CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	03/07/2014
Experimenters:	Kathleen Tenaglia, Alicia Melvin
ClientType:	Cleaning Company
ProjectNumber:	Project #1
Substrates:	Ceramics, Plastic, Stainless Steel
PartType:	Coupon
Contaminants:	
Cleaning Methods:	Steam
Analytical Methods:	Visual
Purpose:	The objective of this study was to determine the effectiveness of commercially available steam devices for disinfection

Experimental Procedure:

All tests performed in triplicate with pos and neg controls.
All tests were performed with a 30 second contact time.
All tests were performed with S. aureus and E. coli.
Tests were performed on aluminum and stainless steel.
Towel variations included: Microfiber washed with no fabric softener
TNTC= Too Numerous to Count (>300 Colonies)

Lab Methods
Day 1
• Subculture Bacteria and Prepare Supplies.
o Make Tryptic Soy Agar Plates
o Autoclave Supplies
o Gather Equipment

Day 2
• Conduct Run
o Set up Biological Safety Cabinet
o Spot Coupon Surface with Inoculation, plate Standardized Inoculum.
o Prepare Controls
o Test Cleaning
o Wrist Action Shaker
o Dilutions
o Plate

Day 3
• Count Plates
o Determine Effectiveness

Results:

Organism	Coupon	Test	Dilution	Result	Duplicate result
S. aureus	Aluminum	Negative	1:1	2	0
S. aureus	Aluminum	Positive	1:1	TNTC	TNTC
S. aureus	Aluminum	Positive	1:10	TNTC	TNTC
S. aureus	Aluminum	Positive	1:100	50	63
S. aureus	Aluminum	Positive	1:1000	2	2
S. aureus	Aluminum	Standard In.	10^{-9}	TNTC	TNTC
S. aureus	Aluminum	Standard In.	10^{-10}	TNTC	TNTC
S. aureus	Aluminum	Standard In.	10^{-11}	188	180
S. aureus	Aluminum	Standard In.	10^{-12}	108	95
S. aureus	Aluminum	1	1:1	0	0

CLEANING LABORATORY EVALUATION SUMMARY

S. aureus	Aluminum	1	1:10	1	0
S. aureus	Aluminum	1	1:100	1	0
S. aureus	Aluminum	1	1:1000	1	0
S. aureus	Aluminum	2	1:1	0	0
S. aureus	Aluminum	2	1:10	1	0
S. aureus	Aluminum	2	1:100	1	0
S. aureus	Aluminum	2	1:1000	3	0
S. aureus	Aluminum	3	1:1	1	0
S. aureus	Aluminum	3	1:10	2	2
S. aureus	Aluminum	3	1:100	0	0
S. aureus	Aluminum	3	1:1000	1	0

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S. aureus	Aluminum	1	1:10	1	0
S. aureus	Aluminum	1	1:100	1	0
S. aureus	Aluminum	1	1:1000	1	0
S. aureus	Aluminum	2	1:1	0	0
S. aureus	Aluminum	2	1:10	1	0
S. aureus	Aluminum	2	1:100	1	0
S. aureus	Aluminum	2	1:1000	3	0
S. aureus	Aluminum	3	1:1	1	0
S. aureus	Aluminum	3	1:10	2	2
S. aureus	Aluminum	3	1:100	0	0

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S. aureus	Aluminum	3	1:1000	1	0

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Organism	Coupon	Test	Dilution	Result	Duplicate result
S. aureus	Aluminum	Negative	1:1	0	0
S. aureus	Aluminum	Positive	1:1	TNTC	TNTC
S. aureus	Aluminum	Positive	1:10	TNTC	TNTC
S. aureus	Aluminum	Positive	1:100	TNTC	TNTC
S. aureus	Aluminum	Positive	1:1000	TNTC	TNTC
S. aureus	Aluminum	Standard In.	10^{-9}	TNTC	TNTC
S. aureus	Aluminum	Standard In.	10^{-10}	TNTC	TNTC
S. aureus	Aluminum	Standard In.	10^{-11}	TNTC	TNTC
S. aureus	Aluminum	Standard In.	10^{-12}	TNTC	TNTC
S. aureus	Aluminum	1	1:1	0	0
S. aureus	Aluminum	1	1:10	0	0
S. aureus	Aluminum	1	1:100	0	0
S. aureus	Aluminum	1	1:1000	0	0
S. aureus	Aluminum	2	1:1	0	0
S. aureus	Aluminum	2	1:10	1	2
S. aureus	Aluminum	2	1:100	0	0
S. aureus	Aluminum	2	1:1000	0	0
S. aureus	Aluminum	3	1:1	0	0
S. aureus	Aluminum	3	1:10	0	4
S. aureus	Aluminum	3	1:100	0	0
S. aureus	Aluminum	3	1:1000	0	0

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Organism	Coupon	Test	Dilution	Result	Duplicate result
S. aureus	Stainless Steel	Negative	1:1	0	0
S. aureus	Stainless Steel	Positive	1:1	TNTC	TNTC
S. aureus	Stainless Steel	Positive	1:10	TNTC	TNTC
S. aureus	Stainless Steel	Positive	1:100	36	33
S. aureus	Stainless Steel	Positive	1:1000	5	3
S. aureus	Stainless Steel	Standard In.	10^{-9}	TNTC	TNTC
S. aureus	Stainless Steel	Standard In.	10^{-10}	TNTC	TNTC

CLEANING LABORATORY EVALUATION SUMMARY

S. aureus	Stainless Steel	Standard In.	10^{-11}	TNTC	TNTC
S. aureus	Stainless Steel	Standard In.	10^{-12}	TNTC	TNTC
S. aureus	Stainless Steel	1	1:1	0	0
S. aureus	Stainless Steel	1	1:10	0	0
S. aureus	Stainless Steel	1	1:100	0	0
S. aureus	Stainless Steel	1	1:1000	0	0
S. aureus	Stainless Steel	2	1:1	TNTC	TNTC
S. aureus	Stainless Steel	2	1:10	TNTC	TNTC
S. aureus	Stainless Steel	2	1:100	238	202
S. aureus	Stainless Steel	2	1:1000	19	31
S. aureus	Stainless Steel	3	1:1	TNTC	TNTC
S. aureus	Stainless Steel	3	1:10	TNTC	TNTC
S. aureus	Stainless Steel	3	1:100	83	78
S. aureus	Stainless Steel	3	1:1000	13	15

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Organism	Coupon	Test	Dilution	Result	Duplicate result
E. coli	Stainless Steel	Negative	1:1	0	0
E. coli	Stainless Steel	Positive	1:1	TNTC	TNTC
E. coli	Stainless Steel	Positive	1:10	TNTC	TNTC
E. coli	Stainless Steel	Positive	1:100	172	178
E. coli	Stainless Steel	Positive	1:1000	14	28
E. coli	Stainless Steel	Standard In.	10^{-8}	TNTC	TNTC
E. coli	Stainless Steel	Standard In.	10^{-9}	TNTC	TNTC
E. coli	Stainless Steel	Standard In.	10^{-10}		
E. coli	Stainless Steel	Standard In.	10^{-11}	140	163
E. coli	Stainless Steel	1	1:1	0	0
E. coli	Stainless Steel	1	1:10	0	0
E. coli	Stainless Steel	1	1:100	0	0
E. coli	Stainless Steel	1	1:1000	0	0
E. coli	Stainless Steel	2	1:1	TNTC	TNTC
E. coli	Stainless Steel	2	1:10	TNTC	TNTC
E. coli	Stainless Steel	2	1:100	TNTC	TNTC
E. coli	Stainless Steel	2	1:1000	55	61

CLEANING LABORATORY EVALUATION SUMMARY

E. coli	Stainless Steel	3	1:1	TNTC	TNTC
E. coli	Stainless Steel	3	1:10	TNTC	TNTC
E. coli	Stainless Steel	3	1:100	TNTC	TNTC
E. coli	Stainless Steel	3	1:1000	152	Plate Dropped

• Shark
o Versatile
o Tested on Hardwood, Tile, Granite, Baseboards, and Walls
o Temperature Control
o Easy Lift Out Hand Unit
o Water Reservoir Easy to Fill, Lasts
o Awkward Plug on Side of Unit

• Orek
o Floor Unit Only
o Feels “Cheap/Flimsy” to Use

Summary:

Substrates:	Ceramics, Plastic, Stainless Steel				
Contaminants:					
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Water	Water	100		☑	Steam units effective at multilog reduction of bacteria

Conclusion: