WORKSAFE!

A California Coalition for Worker Occupational Safety & Health Protection

May 22, 2006

Clerk of the Board
Air Resources Board
1001 I Street, 23rd Floor
Sacramento, CA 95814
By regular mail and fax: (916) 322-3928

Re: Amendments to the control measure for perchloroethylene dry cleaning operations—May 25, 2006 public hearing

Dear Air Resources Board:

WorkSafe, Inc. provides the following comments on the California Air Resources Board's consideration of the proposed amendments to the control measures for perchloroethylene dry cleaning operations. We urge the Air Resources Board (ARB) to do the following:

- Expand prohibition of perchloroethylene use beyond the proposed co-residential facilities across the board to all dry cleaning businesses in order to better protect residents and workers.
- Phase out the use of all Toxic Air Contaminants (TAC's) in dry cleaning facilities.
- Decrease phase out time of Perc machinery.
- Add penalties for failure to comply with the regulation.
- Analyze costs of illness related to organic solvent exposure, including perchloroethylene.

WorkSafe Law Center is a legal services support project which focuses on California's most vulnerable workers and provides advocacy support, technical assistance, and training to qualified legal services programs (QLSP's) about the effective use of workplace and environmental health and safety laws and remedies. WORKSAFE! is a coalition of labor and community groups, individual workers, occupational safety and health and other professionals, environmentalists and other interested persons dedicated to promoting occupational safety and health in the workplace in order to preserve the health of all Californians. Both are projects of the nonprofit organization, WorkSafe, Inc.

I. The health effects of perchloroethylene range from cancer to effects on the central nervous system such as dizziness and headache and even brain tumors.

Perchloroethylene (Perc, tetrachloroethylene) is a volatile organic solvent. Eighty-five percent of dry cleaning businesses in California use Perc. This harmful chemical enters the body through inhalation and absorption by the skin. People who regularly breathe excess amounts of Perc or spill it on their skin are in danger of developing serious health problems for themselves and for their future children.

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EPA estimates that 25% of solvent emissions can be attributed to leaks. US Dept.of Labor, Occupational Safety & Health Administration, *Reducing Workers Exposure to Perchloroethylene (PERC) in Dry Cleaning ("OSHA Fact Sheet")*, www.osha.gov/dsg/guidance/perc.html. It is possible to be exposed to Perc by living in an apartment above a dry cleaning facility and, we would add, no doubt next door to one. National Insititute of Environmental Health Sciences, *Dry Cleaners—Perchloroethylene (PERC) ("NIEHS Fact Sheet")*, www.niehs.nih.gov/external/faq/dryclean.htm. Dry cleaning workers themselves are even more heavily impacted.

When people bring clothes home from the dry cleaners, they release small amounts of Perc in the air. Agency for Toxic Substances and Disease Registry, *ToxFAQ's for Tetrachloroethylene (PERC) ("ATSDR Fact Sheet")*, www.atsdr.cdc.gov/tfacts18.html. Perc concentrations in homes with freshly dry-cleaned clothes stored in closets may be 2 to 30 times higher than average background levels. Children's Health Environmental Coalition, *Chemical Profile: perchloroethylene* ("*CHEC Fact Sheet*"), citing Tetrachloroethylene (Perchloroethylene), CAS No. 127-18-4: Reasonably Anticipated to be a Human Carcinogen." *Tenth Report on Carcinogens*. U.S. Dept. of Health and Human Services, Public Health Service, National Toxicology Program, December 2002, http://ehp.niehs.nih.gov/roc/tenth/profiles/s169tetr.pdf.

Families of dry cleaning workers are also affected. When dry cleaning workers come home, they bring some of their workplace with them—indoor air concentrations in apartments where dry cleaning workers lived were more than 10-fold higher than in other apartments. *CHEC Fact Sheet*.

A. Exposure to Perc results in acute and chronic neurological problems, including brain tumors.

Acute neurological effects of perchloroethylene include dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and even death. *ATSDR Fact Sheet*.

Chronic neurological effects of Perc include loss of coordination, mild loss of memory and visual perception, and delayed reaction time. *OSHA Fact sheet*. Latent effects from exposure to chlorinated aliphatic hydrocarbons like Perc include brain tumors. Chlorinated aliphatic hydrocarbons such as Perc can pass the blood-brain barrier because of their high solubility in fat. Heineman EF, Cocco P, et al. (1994) "Occupational exposure to chlorinated aliphatic hydrocarbons and risk of astrocytic brain cancer," *Am J Ind Med* 26(2): 155-69; Cocco P, Heinemen EF, et al. (1999) "Occupational risk factors for cancer of the central nervous system (CNS) among US women," *Am J Ind Med*, 36(1): 70-4.

B. Perc is a carcinogen.

The California Office of Environmental Health Hazard Assessment (OEHHA) has determined that perchloroethylene is a potential human carcinogen with no identifiable threshold below which no carcinogenic effects are likely to occur. Perc is listed as a carcinogen under California's Proposition 65. Both the U.S. Environmental Protection Agency (EPA) and the International Agency for Research on Cancer (IARC) have classified Perc as a probable human carcinogen.

Perc has been shown to cause cancer in laboratory animals that repeatedly breathed Perc in the air. Perc causes cancer in laboratory animals at exposure levels close to the level legally allowed in the workplace. California Department of Health Sciences, Hazard Evaluation System and Information Service, *Fact Sheet—Perchloroethylene (tetrachloroethylene or "perc) ("DHS/HESIS Perc Fact Sheet")*, www.dhs.ca.gov/ohb/HESIS/perc.htm). A report by the National Institute for Environmental Health Sciences (NIEHS) and National Institute for Occupational Safety and Health (NIOSH) confirmed studies that dry cleaning workers have excess cancer mortality at several sites, including tongue, bladder, esophagus, intestine, lung, and cervix. Both esophageal and cervical cancers seem to be specifically related to Perc exposure; whereas, cancer of the pancreas and the bladder may be related to either Perc or Stoddard solvent.

There is support for an association between dry cleaning and laundry work (likely PERC exposure) and kidney, pancreatic, cervical, esophageal, and lung cancers, and some support for bladder and colon cancers. Wartenberg, D, Reyner D, et al. (2000) Trichloroethylene and cancer: epidemiological evidence, *Environ Health Perspect*, 108 Suppl 2: 161-76.

Dry cleaning is associated with elevated levels of ovarian cancer. Shields T, Gridley G, et al., "Occupational exposures and the risk of ovarian cancer in Sweden," (2002) *Am J Ind Med*, 42, 3:200-213.

C. Perc is linked to reproductive harm.

Results from some studies suggest that women who work in dry cleaning industries where exposure to Perc is high may have more menstrual problems and spontaneous abortions than women who are not exposed. *ATSDR Fact Sheet*. Links are also suggested to altered sperm and reduced fertility. US Environmental Protection Agency, *Tetrachloroethylene (Perchloroethylene)*, ("*EPA Fact Sheet*"), www.epa.gov/cgi-bin/epaprintonly.cgi.

D. Perc is linked to birth defects.

Perc may also be harmful to pregnant women and their unborn children. Results of animal studies suggest that Perc can cross over the placenta to the embryo or fetus. *CHEC Fact Sheet*. Changes in behavior of the offspring of rats who were exposed to large amounts of Perc have been observed. *ATSDR Fact Sheet*.

When pregnant women are exposed to organic solvents such as Perc the risk of a malformation of the central nervous system to the child, including oral clefts, increases. Lorente C. et al., "Maternal occupational risk factors for oral clefts," *Scand J Work Enviro Health* 2000; 26(2):137-145 at 138; Holmberg PC, "Central-nervous-system defects in children born to mothers exposed to organic solvents during pregnancy," *Lancet* 1979;1 177-79. Exposure to organic solvents may also increase the risk of congenital heart malformations. J. Tikkanen and O.P. Heinonen, "Risk Factors for Ventricular Septal Defect," *Public Health* (1991), 105, 99-112.

E. Other chronic illnesses are linked to Perc.

Perc is linked to liver and kidney damage. Redness and blistering and redness of the skin after prolonged dermal contact are also side effects of Perc exposure. The NIOSH/NIEHS study also revealed elevated mortality rates in dry cleaning workers for pneumonia and diseases of the stomach and duodenum, ischemic heart disease, and urinary calculi.

F. Illness is costly.

In its recommendation, the ARB staff discusses the cost of replacing old equipment with new, and the cost to the individual dry cleaner consumer. But what about the cost of illness that is ultimately borne by the individual, her or his family, and public institutions in the form of medical care and education?

The cost of chronic illness, including those at least partially attributable to toxic environmental exposures, is almost immeasurable. For instance, as reported in the Journal of the American Medical Association,

> In 1987, 90 million Americans were living with chronic conditions, 39 million of whom were living with more than 1 chronic condition. Over 45% of non-institutionalized Americans had 1 or more chronic conditions and their direct health care costs accounted for three fourths of US health care expenditures. Total costs projected to 1990 for people with chronic conditions amounted to $659 billion--$425 billion for direct health care costs and $234 billion in indirect costs. Because the number of persons with limitations due to chronic conditions is more regularly reported in the literature, the total prevalence of chronic conditions has perhaps been minimized. The majority of persons with chronic conditions are not disabled, nor are they elderly. Chronic conditions affect all ages. Because persons with chronic conditions have greater health needs at any age, their costs are disproportionately high.

C. Hoffman, D. Rice and H. Y. Sung, Institute for Health and Aging at the University of California, San Francisco, USA, "Persons with chronic conditions: their prevalence and costs," *Journal of the American Medical Association* (1996) November 13;276(18):1473-1479.

In one year in the state of Massachusetts, direct costs of cancers in children that are at least partially environmentally attributable are estimated to range from $8,200,000 to as high as $147,600,000. "Direct costs" include medical costs, home and institutional care, lost parental earnings, and special education. The estimated cost of birth defects in Massachusetts for 1997, specifically of cleft palate or lip, was $2,559,000 or over $23,000 per each of 111 (estimated in 2002 dollars). Those "costs" include only direct medical costs and special education. These figures do not even touch on what is arguably the immeasurable cost of loss of life due to cancers and birth defects, to name just two results of Perc exposure; however, the US Environmental Protection Agency has estimated the value of a human life at $6.1 million. Rachel Massey, Frank Ackerman, Global Development and Environment Institute, Working Paper No. 03-09, *Costs of Preventable Childhood Illness: The Price We Pay for Pollution*, September 2003.

II. Summary of ARB Staff Recommendation:

The Air Resources Board staff recommends a two-tier regulatory system where businesses using Perc that are not located in co-residential facilities are treated differently from those that are. Perc machines

will be prohibited in any new facility situated in a co-residential building. An existing co-residential facility must remove its Perc machine by July 1, 2010. A co-residential facility is any facility existing in the same building as residences.

With respect to existing facilities that are not co-residential, the staff's proposal suggests that all facilities within 100 ft of sensitive receptors, convert to an integral secondary control system (or a non-Perc alternative) by July 10, 2009 or when the machine is 15 years old, whichever is the latest. For those facilities that are situated 100 feet or more from a sensitive receptor, machines must be converted to an integral secondary control system by July 10, 2010 or when the machine is 15 years old, whichever is the latest.

A new non-co-residential facility must be situated at least 300 feet from sensitive receptors, more than 300 feet from the border of any residential zone. It must use the Best Available Control Technology (BACT) for Perc operations—integral secondary control machine and enhanced ventilation.

III. WorkSafe's Comments and Recommendations:

A. Expand prohibition on perchloroethylene (Perc) used in drycleaners beyond co-residential buildings to all facilities.

We applaud the recommendation to prohibit Perc in co-residential dry cleaning facilities; however, in light of the health effects of organic solvents including Perc and the costs of chronic illnesses and diseases, we urge the ARB to expand the co-residential prohibition to all facilities in order to better protect the person who lives or works next door to a drycleaner, and better protect the person who works at the drycleaner itself.

B. Prohibit the use of all other Toxic Air Contaminants (TAC's) in dry cleaning which are also harmful to neighborhood residents, workers, and the environment:

The staff admits that its proposal could lead to increased emissions of ozone depleting hydro carbons. The suggested amendment has no prohibition on other TAC's such as Stoddard solvent. Stoddard solvent is a petroleum-based mixture of alkane, naphthene, and aromatic hydrocarbons. Its use greatly increases the risk of fire. It is used by about 10% of dry cleaners across the United States. To reduce the possibility of explosion, the transfer step would need to continue to exist, making the process more unsafe for workers and harmful emissions more likely. Conversion to a TAC other than Perc is no solution; prohibition of all TAC's is.

C. Reduce the time by which facilities must be in compliance with the amended regulation.

The proposed regulation makes it quite possible that a machinery using Perc can continue operating without the best and most protective equipment for 10 years from May 2006. Due to the dire and costly health effects of the Perc technology, this is unacceptable. All existing facilities should be operating with non-toxic processes and equipment by July, 2009. If facilities are allowed to continue to use Perc or other toxic products, they should be required to switch to integral secondary control machinery also by July 1, 2009.

We recommend changing the definition of "existing facility" to one that is operating Perc dry cleaning equipment prior to the effective date of this regulation—instead of one that is operating prior to July 1, 2007.

D. We recommend imposing penalties for violating the regulation.

It is unclear whether any penalties will be imposed for violating regulations to eliminate Perc and unsound machinery that uses it or another TAC. We recommend developing a schedule of penalties that takes into account the capacity of smaller businesses so that Perc machine owners understand the seriousness of unlawfully exposing neighbors and workers to harmful Perc emissions.

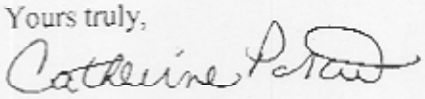
E. We recommend the staff analyze the cost of illness due to solvent exposure such as Perc as a critical part of its review of the proposed regulation.

We reviewed the staff's cost analysis of businesses converting to non-Perc machines or products. We believe that any comprehensive analysis of shifting from a toxic to a less or non-toxic system or product, must also take into account the cost of illness and the cost savings in avoiding illness.

IV. Conclusion:

We urge the Air Resources Board to act in deference to the health and safety of residents who live, and of workers who work, in neighborhoods where dry cleaners are located, and the health and safety of the workers in the cleaning facilities themselves. As the Staff indicated in its report, there are effective and safe alternatives to Perc and other solvent cleaners. There is no better time than now to require shifting to safer and healthier ways of doing the business of cleaning.

Yours truly,



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