CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2007
DateRun:	08/08/2007
Experimenters:	Jason Marshall
ClientType:	Environmental Service Firm
ProjectNumber:	Project #1
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Carbon Deposits, Cutting/Tapping Fluids, Greases, Lubricating/Lapping Oils, Dirt, Oil
Cleaning Methods:	
Analytical Methods:	Colorimeter
Purpose:	To measure %T and absorbance of supplied cleaning product collected at one month intervals.
Experimental Procedure:	The experiment measured the percent transmittance and absorbance at 510 nm using a LaMotte's SMART Colorimeter. The instrument was first zeroed using DI water. Each sample was then measured three times. A 10 ml sample was poured into the glass bottle, capped, wiped and inverted once prior to placing in the instrument. After the reading was recorded, the 10 ml sample was poured back into the larger bottle. Then, a second reading was taken from another 10 ml sample and then finally a third sample. The values were averaged and graphed. Samples were taken from zero month, one month, two months, and three months. In between each location, a blank reading was taken using DI water.
Results:	All three sites showed a decrease in %Transmittance (and an increase and absorbance) from one month to the next. The Bergdales site had the least amount of decrease in the %Transmittance and Syversons had the greatest drop. It was noted that each zero month sample had a %Transmittance greater than 100%. This could result from using DI water as the blank and not the cleaning solution itself. However, all three products showed the same starting point and the trends discovered for each site would have been effected at the same rate for each site of collection. Table 1 list the recorded values for each sample measured. Table 2 summarizes the average results by week. Figures 1 and 2 show the %Transmittance per month and Absorbance per month, respectively.

Table 1. Data Recorded

Sample	%T 1	%T 2	%T 3	Ave %T	Abs 1	Abs 2	Abs 3	Ave Abs
Bergdales 1	115.00	115.00	115.00	115.00	-0.06	-0.06	-0.06	-0.06
Bergdales 2	83.00	82.00	82.00	82.33	0.08	0.09	0.09	0.09
Bergdales 3	55.00	54.00	55.00	54.67	0.26	0.26	0.26	0.26
Bergdales 4	36.00	35.00	35.00	35.33	0.45	0.45	0.45	0.45
Flahertys 1	115.00	115.00	115.00	115.00	-0.06	-0.06	-0.06	-0.06
Flahertys 2	74.00	74.00	73.00	73.67	0.13	0.13	0.14	0.13
Flahertys 3	43.00	43.00	43.00	43.00	0.37	0.37	0.37	0.37
Flahertys 4	25.00	25.00	25.00	25.00	0.60	0.60	0.60	0.60
Syversons 1	115.00	115.00	115.00	115.00	-0.06	-0.06	-0.06	-0.06
Syversons 2	55.00	57.00	54.00	55.33	0.26	0.25	0.27	0.26
Syversons 3	37.00	36.00	36.00	36.33	0.43	0.44	0.44	0.44
Syversons 4	15.00	15.00	15.00	15.00	0.82	0.81	0.82	0.82
Blank 1	100.00	100.00	99.00	99.67	0.00	0.00	0.00	0.00
Blank 2	99.00	99.00	98.00	98.67	0.00	0.01	0.01	0.01
Blank 3	98.00	97.00	97.00	97.33	0.01	0.01	0.01	0.01
Blank 4	99.00	98.00	98.00	98.33	0.01	0.01	0.01	0.01

CLEANING LABORATORY EVALUATION SUMMARY

Table 2. Average Recordings by Month

Month 1	Ave %T	Ave Abs
Bergdales 1	115.00	-0.06
Flahertys 1	115.00	-0.06
Syversons 1	115.00	-0.06
Blank 1	99.67	0.00
Month 2	Ave %T	Ave Abs
Bergdales 2	82.33	0.09
Flahertys 2	73.67	0.13
Syversons 2	55.33	0.26
Blank 2	98.67	0.01
Month 3	Ave %T	Ave Abs
Bergdales 3	54.67	0.26
Flahertys 3	43.00	0.37
Syversons 3	36.33	0.44
Blank 3	97.33	0.01
Mnth 4	Ave %T	Ave Abs
Bergdales 4	35.33	0.45
Flahertys 4	25.00	0.60
Syversons 4	15.00	0.82
Blank 4	98.33	0.01

Summary:

Substrates:	Liquid				
Contaminants:	Carbon Deposits, Cutting/Tapping Fluids, Greases, Lubricating/Lapping Oils, Dirt, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Kleer Flo Company	Degreasol Formula 99-R		0.00	☐	

Conclusion:

The %Transmittance decreased for each sample site over time. Bergdales had the lowest decrease and Syversons had the greatest reduction. In order to determine the relevance of this trend, the amount of usage each cleaning system received during the time period should be determined. Without consistent usage, the effectiveness of the filtration system across the three sites may be hard to compare.