

# Dense Non-Aqueous Phase Liquids (DNAPLs)

Public Outreach EDU-2A



**Source Water Protection is a provincial requirement of the *Clean Water Act* meant to protect our municipal drinking water sources (lakes, rivers and underground) from contamination and overuse.**

## What Are DNAPLs?

Dense Non-Aqueous Phase Liquids or DNAPLs are chemicals that are denser than water and generally do not dissolve readily. They remain as a separate liquid in surface or ground waters.

These chemicals are toxic to humans and the environment even in low levels, which means they would be harmful to drink.

## Commonly Used DNAPLs

- DCM (Dichloromethane) – Paint stripper, metal cleaning, pharmaceutical, and aerosols.
- TCM (Chloroform) – Pharmaceuticals, fats, oil, rubber, and resins.
- TCA (Trichloroethane) – Metal/plastic cleaning, adhesives, aerosols, inks, fats, and waxes.
- CTC (Carbon tetrachloride) – Fats, oils, lacquers, varnishes, waxes, resins and seed oil.
- TCE (Trichlorethylene) – Metal cleaning, dry cleaning, paint removers, and adhesives.
- PCE (Perchloroethylene) – Dry cleaning, metal cleaning, intermediates in processes.

## Who is Responsible?

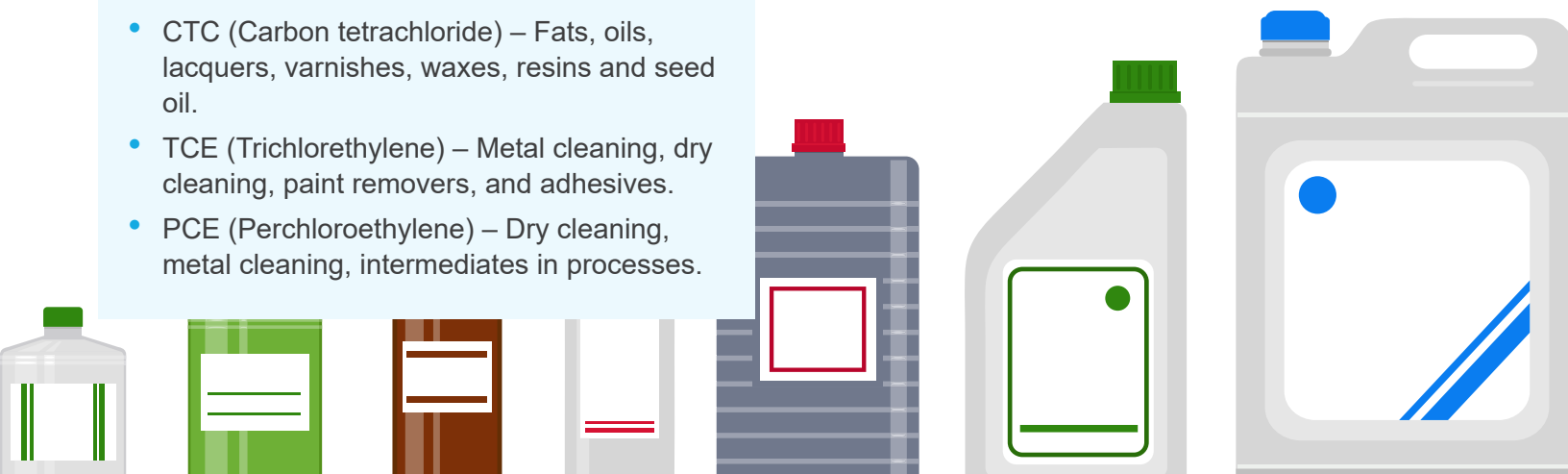
Everyone needs to do their part to protect our drinking water. DNAPLs of concern tend to be products that have been used extensively in commercial and industrial applications.

## Why Are DNAPLs Dangerous?

DNAPLs are dense and it only takes a small amount to travel deep into the ground to the water table. DNAPLs are heavy which means they get into aquifers where we get our drinking water. DNAPLs are referred to as “toxic blobs” because of their traits.

## How Will This Affect You?

DNAPLs contaminate our groundwater for anywhere from decades to centuries, depending on the conditions. DNAPLs can cause serious health issues in humans and the environment.



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## What Actions Can You Take?

Landowners who own property near sources of drinking water and handle or store DNAPLs, or have done so in the past, should be aware that this practice can pose a significant threat to drinking water quality.

The best way to protect our drinking water and the environment is to make sure DNAPLs are not spilled, that they are contained properly, and that property activities or conditions are identified.

## Authorities

Source Protection Plans were developed and contain policies that either recommend or require actions to be taken to protect the existing and future sources of drinking water. The *Clean Water Act* mandates that risks associated with all significant threat activities must be reduced.

### Source Water Protection Questions? Contact:

1-800-465-0437 | [ourwatershed.ca](http://ourwatershed.ca)



## Background

The City of Orillia is part of the Lake Simcoe Source Protection Region under the *Clean Water Act*. The Source Protection Authority developed processes for municipalities to provide guidance to property owners in vulnerable areas where activities would cause a significant drinking water threat. Land-use activities have been inventoried in vulnerable areas and significant drinking water threats have been identified.

South Georgian Bay Lake Simcoe Source  
Protection Region  
[ourwatershed.ca](http://ourwatershed.ca)

## Contact Information

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