



DRILL STEM TEST REPORT

Prepared For: **Arrow Oil & Gas Inc.**

PO Box 862
Norman, OK 73070

ATTN: Arrow Oil & Gas Inc.

23-16-42 Greeley, Ks

Hibbert-Carnes#1

Start Date: 2003.08.09 @ 10:50:35

End Date: 2003.08.09 @ 19:44:19

Job Ticket #: 17651 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Arrow Oil & Gas Inc.

Hibbert-Carnes#1

23-16-42 Greeley, Ks

DST # 1

upper morrow

2003.08.09



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Norman, OK 73070

ATTN: Arrow Oil & Gas Inc.

Hibbert-Carnes#1

23-16-42 Greeley, Ks

Job Ticket: 17651

DST#: 1

Test Start: 2003.08.09 @ 10:50:35

GENERAL INFORMATION:

Formation: **upper morrow**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:50:04

Time Test Ended: 19:44:19

Test Type: Conventional Bottom Hole

Tester: Shane McBride

Unit No: 25

Interval: **4944.00 ft (KB) To 5056.00 ft (KB) (TVD)**

Total Depth: 5056.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3789.00 ft (KB)

3779.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 3017

Inside

Press@RunDepth: 802.09 psig @ 4945.00 ft (KB)

Start Date: 2003.08.09

End Date: 2003.08.09

Capacity: 7000.00 psig

Last Calib.: 1899.12.30

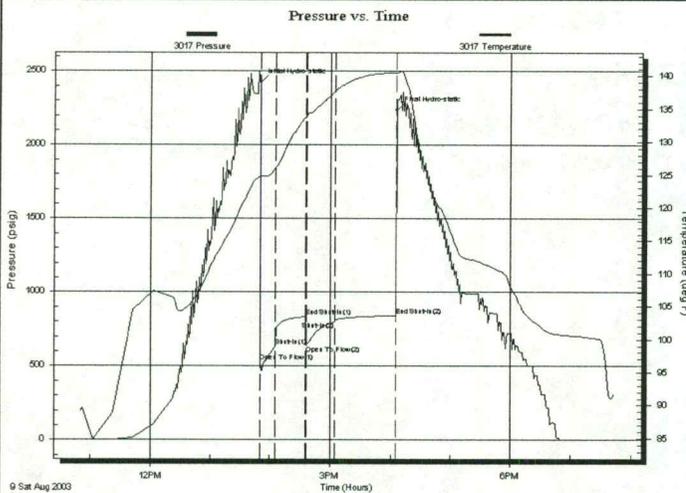
Start Time: 10:50:35

End Time: 19:44:19

Time On Btm: 2003.08.09 @ 13:49:49

Time Off Btm: 2003.08.09 @ 16:05:34

TEST COMMENT: B.O.B. in 1 1/2 min.
No return
B.O.B. in 1 min.
Bleed off throughout , Gas to surface 40 min. into shut in.



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2425.16 | 124.68 | Initial Hydro-static |
| 1 | 527.56 | 124.69 | Open To Flow (1) |
| 16 | 632.08 | 126.03 | Shut-In(1) |
| 46 | 833.65 | 133.71 | End Shut-In(1) |
| 47 | 636.59 | 133.87 | Open To Flow (2) |
| 76 | 802.09 | 137.78 | Shut-In(2) |
| 136 | 841.64 | 140.52 | End Shut-In(2) |
| 136 | 2236.78 | 140.52 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------------------|--------------|
| 582.00 | s o c g w 5%o 20%g 75%w | 2.86 |
| 434.00 | o c g w 30%o 30%g 40%w | 6.09 |
| 186.00 | g m c o 35%g 25%m 40%o | 2.61 |
| 93.00 | g o c m 35%g 25%o 40%m | 1.30 |
| 100.00 | s o c g m 10%o 40%g 50%m | 1.40 |
| | | |

Gas Rates

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



**TRILOBITE
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TOOL DIAGRAM

Arrow Oil & Gas Inc.

Hibbert-Carnes#1

PO Box 862
Norman, OK 73070

23-16-42 Greeley, Ks

Job Ticket: 17651

DST#: 1

ATTN: Arrow Oil & Gas Inc.

Test Start: 2003.08.09 @ 10:50:35

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4356.00 ft | Diameter: 3.80 inches | Volume: 61.10 bbl | Tool Weight: 1500.00 lb |
| Heavy Wt. Pipe: | Length: 0.00 ft | Diameter: 0.00 inches | Volume: 0.00 bbl | Weight set on Packer: 30000.00 lb |
| Drill Collar: | Length: 582.00 ft | Diameter: 2.25 inches | Volume: 2.86 bbl | Weight to Pull Loose: 130000.0 lb |
| | | | <u>Total Volume: 63.96 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 24.00 ft | | | String Weight: Initial 105000.0 lb |
| Depth to Top Packer: | 4944.00 ft | | | Final 109000.0 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 112.00 ft | | | |
| Tool Length: | 142.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|---------------|------------|----------|------------|--------------------------------|
| C.O. Sub | 1.00 | | | 4915.00 | |
| S.I. Tool | 5.00 | | | 4920.00 | |
| Sampler | 3.00 | | | 4923.00 | |
| HMV | 5.00 | | | 4928.00 | |
| Jars | 5.00 | | | 4933.00 | |
| Safety Joint | 2.00 | | | 4935.00 | |
| Packer | 5.00 | | | 4940.00 | 30.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4944.00 | |
| Stubb | 1.00 | | | 4945.00 | |
| Recorder | 0.00 | 3017 | Inside | 4945.00 | |
| Perforations | 11.00 | | | 4956.00 | |
| C.O. Sub | 1.00 | | | 4957.00 | |
| drillpipe | 93.00 | | | 5050.00 | |
| C.O. Sub | 1.00 | | | 5051.00 | |
| Recorder | 0.00 | 11058 | Outside | 5051.00 | |
| Bullnose | 5.00 | | | 5056.00 | 112.00 Bottom Packers & Anchor |
| Total Tool Length: | 142.00 | | | | |



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FLUID SUMMARY

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Hibbert-Carnes#1

PO Box 862
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Job Ticket: 17651

DST#: 1

ATTN: Arrow Oil & Gas Inc.

Test Start: 2003.08.09 @ 10:50:35

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:

48000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 0.60 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|--------------------------|---------------|
| 582.00 | s o c g w 5%o 20%g 75%w | 2.862 |
| 434.00 | o c g w 30%o 30%g 40%w | 6.088 |
| 186.00 | g m c o 35%g 25%m 40%o | 2.609 |
| 93.00 | g o c m 35%g 25%o 40%m | 1.305 |
| 100.00 | s o c g m 10%o 40%g 50%m | 1.403 |

Total Length: 1395.00 ft

Total Volume: 14.267 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 3017

Inside

Arrow Oil & Gas Inc.

23-16-42 Greeley, Ks

DST Test Number: 1

