



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1219434
OIL & GAS CONSERVATION DIVISION

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 # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

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 #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ 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: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

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: _____ Date: _____

1219434

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> 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 <i>(Amount and Kind of Material Used)</i>	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: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	H & C Oil Operating Inc.
Well Name	Newell Unit 23-2
Doc ID	1219434

Tops

Name	Top	Datum
Top Anhydrite	1606	+482
Base Anhydrite	1639	+449
Topeka	3063	-975
Heebner	3275	-1187
Toronto	3297	-1209
LKC	3313	-1225
BKC	3531	-1443
Marmaton	3561	-1473
Arbuckle		-1527



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Newell Unit #23-2

23-8s-21w Graham,KS

Start Date: 2014.07.24 @ 19:35:00

End Date: 2014.07.25 @ 02:41:15

Job Ticket #: 59399 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.07.28 @ 16:24:43



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

ATTN: Marc Downing

Job Ticket: 59399

DST#: 1

Test Start: 2014.07.24 @ 19:35:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:50:15

Time Test Ended: 02:41:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: 3340.00 ft (KB) To 3383.00 ft (KB) (TVD)

Reference Elevations: 2081.00 ft (KB)

Total Depth: 3383.00 ft (KB) (TVD)

2073.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8957 Outside

Press@RunDepth: 250.49 psig @ 3341.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.24

End Date:

2014.07.25

Last Calib.:

2014.07.25

Start Time: 19:35:05

End Time:

02:41:14

Time On Btm:

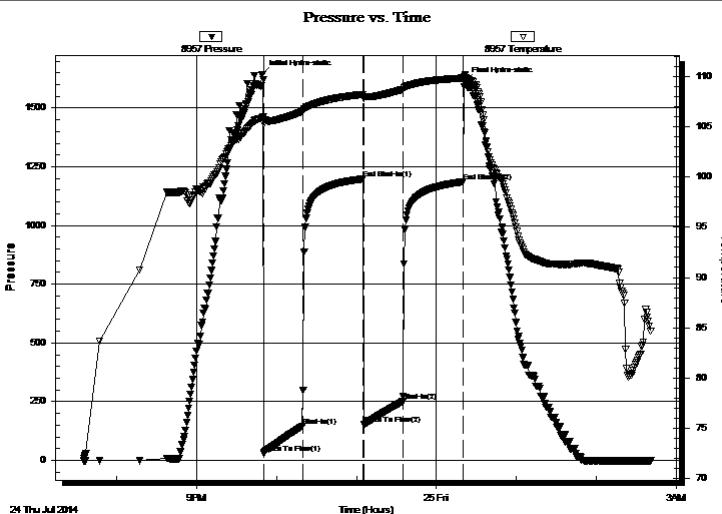
2014.07.24 @ 21:49:15

Time Off Btm:

2014.07.25 @ 00:21:45

TEST COMMENT: IF-BOB in 4 min
IS-2" blow
FF-BOB in 5 1/2 min
FS-1" blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1643.01	105.85	Initial Hydro-static
1	28.71	105.23	Open To Flow (1)
31	145.24	106.49	Shut-In(1)
76	1197.89	108.19	End Shut-In(1)
77	153.86	107.75	Open To Flow (2)
106	250.49	108.68	Shut-In(2)
151	1185.55	109.81	End Shut-In(2)
153	1611.19	110.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
820.00	GO 80%O 20%M	11.23

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 59399

DST#: 1

ATTN: Marc Downing

Test Start: 2014.07.24 @ 19:35:00

Tool Information

Drill Pipe:	Length: 3312.00 ft	Diameter: 3.80 inches	Volume: 46.46 bbl	Tool Weight: 2000.00 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: 50000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3340.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	43.00 ft			
Tool Length:	63.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3325.00	
Hydraulic tool	5.00			3330.00	
Packer	5.00			3335.00	20.00 Bottom Of Top Packer
Packer	5.00			3340.00	
Stubb	1.00			3341.00	
Recorder	0.00	8934	Inside	3341.00	
Recorder	0.00	8957	Outside	3341.00	
Perforations	5.00			3346.00	
Change Over Sub	1.00			3347.00	
Drill Pipe	32.00			3379.00	
Change Over Sub	1.00			3380.00	
Bullnose	3.00			3383.00	43.00 Bottom Packers & Anchor

Total Tool Length: 63.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 59399

DST#: 1

ATTN: Marc Downing

Test Start: 2014.07.24 @ 19:35:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
820.00	GO 80%O 20%M	11.229

Total Length: 820.00 ft Total Volume: 11.229 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

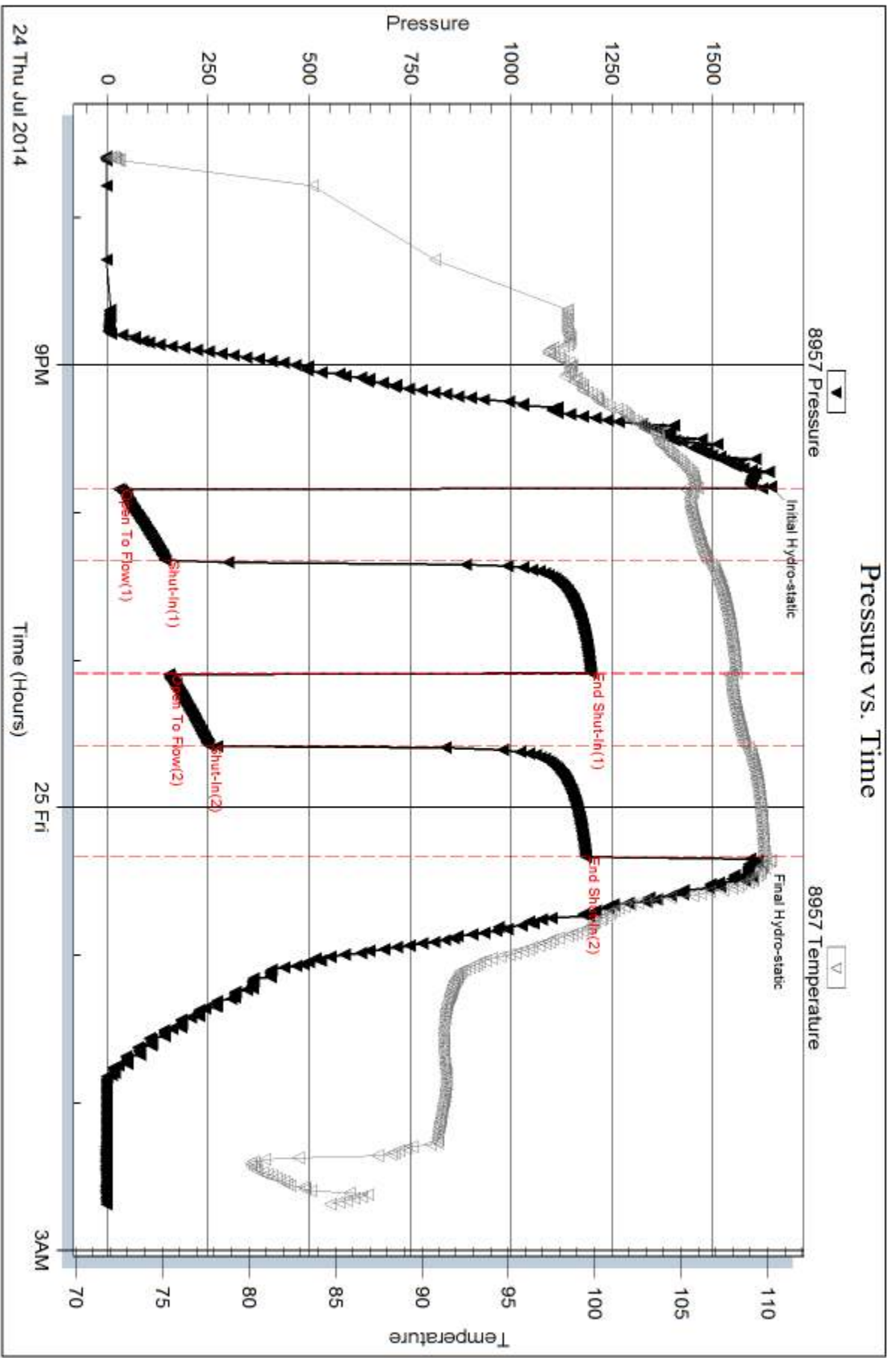
Recovery Comments:

Serial #: 8957

Outside H&C Oil Operating Inc

New Oil Unit #23-2

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 59399

Printed: 2014.07.28 @ 16:24:44

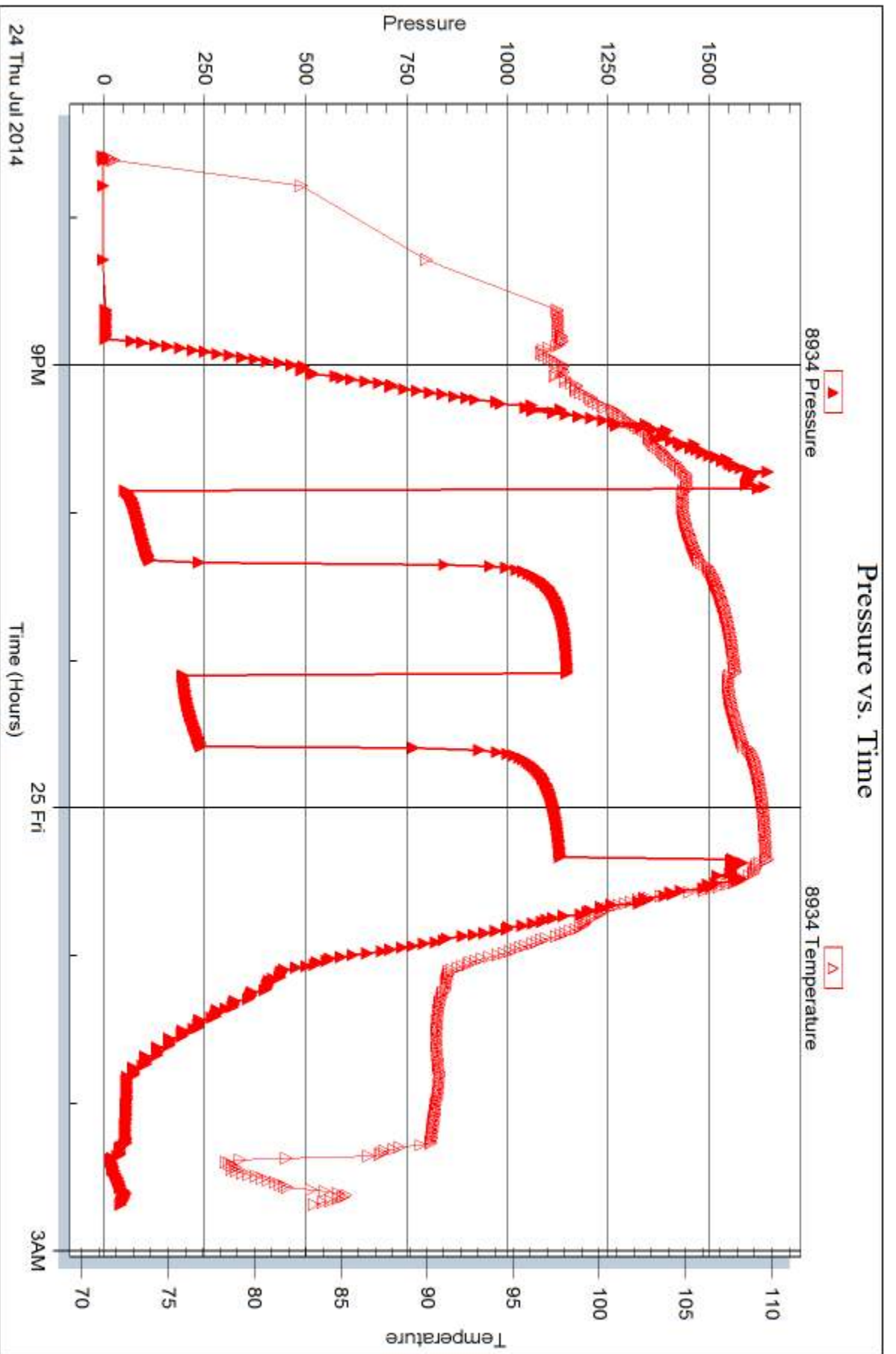
Serial #: 8934

Inside

H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 59399

Printed: 2014.07.28 @ 16:24:44



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Newell Unit #23-2

23-8s-21w Graham,KS

Start Date: 2014.07.25 @ 08:45:00

End Date: 2014.07.25 @ 15:15:15

Job Ticket #: 59400 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.07.28 @ 16:24:10



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

ATTN: Marc Downing

Job Ticket: 59400

DST#: 2

Test Start: 2014.07.25 @ 08:45:00

GENERAL INFORMATION:

Formation: **LKC "E-F"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:21:45
 Time Test Ended: 15:15:15
 Interval: **3381.00 ft (KB) To 3406.00 ft (KB) (TVD)**
 Total Depth: 3406.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2081.00 ft (KB)
 2073.00 ft (CF)
 KB to GR/CF: 8.00 ft

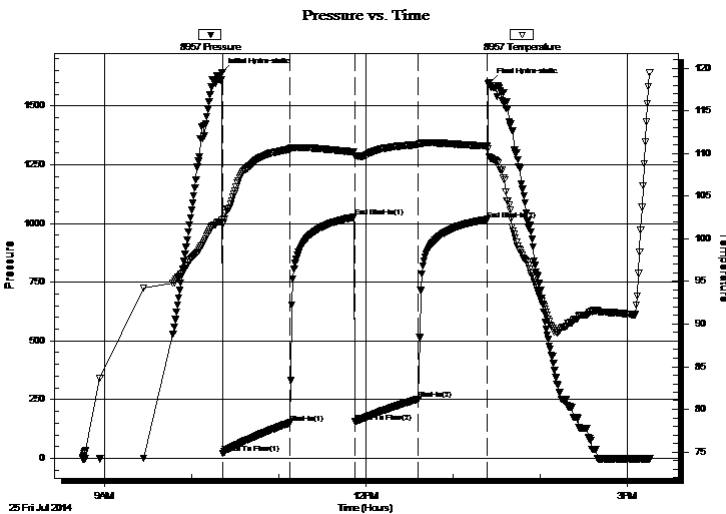
Serial #: 8957

Outside

Press@RunDepth: 252.08 psig @ 3382.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.07.25 End Date: 2014.07.25 Last Calib.: 2014.07.25
 Start Time: 08:45:05 End Time: 15:15:14 Time On Btm: 2014.07.25 @ 10:21:00
 Time Off Btm: 2014.07.25 @ 13:25:00

TEST COMMENT: IF-BOB in 11min
 IS- No blow
 FF-BOB in 4 min
 FS-1/2" blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1642.91	102.22	Initial Hydro-static
1	20.63	101.81	Open To Flow (1)
47	151.13	110.53	Shut-In(1)
91	1026.74	110.16	End Shut-In(1)
92	155.19	109.75	Open To Flow (2)
135	252.08	111.02	Shut-In(2)
183	1016.92	110.85	End Shut-In(2)
184	1598.86	109.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
635.00	Water	8.63
120.00	VSOMCW 2%O 10%M 88%W	1.68
70.00	GO 15%G 85%O	0.98

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 59400

DST#: 2

ATTN: Marc Downing

Test Start: 2014.07.25 @ 08:45:00

Tool Information

Drill Pipe:	Length: 3339.00 ft	Diameter: 3.80 inches	Volume: 46.84 bbl	Tool Weight:	2000.00 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:	45000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	42000.00 lb
Drill Pipe Above KB:	8.00 ft			Final	44000.00 lb
Depth to Top Packer:	3381.00 ft				
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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3366.00	
Hydraulic tool	5.00			3371.00	
Packer	5.00			3376.00	20.00 Bottom Of Top Packer
Packer	5.00			3381.00	
Stubb	1.00			3382.00	
Recorder	0.00	8934	Inside	3382.00	
Recorder	0.00	8957	Outside	3382.00	
Perforations	21.00			3403.00	
Bullnose	3.00			3406.00	25.00 Bottom Packers & Anchor
Total Tool Length:	45.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 59400

DST#: 2

ATTN: Marc Downing

Test Start: 2014.07.25 @ 08:45:00

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:

80000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
635.00	Water	8.634
120.00	VSOMCW 2%O 10%M 88%W	1.683
70.00	GO 15%G 85%O	0.982

Total Length: 825.00 ft Total Volume: 11.299 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

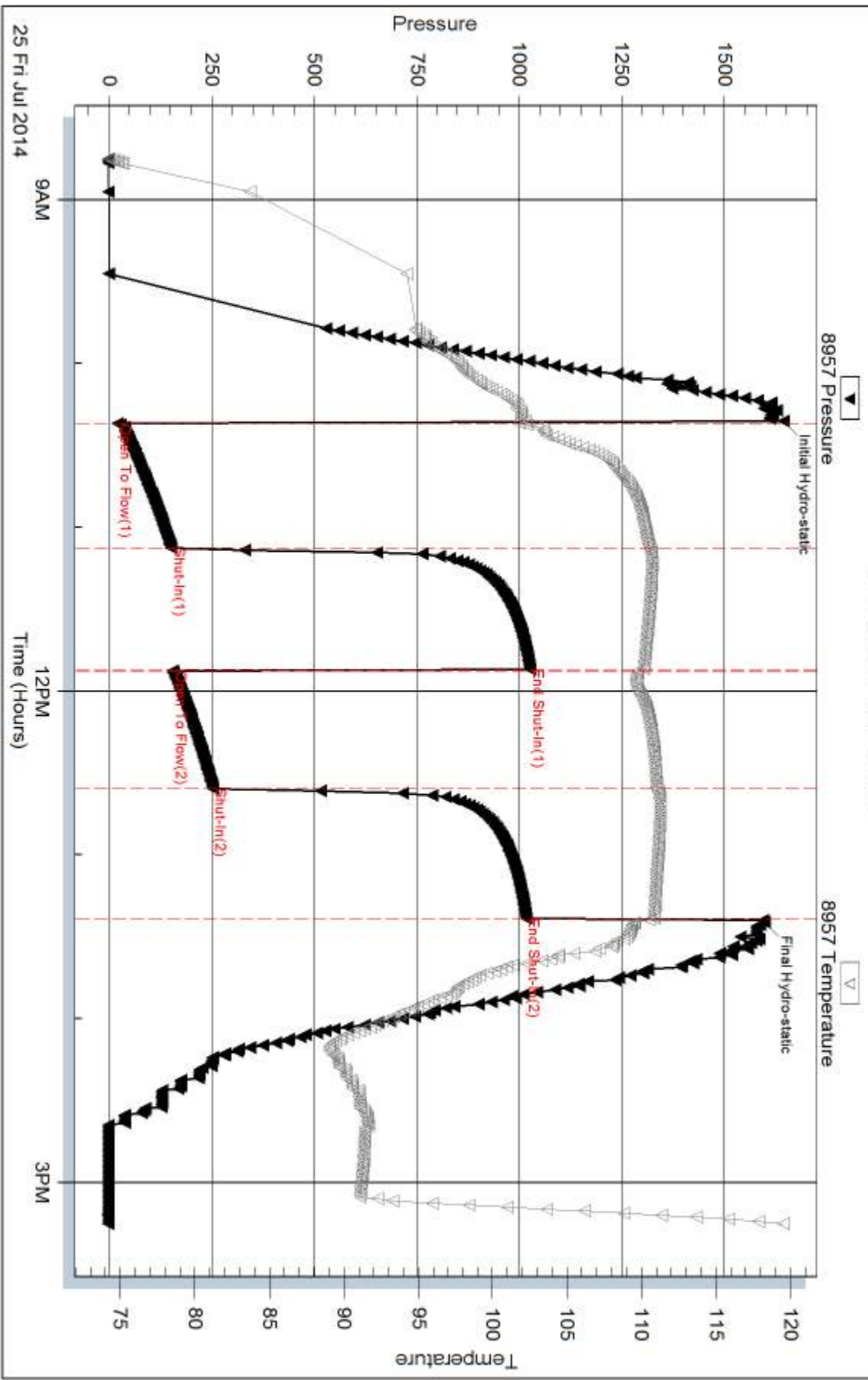
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



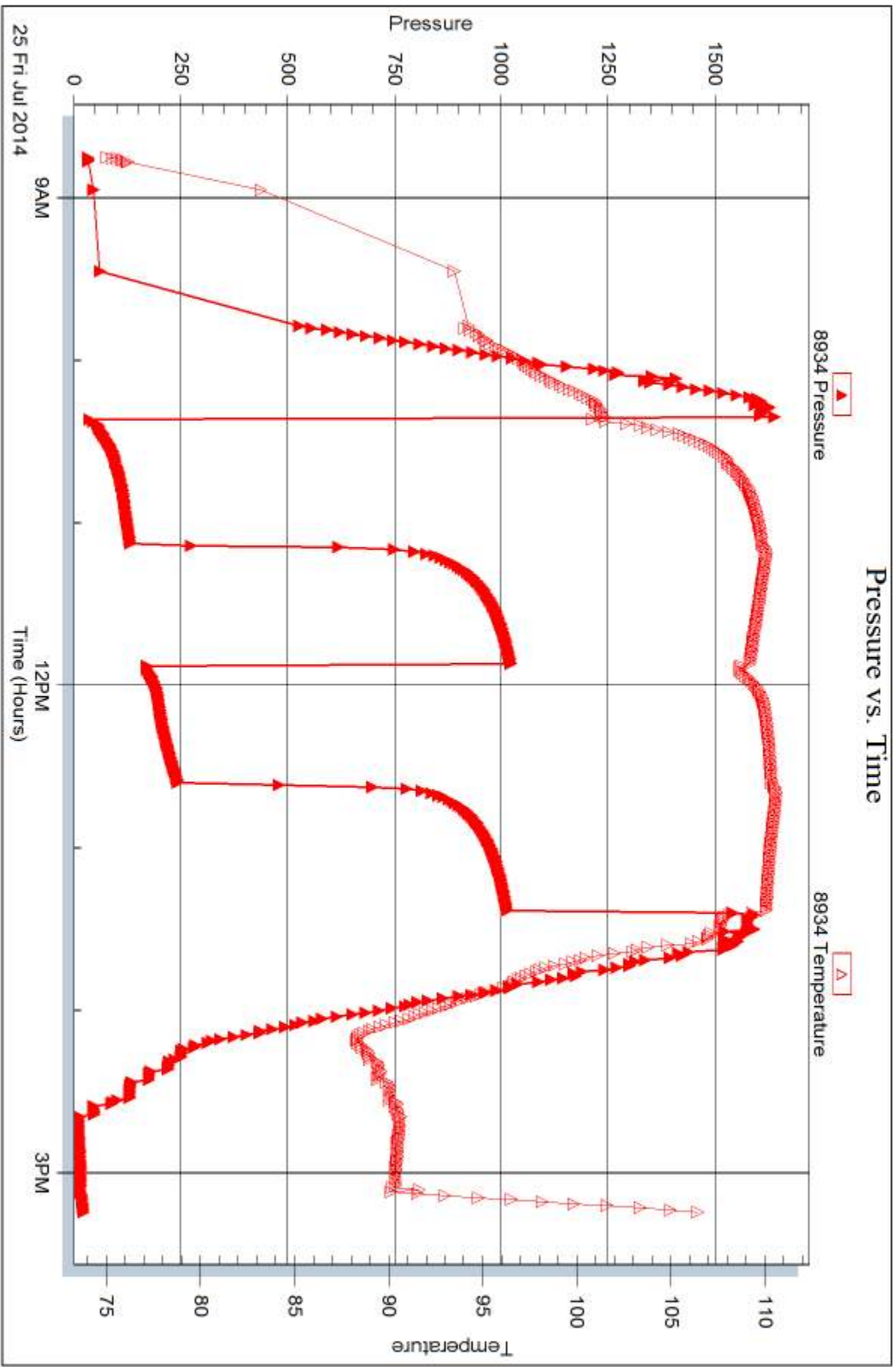
Serial #: 8934

Inside

H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 59400

Printed: 2014.07.28 @ 16:24:13



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Newell Unit #23-2

23-8s-21w Graham,KS

Start Date: 2014.07.26 @ 02:10:00

End Date: 2014.07.26 @ 09:20:30

Job Ticket #: 53951 DST #: 3

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

Printed: 2014.07.28 @ 16:23:46



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

ATTN: Marc Downing

Job Ticket: 53951

DST#: 3

Test Start: 2014.07.26 @ 02:10:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:16:15

Time Test Ended: 09:20:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3434.00 ft (KB) To 3497.00 ft (KB) (TVD)

Reference Elevations: 2081.00 ft (KB)

Total Depth: 3497.00 ft (KB) (TVD)

2073.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8957 Outside

Press@RunDepth: 71.08 psig @ 3435.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.26

End Date: 2014.07.26

Last Calib.: 2014.07.26

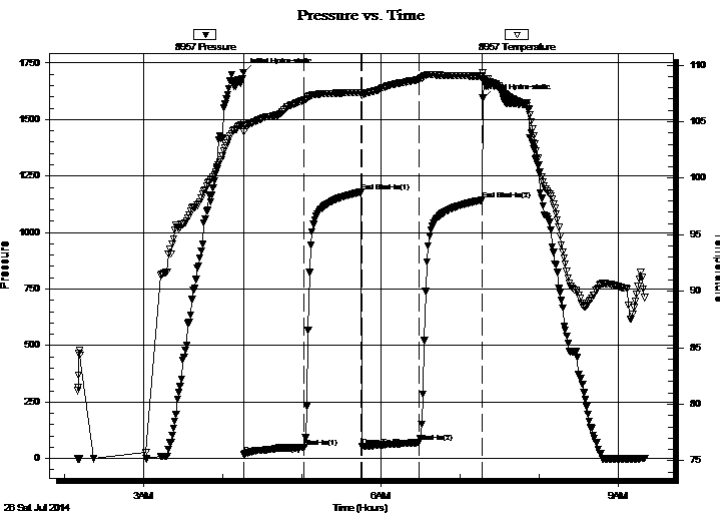
Start Time: 02:10:05

End Time: 09:20:29

Time On Btm: 2014.07.26 @ 04:15:45

Time Off Btm: 2014.07.26 @ 07:17:00

TEST COMMENT: IF-3 1/4" blow
ISI_No blow
FF-2" blow
FSI-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1708.52	104.89	Initial Hydro-static
1	18.81	104.13	Open To Flow (1)
46	49.44	106.91	Shut-In(1)
89	1178.27	107.57	End Shut-In(1)
90	55.18	107.31	Open To Flow (2)
134	71.08	108.77	Shut-In(2)
181	1143.85	109.03	End Shut-In(2)
182	1594.34	109.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
115.00	VSOCM 2%O 98%M	1.34

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

ATTN: Marc Downing

Job Ticket: 53951

DST#: 3

Test Start: 2014.07.26 @ 02:10:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:16:15

Time Test Ended: 09:20:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3434.00 ft (KB) To 3497.00 ft (KB) (TVD)

Reference Elevations: 2081.00 ft (KB)

Total Depth: 3497.00 ft (KB) (TVD)

2073.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934 Inside

Press@RunDepth: psig @ 3435.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.26

End Date: 2014.07.26

Last Calib.: 2014.07.26

Start Time: 02:10:05

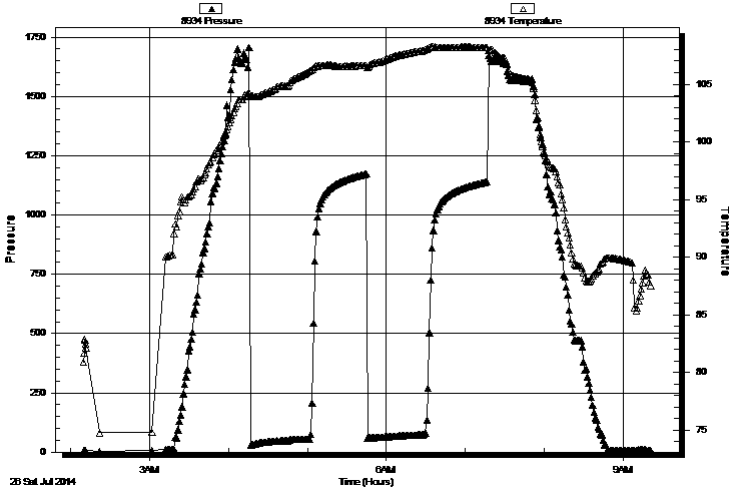
End Time: 09:20:44

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-3 1/4" blow
ISI_No blow
FF-2" blow
FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
115.00	VSOCM 2%O 98%M	1.34

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53951

DST#: 3

ATTN: Marc Downing

Test Start: 2014.07.26 @ 02:10:00

Tool Information

Drill Pipe:	Length: 3402.00 ft	Diameter: 3.80 inches	Volume: 47.72 bbl	Tool Weight: 2000.00 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: 45000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 43000.00 lb
Depth to Top Packer:	3434.00 ft			Final 43000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	63.00 ft			
Tool Length:	83.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			3419.00	
Hydraulic tool	5.00			3424.00	
Packer	5.00			3429.00	20.00 Bottom Of Top Packer
Packer	5.00			3434.00	
Stubb	1.00			3435.00	
Recorder	0.00	8934	Inside	3435.00	
Recorder	0.00	8957	Outside	3435.00	
Perforations	25.00			3460.00	
Change Over Sub	1.00			3461.00	
Drill Pipe	32.00			3493.00	
Change Over Sub	1.00			3494.00	
Bullnose	3.00			3497.00	63.00 Bottom Packers & Anchor

Total Tool Length: 83.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53951

DST#: 3

ATTN: Marc Downing

Test Start: 2014.07.26 @ 02:10:00

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: 55.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
115.00	VSOCM 2%O 98%M	1.340

Total Length: 115.00 ft Total Volume: 1.340 bbl

Num Fluid Samples: 0

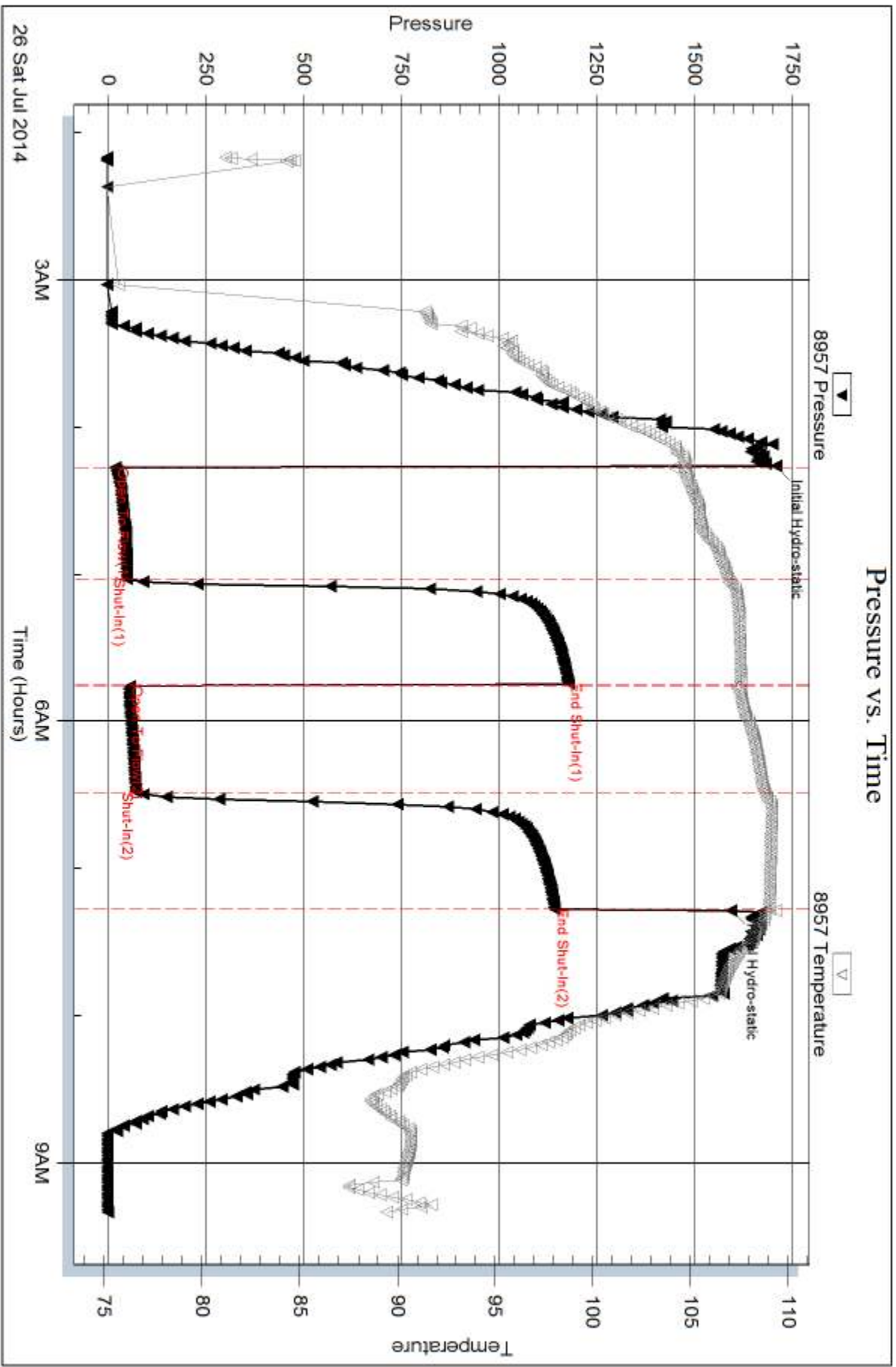
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



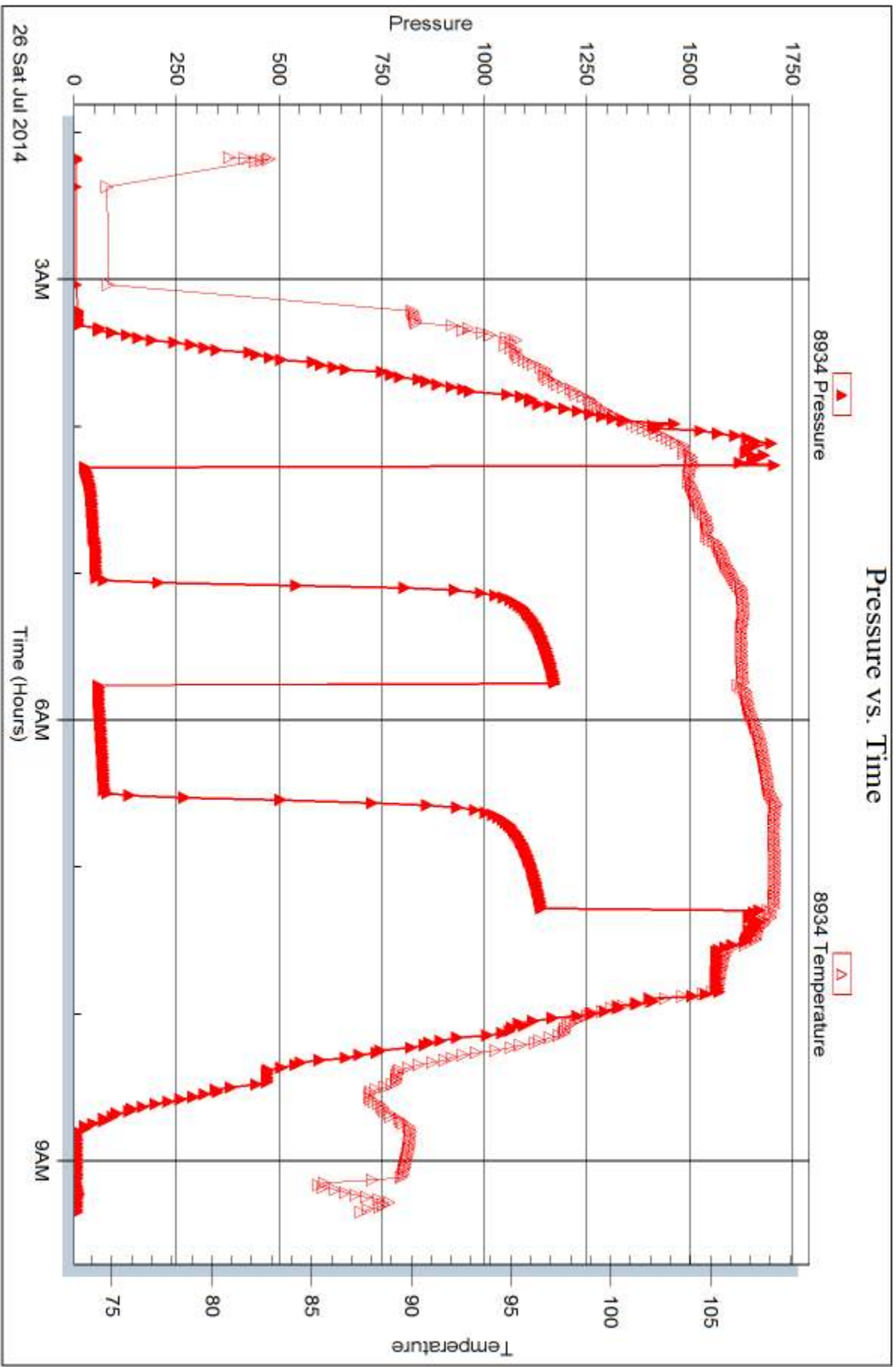
Serial #: 8934

Inside

H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Newell Unit #23-2

23-8s-21w Graham,KS

Start Date: 2014.07.26 @ 14:55:00

End Date: 2014.07.26 @ 20:06:30

Job Ticket #: 53952 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.07.28 @ 16:23:21



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

ATTN: Marc Downing

Job Ticket: 53952

DST#: 4

Test Start: 2014.07.26 @ 14:55:00

GENERAL INFORMATION:

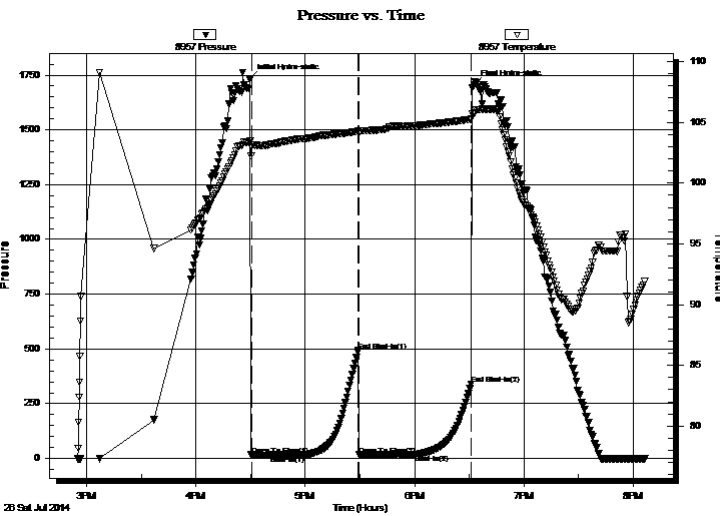
Formation: **LKC "K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:30:30
 Time Test Ended: 20:06:30
 Interval: **3494.00 ft (KB) To 3515.00 ft (KB) (TVD)**
 Total Depth: 3515.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2081.00 ft (KB)
 2073.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 8957

Outside

Press@RunDepth: 16.68 psig @ 3495.00 ft (KB)
 Start Date: 2014.07.26 End Date: 2014.07.26
 Start Time: 14:55:05 End Time: 20:06:29
 Capacity: 8000.00 psig
 Last Calib.: 2014.07.26
 Time On Btm: 2014.07.26 @ 16:29:45
 Time Off Btm: 2014.07.26 @ 18:32:30

TEST COMMENT: IF-Weak surface blow died in 17 min
 IS-No blow
 FF-No blow
 FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1732.80	103.51	Initial Hydro-static
1	15.01	102.98	Open To Flow (1)
30	15.40	103.65	Shut-In(1)
60	491.70	104.27	End Shut-In(1)
60	16.34	104.11	Open To Flow (2)
91	16.68	104.72	Shut-In(2)
122	339.40	105.27	End Shut-In(2)
123	1704.58	105.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OS Mud	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53952

DST#: 4

ATTN: Marc Downing

Test Start: 2014.07.26 @ 14:55:00

Tool Information

Drill Pipe:	Length: 3472.00 ft	Diameter: 3.80 inches	Volume: 48.70 bbl	Tool Weight:	2000.00 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:	60000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	43000.00 lb
Depth to Top Packer:	3494.00 ft			Final	43000.00 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
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			3479.00	
Hydraulic tool	5.00			3484.00	
Packer	5.00			3489.00	20.00 Bottom Of Top Packer
Packer	5.00			3494.00	
Stubb	1.00			3495.00	
Recorder	0.00	8934	Inside	3495.00	
Recorder	0.00	8957	Outside	3495.00	
Perforations	17.00			3512.00	
Bullnose	3.00			3515.00	21.00 Bottom Packers & Anchor
Total Tool Length:	41.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53952

DST#: 4

ATTN: Marc Downing

Test Start: 2014.07.26 @ 14:55:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OS Mud	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

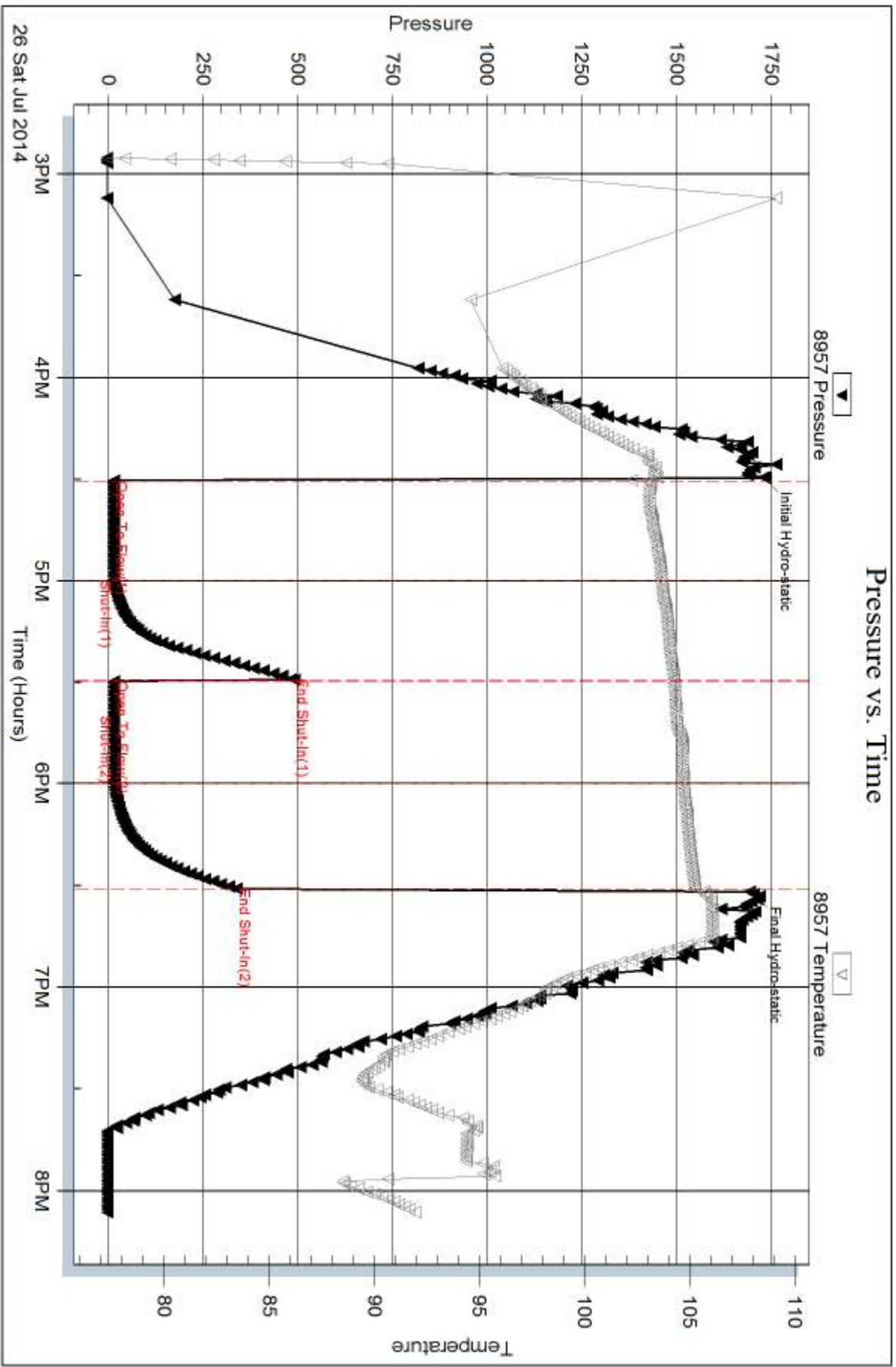
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



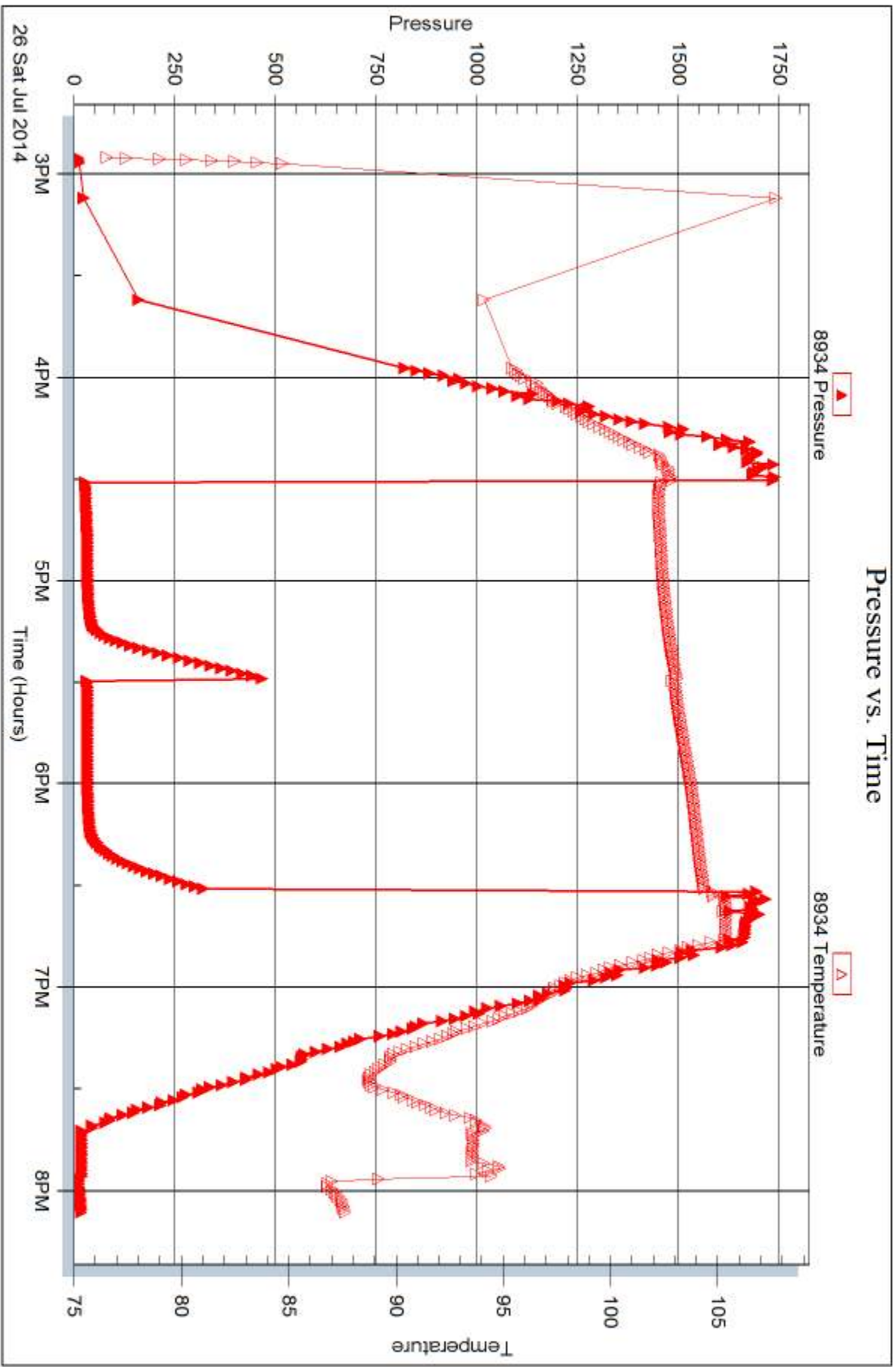
Serial #: 8934

Inside

H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 53952

Printed: 2014.07.28 @ 16:23:23



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Newell Unit #23-2

23-8s-21w Graham,KS

Start Date: 2014.07.27 @ 05:25:00

End Date: 2014.07.27 @ 10:27:00

Job Ticket #: 53953 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.07.28 @ 16:22:58



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

ATTN: Marc Downing

Job Ticket: 53953

DST#: 5

Test Start: 2014.07.27 @ 05:25:00

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:00:00

Time Test Ended: 10:27:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3531.00 ft (KB) To 3593.00 ft (KB) (TVD)

Reference Elevations: 2081.00 ft (KB)

Total Depth: 3593.00 ft (KB) (TVD)

2073.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8957 Outside

Press@RunDepth: 35.22 psig @ 3532.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.27 End Date: 2014.07.27

Last Calib.: 2014.07.27

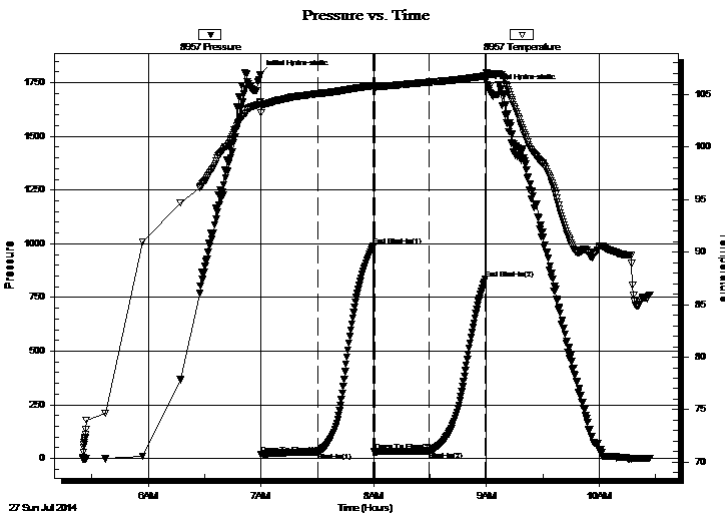
Start Time: 05:25:05 End Time: 10:26:59

Time On Btm: 2014.07.27 @ 06:59:30

Time Off Btm: 2014.07.27 @ 09:01:00

TEST COMMENT: IF-1 1/4" blow
IS-No blow
FF-1" blow
FS-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1788.82	104.29	Initial Hydro-static
1	18.79	103.26	Open To Flow (1)
31	30.70	105.08	Shut-In(1)
61	988.22	105.84	End Shut-In(1)
61	31.14	105.68	Open To Flow (2)
90	35.22	106.18	Shut-In(2)
120	835.71	106.78	End Shut-In(2)
122	1722.45	106.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	OCM 35%O 65%M	0.36

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53953

DST#: 5

ATTN: Marc Downing

Test Start: 2014.07.27 @ 05:25:00

Tool Information

Drill Pipe:	Length: 3505.00 ft	Diameter: 3.80 inches	Volume: 49.17 bbl	Tool Weight: 2000.00 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: 45000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3531.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	82.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3516.00	
Hydraulic tool	5.00			3521.00	
Packer	5.00			3526.00	20.00 Bottom Of Top Packer
Packer	5.00			3531.00	
Stubb	1.00			3532.00	
Recorder	0.00	8934	Inside	3532.00	
Recorder	0.00	8957	Outside	3532.00	
Perforations	24.00			3556.00	
Change Over Sub	1.00			3557.00	
Drill Pipe	32.00			3589.00	
Change Over Sub	1.00			3590.00	
Bullnose	3.00			3593.00	62.00 Bottom Packers & Anchor

Total Tool Length: 82.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53953

DST#: 5

ATTN: Marc Downing

Test Start: 2014.07.27 @ 05:25:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	OCM 35%O 65%M	0.358

Total Length: 45.00 ft Total Volume: 0.358 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

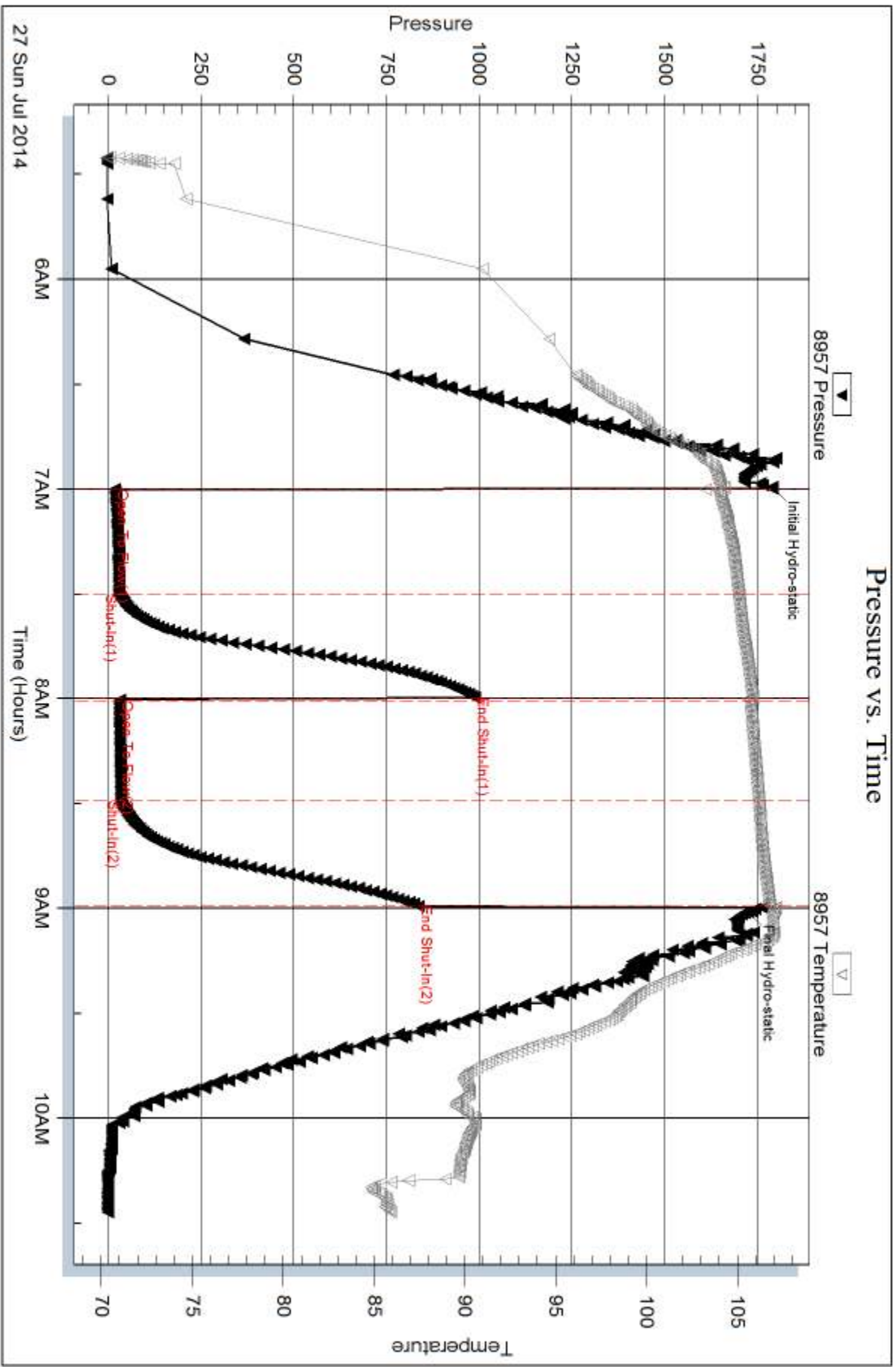
Recovery Comments:

Serial #: 8957

Outside H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 5



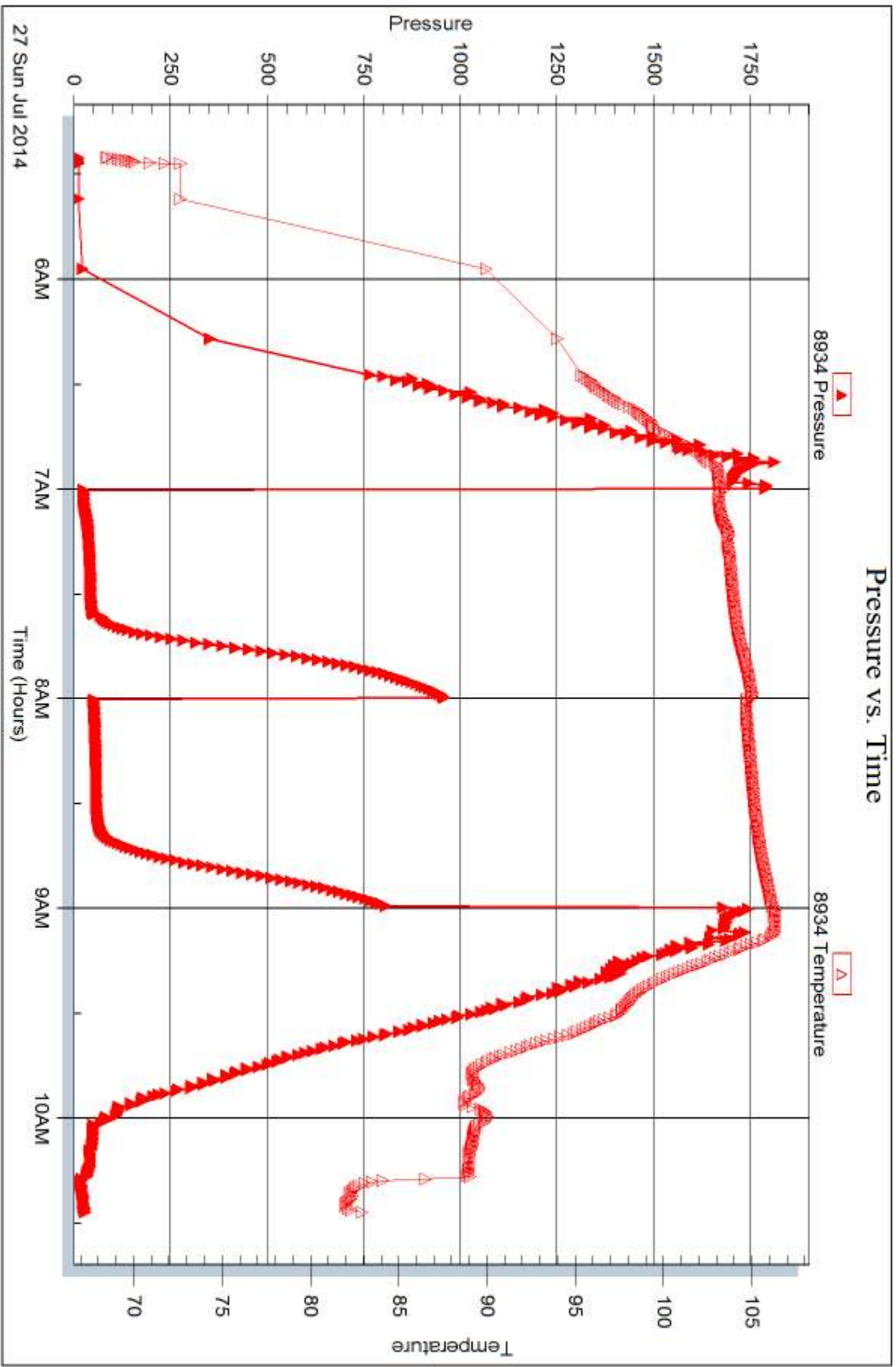
Serial #: 8934

Inside

H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 53953

Printed: 2014.07.28 @ 16:22:59



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc**

PO Box 86
Plainville KS 67663

ATTN: Marc Downing

Newell Unit #23-2

23-8s-21w Graham,KS

Start Date: 2014.07.27 @ 18:10:00

End Date: 2014.07.28 @ 00:44:45

Job Ticket #: 53954 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2014.07.28 @ 16:22:22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

ATTN: Marc Downing

Job Ticket: 53954

DST#: 6

Test Start: 2014.07.27 @ 18:10:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:01:45

Time Test Ended: 00:44:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3582.00 ft (KB) To 3621.00 ft (KB) (TVD)

Reference Elevations: 2081.00 ft (KB)

Total Depth: 3621.00 ft (KB) (TVD)

2073.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8957 Outside

Press@RunDepth: 63.03 psig @ 3583.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.27

End Date:

2014.07.28

Last Calib.:

2014.07.28

Start Time: 18:10:05

End Time:

00:44:44

Time On Btm:

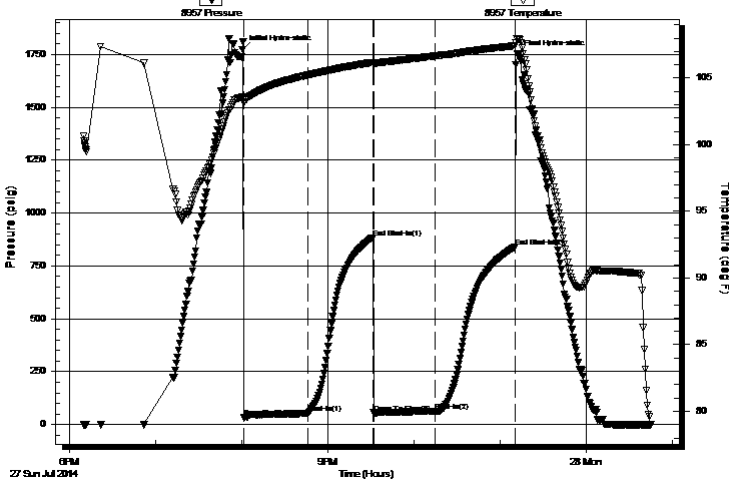
2014.07.27 @ 20:00:30

Time Off Btm:

2014.07.27 @ 23:11:30

TEST COMMENT: IF-7" blow
IS-No blow
FF-2" blow
FS-No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1771.39	103.60	Initial Hydro-static
2	32.76	103.14	Open To Flow (1)
46	53.95	105.23	Shut-In(1)
91	883.73	106.18	End Shut-In(1)
92	54.74	106.03	Open To Flow (2)
135	63.03	106.67	Shut-In(2)
190	838.51	107.42	End Shut-In(2)
191	1751.33	107.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
105.00	OCM 25%O 75%M	1.20
5.00	Free Oil	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53954

DST#: 6

ATTN: Marc Downing

Test Start: 2014.07.27 @ 18:10:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:01:45

Time Test Ended: 00:44:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3582.00 ft (KB) To 3621.00 ft (KB) (TVD)

Reference Elevations: 2081.00 ft (KB)

Total Depth: 3621.00 ft (KB) (TVD)

2073.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8934 Inside

Press@RunDepth: psig @ 3583.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.27

End Date: 2014.07.28

Last Calib.: 2014.07.28

Start Time: 18:10:05

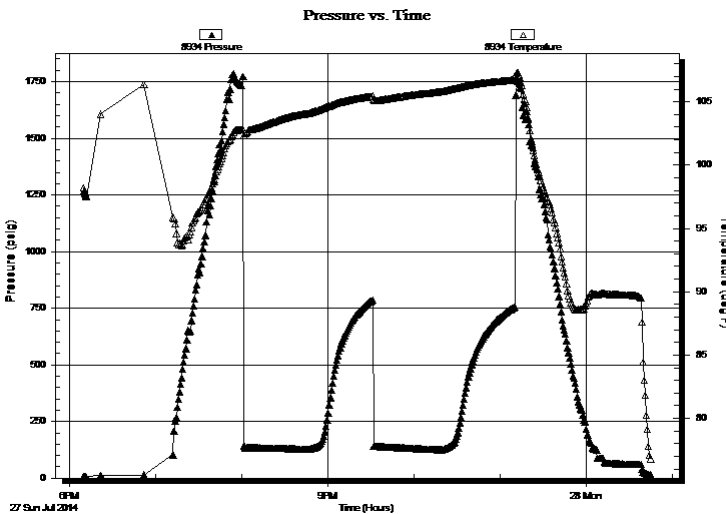
End Time: 00:44:44

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-7" blow
IS-No blow
FF-2" blow
FS-No blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
105.00	OCM 25%O 75%M	1.20
5.00	Free Oil	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53954

DST#: 6

ATTN: Marc Downing

Test Start: 2014.07.27 @ 18:10:00

Tool Information

Drill Pipe:	Length: 3544.00 ft	Diameter: 3.80 inches	Volume: 49.71 bbl	Tool Weight:	2000.00 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:	44000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	44000.00 lb
Depth to Top Packer:	3582.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	39.00 ft				
Tool Length:	59.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3567.00	
Hydraulic tool	5.00			3572.00	
Packer	5.00			3577.00	20.00 Bottom Of Top Packer
Packer	5.00			3582.00	
Stubb	1.00			3583.00	
Recorder	0.00	8934	Inside	3583.00	
Recorder	0.00	8957	Outside	3583.00	
Perforations	2.00			3585.00	
Change Over Sub	1.00			3586.00	
Drill Pipe	31.00			3617.00	
Change Over Sub	1.00			3618.00	
Bullnose	3.00			3621.00	39.00 Bottom Packers & Anchor

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc

23-8s-21w Graham,KS

PO Box 86
Plainville KS 67663

Newell Unit #23-2

Job Ticket: 53954

DST#: 6

ATTN: Marc Downing

Test Start: 2014.07.27 @ 18:10:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
105.00	OCM 25%O 75%M	1.200
5.00	Free Oil	0.070

Total Length: 110.00 ft

Total Volume: 1.270 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

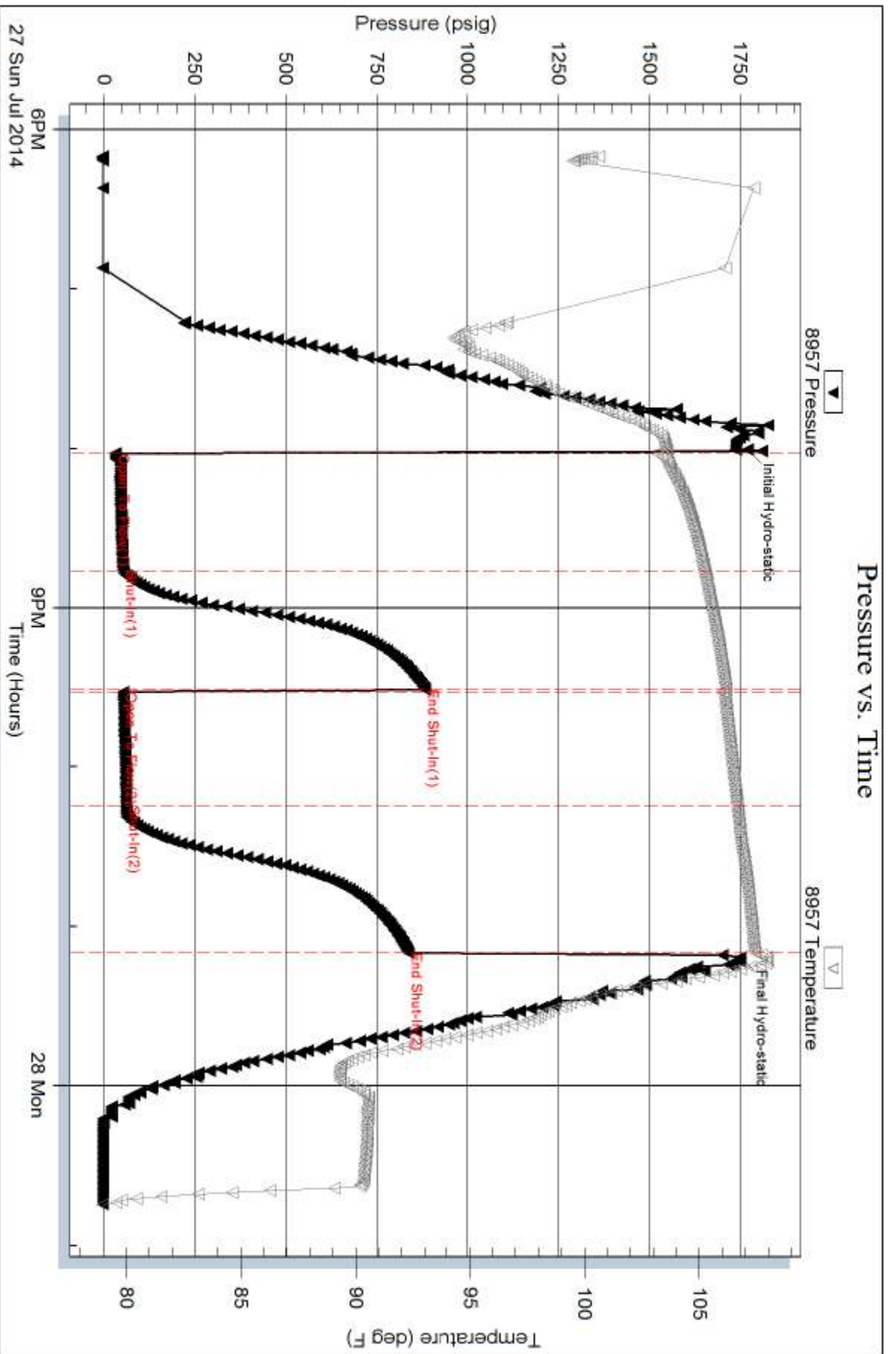
Recovery Comments:

Serial #: 8957

Outside H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 53954

Printed: 2014.07.28 @ 16:22:23

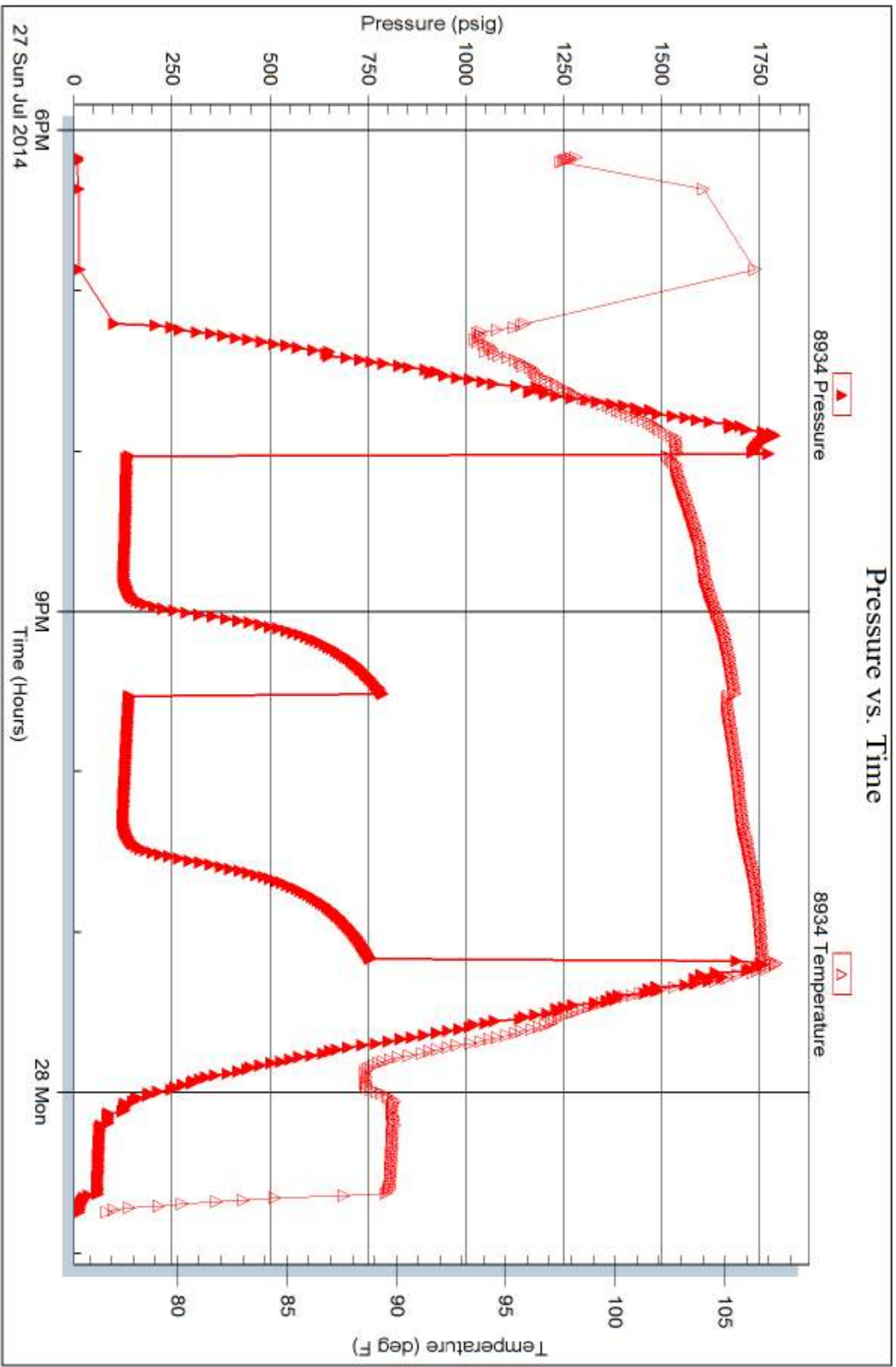
Serial #: 8934

Inside

H&C Oil Operating Inc

New oil Unit #23-2

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 53954

Printed: 2014.07.28 @ 16:22:24



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59399

Well Name & No. Newell Unit Well #23-2 Test No. 1 Date 7/24/14
 Company H+C Oil Operating Inc. Elevation 2081 KB 2073 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 23 Twp. 8s Rge. 21w Co. Graham State KS

Interval Tested 3340 - 3383 Zone Tested KC "C, D"
 Anchor Length 43 Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 3335 Drill Collars Run 30 Vis 55"
 Bottom Packer Depth 3340 Wt. Pipe Run _____ WL 7.6
 Total Depth 3383 Chlorides 2,000 ppm System LCM 2#

Blow Description IF - BOB in 4 min
BSF - 2 in blow
EF - BOB in 5 1/2 min
BSF - 1 in blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>820</u>	<u>60</u>	<u>20</u>	<u>80</u>		
Rec _____	Feet of <u>180 FT GZP</u>				
Rec _____	Feet of _____				
Rec _____	Feet of _____				
Rec _____	Feet of _____				

Rec Total 820 BHT _____ Gravity 29 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1,647</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>18:50</u>
(B) First Initial Flow <u>29</u>	<input type="checkbox"/> Jars _____	T-Started <u>19:35</u>
(C) First Final Flow <u>145</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>21:46</u>
(D) Initial Shut-In <u>1,198</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>00:16</u>
(E) Second Initial Flow <u>154</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>2:35</u>
(F) Second Final Flow <u>250</u>	<input checked="" type="checkbox"/> Mileage <u>86.7</u> 133.30	Comments _____
(G) Final Shut-In <u>1,186</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1,611</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>43</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby _____	Total <u>1283.33</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1283.30</u>	

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59400

4/10

Well Name & No. Newell Unit #23-2 Test No. 2 Date 7/25/14
 Company HFC Oil Operating Inc. Elevation 2081 KB 2073 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. _____ Rig Discovery #1
 Location: Sec. 23 Twp. 8s Rge. 21w Co. Graham State KS

Interval Tested 3381 - 3406 Zone Tested KC "E, F"
 Anchor Length 25 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3376 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3381 Wt. Pipe Run _____ WL _____
 Total Depth 3406 Chlorides _____ ppm System LCM _____

Blow Description IF - BOB in 1 min
ISF - No blow
FF - BOB in 14 min
FSF - 1 min blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>60</u>	<u>45</u>	<u>85</u>		
<u>120</u>	<u>vsomcu</u>		<u>2</u>	<u>88</u>	<u>10</u>
<u>63.5</u>	<u>water</u>				
	<u>100 ft GRP</u>				

Rec Total 825 BHT _____ Gravity _____ API RW .09 @ 85 °F Chlorides 80,000 ppm
 (A) Initial Hydrostatic 1,643 Test 1150 T-On Location 8:30
 (B) First Initial Flow 21 Jars _____ T-Started 8:45
 (C) First Final Flow 151 Safety Joint _____ T-Open 10:20
 (D) Initial Shut-In 1,027 Circ Sub _____ T-Pulled 13:20
 (E) Second Initial Flow 155 Hourly Standby _____ T-Out 15:15
 (F) Second Final Flow 252 Mileage 86.7 133.30
 (G) Final Shut-In 1,017 Sampler _____
 (H) Final Hydrostatic 1,599 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 45 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1283.30
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 45 Sub Total 1283.30

Approved By _____ Our Representative Bob D. [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53951

Well Name & No. Newell Unit #23-2 Test No. 3 Date 7/26/14
 Company H&C Oil Operating Inc. Elevation 2081 KB 2073 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. _____ Rig Discovery #1
 Location: Sec. 23 Twp. 8s Rge. 2W Co. Graham State KS

Interval Tested 3434-3497 Zone Tested KCH-J"
 Anchor Length 63 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3429 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3434 Wt. Pipe Run _____ WL _____
 Total Depth 3497 Chlorides _____ ppm System LCM _____

Blow Description IF - 3/4 in blow
IS - No blow
FF - 2 in
FS - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>115</u>	<u>VSECM</u>		<u>2</u>		<u>98</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 115 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1709</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1:55</u>
(B) First Initial Flow <u>69</u>	<input type="checkbox"/> Jars _____	T-Started <u>2:10</u>
(C) First Final Flow <u>49</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>4:16</u>
(D) Initial Shut-In <u>1,128</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>7:16</u>
(E) Second Initial Flow <u>35</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>9:15</u>
(F) Second Final Flow <u>71</u>	<input checked="" type="checkbox"/> Mileage <u>133.30</u>	Comments _____
(G) Final Shut-In <u>1,144</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>6594</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby _____	Total <u>1283.30</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1283.30</u>	

Approved By _____ Our Representative _____

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **53952**

Well Name & No. Newell Unit #23-2 Test No. 4 Date 7/26/14
 Company H&C Oil Operating Inc. Elevation 2081 KB 2073 GL
 Address PO Box 86 Plainville KS 67863
 Co. Rep / Geo. _____ Rig Discovery #1
 Location: Sec. 23 Twp. 8s Rge. 2ln Co. Graham State KS

Interval Tested 3494-3515 Zone Tested KC "K"
 Anchor Length 21 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3489 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3494 Wt. Pipe Run _____ WL _____
 Total Depth 3515 Chlorides _____ ppm System LCM _____

Blow Description IF - weak surface blow died in 17 min
ISD - No blow
EF - No blow
FSE - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OS Mud</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

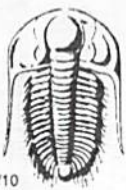
Rec Total 5 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 6733 Test _____ T-On Location 14:55
 (B) First Initial Flow 15 Jars _____ T-Started 14:55
 (C) First Final Flow 15 Safety Joint _____ T-Open 16:30
 (D) Initial Shut-In 492 Circ Sub _____ T-Pulled 18:30
 (E) Second Initial Flow 16 Hourly Standby _____ T-Out 20:05
 (F) Second Final Flow 17 Mileage 133.30 Comments _____
 (G) Final Shut-In 339 Sampler _____
 (H) Final Hydrostatic 1,705 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 30 Extra Packer _____ Extra Copies _____
 Final Flow 30 Extra Recorder _____ Sub Total 0
 Final Shut-In 30 Day Standby _____ Total 1283.30
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1283.30

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53953

Well Name & No. Newell Unit #23-2 Test No. 5 Date 7/27/14
 Company H&C Oil Operating Inc. Elevation 2081 KB 2073 GL
 Address _____
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 23 Twp. 8s Rge. 2lw Co. Graham State KS

Interval Tested 3531 - 3593 Zone Tested Marmaton
 Anchor Length 62 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3526 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3531 Wt. Pipe Run _____ WL _____
 Total Depth 3593 Chlorides _____ ppm System LCM _____

Blow Description IF - 1/4 in blow
ISF - No blow
FF - 1 in blow
FSF - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>OCM</u>		<u>35</u>		<u>65</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 45 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,789 Test _____ T-On Location 5:05
 (B) First Initial Flow 19 Jars _____ T-Started 5:25
 (C) First Final Flow 31 Safety Joint _____ T-Open 6:57
 (D) Initial Shut-In 988 Circ Sub _____ T-Pulled 8:57
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 10:25
 (F) Second Final Flow 35 Mileage 86.7 133.30 Comments _____
 (G) Final Shut-In 836 Sampler _____
 (H) Final Hydrostatic 1,722 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 1283.30
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1283.30

Approved By _____ Our Representative B. [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **53954**

Well Name & No. Newell Unit #23-2 Test No. 6 Date 7/27/14
 Company H+C Oil Operating Inc. Elevation 2091 KB 2073 GL _____
 Address _____
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 23 Twp. 8s Rge. 2ln Co. Graham State KS

Interval Tested 3582 - ~~3448~~ 3621 Zone Tested Arbuckle
 Anchor Length 39 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3577 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3582 Wt. Pipe Run 5 WL _____
 Total Depth ~~3582~~ 3621 Chlorides _____ ppm System LCM _____
 Blow Description FF - 2in blow
FST - No blow
FF - 2in blow
FST - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>105</u>	<u>OCM</u>	<u>25</u>		<u>75</u>	
<u>5</u>	<u>Frac 0:1</u>				
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Rec Total 110 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 6771 Test 1150 T-On Location 17:55
 (B) First Initial Flow 33 Jars _____ T-Started 18:10
 (C) First Final Flow 54 Safety Joint _____ T-Open 20:00
 (D) Initial Shut-In 884 Circ Sub _____ T-Pulled 23:00
 (E) Second Initial Flow 55 Hourly Standby _____ T-Out 00:45
 (F) Second Final Flow 63 Mileage 86RT 133.30 Comments _____
 (G) Final Shut-In 839 Sampler _____
 (H) Final Hydrostatic 1751 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 45 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1283.30
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 45 Sub Total 1283.30

Approved By _____ Our Representative Butt D...

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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. 525

Date	7-28-14	Sec.	23	Twp.	8	Range	21	County	Graham	State	KS	On Location		Finish	5:15 PM
------	---------	------	----	------	---	-------	----	--------	--------	-------	----	-------------	--	--------	---------

Lease **Newell** Well No. **23-2** Location **Damar W to 390 1/4 S 1/4 W N 14**

Contractor **Discovery #1**
Type Job **Production string**
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.

Hole Size **7 7/8** Charge **H+C**
Csg. **5 1/2** To
Tbg. Size **5 1/2** Street
Depth **3621'**
Depth **3620'**
Depth

Tool
Cement Left in Csg. **22.16** Shoe Joint **22.16**
Meas Line Displace **87 3/4 bbl**

EQUIPMENT		
Pumptrk No.	Cementer	
5	Helper David	
Bulktrk No.	Driver	
21	Tyler	
Bulktrk No.	Driver	
9	Chad	

JOB SERVICES & REMARKS
Remarks:
Rat Hole
Mouse Hole
Centralizers - **1-10, 49, 65**
Baskets - **2, 50, 66**
DV or Port Collar

160 pro-c
Common **160 pro-c**
Poz. Mix **450 Qmhc**
Gel.
Calcium
Hulls
Salt **14**
Flowseal **152#**
Kol-Seal **800#**
Mud CLR 48 - **500 Gal**
CFL-117 or CD110 CAF 38
Sand
Handling **632**
Mileage
5 1/2 FLOAT EQUIPMENT
Guide Shoe
Centralizer - **12**
Baskets - **3**
AFU inserts
~~1600~~ Packer Shoe - **1**
Latch Down - **1**
Rubber Plug - 1
Pumptrk Charge
Mileage **45** Prod String

Cement Circulated!
Signature **Bob Plouffe**
Tax
Discount
Total Charge

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. 361

Date	7-21-14	Sec.	23	Twp.	8	Range	21	County	Cartham	State	KS	On Location		Finish	5:45P.m.		
Lease	Newell Unit																
Well No.	23-2																
Contractor	Discovery #1																
Type Job	Surface																
Hole Size	12 1/4																
Csg.	8 5/8																
Tbg. Size																	
Tool																	
Cement Left in Csg.	15																
Meas Line	Displace 13BL																
EQUIPMENT																	
Pumptrk	18	No.	Cementer	Graig												Common	150
Bulktrk		No.	Helper	Goy												Poz. Mix	
Bulktrk	21	No.	Driver	Clayton												Gel.	3
		No.	Driver													Calcium	5
		No.	Driver													Hulls	
JOB SERVICES & REMARKS																	
Remarks:																	
Rat Hole																	
Mouse Hole																	
Centralizers																	
Baskets																	
DV or Port Collar																	
	8 5/8 on bottom - Best Circulation.																
	Mix 150cc + Displace.																
	Cement Circulated																
	FLOAT EQUIPMENT																
	Guide Shoe																
	Centralizer																
	Baskets																
	AFU Inserts																
	Float Shoe																
	Latch Down																
	Pumptrk Charge																
	Surface																
	Mileage 45																
	Tax																
	Discount																
	Total Charge																

X Signature *Cliff Mayfield*