



## Drinking water threats

Industrial and commercial businesses use chemicals for a variety of purposes. If not properly handled, stored and disposed of, some of these chemicals may pose a risk to drinking water sources.

A *threat* is an activity that has the potential to have a harmful effect on the quality of drinking water sources. Even minor spills or leaks of fuels or some chemicals can leach into the groundwater, posing a risk to drinking water sources. The *Clean Water Act, 2006* regulates drinking water threat activities, including the storage and handling of hazardous chemicals and fuel.

Within vulnerable areas surrounding municipal wells and under certain conditions, these activities may be classified as *significant threats*. Businesses in these areas need to pay special attention when it comes to protecting source water



## Significant threat activities

- **Organic solvents**— liquids that are used to dissolve other substances. Can be hazardous to human health and the environment.
- **Dense non-aqueous phase liquids (DNAPLs)**— chemicals that are denser than water and sink in groundwater aquifers. and do not readily dissolve. Can be toxic to human health
- **Fuels**
- **Hazardous waste**

Significant threat details are on the reverse side of this handout.



## Managing the risk

The *Clean Water Act, 2006* and the *Source Protection Plan* manage these significant threat activities within vulnerable areas by using:

### Risk Management Plans (RMP)

A negotiated agreement between a County Risk Management Official (RMO) and the person (business owner, tenant, landowner) engaged in the activity. The RMP includes best management practices to manage the risk associated with the storage and handling of the chemical or fuel.

### Prohibition

The future handling and storage of chemicals and fuels may be prohibited in areas close to municipal wells.



## Tips to protect our water

- Develop and regularly review and update a Spill Prevention and Response Plan
- Train staff to use chemicals responsibly
- Identify hazardous products and consider using alternatives or reducing the amounts stored
- Conduct regular inspections of containers, tanks and chemical storage areas
- Store chemicals in areas away from floor drains and other paths to environment
- Use certified contractors to transport and dispose of hazardous material
- Keep spill kits or spill response equipment on site
- Keep Safety Data Sheets available and current

### For more information:

Source Protection Program Coordinator  
sourcewaterprotection@oxfordcounty.ca 519-539-9800 ext. 3126

## Significant threat criteria

### DNAPLs

Significant in WHPA – A, B, C with any vulnerability score

| Chemical   | Common names and use   |
|--|--|
| <b>Polyaromatic Hydrocarbons (PAHs)</b>                  | PAH Compounds: Acenaphthene, Acenaphthylene, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Benzo(a)phenanthrene, Dibenz(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene<br>Used in wood preservatives, pharmaceuticals, dyes and asphalt products, creosote manufacturing, wood burning, combustion of biofuels |
| <b>Dioxane-1.4</b>                                       | Dioxane, Diethylene Dioxide, Diethylene Ether<br>Used as a degreasing solvent or solvent stabilizer in various manufacturing processes   |
| <b>Tetrachloroethylene (PCE)</b>                         | Perchloroethylene, PCE, Ethylene, Tetrachloride, Nema, Tetracap, Perclene, Ankilostin, PerSec<br>Used in dry cleaning, metal cleaning and as intermediate in manufacturing processes   |
| <b>Trichloroethylene (TCE)</b>                           | TCE, Trichlor, Trike, Tricky, Tri, Trimar, Triene, Ethinyl Trichloride, Tri-Clene, Trielene, Trichloran, Trichloren, Algylen, Trimar, Trethylene, Westrosol, Chlorlyen, Gemalgene, Germalgene<br>Mainly used for degreasing metal parts in the automotive and metal industries. Also found in some household products such as adhesives, paint removers, paints, rug cleaning fluids, and metal cleaners.                  |
| <b>Vinyl Chloride</b>                                    | VCM, Polymer Polyvinyl Chloride (PVC), Vinyl Chloride Monomer, Chloroethene, Chloroethylene<br>Used to make polyvinyl chloride (PVC) pipes, wire coatings, vehicle upholstery and plastic kitchen ware   |
| <b>Compounds that degrade into TCE or Vinyl Chloride</b> | 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, 1,1,1-Trichloroethane (1,1,1-TCA), 1,1,2-Trichloroethane (1,1,2-TCA), 1,1-Dichloroethylene (1,1-DCE), 1,1-Dichloroethylene (1,1-DCE), Cis 1,2-Dichloroethylene (Cis 1,2- DCE), Trans 1,2-Dichloroethylene (Trans 1,2- DCE), Chloroacetylene, Dichloroacetylene   |

### Organic solvents

Significant in WHPA – A, B with a vulnerability score of 10

| Chemical   | Common names and use   |
|--|--|
| <b>Carbon Tetrachloride (tetrachloromethane)</b> | Carbon Chloride, Methane Tetrachloride, Benziform, Perchloromethane, Tetrachloroethane, Benzinoform, Freon 10, Halon 104, Tetraform, Tetrasol, carbon tet, refrigerant 10<br>Used in research labs or in a manufacturing process that converts the substance to an alternative product<br><b>Quantities of &gt;25L below grade or &gt;250L above grade</b>                     |
| <b>Chloroform (trichloromethane)</b>             | Trihalomethanes, Methyl Trichloride<br>Laboratory settings, used in production of pharmaceuticals, dyes and pesticides<br><b>Quantities of &gt;250L below grade or &gt;2,500L above grade</b>  |
| <b>Methylene Chloride (Dichloromethane)</b>      | DCM, Methylene Chloride, Methylene, Dichloride, Methylene Bichloride<br>Solvent in paint strippers. Process solvents in manufacturing for pharmaceuticals, film coatings. Also used in metal cleaning, finishing in electronics and in some paints. Some aerosol paint products, cleaning applications.<br><b>Quantities of &gt;250L below grade or &gt;2,500L above grade</b> |
| <b>Pentachlorophenol</b>                         | Santophen, Pentachlorol, Chlorophen, Chlon, Dowicide 7, Pentacon, Penwar, Sinituho, Penta<br>Used as a herbicide, insecticide, disinfectant, ingredient in antifouling paint, wood preservative.<br><b>Quantities of &gt;2,500L below grade (not a significant threat above grade)</b>   |

### Fuel

Significant in WHPA – A, B with a vulnerability score of 10

| Threat activity  | Circumstances  |
|--|--|
| <b>Smaller quantities e.g. residential heating oil (&lt;2,500L)</b>                | Where liquid fuel is stored partially or completely below grade in tanks at a facility where the quantity stored is >250L            |
| <b>Larger quantities &amp; bulk plant or fuel manufacture/refining &gt;2,500 L</b> | Where liquid fuel is stored completely at or above grade, below grade or partially below grade, where the quantity stored is >2500 L |