DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Lake Simcoe Region Conservation Authority

South Georgian Bay Lake Simcoe Source Protection Region

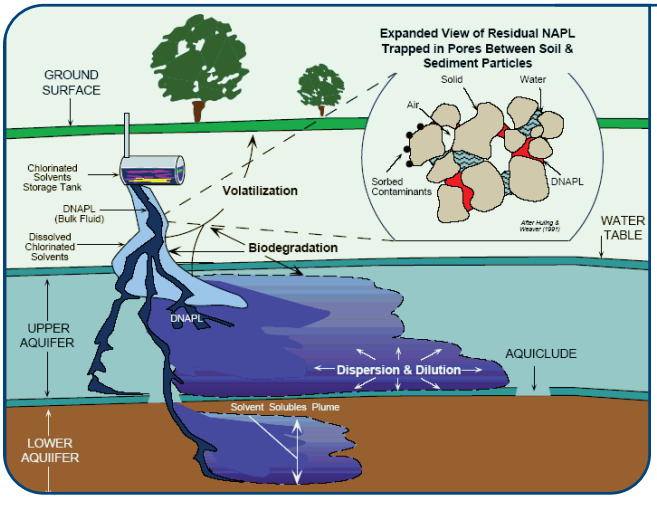
# What are DNAPLs and why are they a threat to drinking water?

Dense, Non-Aqueous Phase Liquids, or DNAPLs (pronounced dee-napple) are chemicals that are more dense than water and generally do not dissolve readily in water, but remain as a distinct liquid in surface or ground waters. If spilled, they tend to sink into the ground and can contaminate the deepest groundwater resources (and those in between).

These chemicals can be quite toxic to humans and/or the environment, even at low levels, which means that even if only a little gets into the water, it would be harmful to consume. Some compounds, such as PCBs and mercury, are persistent in the environment for decades, while others can become more toxic as they break down (chlorinated ethenes). DNAPLs of greatest interest tend to be those products that have been used extensively in commercial and industrial applications. The Clean Water Act, 2006, stipulates that we pay extra attention to DNAPLs because if they get into the water they are very difficult to get out. DNAPL contaminants may very well be the most difficult groundwater contaminant to deal with.

## *What are the commonly used DNAPLs*

- DCM (dichloromethane) Paint stripper, metal cleaning, pharmaceuticals, aerosols.
- TCM (chloroform) Pharmaceuticals, fats, oils, rubber, resins.
- TCA (trichloroethane) Metal/plastic cleaning, adhesives, aerosols, inks, fats, waxes.
- TCE (trichloroethylene) Metal cleaning, dry cleaning, paint removers, adhesives.
- PCE (perchloroethylene) Dry cleaning, metal cleaning, intermediates in processes.




## *Why are DNAPLs so dangerous?*

- DNAPLs don't dissolve readily, and are heavier than water, which means they sink into the ground and create pools which may remain for decades to centuries.
- DNAPLs are sometimes also called "sinkers" or "toxic blobs" because of these characteristics.

## *What can you do?*

- Dispose of household chemicals at your local Hazardous Household Waste Disposal Centre.
- Help the South Georgian Bay Lake Simcoe Source Protection Committee identify locations of old DNAPL use and disposal sites.