

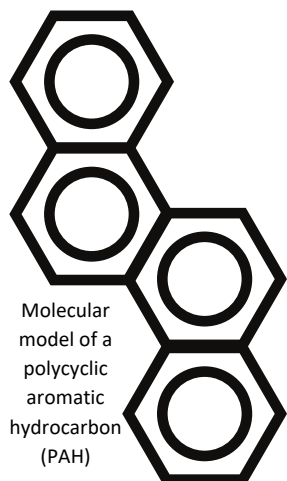


# Dense Non-Aqueous Phase Liquids

Dense non-aqueous phase liquids (DNAPLs) are chemicals that have a higher density than water, and do not dissolve easily in water. DNAPLs are considered dangerous and toxic to human health, even at low concentrations. Some DNAPLs are classified as carcinogenic to human and animals.


## DNALPs as a Drinking Water Threat

The handling and storage of DNAPLs could result in spills or leaks which can affect drinking water systems since the substances will sink below the water table which contaminates the groundwater. These chemicals can last for decades or centuries, and they are difficult to locate and remove from groundwater. DNAPL contamination is unlikely to remediate and therefore wells will need to be replaced. DNAPLs are widely used in many industries and can also be found in smaller quantities in household cleaners and adhesives. DNAPLs are typically used in dry cleaning chemicals, cleaners, degreasers, and varnishes. Examples of DNAPLs include 1,4- Dioxane, polycyclic aromatic hydrocarbons (PAHs), tetrachloroethylene (TCE), trichloroethylene (PCE), and vinyl chloride (VC).



## Where are DNALPs Drinking Water Threats?

The handling and storage of DNAPLs are considered significant drinking water threats when they occur in the most vulnerable areas around a municipal drinking water source such as Wellhead Protection Areas (WHPAs), and Intake Protection Zones (IPZs) There are significant drinking water threats for the handling, and storage of DNAPLs in:

- WHPA A, B, and C for wells in the Villages of Deloro, Madoc, Point Anne, and Tweed, and the hamlet of Peats Point.
  - IPZ 1 in Ameliasburgh, Belleville, Deseronto, Napanee, Picton, and Point Anne.
  - Due to Picton's IPZ's vulnerability scoring, DNAPLs are considered a significant drinking water threat in both IPZs 1 and 2.
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## How are DNAPL Threats Being Addressed?

The Quinte Source Protection Plan contains policies that address both existing and future handling and storage of DNAPLs that are or would be considered significant drinking water threats in vulnerable areas.

### Risk Management Plans

Risk Management Plans (RMPs) are required for existing commercial and industrial handling and storage of DNAPLs in vulnerable areas (WHPAs A-C, and IPZs 1 and 2). RMPs are negotiated with the people engaged in the threat activity and Risk Management Officials. The RMPs include management measures related to the threat(s) on the property. These measures may include the relocation of storage facilities, emergency spill plans, and/or the adoption of best management practices.



### Restricted Land Use

Restricted land use allows municipalities to identify areas where the application, handling, and storage of pesticides should be either prohibited or require a risk management plan (WHPAs A-C, and IPZs 1 and 2). This allows municipalities to create their own process to ensure that future development complies with the Quinte Source Protection Plan.



### Prohibition

The handling and storage of DNAPLs for commercial or industrial uses is prohibited in the most vulnerable areas which include:

- WHPAs A, B and C for Deloro, Madoc, Peats Point, Point Anne, and Tweed.
- IPZ 1 for Ameliasburgh, Belleville, Deseronto, Napanee, Picton, and Point Anne.
- IPZ 2 in Picton.

### Education and Outreach

The Quinte Source Protection Plan includes a policy for general education and outreach. This policy exists to raise awareness about the drinking water concerns related to the handling, and storage of DNAPLs in vulnerable areas.