CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2010
DateRun:	12/16/2010
Experimenters:	Jason Marshall, Kathleen Tenaglia
ClientType:	General
ProjectNumber:	Project #1
Substrates:	Ceramics, Porcelain
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate the cleaning ability of supplied product for toilet cleaning against similar products
Experimental Procedure:	Pre-weighed ceramic, porcelain coupons were coated with Hucker's Soil Formulation (Jiffy creamy peanut butter, salted butter, Arrowhead Mills stone ground wheat flour, egg yolk, evaporated milk, distilled water, printer's ink with boiled linseed oil, Shaws saline solution) using a hand held swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with 5-7 sprays of cleaning solutions. Each coupon was sprayed 7-10 times with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded. Products were selected based on toilet bowl cleaning needs and health and safety options.
Results:	The current TMI product beings used for toilet bowl cleaning had the best performance for the removal of the Hucker's soil using manual wiping. The PC 120 from MD Stetson had the next most effective product. The table lists the amount of soil added, the amount remaining and the percent effectiveness for the four product tested.

Cleaner	Initial wt	Final wt	% Removed	Ave	Overall Ave
TMI Toilet Bowl - ceramic					
	0.0568	0.0060	89.44	91.97	95.13
	0.0490	0.0012	97.55		
	0.0541	0.0060	88.91		
TMI Toilet Bowl - porcelain					
	0.0623	0.0006	99.04	98.30	
	0.0394	0.0001	99.75		
	0.0412	0.0016	96.12		
Tough Job - cermaic					
	0.0686	0.0125	81.78	80.35	89.05
	0.0774	0.0177	77.13		
	0.1036	0.0185	82.14		
Tough Job - porcelain					
	0.0457	0.0026	94.31	97.74	
	0.0524	-0.0003	100.57		
	0.0667	0.0011	98.35		
7th Generation All Purpose - ceramic					
	0.0734	0.0165	77.52	81.57	88.22
	0.0513	0.0129	74.85		
	0.0899	0.0069	92.32		
7th Generation All Purpose - porcelain					
	0.0591	0.0073	87.65	94.87	
	0.0467	0.0006	98.72		
	0.0397	0.0007	98.24		
PC120 - ceramic					
	0.0747	0.0086	88.49	87.09	90.29

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	0.1015	0.0160	84.24		
	0.0944	0.0108	88.56		
PC120 - porcelain					
	0.0505	0.0010	98.02	93.49	
	0.0629	0.0027	95.71		
	0.0641	0.0085	86.74		

Summary:

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Rochester Midland Corporation	EnviroCare Tough Job	12.5	89.05	☑	
Seventh Generation	Free & Clear All Purpose	100	88.22	☑	
Next-Gen Supply Group	PC 120 Peroxide Mulitsurface Cleaner	2	90.29	☑	

Conclusion: A follow up test will be conducted on the same products to determine hard water stain removal.