101.50       | Initial Hydro-static |
| 3           | 17.37           | 101.46       | Open To Flow (1)     |
| 48          | 30.98           | 104.15       | Shut-In(1)           |
| 94          | 944.63          | 106.02       | End Shut-In(1)       |
| 95          | 29.54           | 105.77       | Open To Flow (2)     |
| 138         | 45.48           | 106.82       | Shut-In(2)           |
| 183         | 944.97          | 108.22       | End Shut-In(2)       |
| 185         | 1658.69         | 109.03       | Final Hydro-static   |

### Recovery

| Length (ft) | Description     | Volume (bbl) |
|-------------|-----------------|--------------|
| 20.00       | OCM 40% O 60% M | 0.10         |
| 60.00       | MCO 75% O 25% M | 0.75         |
| 0.00        | 270ft GIP       | 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 Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 40410

**DST#: 2**

ATTN: Marc Dow ning

Test Start: 2010.09.28 @ 12:17:47

### Tool Information

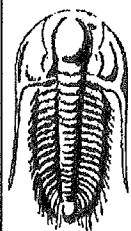
|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3446.00 ft | Diameter: 3.80 inches | Volume: 48.34 bbl              | Tool Weight: 2500.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 2.70 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 30.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl               | Weight to Pull Loose: 47000.00 lb  |
|                           |                    |                       | <u>Total Volume: 48.49 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 21.00 ft           |                       |                                | String Weight: Initial 47000.00 lb |
| Depth to Top Packer:      | 3475.00 ft         |                       |                                | Final 47000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 49.00 ft           |                       |                                |                                    |
| Tool Length:              | 69.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

### Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3456.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3461.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3466.00    |                               |
| Packer           | 4.00        |            |          | 3470.00    | 20:00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3475.00    |                               |
| Stubb            | 1.00        |            |          | 3476.00    |                               |
| Perforations     | 4.00        |            |          | 3480.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3481.00    |                               |
| Recorder         | 0.00        | 8319       | Inside   | 3481.00    |                               |
| Recorder         | 0.00        | 6719       | Inside   | 3481.00    |                               |
| Blank Spacing    | 31.00       |            |          | 3512.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3513.00    |                               |
| Perforations     | 8.00        |            |          | 3521.00    |                               |
| Bullnose         | 3.00        |            |          | 3524.00    | 49.00 Bottom Packers & Anchor |

**Total Tool Length: 69.00**



**TRILOBITE**  
**TESTING, INC**

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Dow ning-Nelson Oil Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 40410

**DST#: 2**

ATTN: Marc Dow ning

Test Start: 2010.09.28 @ 12:17:47

### 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: 63.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.96 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

| Length<br>ft | Description   | Volume<br>bbl |
|--------------|---------------|---------------|
| 20.00        | OCM 40%O 60%M | 0.098         |
| 60.00        | MCO 75%O 25%M | 0.751         |
| 0.00         | 270ft GIP     | 0.000         |

Total Length: 80.00 ft

Total Volume: 0.849 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

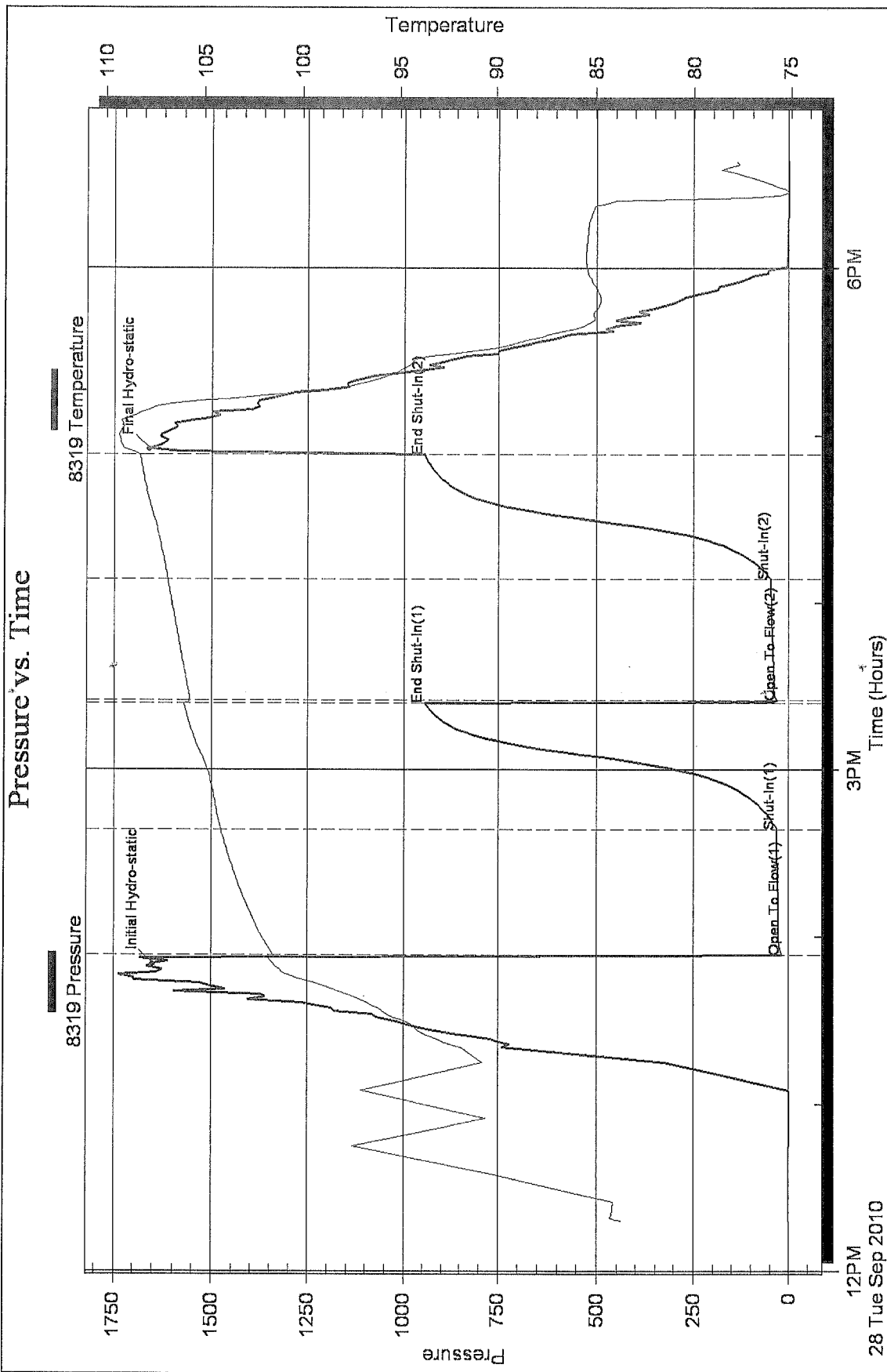
Serial #:

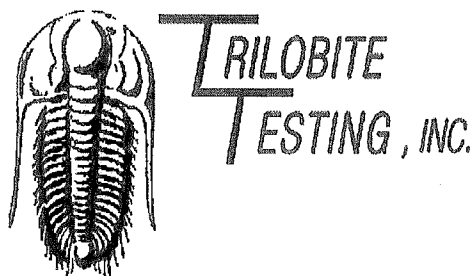
Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.Inc.**

PO Box 372  
Hays Ks 67601

ATTN: Marc Downing

**1-13-20 Ellis,Ks<sup>42</sup>**

**Pfeifer Unit 1-1**

Start Date: 2010.09.29 @ 06:40:03

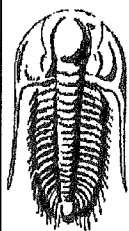
End Date: 2010.09.29 @ 11:40:33

Job Ticket #: 40411                      DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE**  
**TESTING, INC**

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co. Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis, Ks**

ATTN: Marc Dow ning

Job Ticket: 40411

**DST#: 3**

Test Start: 2010.09.29 @ 06:40:03

### GENERAL INFORMATION:

Formation: **KC "I,J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:18:03

Time Test Ended: 11:40:33

Test Type: Conventional Bottom Hole

Tester: Brett Dickinson

Unit No: 47

Interval: **3610.00 ft (KB) To 3656.00 ft (KB) (TVD)**

Total Depth: 3656.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2154.00 ft (KB)

2146.00 ft (CF)

KB to GR/CF: 8.00 ft

**Serial #: 8319**

Inside

Press@RunDepth: 19.62 psig @ 3616.00 ft (KB)

Start Date: 2010.09.29

End Date: 2010.09.29

Start Time: 06:40:08

End Time: 11:40:32

Capacity: 8000.00 psig

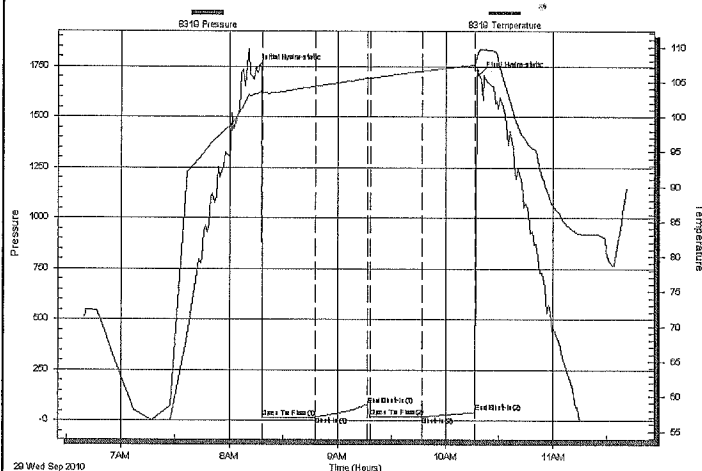
Last Calib.: 2010.09.29

Time On Btm: 2010.09.29 @ 08:14:33

Time Off Btm: 2010.09.29 @ 10:18:33

**TEST COMMENT:** IF-1/4in blow died back to very weak surface blow  
ISI-No blow  
FF-No blow  
FSI-No blow

Pressure vs. Time



### PRESSURE SUMMARY

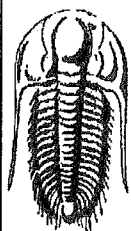
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1737.71         | 103.29       | Initial Hydro-static |
| 4           | 15.09           | 103.42       | Open To Flow (1)     |
| 34          | 17.36           | 104.35       | Shut-In(1)           |
| 62          | 79.06           | 105.51       | End Shut-In(1)       |
| 64          | 17.66           | 105.55       | Open To Flow (2)     |
| 93          | 19.62           | 106.55       | Shut-In(2)           |
| 122         | 41.30           | 107.47       | End Shut-In(2)       |
| 124         | 1707.81         | 109.49       | Final Hydro-static   |

### Recovery

| Length (ft) | Description    | Volume (bbl) |
|-------------|----------------|--------------|
| 10.00       | SOCM 10%O 90%M | 0.05         |
|             |                |              |
|             |                |              |
|             |                |              |
|             |                |              |
|             |                |              |

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Dow ning-Nelson Oil Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 40411

**DST#: 3**

ATTN: Marc Dow ning

Test Start: 2010.09.29 @ 06:40:03

### Tool Information

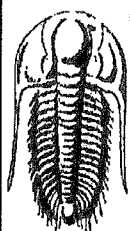
|                           |                    |                       |                   |                        |             |
|---------------------------|--------------------|-----------------------|-------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3572.00 ft | Diameter: 3.80 inches | Volume: 50.11 bbl | Tool Weight:           | 2500.00 lb  |
| Heavy Wt. Pipe:           | Length: ft         | Diameter: 2.70 inches | Volume: - bbl     | Weight set on Packer:  | 25000.00 lb |
| Drill Collar:             | Length: 30.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl  | Weight to Pull Loose:  | 55000.00 lb |
|                           |                    | Total Volume:         | - bbl             | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 12.00 ft           |                       |                   | String Weight: Initial | 47000.00 lb |
| Depth to Top Packer:      | 3610.00 ft         |                       |                   | Final                  | 47000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                   |                        |             |
| Interval between Packers: | 46.00 ft           |                       |                   |                        |             |
| Tool Length:              | 66.00 ft           |                       |                   |                        |             |
| Number of Packers:        | 2                  | Diameter:             | 6.75 inches       |                        |             |

Tool Comments:

### Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3591.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3596.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3601.00    |                               |
| Packer           | 4.00        |            |          | 3605.00    | 20.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3610.00    |                               |
| Stubb            | 1.00        |            |          | 3611.00    |                               |
| Perforations     | 4.00        |            |          | 3615.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3616.00    |                               |
| Recorder         | 0.00        | 8319       | Inside   | 3616.00    |                               |
| Recorder         | 0.00        | 6719       | Inside   | 3616.00    |                               |
| Blank Spacing    | 31.00       |            |          | 3647.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3648.00    |                               |
| Perforations     | 5.00        |            |          | 3653.00    |                               |
| Bullnose         | 3.00        |            |          | 3656.00    | 46.00 Bottom Packers & Anchor |

**Total Tool Length: 66.00**



**TRILOBITE**  
**TESTING, INC**

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Dow ning-Nelson Oil Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 40411

**DST#: 3**

ATTN: Marc Dow ning

Test Start: 2010.09.29 @ 06:40:03

### 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: 57.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6200.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

| Length<br>ft | Description    | Volume<br>bbl |
|--------------|----------------|---------------|
| 10.00        | SOCM 10%O 90%M | 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:

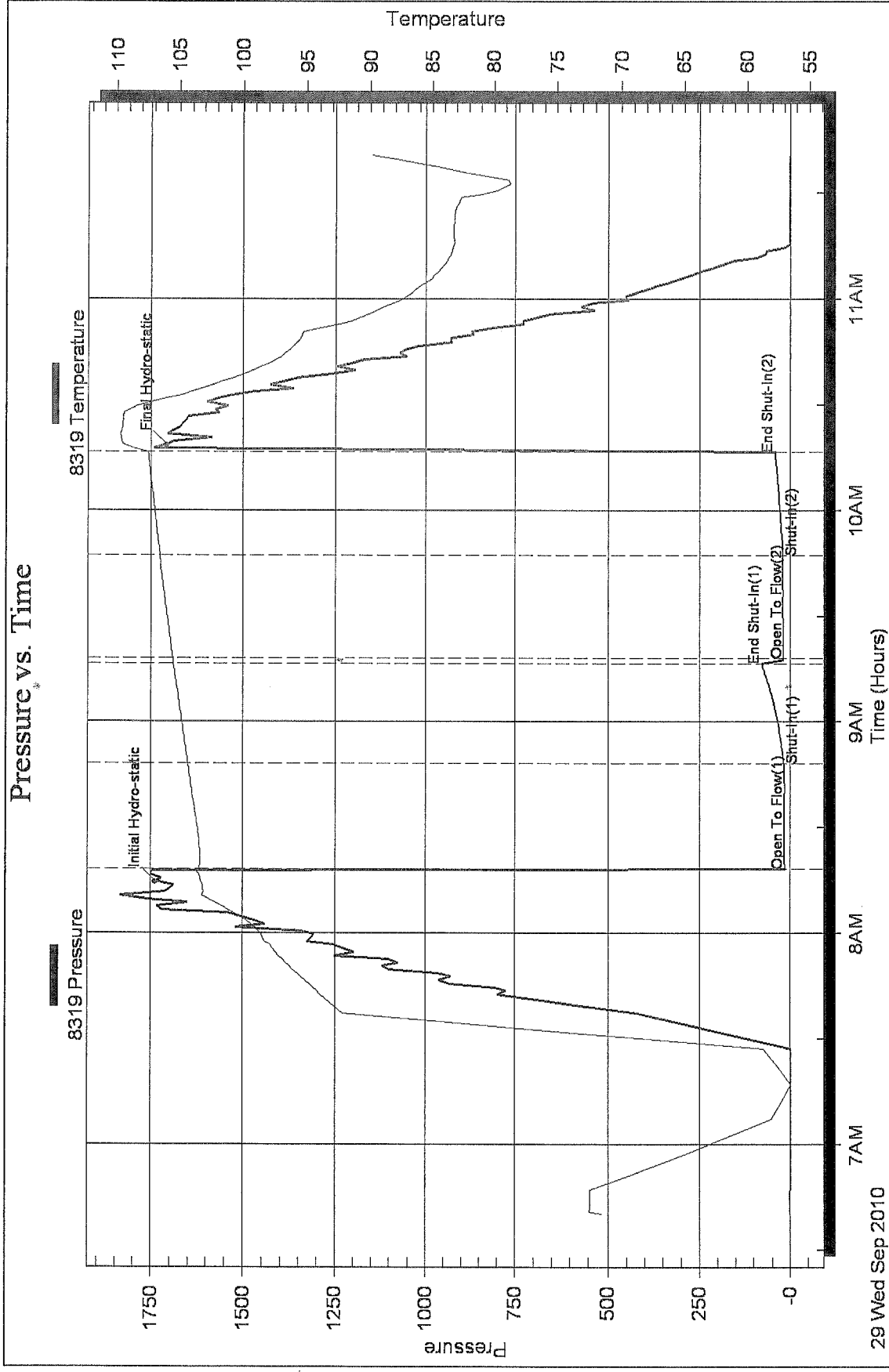
Serial #: 8319

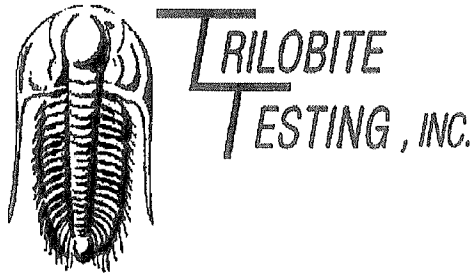
Inside

Dow nung-Nelson Oil Co.lnc.

1-13-20 Ellis,Ks

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co.Inc.**

PO Box 372  
Hays Ks 67601

ATTN: Marc Downing

**1-13-20 Ellis,Ks**

**Pfeifer Unit 1-1**

Start Date: 2010.09.30 @ 00:13:58

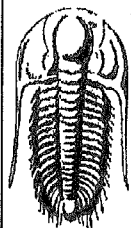
End Date: 2010.09.30 @ 07:18:58

Job Ticket #: 39574                      DST #: 4

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co. Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis, Ks**

Job Ticket: 39574

**DST#: 4**

ATTN: Marc Dow ning

Test Start: 2010.09.30 @ 00:13:58

### GENERAL INFORMATION:

Formation: **Conglomerate Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:57:28

Time Test Ended: 07:18:58

Test Type: Conventional Bottom Hole

Tester: Dustin Rash

Unit No: 47

Interval: **3770.00 ft (KB) To 3798.00 ft (KB) (TVD)**

Reference Elevations: 2154.00 ft (KB)

Total Depth: 3798.00 ft (KB) (TVD)

2146.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

**Serial #: 6719 Outside**

Press@RunDepth: 285.75 psig @ 3774.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.09.30

End Date: 2010.09.30

Last Calib.: 2010.09.30

Start Time: 00:14:03

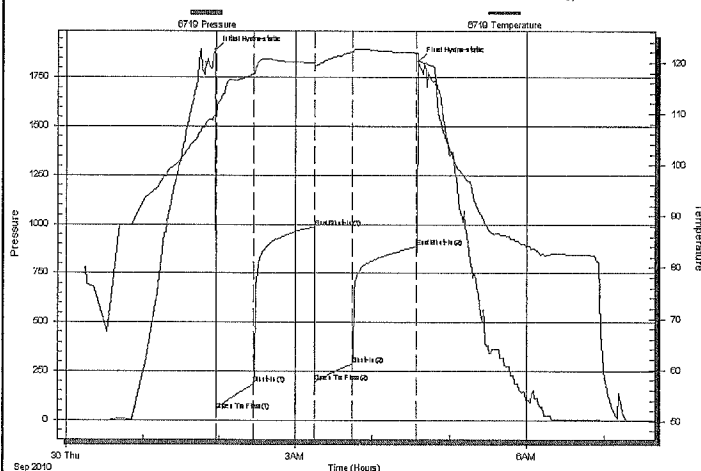
End Time: 07:18:57

Time On Btm: 2010.09.30 @ 01:56:58

Time Off Btm: 2010.09.30 @ 04:35:58

**TEST COMMENT:** IF- Strong building blow . BOB in 5 minutes.  
ISI- Return @ 12 minutes. Built to 1 3/4 inches.  
FF- Strong building blow . BOB in 7 minutes.  
FSI- Return @ 13 minutes. Built to 1 3/4 inches.

Pressure vs. Time



### PRESSURE SUMMARY

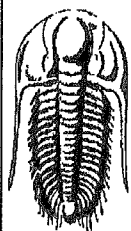
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1891.74         | 109.71       | Initial Hydro-static |
| 1           | 50.34           | 109.63       | Open To Flow (1)     |
| 30          | 184.64          | 117.85       | Shut-In(1)           |
| 78          | 985.14          | 120.03       | End Shut-In(1)       |
| 78          | 197.95          | 119.79       | Open To Flow (2)     |
| 107         | 285.75          | 122.08       | Shut-In(2)           |
| 157         | 885.90          | 121.96       | End Shut-In(2)       |
| 159         | 1835.69         | 120.68       | Final Hydro-static   |

### Recovery

| Length (ft) | Description            | Volume (bbl) |
|-------------|------------------------|--------------|
| 10.00       | GMCO 20% M 60% G 20% M | 0.05         |
| 734.00      | GO 70% O 30% G         | 10.11        |
|             |                        |              |
|             |                        |              |
|             |                        |              |
|             |                        |              |

### Gas Rates

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



**TRILOBITE**  
**TESTING, INC**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 39574

**DST#: 4**

ATTN: Marc Dow ning

Test Start: 2010.09.30 @ 00:13:58

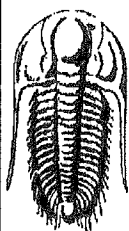
### Tool Information

|                            |            |            |             |             |               |           |                        |             |
|----------------------------|------------|------------|-------------|-------------|---------------|-----------|------------------------|-------------|
| Drill Pipe:                | Length:    | 3730.00 ft | Diameter:   | 3.80 inches | Volume:       | 52.32 bbl | Tool Weight:           | 2000.00 lb  |
| Heavy Wt. Pipe:            | Length:    | 0.00 ft    | Diameter:   | 2.70 inches | Volume:       | 0.00 bbl  | Weight set on Packer:  | 22000.00 lb |
| Drill Collar:              | Length:    | 30.00 ft   | Diameter:   | 2.25 inches | Volume:       | 0.15 bbl  | Weight to Pull Loose:  | 2000.00 lb  |
|                            |            |            |             |             | Total Volume: | 52.47 bbl | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:       | 10.00 ft   |            |             |             |               |           | String Weight: Initial | 48000.00 lb |
| Depth to Top Packer:       | 3770.00 ft |            |             |             |               |           | Final                  | 52000.00 lb |
| Depth to Bottom Packer:    | ft         |            |             |             |               |           |                        |             |
| Interval betw een Packers: | 28.00 ft   |            |             |             |               |           |                        |             |
| Tool Length:               | 48.00 ft   |            |             |             |               |           |                        |             |
| Number of Packers:         | 2          | Diameter:  | 6.75 inches |             |               |           |                        |             |
| Tool Comments:             |            |            |             |             |               |           |                        |             |

### Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3751.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3756.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3761.00    |                               |
| Packer           | 5.00        |            |          | 3766.00    | 20.00 Bottom Of Top Packer    |
| Packer           | 4.00        |            |          | 3770.00    |                               |
| Stubb            | 1.00        |            |          | 3771.00    |                               |
| Perforations     | 3.00        |            |          | 3774.00    |                               |
| Recorder         | 0.00        | 8319       | Inside   | 3774.00    |                               |
| Recorder         | 0.00        | 6719       | Outside  | 3774.00    |                               |
| Perforations     | 21.00       |            |          | 3795.00    |                               |
| Bullnose         | 3.00        |            |          | 3798.00    | 28.00 Bottom Packers & Anchor |

**Total Tool Length: 48.00**



**TRILOBITE**  
**TESTING, INC**

## DRILL STEM TEST REPORT

### FLUID SUMMARY

Dow ning-Nelson Oil Co.Inc.

**Pfeifer Unit 1-1**

PO Box 372  
Hays Ks 67601

**1-13-20 Ellis,Ks**

Job Ticket: 39574

**DST#: 4**

ATTN: Marc Dow ning

Test Start: 2010.09.30 @ 00:13:58

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

27 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

| Length<br>ft | Description          | Volume<br>bbl |
|--------------|----------------------|---------------|
| 10.00        | GMCO 20% M 60%G 20%M | 0.049         |
| 734.00       | GO 70%O 30%G         | 10.114        |

Total Length: 744.00 ft

Total Volume: 10.163 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time

