Still Residue and Cooker Muck Update

Several states have already enacted stringent laws regulating hazardous wastes, and we can expect this trend to continue on both federal and state levels. As still residues, cooker muck, and cartridges containing perchloroethylene (perc) become more closely regulated, reducing the perc content in plant residues becomes vital for every perc plant. Of equal importance is the savings of perc. A full drum of perc may be thrown out as wastes each year in the average plant. Reductions of this size cannot be achieved by strictly following a manufacturer's directions, even using steam sweep procedures.

Since IFI introduced the water addition method of reducing perc content in residues (Technical bulletin 560), many member drycleaners have used this method in their plants. Their reaction to the results has been enthusiastic.

Some members have sent us residue samples from both before and after water addition. In every case, the perc content had been reduced significantly. In most cases, the difference was noticed in the plant even before analytical tests were made at IFI documenting these reductions. This may explain why some cleaners who used this method did not send us samples of their residues before water addition, sending only the final product. From what we have seen, the results are encouraging.

Take the example of a typical cleaner who tried this method with his still. After a well-done conventional boildown, the perc content using first low and then elevated steam pressure was 69.2 percent on a weight-to-weight basis. The first water addition lowered this amount to 51.7 percent, and the second addition produced a very low 1.5 percent of residual perc.

Application of a steam sweep also helps reduce the perc content of still residues. The perc content in residues which had been steam swept averages 40 percent, which is not low enough to escape regulation. In our IFI stills, we averaged only 0.36 percent residual perc content with the water addition method.

Similar improvements are achieved when this method is used on cookers as well, even though only one water addition is required for cookers. A cleaner using a cooker sent us a sample of cooker muck that had been cooked down for three hours at 45 pounds per square inch (psi) pressure. Since this pressure is not high enough for adequate cookdown, the perc content level of the sample was a high 46.7 percent on a weight-to-weight basis. When the cleaner added water to this sample and continued cookdown at a low 25 psi until the flow of solvent and water stopped, the perc content remaining in the sample was less than 1.4 percent.

Steam sweeping also helps reduce perc content in cookers, but not as well as the water addition method. Typical steam swept cooker muck will contain 25 percent perc. Again, this level is above proposed regulatory limits.

Your results will obviously depend on your plant due to differences in residue constituents, cooling coil temperatures, and cleanliness of the still's heating coil. There have been very few problems using this procedure. It is important to remember, however, that the steam pressure during the water addition procedure should be relatively low—no higher than 30 psi—for best results. Failure to lower the pressure will result in overheating the still kettle, causing the solvent and water mixture to flow into the water separator too fast for efficient separation. Also, we advise you to collect solvent in a covered container so that you can periodically check its odor.

The chart below offers the results of some of the residue samples tested by IFI. For more information on the water addition method of lowering perc content, request Technical Bulletin 560 or call the IFI Research Department, 301/622-1900.

### PERCENTAGE OF PERC CONTENT IN RESIDUES

<table>
<thead>
<tr>
<th>Method</th>
<th>Still Residue Cleaner A</th>
<th>Still Residue Cleaner B</th>
<th>Cooker Muck Cleaner A</th>
<th>Cooker Muck Cleaner B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional</td>
<td>60.2%</td>
<td>55.8%</td>
<td>46.7%</td>
<td>29.5%</td>
</tr>
<tr>
<td>One water addition</td>
<td>15%</td>
<td>—</td>
<td>1.4%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Two water additions</td>
<td>1.5%</td>
<td>1.1%</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**TLDA/TWU School of Drycleaning Finds Enthusiastic Support**

The new drycleaning school being set up by the Texas Laundry and Drycleaning Association (TLDA) in cooperation with the Texas Women's University (TWU) at Denton has met with overwhelming support from the industry, with eleven Texas firms making contributions to date. Equipment is presently in Denton or en route, and current plants are to shut down the existing installation in early summer for several days to install new equipment. Meanwhile, TLDA Director John Faulkner is assessing industry training needs in preparation for setting up the curriculum.

The first planned activity at the new center is TLDA's annual laundry conference, to be held August 24-26 at TWU. Charles Riggott, IFI executive vice president, has announced a cash contribution from IFI to help pay for installation of the physical plant and a line of credit for use in purchasing educational materials from IFI for use in the training courses. "The entire IFI Board joins in wishing TLDA a successful program," Riggott said, adding that this program will benefit the entire industry.