Confidentiality Requested:
☐ Yes ☑ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1182976

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 30717
Name: Downing-Nelson Oil Co Inc
Address 1: PO BOX 1019
Address 2:
City: HAYS State: KS Zip: 67601 + ____
Contact Person: Ron Nelson
Phone: (785) 621-2610
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: Marc Downing
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover

☐ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☑ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

01/18/2014	01/23/2014	01/24/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-065-24003-00-00
Spot Description:
S2 - NE - SE - SW Sec. 19 Twp. 9 S. R. 23 ☐ East ☑ West
680 Feet from ☐ North / ☑ South Line of Section
2310 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☐ SE ☑ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Graham
Lease Name: Hildebrand Well #: 4-19
Field Name: Ernst West
Producing Formation: None
Elevation: Ground: 2426 Kelly Bushing: 2434
Total Vertical Depth: 3986 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 215 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 30000 ppm Fluid volume: 320 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

☐ **Confidentiality Requested**
Date:
☐ **Confidential Release Date:**
☐ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ I ☑ II ☐ III **Approved by:** Deanna Garrison **Date:** 02/10/2014

[redacted] 1182976

Operator Name: Downing-Nelson Oil Co Inc Lease Name: Hildebrand Well #: 4-19

Sec. 19 Twp. 9 S. R. 23 ☐ East ☑ West County: Graham

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☐ Yes ☑ No

List All E. Logs Run:

☐ Log Formation (Top), Depth and Datum ☑ Sample

Name	Top	Datum
Top Anhydrite	2065'	+382
Base Anhydrite	2106'	+341
Topeka	3533'	-1086
Heebner	3747'	-1300
Toronto	3770'	-1323
LKC	3787'	-1340

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface Pipe	12.25	8.625	23	215	Common	150	2% Gel & 3% CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ Plug Off Zone	-			
	-			

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☑ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: ☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*

METHOD OF COMPLETION: ☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)* ☐ Other *(Specify)* _____

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Hildebrand #4-19

19-9s-23w Graham,KS

Start Date: 2014.01.22 @ 06:18:00
End Date: 2014.01.22 @ 11:58:00
Job Ticket #: 53575 DST #: 1

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

Printed: 2014.01.24 @ 13:57:55

DRILL STEM TEST REPORT

Downing-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53575 **DST#: 1**

Test Start: 2014.01.22 @ 06:18:00

GENERAL INFORMATION:

Formation: **LKC "C & D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:12:40
Time Test Ended: 11:58:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack /Robert Z
Unit No: 66

Interval: 3804.00 ft (KB) To 3845.00 ft (KB) (TVD)
Total Depth: 3845.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

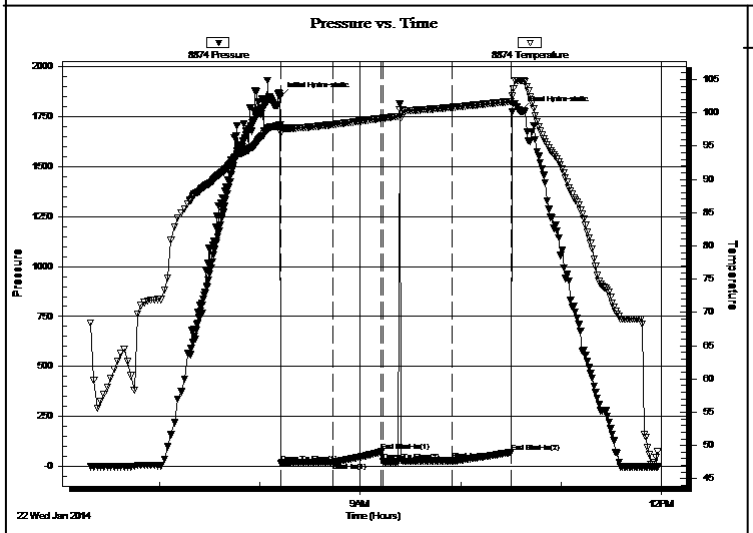
Reference Elevations: 2444.00 ft (KB)
2434.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8874 **Inside**

Press@RunDepth: 27.26 psig @ 3805.00 ft (KB)
Start Date: 2014.01.22 End Date: 2014.01.22
Start Time: 06:19:00 End Time: 11:58:00

Capacity: 8000.00 psig
Last Calib.: 2014.01.22
Time On Btm: 2014.01.22 @ 08:12:30
Time Off Btm: 2014.01.22 @ 10:36:00

TEST COMMENT: 30 - IF - 1/4" blow died in 10 min.
30 -ISI - No Return
30 - FF - No Blow - Flushed tool at 10 min. - No Blow
30 -FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1852.33	98.20	Initial Hydro-static
1	15.37	96.96	Open To Flow (1)
31	20.65	98.24	Shut-In(1)
60	72.60	99.17	End Shut-In(1)
61	22.82	99.19	Open To Flow (2)
103	27.26	100.83	Shut-In(2)
138	70.06	101.72	End Shut-In(2)
144	1778.74	104.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OSM 100M (oil spots)	0.05

Gas Rates

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

DRILL STEM TEST REPORT

Downing-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53575 **DST#: 1**

Test Start: 2014.01.22 @ 06:18:00

GENERAL INFORMATION:

Formation: **LKC "C & D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:12:40
Time Test Ended: 11:58:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack /Robert Z
Unit No: 66

Interval: 3804.00 ft (KB) To 3845.00 ft (KB) (TVD)
Total Depth: 3845.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

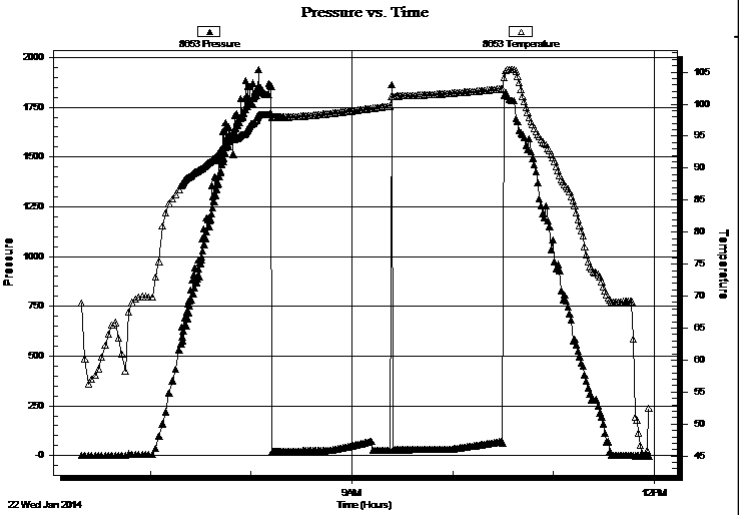
Reference Elevations: 2444.00 ft (KB)
2434.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8653 **Outside**

Press@RunDepth: psig @ 3805.00 ft (KB)
Start Date: 2014.01.22 End Date: 2014.01.22
Start Time: 06:19:00 End Time: 11:57:00

Capacity: 8000.00 psig
Last Calib.: 2014.01.22
Time On Btm:
Time Off Btm:

TEST COMMENT: 30 - IF - 1/4" blow died in 10 min.
30 -ISI - No Return
30 - FF - No Blow - Flushed tool at 10 min. - No Blow
30 -FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OSM 100M (oil spots)	0.05

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53575 **DST#: 1**

Test Start: 2014.01.22 @ 06:18:00

Tool Information

Drill Pipe:	Length:	3790.00 ft	Diameter:	3.80	inches	Volume:	53.16	bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	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:	65000.00 lb
						Total Volume:	53.31	bbl	Tool Chased	ft
Drill Pipe Above KB:		36.00 ft							String Weight: Initial	58000.00 lb
Depth to Top Packer:		3804.00 ft							Final	58000.00 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			3785.00		
Shut In Tool	5.00			3790.00		
Hydraulic tool	5.00			3795.00		
Packer	5.00			3800.00	20.00	Bottom Of Top Packer
Packer	4.00			3804.00		
Stubb	1.00			3805.00		
Recorder	0.00	8653	Outside	3805.00		
Recorder	0.00	8874	Inside	3805.00		
Perforations	2.00			3807.00		
Change Over Sub	1.00			3808.00		
Drill Pipe	31.00			3839.00		
Change Over Sub	1.00			3840.00		
Bullnose	5.00			3845.00	41.00	Bottom Packers & Anchor
Total Tool Length:	**61.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53575 **DST#: 1**

Test Start: 2014.01.22 @ 06:18:00

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:	53.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.58 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2000.00 ppm				
Filter Cake:	2.00 inches				

Recovery Information

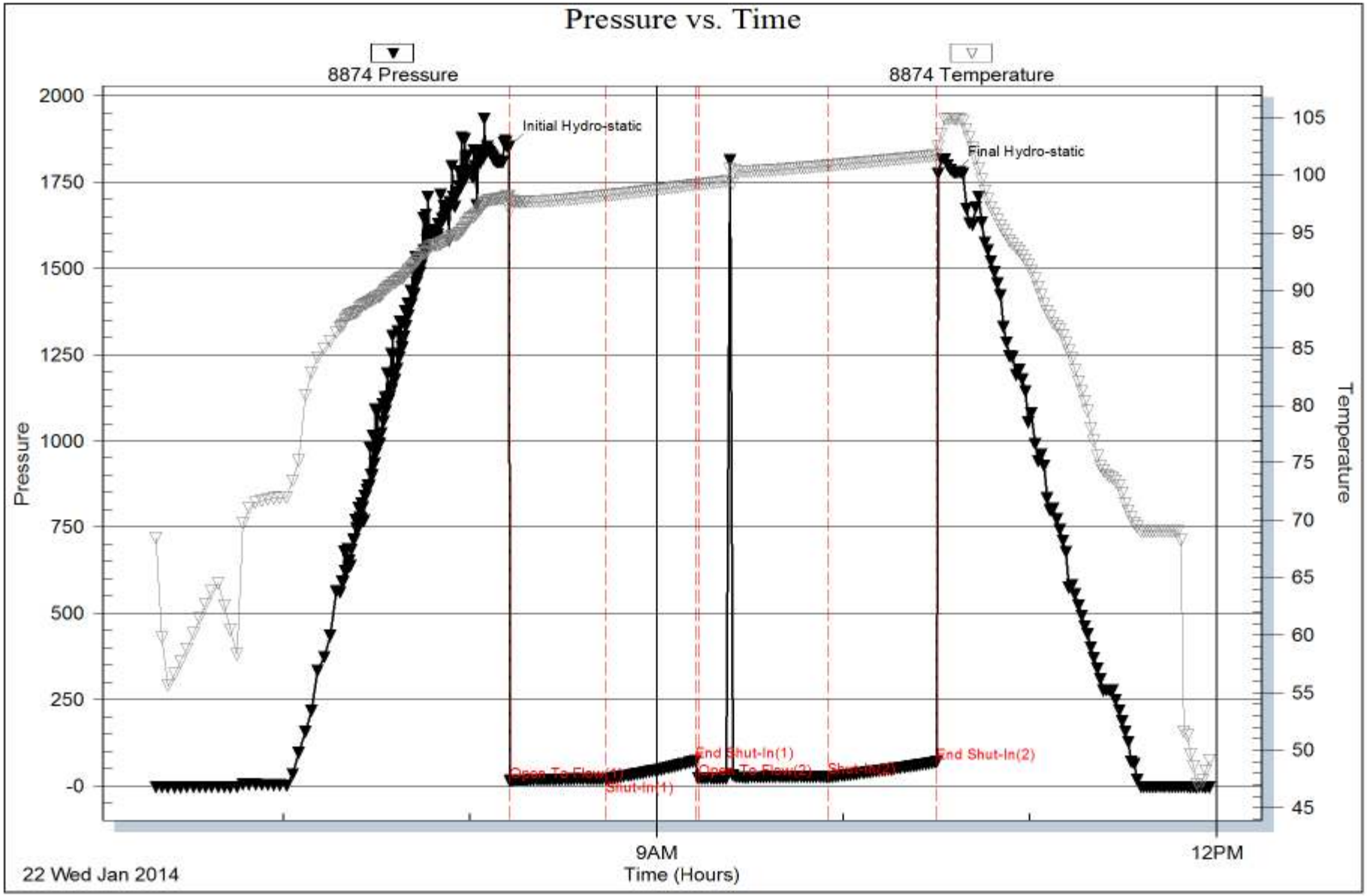
Recovery Table

Length ft	Description	Volume bbl
10.00	OSM 100M (oil spots)	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

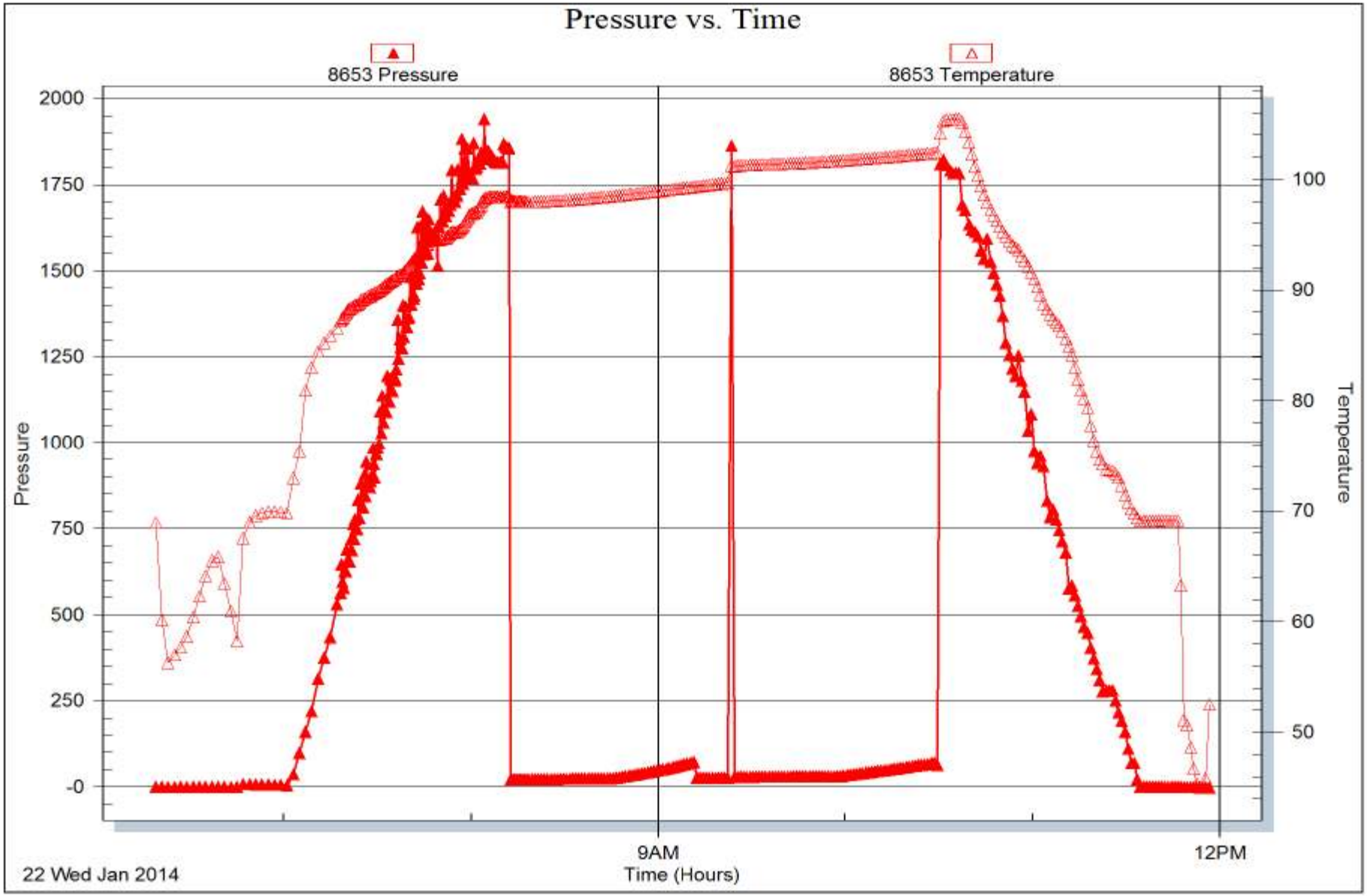
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8874 **Inside** Dow ning-Nelson Oil Co Hildebrand #4-19 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 53575 Printed: 2014.01.24 @ 13:57:57

Serial #: 8653 **Outside** Dow ning-Nelson Oil Co Hildebrand #4-19 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 53575 Printed: 2014.01.24 @ 13:57:57

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Hildebrand #4-19

19-9s-23w Graham,KS

Start Date: 2014.01.22 @ 18:41:00
End Date: 2014.01.23 @ 02:28:30
Job Ticket #: 53376 DST #: 2

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

Printed: 2014.01.24 @ 13:57:29

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53376 **DST#: 2**

Test Start: 2014.01.22 @ 18:41:00

GENERAL INFORMATION:

Formation: **LKC "E & F "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:33:30
Time Test Ended: 02:28:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack /Robert Z
Unit No: 66

Interval: 3841.00 ft (KB) To 3870.00 ft (KB) (TVD)
Total Depth: 3870.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

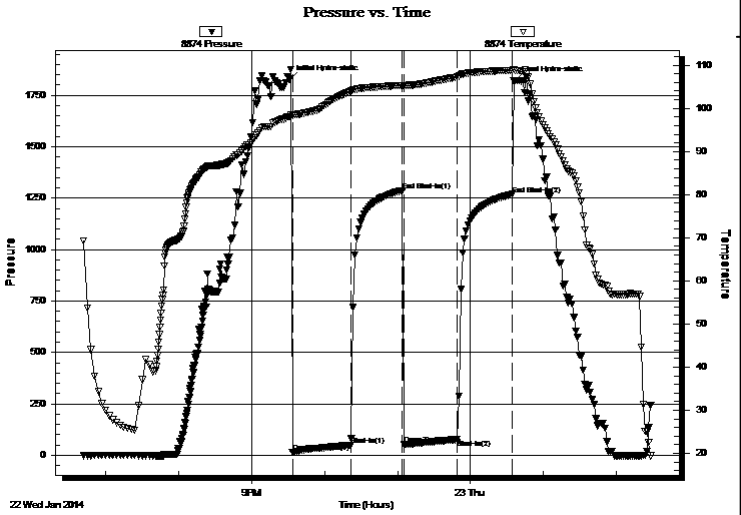
Reference Elevations: 2444.00 ft (KB)
2434.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8874 **Inside**

Press@RunDepth: 76.57 psig @ 3842.00 ft (KB)
Start Date: 2014.01.22 End Date: 2014.01.23
Start Time: 18:42:00 End Time: 02:28:30

Capacity: 8000.00 psig
Last Calib.: 2014.01.23
Time On Btm: 2014.01.22 @ 21:31:30
Time Off Btm: 2014.01.23 @ 00:37:00

TEST COMMENT: 45 - IF- surface blow built to 6 "
45 - ISI- no return
45 - FF- surface blow built to 4 1/4 "
45 - FSI- no return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1828.91	98.15	Initial Hydro-static
2	13.43	98.43	Open To Flow (1)
50	48.79	103.96	Shut-In(1)
93	1287.48	105.32	End Shut-In(1)
94	50.77	105.02	Open To Flow (2)
138	76.57	107.30	Shut-In(2)
183	1268.43	108.84	End Shut-In(2)
186	1821.07	108.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
64.00	MW 10M 90W	0.62
79.00	OSMW 45M 55W (oil spots)	1.11

Gas Rates

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

DRILL STEM TEST REPORT

Downing-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53376 **DST#: 2**

Test Start: 2014.01.22 @ 18:41:00

GENERAL INFORMATION:

Formation: **LKC "E & F "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:33:30
Time Test Ended: 02:28:30

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack /Robert Z
Unit No: 66

Interval: 3841.00 ft (KB) To 3870.00 ft (KB) (TVD)
Total Depth: 3870.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

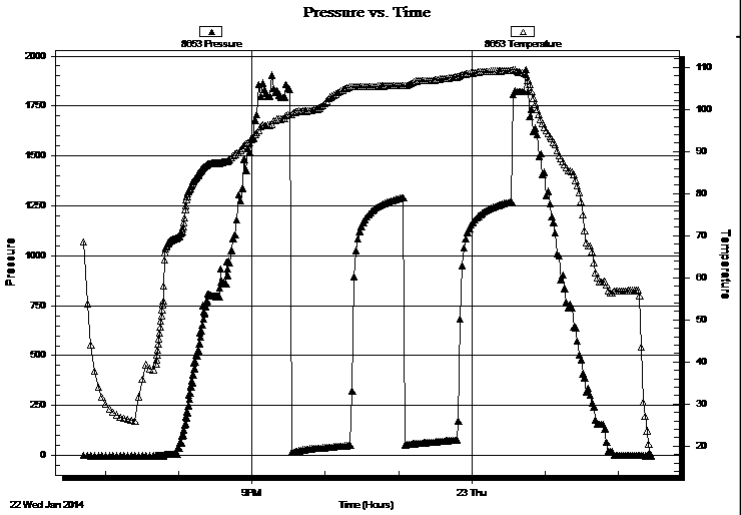
Reference Elevations: 2444.00 ft (KB)
2434.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8653 **Outside**

Press@RunDepth: psig @ 3842.00 ft (KB)
Start Date: 2014.01.22 End Date: 2014.01.23
Start Time: 18:42:00 End Time: 02:27:00

Capacity: 8000.00 psig
Last Calib.: 2014.01.23
Time On Btm:
Time Off Btm:

TEST COMMENT: 45 - IF- surface blow built to 6 "
45 - ISI- no return
45 - FF- surface blow built to 4 1/4 "
45 - FSI- no return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
64.00	MW 10M 90W	0.62
79.00	OSMW 45M 55W (oil spots)	1.11

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53376 **DST#: 2**

Test Start: 2014.01.22 @ 18:41:00

Tool Information

Drill Pipe:	Length:	3823.00 ft	Diameter:	3.80	inches	Volume:	53.63	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	30.00 ft	Diameter:	2.25	inches	Volume:	0.15	bbl	
						Total Volume:	53.78	bbl	

Drill Pipe Above KB:	32.00 ft
Depth to Top Packer:	3841.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	29.00 ft
Tool Length:	49.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2000.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		58000.00 lb
Tool Chased		ft
String Weight:	Initial	50000.00 lb
	Final	56000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3822.00		
Shut In Tool	5.00			3827.00		
Hydraulic tool	5.00			3832.00		
Packer	5.00			3837.00	20.00	Bottom Of Top Packer
Packer	4.00			3841.00		
Stubb	1.00			3842.00		
Recorder	0.00	8653	Outside	3842.00		
Recorder	0.00	8874	Inside	3842.00		
Perforations	23.00			3865.00		
Bullnose	5.00			3870.00	29.00	Bottom Packers & Anchor
Total Tool Length:	**49.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53376 **DST#: 2**

Test Start: 2014.01.22 @ 18:41:00

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:	bbl		
Water Loss:	7.98 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	4000.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
64.00	MW 10M 90W	0.624
79.00	OSMW 45M 55W (oil spots)	1.108

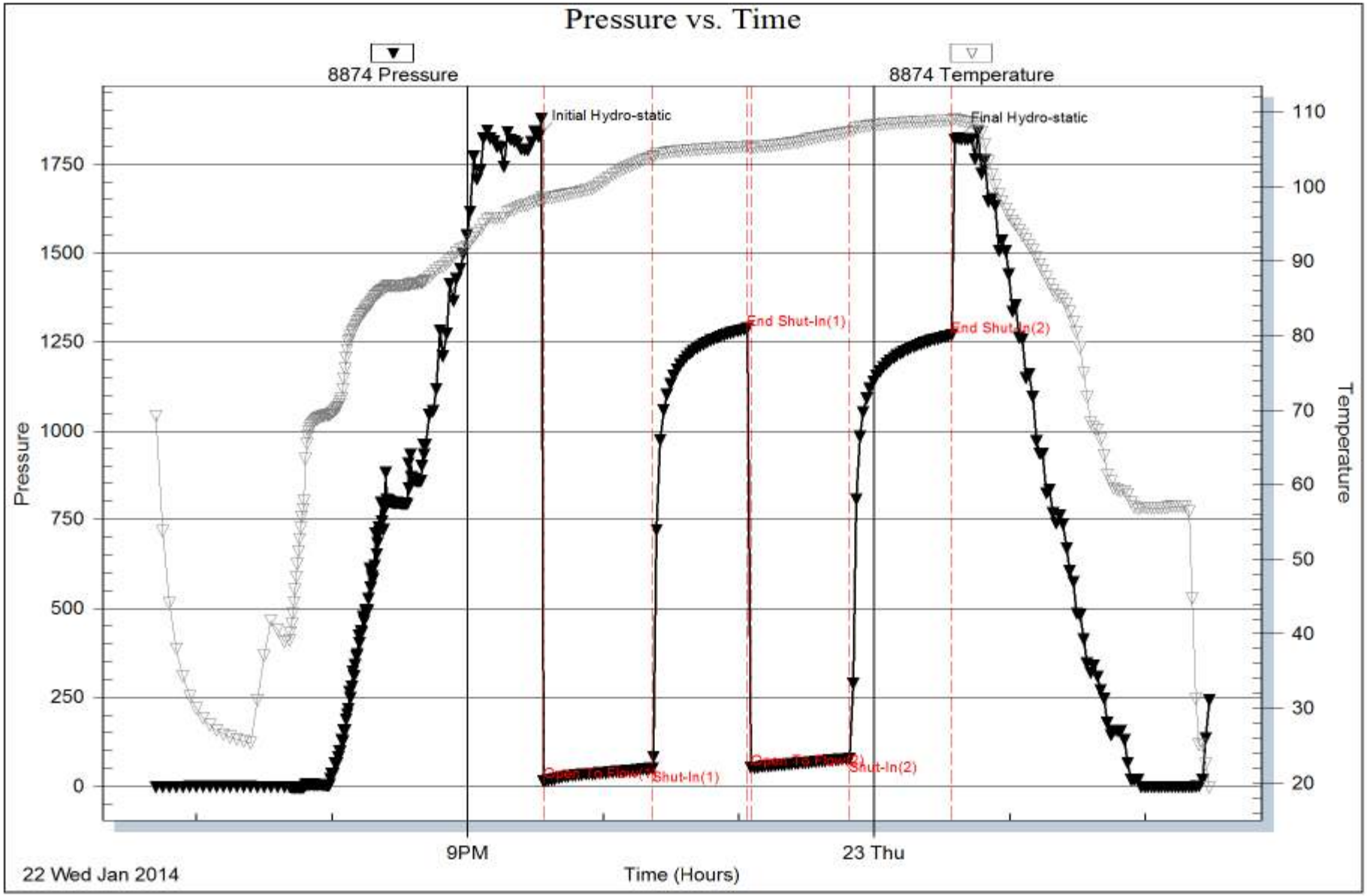
Total Length: 143.00 ft Total Volume: 1.732 bbl

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

Laboratory Name: Laboratory Location:

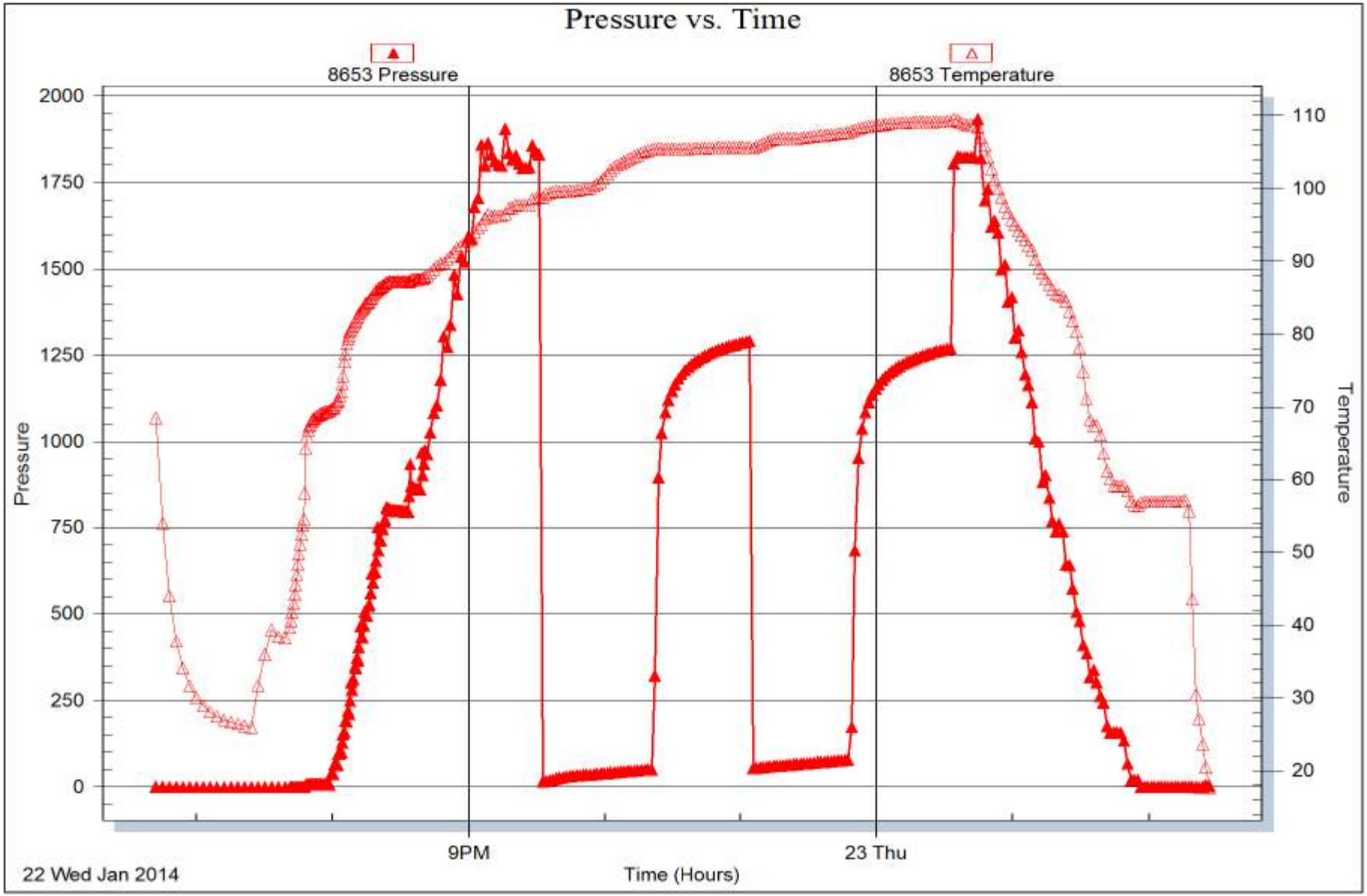
Recovery Comments:

Serial #: 8874 **Inside** Dow ning-Nelson Oil Co Hildebrand #4-19 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 53376 Printed: 2014.01.24 @ 13:57:32

Serial #: 8653 **Outside** Dow ning-Nelson Oil Co Hildebrand #4-19 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 53376 Printed: 2014.01.24 @ 13:57:32

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

Hildebrand #4-19

19-9s-23w Graham,KS

Start Date: 2014.01.23 @ 15:10:00
End Date: 2014.01.23 @ 21:17:00
Job Ticket #: 53377 DST #: 3

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

Printed: 2014.01.24 @ 13:56:43

DRILL STEM TEST REPORT

Downing-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53377 **DST#: 3**

Test Start: 2014.01.23 @ 15:10:00

GENERAL INFORMATION:

Formation: **LKC "I - K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:14:30
Time Test Ended: 21:17:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack /Robert Z
Unit No: 66

Interval: 3926.00 ft (KB) To 3986.00 ft (KB) (TVD)
Total Depth: 3986.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

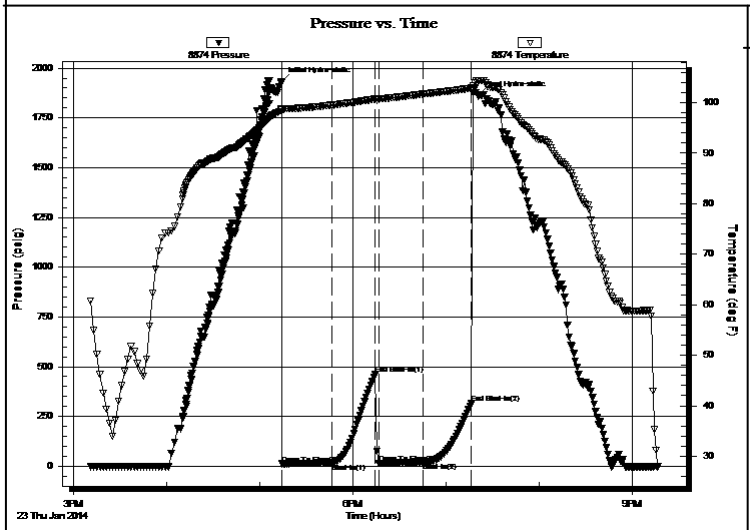
Reference Elevations: 2444.00 ft (KB)
2434.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8874 **Inside**

Press@RunDepth: 17.49 psig @ 3927.00 ft (KB)
Start Date: 2014.01.23 End Date: 2014.01.23
Start Time: 15:11:00 End Time: 21:17:00

Capacity: 8000.00 psig
Last Calib.: 2014.01.23
Time On Btm: 2014.01.23 @ 17:14:00
Time Off Btm: 2014.01.23 @ 19:21:00

TEST COMMENT: 30 - IF - Surface Blow built to 3/4"
30 -ISI- No Return
30 -FF - Surface Blow built to 1/4"
30 -FSI- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1930.19	98.73	Initial Hydro-static
1	12.31	98.50	Open To Flow (1)
33	15.32	99.53	Shut-In(1)
61	461.98	100.73	End Shut-In(1)
63	15.87	100.76	Open To Flow (2)
92	17.49	101.72	Shut-In(2)
123	316.18	102.87	End Shut-In(2)
127	1860.21	104.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud 100M	0.10

Gas Rates

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

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Dow ning

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53377 **DST#: 3**

Test Start: 2014.01.23 @ 15:10:00

GENERAL INFORMATION:

Formation: **LKC "I - K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:14:30
Time Test Ended: 21:17:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack /Robert Z
Unit No: 66

Interval: 3926.00 ft (KB) To 3986.00 ft (KB) (TVD)
Total Depth: 3986.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

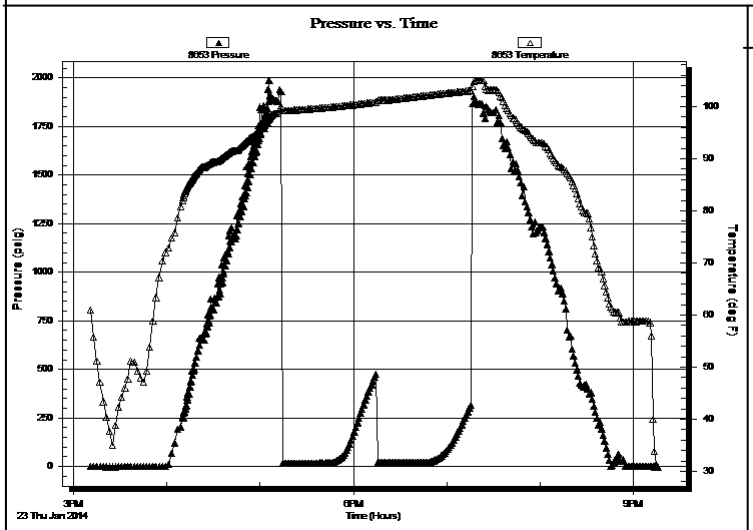
Reference Elevations: 2444.00 ft (KB)
2434.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8653 **Outside**

Press@RunDepth: psig @ 3927.00 ft (KB)
Start Date: 2014.01.23 End Date: 2014.01.23
Start Time: 15:11:00 End Time: 21:16:00

Capacity: 8000.00 psig
Last Calib.: 1899.12.30
Time On Btm:
Time Off Btm:

TEST COMMENT: 30 - IF - Surface Blow built to 3/4"
30 -ISI- No Return
30 -FF - Surface Blow built to 1/4"
30 -FSI- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud 100M	0.10

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Downing-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53377 **DST#: 3**

Test Start: 2014.01.23 @ 15:10:00

Tool Information

Drill Pipe:	Length:	3886.00 ft	Diameter:	3.80	inches	Volume:	54.51	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	30.00 ft	Diameter:	2.25	inches	Volume:	0.15	bbl	
						Total Volume:	54.66	bbl	

Drill Pipe Above KB:	10.00 ft
Depth to Top Packer:	3926.00 ft
Depth to Bottom Packer:	ft
Interval between Packers:	60.00 ft
Tool Length:	80.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:		2000.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		58000.00 lb
Tool Chased		ft
String Weight:	Initial	55000.00 lb
	Final	55000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3907.00		
Shut In Tool	5.00			3912.00		
Hydraulic tool	5.00			3917.00		
Packer	5.00			3922.00	20.00	Bottom Of Top Packer
Packer	4.00			3926.00		
Stubb	1.00			3927.00		
Recorder	0.00	8653	Outside	3927.00		
Recorder	0.00	8874	Inside	3927.00		
Perforations	20.00			3947.00		
Change Over Sub	1.00			3948.00		
Drill Pipe	32.00			3980.00		
Change Over Sub	1.00			3981.00		
Bullnose	5.00			3986.00	60.00	Bottom Packers & Anchor
Total Tool Length:	**80.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Downing-Nelson Oil Co

PO Box 1019
Hays, KS 67601

ATTN: Marc Downing

19-9s-23w Graham,KS

Hildebrand #4-19

Job Ticket: 53377 **DST#: 3**

Test Start: 2014.01.23 @ 15:10:00

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:	ppm
Viscosity:	51.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.38 in³	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	4000.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Mud 100M	0.098

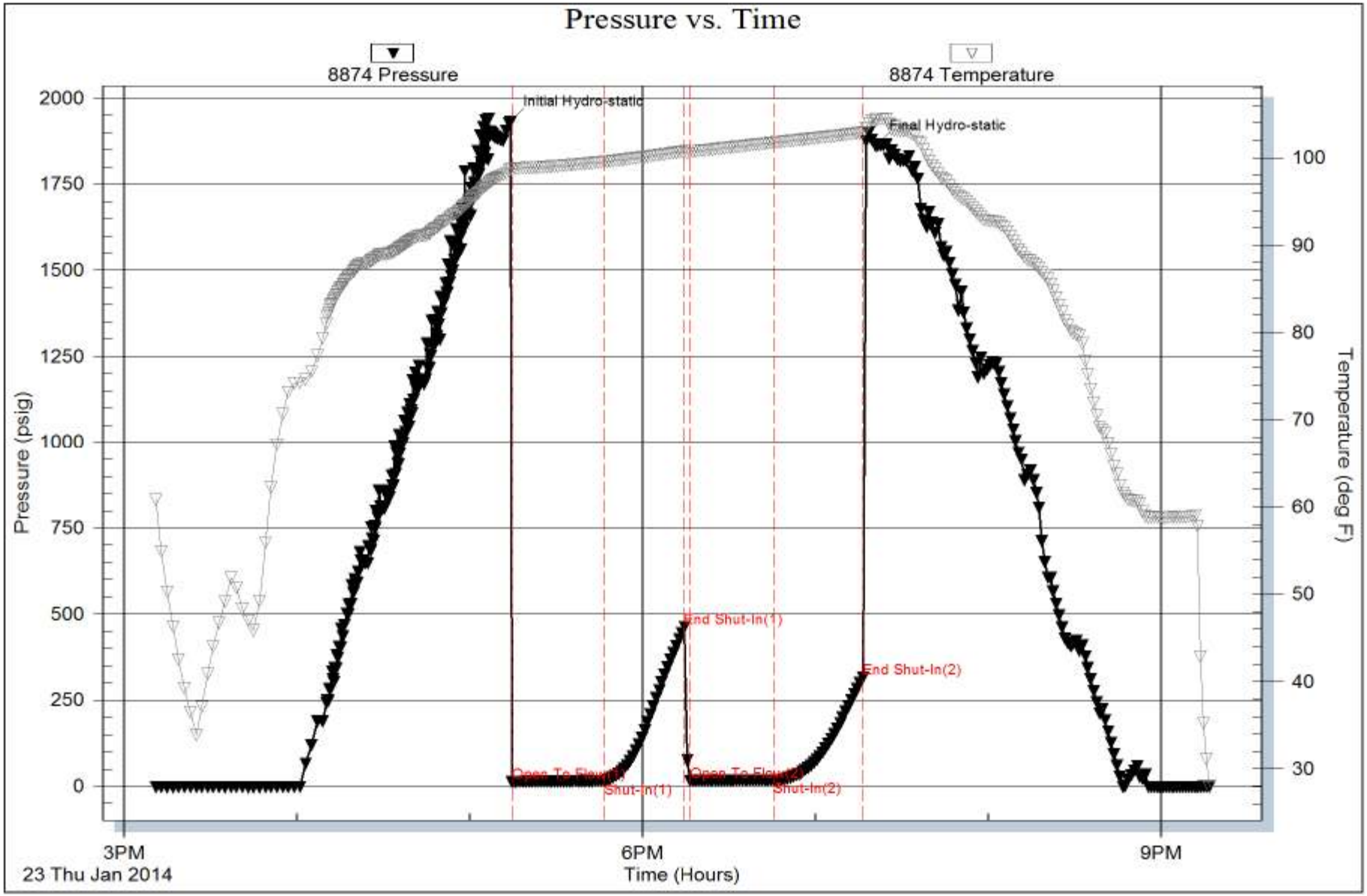
Total Length: 20.00 ft Total Volume: 0.098 bbl

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

Laboratory Name: Laboratory Location:

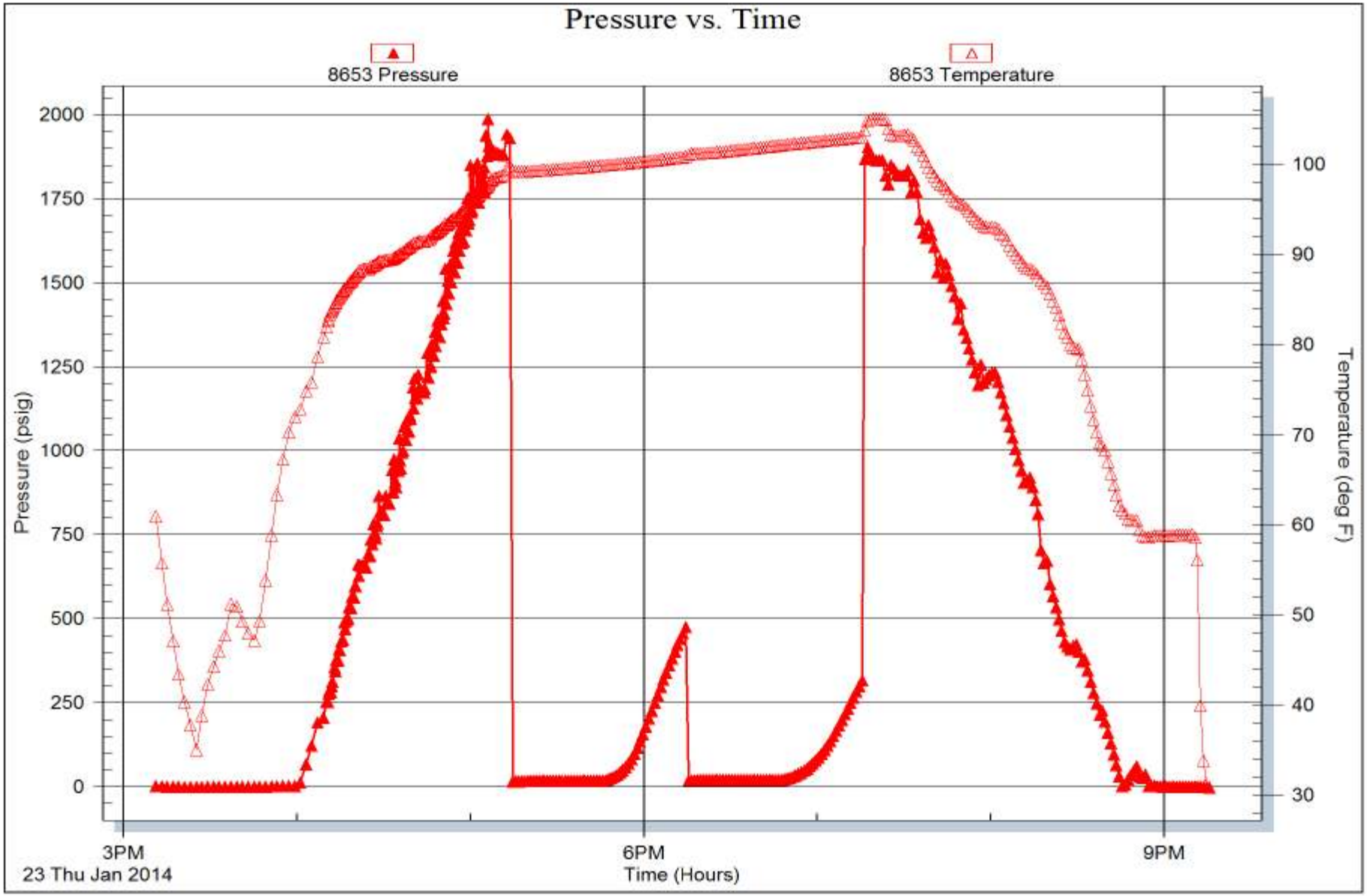
Recovery Comments:

Serial #: 8874 **Inside** Dow ning-Nelson Oil Co Hildebrand #4-19 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 53377 Printed: 2014.01.24 @ 13:56:45

Serial #: 8653 **Outside** Dow ning-Nelson Oil Co Hildebrand #4-19 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 53377 Printed: 2014.01.24 @ 13:56:45

4/10

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53575

Well Name & No. Hildebrand #4-19 Test No. 1 Date 1-22-14

Company Downing-Nelson Oil, Inc Elevation 2484 KB ~~2484~~ 2434 GL

Address P.O. Box 1019 Hays, KS 67601

Co. Rep / Geo. Marc Downing Rig Discovery #1

Location: Sec. 19 Twp. 9S Rge. 23W Co. Graham State K.S.

Interval Tested 3804-3845 Zone Tested LKC "C+D"

Anchor Length 41' Drill Pipe Run 3790 Mud Wt. 8.7

Top Packer Depth 3800 Drill Collars Run 30' Vis 53

Bottom Packer Depth 3804 Wt. Pipe Run 0 WL 7.6

Total Depth 3845 Chlorides 2000 ppm System LCM 2

Blow Description IF- ¼" Died in ten mins.
ISI - no return
FF - no blow Flush Tool @ Ten min No blow
FSI - No return

Rec 10	Feet of 0SM	%gas Spots	%oil	%water 100	%mud
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 10 BHT 102 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1852
(B) First Initial Flow 15
(C) First Final Flow 20
(D) Initial Shut-In 72
(E) Second Initial Flow 22
(F) Second Final Flow 27
(G) Final Shut-In 70
(H) Final Hydrostatic 1778

Initial Open 30
Initial Shut-In 30
Final Flow 30
Final Shut-In 30

- ☑ Test 1150
- ☐ Jars
- ☐ Safety Joint
- ☑ Circ Sub NC
- ☐ Hourly Standby
- ☑ Mileage 172 110rt 170.50
- ☐ Sampler
- ☐ Straddle
- ☐ Shale Packer
- ☐ Extra Packer
- ☐ Extra Recorder
- ☐ Day Standby
- ☐ Accessibility

Sub Total 1320.50

T-On Location 5:30 AM
T-Started 6:18 AM
T-Open 8:13 AM
T-Pulled 10:25 AM
T-Out 1:00 P.M.

Comments

- ☐ Ruined Shale Packer
- ☐ Ruined Packer
- ☐ Extra Copies

Sub Total 0
Total 1320.50
MP/DST Disc't

Approved By Our Representative

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 53376

Well Name & No. Hilde brand # 4-19 Test No. 2 Date 1-22-14

Company Downing-Nelson Oil, Inc Elevation 2444 KB 2434 GL

Address P.O. Box 1019 Hays, KS 67601

Co. Rep / Geo. Marc Downing Rig Discovery #1

Location: Sec. 19 Twp. 9S Rge. 23W Co. Graham State K.S.

Interval Tested 3841 - 3870 Zone Tested LKC "E & F"

Anchor Length 29 Drill Pipe Run 3823 Mud Wt. 9

Top Packer Depth 3837 Drill Collars Run 30 Vis 58

Bottom Packer Depth 3841 Wt. Pipe Run 0 WL 8.0

Total Depth 3870 Chlorides 4000 ppm System LCM 1.5

Blow Description IF - surface blow built to 6"

ISI - no Return

FF - surface blow built to 4 1/4

FSI - no Return

Rec 79	Feet of OSMW	%gas spots	%oil 55	%water 45	%mud	
Rec 64	Feet of MW	%gas	%oil 90	%water 10	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	
Rec	Feet of	%gas	%oil	%water	%mud	

Rec Total 143 BHT 109 Gravity ____ API RW ____ @ ____ °F Chlorides ____ ppm

(A) Initial Hydrostatic 1828

(B) First Initial Flow 13

(C) First Final Flow 48

(D) Initial Shut-In 1287

(E) Second Initial Flow 50

(F) Second Final Flow 76

(G) Final Shut-In 1268

(H) Final Hydrostatic 1821

Initial Open 45

Initial Shut-In 45

Final Flow 45

Final Shut-In 45

- ☑ Test 1150
- ☐ Jars
- ☐ Safety Joint
- ☑ Circ Sub N/C
- ☐ Hourly Standby
- ☑ Mileage 172 170.50
- ☐ Sampler
- ☐ Straddle
- ☐ Shale Packer
- ☐ Extra Packer
- ☐ Extra Recorder
- ☐ Day Standby
- ☐ Accessibility

Sub Total 1320.50

T-On Location 5:45 pm

T-Started 6:41 pm

T-Open 9:35 pm

T-Pulled 12:35 AM

T-Out 2:30 AM

Comments split commission

75% Kevin

25% Robert

- ☐ Ruined Shale Packer
- ☐ Ruined Packer
- ☐ Extra Copies

Sub Total 0

Total 1320.50

MP/DST Disc't

75% 25%

Approved By ____ Our Representative [signature] / Robert Godfrey

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

4/10

Test Ticket

NO. 53377

Well Name & No. Hildebrand # 4-19 Test No. 3 Date 1-23-14

Company Downing - Nelson Oil, Inc Elevation 2444 KB 2434 GL

Address P.O. Box 1019 Hays, KS 67601

Co. Rep / Geo. Marc Downing Rig Discovery #1

Location: Sec. 19 Twp. 9S Rge. 23W Co. Graham State KS

Interval Tested 3926 - 3986 Zone Tested LKC "I-K"

Anchor Length 60 Drill Pipe Run 3886 Mud Wt. 9.1

Top Packer Depth 3922 Drill Collars Run 38 Vis 51

Bottom Packer Depth 3926 Wt. Pipe Run 0 WL 8.4

Total Depth 3986 Chlorides 4000 ppm System LCM 1

Blow Description IF - surface blow built to 3/4"

ISI - no return

FF - surface blow built to 1/4"

FSI - no return

Rec 20	Feet of M	%gas	%oil	%water 100	%mud
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 20 BHT 104 Gravity — API RW — @ — °F Chlorides ppm

(A) Initial Hydrostatic 1930

(B) First Initial Flow 12

(C) First Final Flow 15

(D) Initial Shut-In 461

(E) Second Initial Flow 15

(F) Second Final Flow 17

(G) Final Shut-In 316

(H) Final Hydrostatic 1860

Initial Open 30

Initial Shut-In 30

Final Flow 30

Final Shut-In 30

- [x] Test 1150
- [ ] Jars
- [ ] Safety Joint
- [x] Circ Sub N/C
- [ ] Hourly Standby
- [x] Mileage 172 170.50
- [ ] Sampler
- [ ] Straddle
- [ ] Shale Packer
- [ ] Extra Packer
- [ ] Extra Recorder
- [ ] Day Standby
- [ ] Accessibility

Sub Total 1320.50

T-On Location 1:45 PM

T-Started 3:10 pm

T-Open 5:15 pm

T-Pulled 7:45 pm

T-Out 10:00 PM

Comments Please split ticket 75% Kevin Mack 25% Robert Z

- [ ] Ruined Shale Packer
- [ ] Ruined Packer
- [ ] Extra Copies

Sub Total 0

Total 1320.50

MP/DST Disc't

75% 25%

Approved By Our Representative Robert Zadow

Marc A. Downing Consulting Petroleum Geologist	Geologic Report Drilling Time and Sample Log

Operator **Downing-Nelson Oil Co., Inc.**

Lease **Hildebrand** No. **4-19**

API # **15-065-24003-0000**

Field **Ernst West**

Location **680' FSL & 2310' FWL**

Sec. **19** Twp. **9s** Rge. **23w**

County **Graham** State **Kansas**

Elevation: KB **2447**, DF **2445**, GL **2439**

Casing Record: Surface **8 5/8" @ 215'**, Production **None**

Electrical Surveys: **None**

Formation	Sample tops	Log Tops	Datum	Struct Comp
Top Anhydrite	2065		+382	+7
Base Anhydrite	2106		+341	FL
Topeka	3533		-1086	+5
Heebner	3747		-1300	+3
Toronto	3770		-1323	+6
LKC	3787		-1340	+5
Total Depth	3986		-1539	

Reference Well For Structural Comparison **Zenith Drilling Corp. Dechant "F" #1** SW-SW-SE Sec. 25-14s-19w

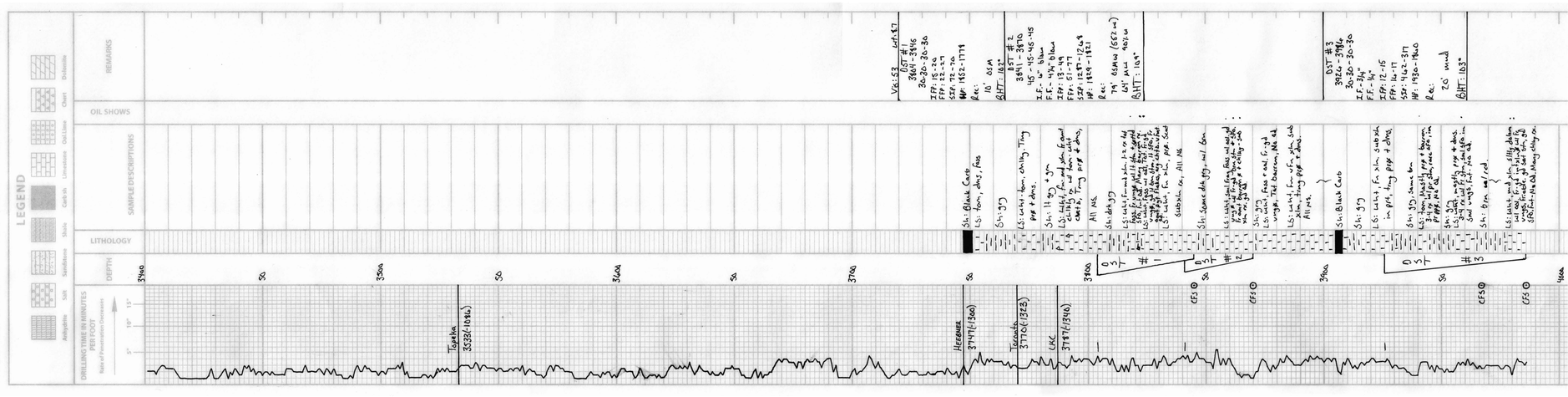
Drilling Contractor	**Discovery Drilling, Rig #1**			
Commenced	**1-18-14**	Completed		**1-23-14**
Samples Saved From	**3750**	To		**RTD**
Drilling Time Kept From	**3400**	To		**RTD**
Samples Examined From	**3750**	To		**RTD**
Geological Supervision From	**3400**	To		**RTD**

Summary and Recommendations

Due to structural position, DST recovery, and sample description, it was decided to plug and abandon the well.

Respectfully Submitted,

Marc A. Downing



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 **Home Office P.O. Box 32 Russell, KS 67665** **No.** 7687

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
1-18-14	19	9	23	Graham	KS		5:30 P.M.

Location Wakeeny N to Redline, 4W, 1¼N, E n2

Lease Hildebrand Well No. 4-19

Contractor Discovery 1

Type Job Surface

Hole Size 12¼ T.D. 215

Csg. 8⅝ Depth 214.90

Tbg. Size Depth

Tool Depth

Cement Left in Csg. Shoe Joint 20

Meas Line Displace 12.66l

EQUIPMENT

	No.		
Pumptrk 17		Cementer / Helper	Nick
Bulktrk 19		Driver / Driver	Lonnie W.
Bulktrk P4		Driver / Driver	Travis

JOB SERVICES & REMARKS

Remarks: Cement did circulate

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Owner

To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To Downing - Nelson

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 150 sx com 3%cc 2%gel

Common	150
Poz. Mix	
Gel.	3
Calcium	5
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	158
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	41
Tax	
Discount	
Total Charge	

X Signature Cliff Mayfield

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7718

Date	Sec.	Twp.	Range	County	State	On Location	Finish
1-24-14	19	9	23	Graham	KS		6:00 A.M.

Location Wakeeney 1/2 E Rd line 4w 1 1/4 N Ent o

Lease Hildebrand	Well No. 4-19	Owner	
Contractor Discovery #1		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Type Job Rotary Plug			
Hole Size 7 7/8	T.D. 3986	Charge To Downing Nelson	
Csg.	Depth	Street	
Tbg. Size	Depth	City	State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	Shoe Joint	Cement Amount Ordered 220 60/40 4% Gel 1/4# Flo	
Meas Line	Displace		

EQUIPMENT

Pumptrk 18	No.	Cementer	Travis
		Helper	Cody
Bulktrk	No.	Driver	
		Driver	
Bulktrk 1	No.	Driver	Doug
		Driver	

JOB SERVICES & REMARKS

Remarks:

Rat Hole 30 SK

Mouse Hole 15 SK

Centralizers

Baskets

D/V or Port Collar

1st 2085 235 SK

2nd 1226 100 SK

3rd 265 40 SK

4th 40' 10 SK

Common	132
Poz. Mix	88
Gel.	8
Calcium	
Hulls	
Salt	
Flowseal	55 #
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	228
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	8 5/8 Rubber Plug
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	plug
Mileage	41
Tax	
Discount	
Total Charge	

X Signature Cliff Mayfield