

Prohibiting installations of perc machines

Ordinance 301.105

301.105. Tetrachloroethylene (Perchloroethylene).

No dry cleaning machine, new or used, installed after March 1st, 2015 shall use tetrachloroethylene, otherwise known as “perc,” as a solvent.



Perc Related Ordinance Change

- Provides the city clear authority to prevent new or used machines from being installed in Minneapolis
- Non-controversial as the industry is heading away from perc (MN Cleaners Association is aware)
- Prevents any business from selling old equipment in Minneapolis



Perc

- Tetrachloroethylene referred to as PERC - C_2Cl_4
- Colorless, non-flammable liquid used mainly for its degreasing properties
- It is Volatile Organic Compound (VOC)
- Defined as a “Likely human carcinogen” by the **EPA**
- Long-term exposure may cause liver and kidney damage as well as decrease immune system function (EPA)
- Short-term exposure affects Nervous System - dizziness, fatigue, headache (EPA)
- Widely used for dry cleaning

Minnesota Department of Health

- The Minnesota Department of Health reexamined the Health Risk Values for perc in 2014.
- The new standard was set at 2 ug/m³
- *“MDH previously recommended values for PCE of 20 µg/m³. The decrease from past values is due to an improved understanding of PCE as a result of a more current toxicological review by the U.S.EPA.”*

potency estimates for early life exposure (U.S. EPA, 2005; MDH, 2010).
The equation used follows:

$$\text{Age Adjusted Unit Risk (AAUR)} = 2/70 [(3 \times 10^{-6}) \times 10] + 14/70 [(3 \times 10^{-6}) \times 3] + 54/70 [(3 \times 10^{-6}) \times 1] = 5 \times 10^{-6} (\mu\text{g}/\text{m}^3)^{-1}$$

Consistent with MDH policy, an additional lifetime risk level of 1×10^{-5} was divided by the AAUR of $5 \times 10^{-6} (\mu\text{g}/\text{m}^3)^{-1}$ to calculate the exposure level as shown below:

$$\frac{1 \times 10^{-5}}{5 \times 10^{-6}} = 2 \mu\text{g}/\text{m}^3$$

Indoor Air: Minneapolis Parkway Plaza Perc Case

Day Care

Dry Cleaner



Workers were being exposed to +80,000 ug/m³ of perc

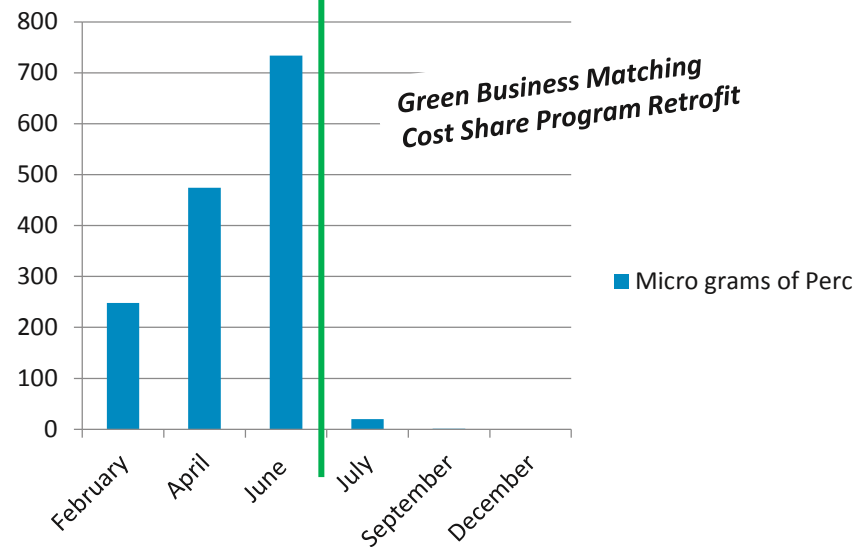
MPCA action level is 20 ug/m³

The Health Risk Value is

2 ug/m³



Rise and Shine Day Care Perchloroethylene Levels



Outdoor Air Quality

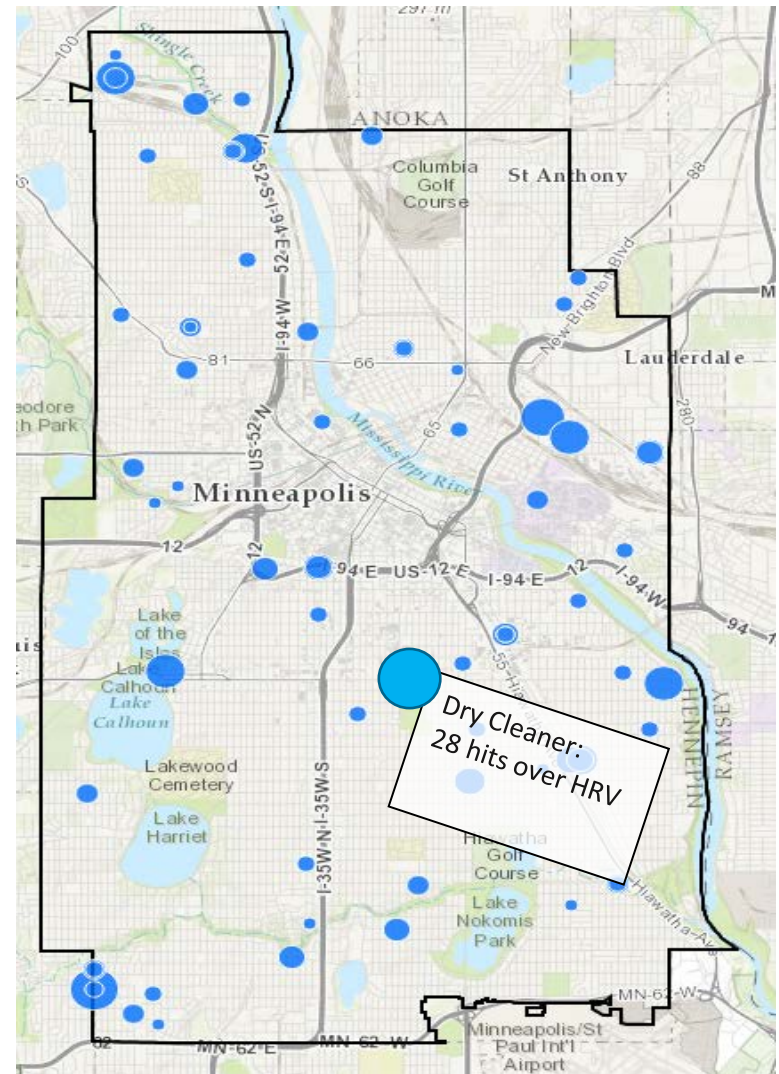
EPA estimates background levels of perc to be less than 2 $\mu\text{g}/\text{m}^3$.

The Minneapolis air quality study found 99 hits of perc over the MN Health Department's Health Risk Value of 2 $\mu\text{g}/\text{m}^3$. Most hits of any chemical.

28 of these hits were at our dry cleaning location.

There are 8 other dry cleaning locations in Minneapolis where we would expect these results.

Figure 2. Air Quality:
A Neighborhood Approach Study



Samples containing levels of perc over 2 $\mu\text{g}/\text{m}^3$

A little closer
to a perc free Minneapolis

