



DRILL STEM TEST REPORT

Prepared For: **Samuel Gary, Jr & Associates**

1515 Wynkoop St Suite 700 Dever CO 80202

ATTN: Chris Mitchell

30-14s-17w Ellis,KS

Copper-Dietz et al #1-30

Start Date: 2012.08.10 @ 08:22:09

End Date: 2012.08.10 @ 16:57:09

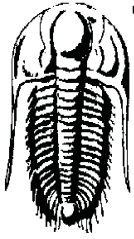
Job Ticket #: 49348 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Samuel Gary, Jr & Associates
1515 Wynkoop St Suite 700 Dever CO 80202
ATTN: Chris Mitchell

Copper-Dietz et al #1-30
30-14s-17w Ellis,KS
Job Ticket: 49348 **DST#: 2**
Test Start: 2012.08.10 @ 08:22:09

GENERAL INFORMATION:

Formation: **LKC-F**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:10:09
Time Test Ended: 16:57:09
Interval: **3286.00 ft (KB) To 3311.00 ft (KB) (TVD)**
Total Depth: 3286.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Jeff Brown
Unit No: 44
Reference Elevations: 1940.00 ft (KB)
1930.00 ft (CF)
KB to GR/CF: 10.00 ft

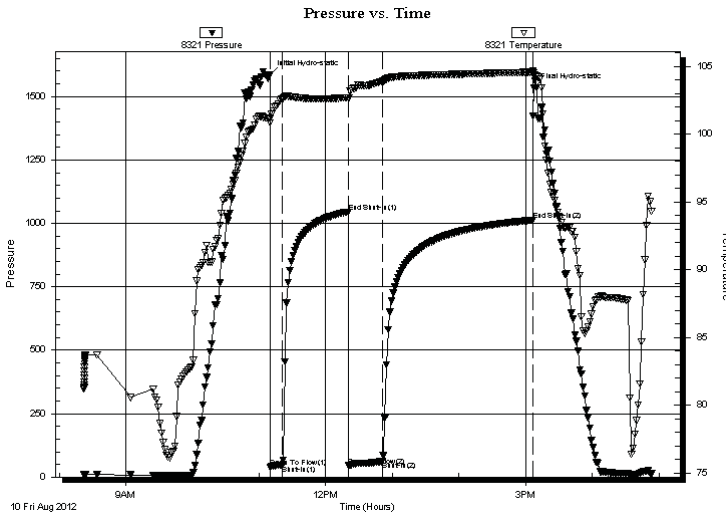
Serial #: 8321

Inside

Press@RunDepth: 63.43 psig @ 3289.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2012.08.10 End Date: 2012.08.10 Last Calib.: 2012.08.10
Start Time: 08:22:10 End Time: 16:54:09 Time On Btm: 2012.08.10 @ 11:09:39
Time Off Btm: 2012.08.10 @ 15:07:09

TEST COMMENT: IFP-Weak blow built to 3"
ISI-Dead no blow back
FFP-Fair blow built to 4 1/4"
FSI-Dead no blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1585.48	101.14	Initial Hydro-static
1	37.29	100.84	Open To Flow (1)
12	45.72	102.60	Shut-In(1)
71	1043.54	102.70	End Shut-In(1)
71	44.05	102.65	Open To Flow (2)
102	63.43	103.89	Shut-In(2)
237	1012.90	104.58	End Shut-In(2)
238	1534.65	104.53	Final Hydro-static

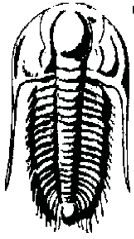
Recovery

Length (ft)	Description	Volume (bbl)
62.00	Mw 25%M 75%W	0.87
10.00	MW with oil spots	0.14

* Recovery from multiple tests

Gas Rates

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



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 ATTN: Chris Mitchell

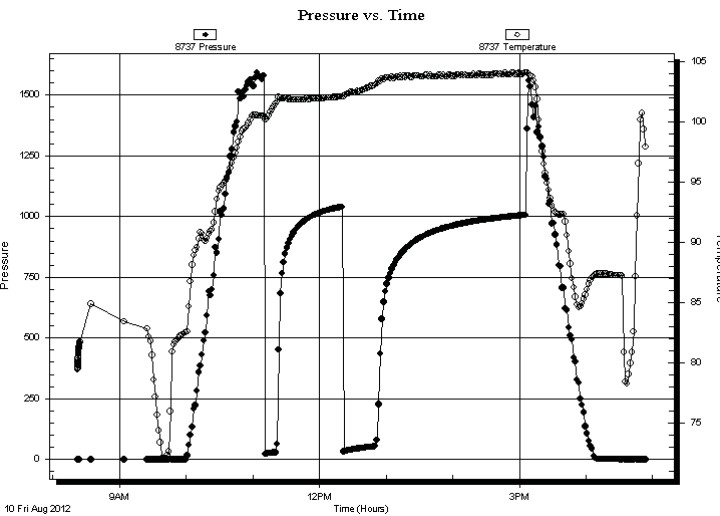
Copper-Dietz et al #1-30
30-14s-17w Ellis,KS
 Job Ticket: 49348 **DST#: 2**
 Test Start: 2012.08.10 @ 08:22:09

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Formation: **LKC-F**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 11:10:09 Tester: Jeff Brown
 Time Test Ended: 16:57:09 Unit No: 44
 Interval: **3286.00 ft (KB) To 3311.00 ft (KB) (TVD)** Reference Elevations: 1940.00 ft (KB)
 Total Depth: 3286.00 ft (KB) (TVD) 1930.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 10.00 ft

Serial #: 8737 Outside
 Press@RunDepth: psig @ 3289.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.08.10 End Date: 2012.08.10 Last Calib.: 2012.08.10
 Start Time: 08:22:26 End Time: 16:54:25 Time On Btm:
 Time Off Btm:

TEST COMMENT: IFP-Weak blow built to 3"
 ISI-Dead no blow back
 FFP-Fair blow built to 4 1/4"
 FSI-Dead no blow back



PRESSURE SUMMARY

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

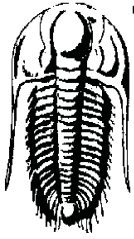
Recovery

Length (ft)	Description	Volume (bbl)
62.00	Mw 25%M 75%W	0.87
10.00	MW with oil spots	0.14

Gas Rates

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

* Recovery from multiple tests



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TOOL DIAGRAM

Samuel Gary, Jr & Associates
1515 Wynkoop St Suite 700 Dever CO 80202
ATTN: Chris Mitchell

Copper-Dietz et al #1-30
30-14s-17w Ellis,KS
Job Ticket: 49348 **DST#: 2**
Test Start: 2012.08.10 @ 08:22:09

Tool Information

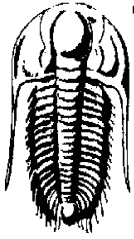
Drill Pipe:	Length: 3284.00 ft	Diameter: 3.80 inches	Volume: 46.07 bbl	Tool Weight:	2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	54000.00 lb
			<u>Total Volume: 46.07 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3286.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	25.00 ft				
Tool Length:	59.00 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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Recorder	0.00	8679	Fluid	3252.00	
Stubb	5.00			3257.00	
Shut In Tool	5.00			3262.00	
Sampler	2.00			3264.00	
Hydraulic tool	5.00			3269.00	
Jars	5.00			3274.00	
Safety Joint	3.00			3277.00	
Packer	4.00			3281.00	34.00 Bottom Of Top Packer
Packer	5.00			3286.00	
Stubb	1.00			3287.00	
Perforations	2.00			3289.00	
Recorder	0.00	8321	Inside	3289.00	
Recorder	0.00	8737	Outside	3289.00	
Perforations	19.00			3308.00	
Bullnose	3.00			3311.00	25.00 Bottom Packers & Anchor

Total Tool Length: 59.00



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FLUID SUMMARY

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30-14s-17w Ellis,KS
Job Ticket: 49348 **DST#: 2**
Test Start: 2012.08.10 @ 08:22:09

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: 54.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.97 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

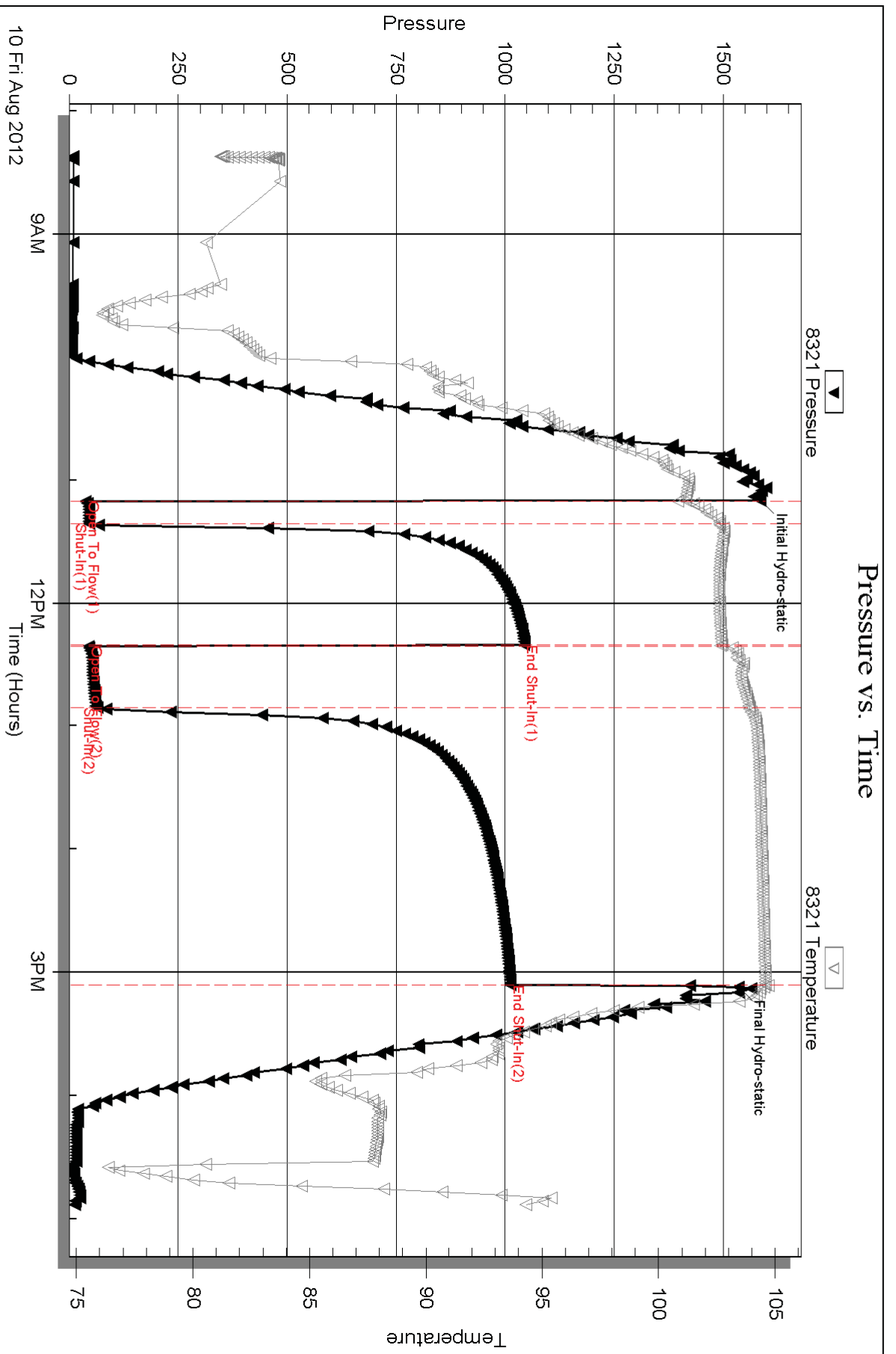
Length ft	Description	Volume bbl
62.00	Mw 25%M 75%W	0.870
10.00	MW w ith oil spots	0.140

Total Length: 72.00 ft Total Volume: 1.010 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:



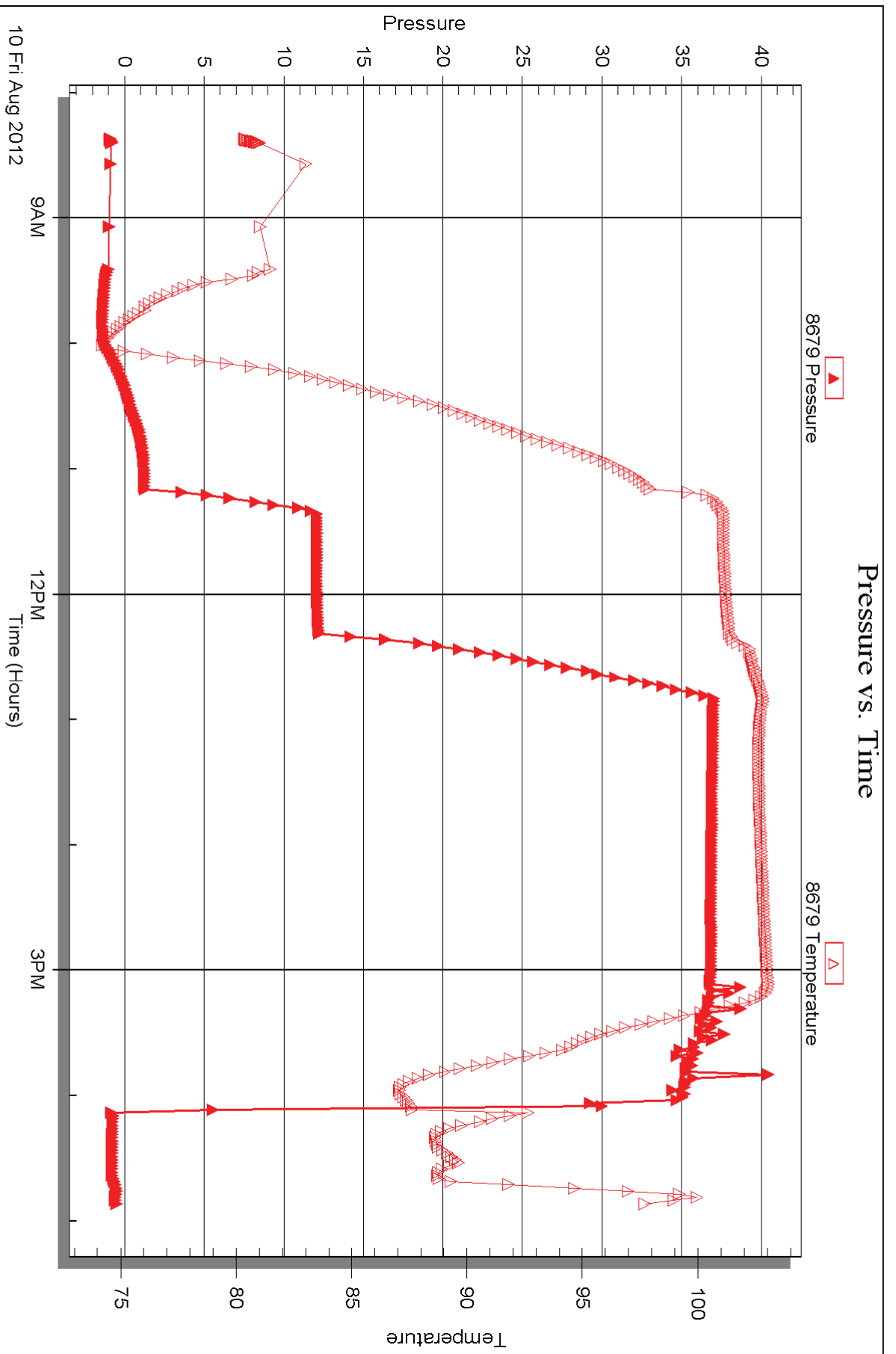
Serial #: 8679

Fluid

Samuel Gary, Jr & Associates

30-14s-17w Ellis, KS

DST Test Number: 2



Serial #: 8737

Outside

Samuel Gary, Jr & Associates

30-14s-17w Ellis, KS

DST Test Number: 2

