

Unearthing USTs

Underground fuel storage tank management

By Agnes Miczynska

Underground storage tanks (USTs) containing fuel oil may prove to be an unexpected and costly liability for owners.

In Canada, USTs are regulated to prevent contamination of surrounding soil and groundwater systems as a result of leakage.

While regulations vary from province to province all abandoned USTs in Ontario must be re-instated with upgrades or removed, according to Ontario Regulation 213/01 (Fuel Oil). Furthermore, if a UST has been out of use for a period greater than two years and there are no plans for use, the UST must be decommissioned and any contaminated soil surrounding the UST removed.

Under Ontario Regulation 216/01 (Certification of Petroleum Equipment Mechanics), removal of USTs must be performed by a qualified PM-2 (petroleum mechanic) contractor licensed by the Technical Standards and Safety Authority (TSSA) fuel safety division. The majority of the responsibilities outlined in this regulation lie with the owner. For example, all USTs must be registered with the TSSA.

Most USTs installed in the '80s were made of metal (for example, steel) that may eventually corrode and leak. As the oil floats to the top of the tank, water collects at the bottom corroding the base of the tank and allowing fuel oil to leak-out. As a result, USTs made of metal must be

removed or upgraded to include a corrosion protection system; for instance, cathodic protection or sacrificial anodes.

Newer tanks are commonly made of fibreglass due to its inherent resistance to moisture-related corrosion in underground applications. These tanks can also be double-walled and equipped with tank monitoring systems capable of detecting leaks.

Knowledge of USTs and all applicable regulations is especially important for anyone who owns or plans to buy or sell property. The TSSA advises potential property buyers to perform their due diligence work and check the property for the presence of USTs. Though commonly found at older, multi-residential properties (as part of a heating system), gas stations, convenience stores, bus terminals, railroad yards and auto dealerships, USTs have also been discovered at schools, auto repair shops, farms, homes, factories as well as other locations.

Potential property buyers can check with the TSSA to see if there is a registered tank on a particular property. Other detection methods include ground penetrating radar systems and electromagnetic surveys that are non-destructive and use radar pulses and magnetic induction to image the subsurface and potentially identify the presence of a former or historic UST.

The question of possible contamination from

a leaking tank will almost certainly come up in any transaction involving a property that has had a UST. Even if owners do not intend to sell their property, they must decommission the tank for their protection as contamination from a leaking UST can lead to off-site migration of contaminants and increased legal liability, which can often be costly. The extent of soil and groundwater contamination will vary depending on the length of time the UST has been leaking, groundwater flow rate, soil composition and the vertical distance between the release point to the surface and release point to the water table. Accordingly, it is in the best interest of the owner or potential buyers to take the necessary measures to minimize risk.

Should a spill, leak or discovery of contamination be encountered as a result of the presence of a UST, the owner must contact a qualified person (QP). Defined by the Ontario Ministry of Environment as either a professional engineer or professional geoscientist, a QP will conduct or supervise a Phase 2 Environmental Site Assessment (ESA) to determine the extent of contamination and propose a remedial action plan (RAP) to clean up the impacted area. The RAP will require the removal of the UST as well as excavation and disposal — or possibly chemical or biological treatment — of the impacted soil and groundwater. The PM-2 contractor performing this work will do so under the direction of the QP (consultant). Following removal and excavation, samples will have to be taken by the QP and analyzed by a CAEAL (Canadian Association for Environmental Analytical Laboratories) certified laboratory to confirm that all contaminated soil has been removed or treated. The area must then be restored by backfilling with clean fill materials and compacted to the conditions prior to tank installation.

Agnes Miczynska is the business development manager at Tri-Phase Environmental Inc., a TSSA licensed contractor. Contact Agnes at 905.823.7965 or Agnes@pcbdisposal.com.

UST Timeframe Compliance

An existing UST will not be registered if it does not comply with the following timeframes for removal or upgrade.

*Age of Underground Tank System	Deadline for Removal or Upgrade
25 or more years (or if unknown)	Oct. 1, 2006
20 – 24 years	Oct. 1, 2007
10 – 19 years	Oct. 1, 2008
0 – 9 years	Oct. 1, 2009

*Years from date of original installation.