CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1998
DateRun:	04/28/1998
Experimenters:	Jason Marshall
ClientType:	Recycling
ProjectNumber:	Project #2
Substrates:	Glass/Quartz
PartType:	Part
Contaminants:	Adhesive
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Visual
Purpose:	Separate leaded & unleaded glass w/o using HNO3
Experimental Procedure:	The back tip of the monitor was broken off to release the vacuum. The monitor was then filled with tap water at 120^{o}F. Next the monitor was placed into a tap water bath also at 120 F for four minutes. Tap water was dumped out of the monitor. A 2% solution of Citrinox solution (pH ~3) was poured into the monitor. The part was placed into a bath of Citrinox (2%). Both solutions of Citrinox were at 130 F. The monitor was left in the heated bath for four minutes. At the end of this cycle, the Citrinox solution was emptied from the inside of the monitor. The monitor was placed into a tap water bath at room temperature for two minutes. From here, the part was returned to the first Citrinox bath for another four minutes, this time with out the Citrinox inside the monitor. The hot acid~cool water cycle was repeated for four times. SUBSTRATE MATERIAL: Monitor screens with leaded and unleaded glass CONTAMINANTS: Frit and adhesive
Results:	After the third Citrinox heated bath, a popping sound was noted. This was the screen face separating from the back of the monitor. More cracking was heard when the monitor was placed into the cool bath. At the very beginning of the fourth Citrinox bath, the front of the monitor fell off and sank to the bottom of the tank.

Summary:

Substrates:	Glass/Quartz				
Contaminants:	Adhesive				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Alconox Inc	Citranox	2	0.00	☑	

Conclusion:

The hot acidic Citrinox bath ~ cool tap water cycle proved to be a possible way to separate the two types of glass.
A second monitor was also put through this method. The only difference in the test was that the second monitor did not have the vacuum seal broken. Therefore, no liquids were poured into the inside of the monitor. During this attempt, the popping sound was not observed until the fourth Citrinox bath. The crack that resulted went from the front of the screen to the back of the monitor, not around the screen as in the first case.
More testing of the process will include two variations of the broken tip method. The first would be to pour solution into the monitor during every step (pre-warm, Citrinox baths, and cool water baths). The second would be to not pour any solution into the monitor.