

DRILL STEM TEST REPORT

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

P.O.Box 372
Hays,Ks.67601

ATTN: Ron Nelson

21-9s-21w Graham KS

Darnell-McCellan Farms # 1-21

Start Date: 2004.01.07 @ 23:20:38

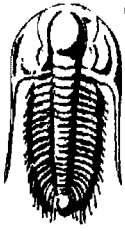
End Date: 2004.01.08 @ 06:30:17

Job Ticket #: 18251 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

Darnell-McCellan Farms # 1-21

P.O.Box 372
Hays, Ks. 67601

21-9s-21w Graham KS

Job Ticket: 18251

DST#: 1

ATTN: Ron Nelson

Test Start: 2004.01.07 @ 23:20:38

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:18:18

Time Test Ended: 06:30:17

Test Type: Conventional Bottom Hole

Tester: John Schmidt

Unit No: 18

Interval: **3751.00 ft (KB) To 3772.00 ft (KB) (TVD)**

Reference Elevations: 2261.00 ft (KB)

Total Depth: 3772.00 ft (KB) (TVD)

2253.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6741 Inside

Press@RunDepth: 48.51 psig @ 3754.00 ft (KB)

Capacity: 7000.00 psig

Start Date: 2004.01.07

End Date:

2004.01.08

Last Calib.: 2004.01.08

Start Time: 23:20:40

End Time:

06:30:18

Time On Btm: 2004.01.08 @ 01:15:48

Time Off Btm: 2004.01.08 @ 04:48:47

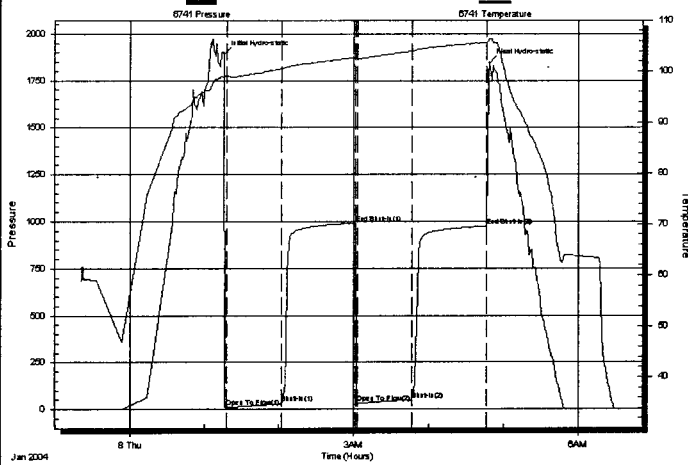
TEST COMMENT: IF-Weak to Fair built to 6&1/2" in.

ISI-Dead

FF-Weak to Fair built to 4" in

FSI-Weak Surface blow back.

Pressure vs. Time



PRESSURE SUMMARY

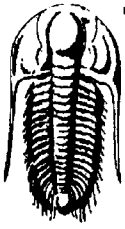
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1893.35	98.82	Initial Hydro-static
3	10.22	99.03	Open To Flow (1)
47	29.39	100.51	Shut-In(1)
106	991.40	102.71	End Shut-In(1)
107	30.69	102.52	Open To Flow (2)
151	48.51	103.96	Shut-In(2)
211	975.62	105.64	End Shut-In(2)
213	1843.17	106.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OGCM-40%O-5%G-55%M	0.14
100.00	Clean Gassy oil 10 %G-95%O	1.40
0.00	100 gas in pipe	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing-Nelson Oil Co., Inc.

Darnell-McCellan Farms # 1-21

P.O.Box 372
Hays, Ks. 67601

21-9s-21w Graham KS

Job Ticket: 18251

DST#: 1

ATTN: Ron Nelson

Test Start: 2004.01.07 @ 23:20:38

Tool Information

Drill Pipe:	Length: 3738.00 ft	Diameter: 3.80 inches	Volume: 52.43 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: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 5000.00 lb
			<u>Total Volume: 52.43 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3751.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	41.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

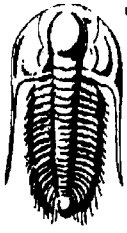
Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			3732.00	
Shut In Tool	5.00			3737.00	
Hydraulic tool	5.00			3742.00	
Packer	4.00			3746.00	20.00 Bottom Of Top Packer
Packer	5.00			3751.00	
Stubb	1.00			3752.00	
Perforations	2.00			3754.00	
Recorder	0.00	6741	Inside	3754.00	
Perforations	15.00			3769.00	
Recorder	0.00	13308	Outside	3769.00	
Bullnose	3.00			3772.00	21.00 Bottom Packers & Anchor

Total Tool Length: 41.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co., Inc.

Darnell-McCellan Farms # 1-21

P.O.Box 372
Hays,Ks.67601

21-9s-21w Graham KS

Job Ticket: 18251

DST#: 1

ATTN: Ron Nelson

Test Start: 2004.01.07 @ 23:20:38

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	37 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	55.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.19 in ³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OGCM-40%O-5%G-55%M	0.140
100.00	Clean Gassy oil10 %G-95%O	1.403
0.00	100 gas in pipe	0.000

Total Length: 110.00 ft Total Volume: 1.543 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

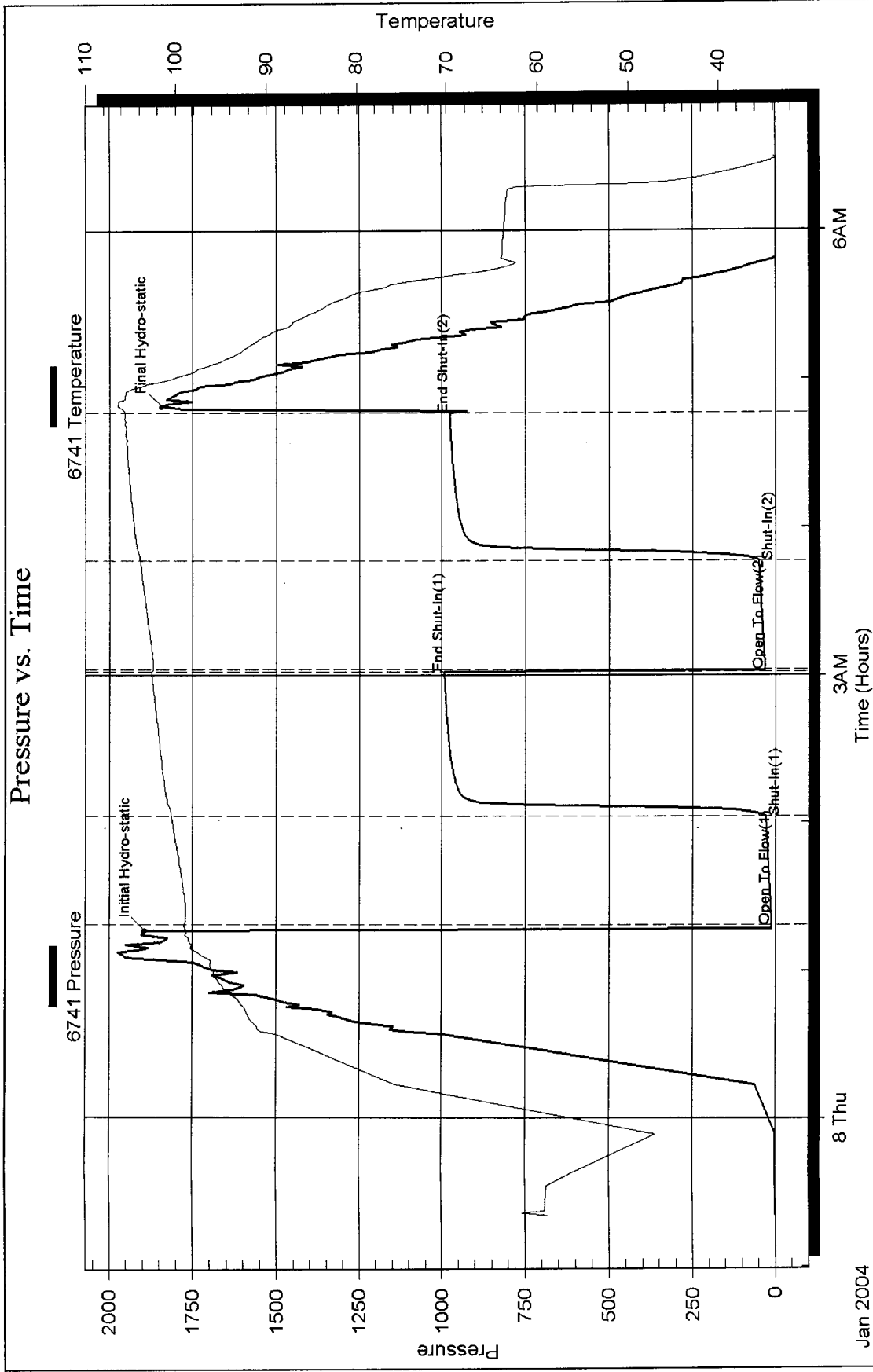
Serial #: 6741

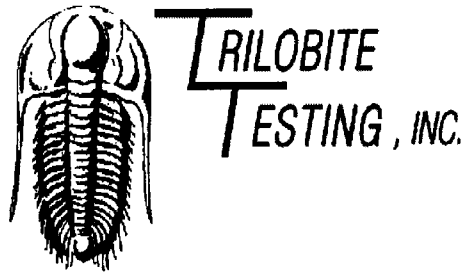
Inside

Dowling-Nelson Oil Co., Inc.

21-9s-21w Graham KS

DST Test Number: 1





DRILL STEM TEST REPORT

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

P.O.Box 372
Hays,Ks.67601

ATTN: Ron Nelson

21-9s-21w Graham KS

Darnell-McCellan Farms # 1-21

Start Date: 2004.01.08 @ 12:23:25

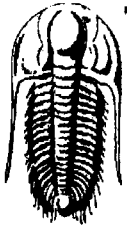
End Date: 2004.01.08 @ 17:37:25

Job Ticket #: 18252 DST #: 2

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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co., Inc.

Darnell-McCellan Farms # 1-21

P.O.Box 372
Hays, Ks. 67601

21-9s-21w Graham KS

Job Ticket: 18252

DST#: 2

ATTN: Ron Nelson

Test Start: 2004.01.08 @ 12:23:25

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:48:55

Time Test Ended: 17:37:25

Test Type: Conventional Bottom Hole

Tester: John Schmidt

Unit No: 18

Interval: **3751.00 ft (KB) To 3776.00 ft (KB) (TVD)**

Total Depth: 3776.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2261.00 ft (KB)

2253.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6741 Inside

Press@RunDepth: 133.39 psig @ 3754.00 ft (KB)

Start Date: 2004.01.08

End Date: 2004.01.08

Start Time: 12:23:27

End Time: 17:37:25

Capacity: 7000.00 psig

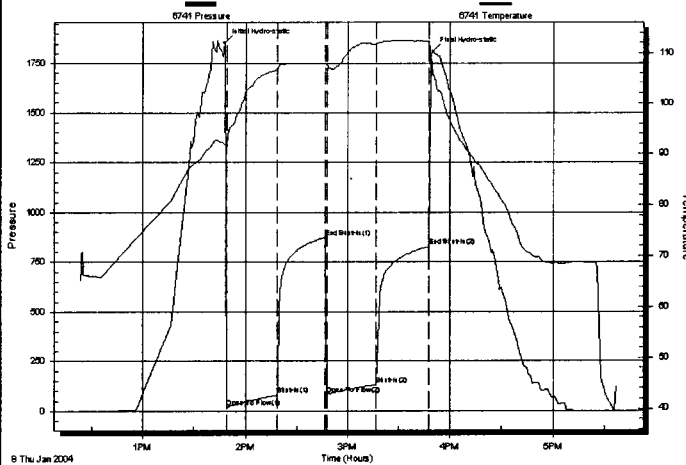
Last Calib.: 2004.01.08

Time On Btm: 2004.01.08 @ 13:47:55

Time Off Btm: 2004.01.08 @ 15:49:55

TEST COMMENT: IF-Strong B.O.B. in 9 min. IS-Blow back built to 1" in
FF-Strong B.O.B. in 12 min. FS-Blow back built to 1" in

Pressure vs. Time



PRESSURE SUMMARY

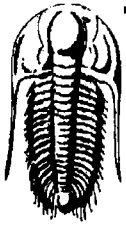
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1855.52	91.80	Initial Hydro-static
1	18.26	91.32	Open To Flow (1)
31	81.27	106.58	Shut-In(1)
59	873.37	107.81	End Shut-In(1)
60	84.33	107.43	Open To Flow (2)
89	133.39	111.79	Shut-In(2)
120	827.32	112.19	End Shut-In(2)
122	1813.34	105.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	GMCO-5%G-40%M-55%O	1.26
250.00	CGO-5%G-95%oil	3.51
0.00	150' 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 Co., Inc.

Darnell-McCellan Farms # 1-21

P.O.Box 372
Hays,Ks.67601

21-9s-21w Graham KS

Job Ticket: 18252

DST#: 2

ATTN: Ron Nelson

Test Start: 2004.01.08 @ 12:23:25

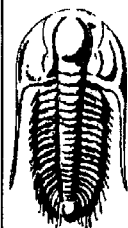
Tool Information

Drill Pipe:	Length: 3738.00 ft	Diameter: 3.80 inches	Volume: 52.43 bbl	Tool Weight: 2100.00 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: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			Total Volume: 52.43 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3751.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between 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
Change Over Sub	1.00			3732.00	
Shut In Tool	5.00			3737.00	
Hydraulic tool	5.00			3742.00	
Packer	4.00			3746.00	20.00 Bottom Of Top Packer
Packer	5.00			3751.00	
Stubb	1.00			3752.00	
Perforations	2.00			3754.00	
Recorder	0.00	6741	Inside	3754.00	
Perforations	19.00			3773.00	
Recorder	0.00	13308	Outside	3773.00	
Bullnose	3.00			3776.00	25.00 Bottom Packers & Anchor

Total Tool Length: 45.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Downing-Nelson Oil Co., Inc.

Darnell-McCellan Farms # 1-21

P.O.Box 372
Hays, Ks. 67601

21-9s-21w Graham KS

Job Ticket: 18252 **DST#: 2**

ATTN: Ron Nelson

Test Start: 2004.01.08 @ 12:23:25

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 29 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.79 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	GMCO-5%G-40%M-55%O	1.262
250.00	CGO-5%G-95%oil	3.507
0.00	150' gas in pipe	0.000

Total Length: 340.00 ft Total Volume: 4.769 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

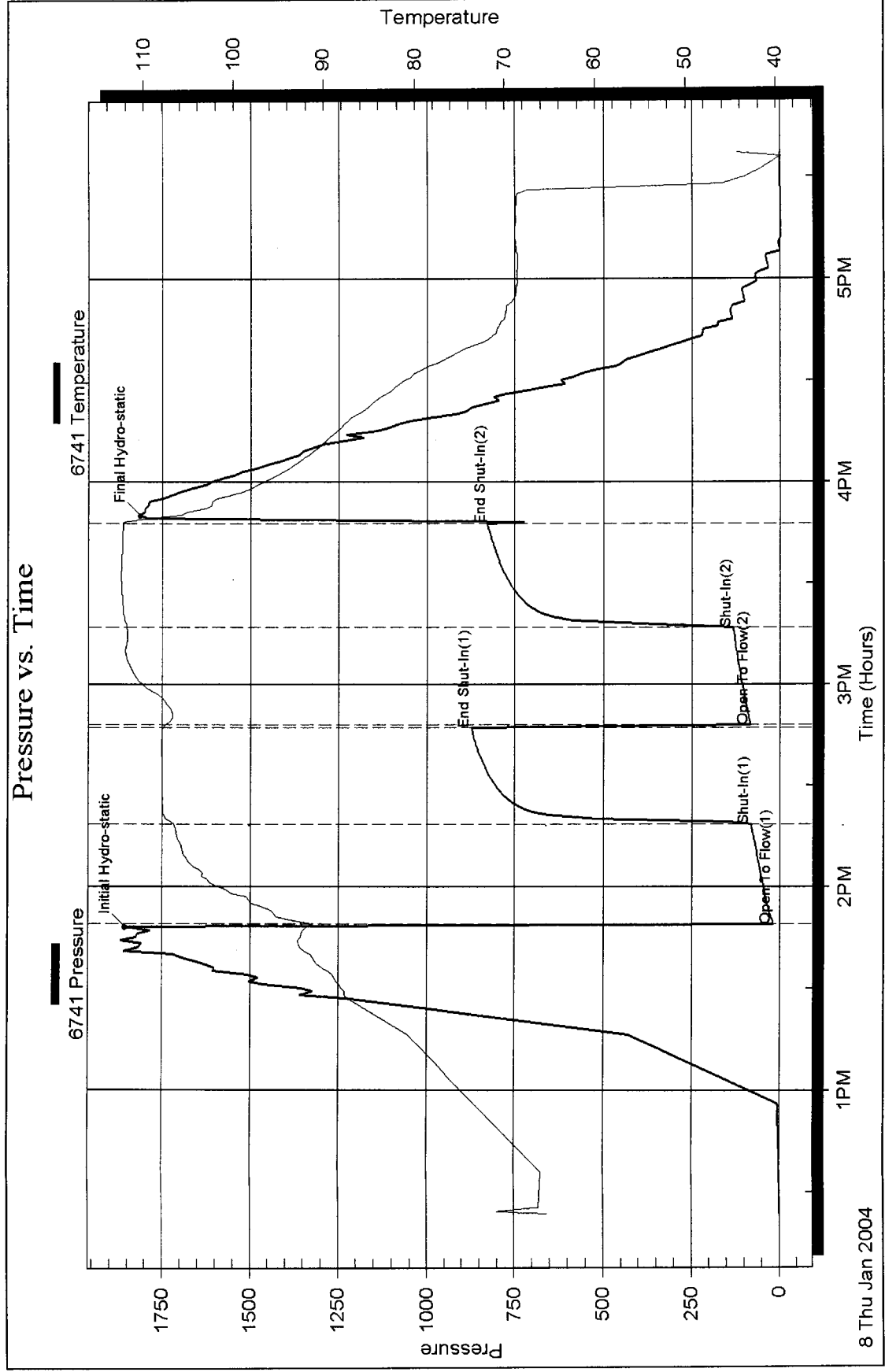
Serial #: 6741

Inside

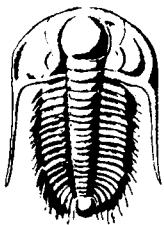
Dowling-Nelson Oil Co., Inc.

21-9s-21w Graham KS

DST Test Number: 2



8 Thu Jan 2004



TRILOBITE TESTING INC.

INV 6/30

P.O. Box 362 • Hays, Kansas 67601

No 18251

05/03

Test Ticket

Well Name & No. DARNELL-McCULLAN FARM #1-21 Test No. #1 Date 1-8-04
 Company DOWNING-NELSON OIL CO., INC. Zone Tested ARBUCKLE
 Address P.O. BOX 372 HAYS, KS, 67601 Elevation 2261 KB 2253 GL
 Co. Rep / Geo. RON NELSON Cont. DISCOVERY #1 Est. Ft. of Pay _____ Por. _____ %
 Location: Sec. 21 Twp. 9S Rge. 21W Co. GRAHAM State KS
 No. of Copies _____ Distribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 3751 TO 3772 Initial Str Wt./Lbs. 47,000 Unseated Str Wt./Lbs. 48,000
 Anchor Length 21' Wt. Set Lbs. 25,000 Wt. Pulled Loose/Lbs. 50,000
 Top Packer Depth 3746' Tool Weight 2,000
 Bottom Packer Depth 3751' Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓
 Total Depth 3772 Wt. Pipe Run 0 Drill Collar Run 0
 Mud Wt. 9.3 LCM 1/4* Vis. 55 WL 7.2 Drill Pipe Size 4 1/2 XH Ft. Run 3738
 Blow Description IF-WEAK TO FAIR 6 1/2" IN FSI-DEAD
FF-WEAK TO FAIR 4" IN FSI-WEAK SURFACE BLOW BACK

Recovery - Total Feet	GIP	Ft. in DC	Ft. in DP
<u>110</u>	<u>100'</u>	<u>0</u>	<u>110'</u>
Rec. <u>10'</u>	Feet of <u>0 GCM</u>	<u>5</u> %gas	<u>40</u> %oil
Rec. <u>100</u>	Feet of <u>CLEAN GASSY OIL</u>	<u>5</u> %gas	<u>95</u> %oil
Rec. _____	Feet of _____	_____ %gas	_____ %oil
Rec. _____	Feet of _____	_____ %gas	_____ %oil
Rec. _____	Feet of _____	_____ %gas	_____ %oil
BHT <u>106</u>	°F Gravity <u>37</u>	°API D @ <u>60</u>	°F Corrected Gravity <u>37</u>
RW <u>-</u>	@ <u>-</u> °F	Chlorides <u>-</u> ppm	Recovery <u>-</u> Chlorides <u>-</u> ppm

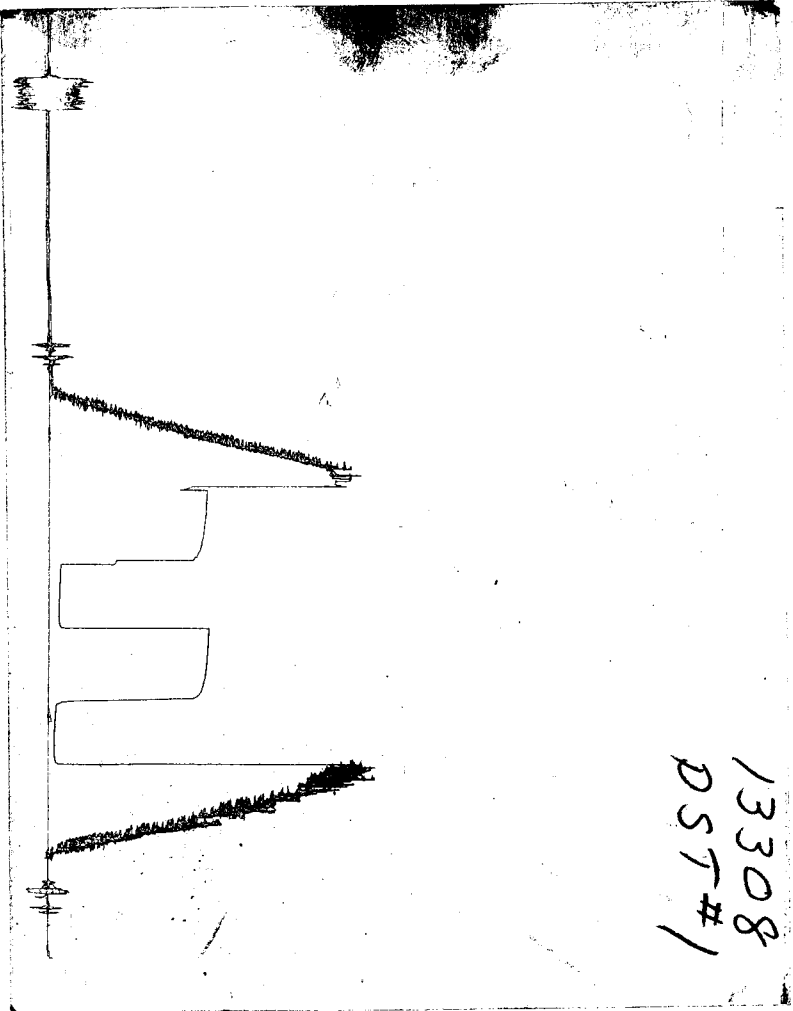
(A) Initial Hydrostatic Mud	AK-1	Alpine	Recorder No.	Test
		<u>1893</u> PSI	<u>6741</u>	<u>B. HOLE 700</u>
(B) First Initial Flow Pressure		<u>10</u> PSI	(depth) <u>3754</u>	Elec. Rec. <u>✓ 150</u>
(C) First Final Flow Pressure		<u>29</u> PSI	Recorder No. <u>13308</u>	Jars _____
(D) Initial Shut-In Pressure		<u>991</u> PSI	(depth) <u>3769</u>	Safety Jt. _____
(E) Second Initial Flow Pressure		<u>30</u> PSI	Recorder No. _____	Circ Sub _____
(F) Second Final Flow Pressure		<u>48</u> PSI	(depth) _____	Sampler _____
(G) Final Shut-In Pressure		<u>975</u> PSI	Initial Opening <u>45</u>	Straddle _____
(Q) Final Hydrostatic Mud		<u>1843</u> PSI	Initial Shut-In <u>60</u>	Ext. Packer _____
			Final Flow <u>45</u>	Shale Packer _____
			Final Shut-In <u>60</u>	Mileage <u>45 76.50</u>
			T-On Location <u>21:15</u>	Sub Total: <u>926.50</u>
			T-Started <u>23:20</u>	Std. By _____
			T-Open <u>01:18</u>	Other _____
			T-Pulled <u>04:48</u>	Total: _____
			T-Out <u>06:30</u>	

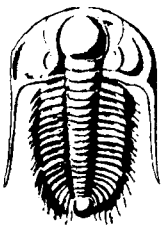
Approved By _____
 Our Representative John J. Schmidt

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.

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 18252

05/03

Test Ticket

Well Name & No. DARNELL-MCELLEN FARMS #1-21 Test No. # 2 Date 1-8-04
 Company DOWNING-NELSON OIL Co., INC. Zone Tested ARBUCKLE
 Address P.O. BOX 372 HAYS, KS, 67601 Elevation 2261 KB 2253 GL
 Co. Rep / Geo. RON NELSON Cont. DISCOVERY #1 Est. Ft. of Pay _____ Por. _____ %
 Location: Sec. 21 Twp. 9S Rge. 21W Co. GRAHAM State KS
 No. of Copies _____ Disbtribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 3751 TO 3776 Initial Str Wt./Lbs. 48,000 Unseated Str Wt/Lbs. 48,000
 Anchor Length 25' Wt. Set Lbs. 25,000 Wt. Pulled Loose/Lbs. 60,000
 Top Packer Depth 3746 Tool Weight 2100
 Bottom Packer Depth 3751 Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓
 Total Depth 3776 Wt. Pipe Run 0 Drill Collar Run 0
 Mud Wt. 9.4 LCM 1/8" Vis. 47 WL 8.8 Drill Pipe Size 4 1/2 XH Ft. Run 3738
 Blow Description IF-STRONG B.O.B. 9-min ISJ-BLOW BACK BUILT 1" IN
FF-STRONG B.O.B. 12-min FSJ-BLOW BACK BUILT 1" IN

Recovery - Total Feet 340' GIP 150' Ft. in DC 0 Ft. in DP _____
 Rec. 90 Feet of GM CO 5 %gas 55 %oil %water 40 %mud
 Rec. 250 Feet of C.G.O. 5 %gas 95 %oil %water _____ %mud
 Rec. _____ Feet of _____ %gas _____ %oil %water _____ %mud
 Rec. _____ Feet of _____ %gas _____ %oil %water _____ %mud
 Rec. _____ Feet of _____ %gas _____ %oil %water _____ %mud
 BHT 112 °F Gravity 29 °API D @ 60 °F Corrected Gravity 29 °API
 RW _____ @ _____ °F Chlorides _____ ppm Recovery _____ Chlorides _____ ppm System

	AK-1	Alpine	Recorder No.	Test
(A) Initial Hydrostatic Mud		<u>1855</u> PSI	<u>6741</u>	<u>B.HOLE</u>
(B) First Initial Flow Pressure		<u>18</u> PSI	(depth) <u>3754</u>	Elec. Rec. <u>✓</u>
(C) First Final Flow Pressure		<u>81</u> PSI	Recorder No. <u>13308</u>	Jars _____
(D) Initial Shut-In Pressure		<u>873</u> PSI	(depth) <u>3773</u>	Safety Jt. _____
(E) Second Initial Flow Pressure		<u>84</u> PSI	Recorder No. _____	Circ Sub _____
(F) Second Final Flow Pressure		<u>133</u> PSI	(depth) _____	Sampler _____
(G) Final Shut-In Pressure		<u>827</u> PSI	Initial Opening <u>30</u>	Straddle _____
(Q) Final Hydrostatic Mud		<u>1813</u> PSI	Initial Shut-In <u>30</u>	Ext. Packer _____
			Final Flow <u>30</u>	Shale Packer _____
			Final Shut-In <u>30</u>	Mileage <u>45</u>

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.

Approved By _____

Our Representative John J. Schmitt

T-On Location

T-Started 12:23
 T-Open 13:48
 T-Pulled 15:49
 T-Out 17:37

Std. By _____
 Other _____
 Total: _____

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart

