

HazMat Magazine, April/May 2006

Pills and Bills

Editorial

A novel way to prevent water woes from pharmaceutical waste

Pharmaceutical and cosmetic wastes dangerously taint Canadian waters. And as consumption of these products continues to steadily increase --from 219.7 million in 1994 to 381.6 million in 2004 --the situation is only getting worse.

A recent report by the Canadian Institute for Environmental Law and Policy (CIELAP) examines the issues related to increasing environmental contamination by pharmaceuticals and personal care products, such as pills and cleaners. The report says that while many contaminants enter the environment through sink and shower drains, flushing old medications down the toilet is another significant contributor. (These in addition to the residual 25 to 95 per cent of active drug ingredients contained in human and animal excrement after pharmaceuticals are ingested.)

The trouble with drug residues is that it only takes a little to do a lot of damage. For example, the report refers to Environment Canada research that found a fish population collapsed after being exposed to water containing only five to six parts per trillion of estrogen. (One part per trillion is roughly equivalent to a drop of water in a train of tank cars stretching 16 kilometers.) The levels are similar to those found downstream from sewage treatment plants where the hormone is found because of its use in birth control pills.

As a result, these hazardous pollutants easily contaminate surface water and enter aquifers, rivers and lakes --the main sources of drinking water --and can lead to endocrine disruption and disease in humans. It's enough to make one want to quit drinking, and I mean water.

Susan Holtz, a senior policy analyst with CIELAP and author of the report, recommends the following actions to address this dire situation. Better product stewardship programs for returning unused drugs. A process to determine endocrine disruptors in sewage and industrial effluents. A phase out of antibiotics and hormones used as animal growth promoters. And, a review of sewage sludge and animal manure management practices in light of issues related to pharmaceuticals and resistant bacteria in water. The report also points to British Columbia's voluntary program as a model because it encourages consumers to return unused medication to drugstores.

While government officials mull over the research and options, the environmental industry is ahead of the game as usual.

An innovative waste treatment solution is on the horizon in Wolseley, Saskatchewan at a facility strategically located smack dab in the middle of the country. Phase Separation Solutions Inc. (PS2) is using the same technology that they used for the recovery of hydrocarbons from paint and industrial , sludges but with a special twist, to accommodate pharmaceutical wastes. The process is called "pyrolytic depolymerization."

"It is quite practical to recover and recycle oil from the product packaging while safely destroying the potentially harmful active ingredients in the product," says Steve Clarke, vice president of business development with PS2. From experience, he estimates that about up to 25 per cent of pharm waste by volume is recoverable oil.

So, a recovery program such as the one in B.C. coupled with this innovative treatment system could, in essence, see old pills reduce oil bills and help protect water sources. I'd drink to that.

Connie Vitello is editor of this magazine. Please send your letters to connie@hazmatmat.com.