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….a dialogue for California's water conservation community

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This issue……special focus on:

- **Wet Cleaning…..replacing traditional dry cleaning technology with a water-based, environmentally-sound technology….does it save or waste water?**
- **Water-Efficient Product Labeling…moving toward a consumer-friendly system patterned after Energy Star®**

1. Wet Cleaning

Background

Traditional dry cleaning equipment and practices are being phased out in the Los Angeles basin, thanks to mandates by the South Coast Air Quality Management District (SCAQMD). The transition to environmentally friendly technologies is now underway. Soon we expect that similar mandates will encompass the rest of California (and likely other areas of the nation as well). The following background information on this transition was adapted from a recent study undertaken by Occidental College's Pollution Prevention Education and Research Center (PPERC)[1]:

[1] Pollution Prevention Education and Research Center (PPERC), Occidental College; *Commercialization of Professional Wet Cleaning, Final Report*, October 28, 2002. Financial support for the study came from the South Coast Air Quality Management District, The California Wellness Foundation, Southern California Gas Company, and Southern California Edison.

Dry Cleaning and its Associated Risks

"Dry cleaning is a widely recognized method for cleaning delicate garments and a convenient service that is offered in nearly every community in the United States. For more than 40 years, the vast majority of dry cleaners have relied on perchloroethylene (PCE) as the solvent used to clean clothes as part of the dry cleaning process. In recent years, however, a wide array of scientific studies and federal, state, and local regulatory actions have focused on PCE in relation to the health and environmental risks that it poses. Costly regulatory and liability actions are becoming increasingly prevalent for this industry, and have created significant economic burdens for cleaners, most of whom are small businesses."

An Alternative to Dry Cleaning

"These concerns about health and environmental effects of PCE, regulatory pressures, and the threat of liability actions have prompted, both inside and outside the garment care industry, a search for alternative cleaning processes. The first pollution prevention technology introduced commercially was *professional wet cleaning* – a water-based cleaning process that uses computer-controlled washers and dryers, specially formulated detergents, and specialized finishing equipment to facilitate the cleaning of delicate garments in water. Beginning in the mid-1990s, case study evaluations of professional wet cleaners concluded that professional wet cleaning represented a viable pollution prevention technology for the garment care industry."

How Wet Cleaning Works

"The essential technological innovation of professional wet cleaning has been to mechanically simulate hand-laundering by retrofitting front-loading commercial laundry machines with a computer to control the rotation of the drum in order to minimize agitation while providing sufficient movement for effective garment cleaning. Wet clean dryers include moisture sensors to assure that garments retain a proper amount of moisture after the dry cycle is complete. Specialized tensioning pressing machines are used to enhance the restoration of constructed garments, such as suit jackets, suit pants, and tailored items.

Water Use in Wet Cleaning

"In professional wet cleaning, water is used as the solvent. Yet, the pollution control devices on dry clean machines also require water use; refrigerated condensers use water in cooling the refrigerant, cooling towers evaporate water in the process of cooling PCE, carbon absorbers are steam stripped; some distillation systems are equipped with steam injection. In both professional wet cleaning and dry cleaning, water is used by the boiler, laundry washers, and water conditioning systems.

"Previous research conducted by PPERC estimated water use at a professional wet cleaning facility to be 77 percent greater than at a dry clean shop.[2] Yet this previous research was based on industry estimates and research assumptions, not on actual water use at a dry cleaner switching to professional wet cleaning."

In 1999, the SCAQMD approached the PPERC to administer the Professional Wet Cleaning Commercialization Project. That project was designed to provide equipment and technical training grants to eight cleaners in the air basin switching from dry cleaning to wet cleaning. As a result, the study was undertaken by the PPERC[3]. It is the first study to evaluate multiple cleaners who made the switch from PCE-based dry cleaning to professional wet cleaning. The report contains a plant level analysis that compares the real world conditions of each of these technology changes at five different locations. The data from the analysis suggest that "the regional impact on water demand associated with a switch to professional wet cleaning is likely to be substantially smaller than previously estimated," according to the PPERC.

In fact, the change in water consumption varied significantly among the five installations studied. That is because the study components did not include monitoring of water consumption changes due solely to the technology change[4]. Rather, water billing records were used and because these five cleaners also provided laundry services both before and after the retrofit, the change in real world water use caused by the technology change could not be isolated.

The Executive Summary of that report may be downloaded at:
http://www.cuwcc.org/Uploads/product/PPERC_Wet_Cleaning_Exec_Summary.pdf

The Future Effect

For the typical dry cleaner, it appears that a changeover to this new technology holds some significant financial and customer service benefits. This is becoming evident at the same time as the SCAQMD is mandating phase-out (by 2020) of PCE-based cleaning. Thus, it is likely that cleaners in Southern California (and eventually throughout California) will be seeking the new technologies and converting their operations.

As this occurs, however, it is important that we more clearly identify the impacts that might be expected upon water consumption as the new technologies take over.

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[2] Pollution Prevention Education and Research Center, *Pollution Prevention in the Garment Care Industry: Assessing the Viability of Professional Wet Cleaning,* 1997, p. 5-8.
[3] Pollution Prevention Education and Research Center, Occidental College; *Commercialization of Professional Wet Cleaning, Final Report*, October 28, 2002.
[4] Due largely to the fact that the primary proponents of the study were the two Investor Owned Utilities: Southern California Gas Company and Southern California Edison. As such, the resource focus was mainly on energy.

Water Use: Proposed Follow-on Study

In 2002, the SCAQMD funded a follow-on project to include 14 additional wet cleaning demonstration sites. The additional research that will accompany the 14 retrofits will be an expansion of the research conducted to date, with more focus on the use of resources. In addition to professional wet cleaning, other technologies will be evaluated as well in this project, including petroleum dry cleaning, silicone dry cleaning, and CO2 dry cleaning. Incentives will be offered to PCE-based dry cleaners to switch to these technologies, such that valuable data can be gathered on all of the available substitutes for PCE-based cleaning.

This project is now at the point where the PPERC and Southern California Edison are seeking input and support from the water provider community to facilitate the collection of resource data on water use. Extensive metering of utilities at the data collection sites is planned and it is critical that the water industry play a role as a technical advisor and supporter of this latest effort. Therefore, the CUWCC is taking steps to join with a team of specialists that are now implementing the incentives and designing the measurement and evaluation protocols for water use.

To view a recent presentation to the CUWCC CII Committee by a representative of the PPERC, download from this site:

http://www.cuwcc.org/Uploads/product/Garment_Cleaning_Technologies_11_21_03c.ppt

2. Water-Efficient Product Labeling and Market Enhancement

As consumers, we have long had the benefits provided by the Energy Star® program in making purchase decisions for a variety of energy-consuming products. Today, the water industry and the private sector, working in conjunction with the federal Environmental Protection Agency (EPA), have the opportunity to explore and implement a companion program for water-efficient products.

CUWCC Initiates Interest

In 2001, members of the CUWCC began to envision and propose specific actions to develop a signature labeling program for water-efficient products. Such a program would aid both the consumer and water agencies in evaluating, selecting, and purchasing the efficient products as well as provide marketing opportunities for manufacturers of those products. Although the CUWCC proposals were not immediately funded, CUWCC members and others in the U.S. began in that same year to enlist support for such a program among the water conservation community throughout North America. Those efforts began to bear fruit in 2002.

U.S. EPA Takes Action

In the summer of 2002, at the direction of its own management, EPA began to investigate water-efficient product labeling as a voluntary program to respond to the growing demands placed on America's water supplies and water infrastructure systems. By 2003, the EPA was undertaking definitive actions potentially leading to its Water Efficiency Products Market Enhancement Program (WEPMEP). At the same time, state and local water officials, environmental organizations, and businesses expressed their need for a program that could mimic the success of Energy Star® for energy efficiency. Over 115 such organizations recently expressed formal support for a national water-efficient product labeling program.

As the national program is developed and implemented by the EPA, it would seek to increase water efficiency by:

- informing water users of the advantages of water-efficient products;
- motivating manufacturers to produce more water-efficient products; and
- encouraging distributors, retailers, and local water utilities to promote these products.

EPA Stakeholder Meetings

In an ongoing process, the EPA is implementing specific steps towards advancing its WEPMEP program, beginning with the meeting of key stakeholders that took place on October 9, 2003 in Washington, D.C. A second Stakeholder Meeting was held on January 15, 2004, at the Austin Hilton in Austin TX. That meeting focused on the interests and roles of the water providers and other governmental and non-governmental organizations.

Future meetings are planned for:

- February 17, 2004, Phoenix, AZ
  Focus on landscape irrigation

- April 13-14, 2004, Seattle, WA
  Focus on commercial, industrial, and indoor residential

Register to attend and participate at:
http://www.ergweb.com/projects/water/registerlist.htm

The October 9, 2003 and January 15, 2004 Stakeholder Meetings gathered about 100 interested participants apiece from the U.S. and Canada for all-day information gathering sessions. For a list of the participants and a view of the formal presentations by the various organizations represented on the panel of presenters, consult the EPA website (http://www.epa.gov/owm/water-efficiency/products_program.htm).

Many other stakeholder participants provided comments and recommendations in an open session of dialog; a summary of those individuals' comments may also be found on the EPA website.

The CUWCC (http://www.cuwcc.org/Uploads/product/Dickinson_Koeller.pdf) and EBMUD (http://www.cuwcc.org/Uploads/product/Harris.pdf) presentations listed the key areas of product focus that are proposed by California water agencies. The presentation by Ed Osann of Potomac Resources (http://www.cuwcc.org/Uploads/product/Osann.pdf) on behalf of Friends of the Earth listed eight recommendations to the EPA, all of which are endorsed by a national range of stakeholder interests:

1. EPA should pursue water-efficient product labeling as one of several complementary strategies that promote greater end-use efficiency of water.

2. EPA should establish a water-efficiency research program to determine the full range of costs and benefits for water-efficiency measures, conduct research and development on new or improved measures, and document potential federal and local cost reductions from their implementation.

3. EPA should support the systematic review of water-using products, the characterization of the markets for such products, and the establishment of performance metrics that achieve water efficiency without compromising performance.

4. An EPA initiative for voluntary water-efficient product labeling should complement existing and future minimum efficiency standards under the National Appliance Energy Conservation Act (NAECA).

5. EPA's implementation of water-efficient product labeling should avoid detrimental effects to existing voluntary programs, most notably Energy Star®, such as confusion in the marketplace or burdens upon manufacturers or distributors.

6. The scope of EPA's national water-efficient product initiative should not be prematurely narrowed at this early stage.

7. EPA's selection of a name and logo design for a water-efficient product program should be fully supported by professional marketing research including field testing by a focus group.

8. EPA should continue to seek out the views of diverse stakeholders by a variety of mechanisms.

An overview of the Australian rating and labeling scheme was presented by Steve Cummings of Caroma on October 9, 2003 (http://www.cuwcc.org/Uploads/product/Cummings.pdf).

The meeting summaries (February 17, 2004 - to be posted soon; October 9, 2003 - http://www.epa.gov/owm/water-efficiency/pdf/meeting_summary.pdf) provide a very complete picture of the formal presentations and the stakeholder comments from all participants.

As the WEPMEP moves forward, it is important that all stakeholders participate…plan to attend the next meetings in Phoenix AZ and Seattle WA!