



Onsite Treatment Offers Solutions for Global Wastewater Pollution

Water re-use, soil-based treatment and other decentralized wastewater treatment methods offer low cost, sustainable solutions for communities faced with water scarcity challenges.

This article explains how onsite systems can reduce local pollution and improve local water supply.

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The Olympic Games in Rio de Janeiro, Brazil drew the world's attention to Brazil and raised awareness of the impaired waters in which competitors would have to compete. The country's lack of wastewater treatment and its resulting contaminated surface and coastal waters are sources of concern, but the truth remains that much of the world still uses dilution as its primary form of wastewater treatment, including some of the most developed nations. Countless sewer systems have no treatment at their outfall or combined sewer overflow (CSO) locations; many more provide only primary treatment (solids separation).

The first sewers, built between 2000 and 1500 BC, were designed to carry wastewater away from the cities and protect public health by preventing disease outbreaks. These early systems collected raw wastewater and discharged it directly, and without treatment, into surface waters such as lakes, harbours, and oceans across the world. At this time, this practice was considered protective of human health. Now simply sewerage, without providing wastewater treatment, is recognized as dangerous to human and environmental health.

Wastewater pollution is toxic to humans, aquatic life, other organisms and the environment. Exposure to untreated and impaired wastewaters leads to a rise in disease. Sewage contains bacteria, viruses and other pathogens that can lead to sickness and death when introduced to the human body. More than an estimated 250 million people contract waterborne diseases each year.

In addition to public health concerns, discharging untreated wastewater into surface waters damages the environment. Nutrient overload (eutrophication) causes water bodies to become anaerobic, killing aquatic life and other organisms dependent on that source of fresh water. Discharging untreated wastewater into surface waters can also change the thermal properties of the water source, as wastewater effluent is often warmer than the natural surface waters, which can in turn harm natural ecosystems and aquatic populations.

Together, the lack of wastewater treatment plants and CSO failure during rain events is causing a widespread crisis of wastewater pollution in many countries. In Canada, approximately 150 billion liters of untreated or undertreated wastewater flow into surface waters, making sewers the number one polluter of Canadian surface waters. Eighty per cent of the urban wastewater released daily into both the Mediterranean Sea and the Yangtze River in China is also untreated. According to the US Environmental Protection Agency, 44 per cent of stream miles, 64 per cent of lakes and 30 per cent of bay and estuarine areas in the United States are too polluted for fishing and swimming. A 2013 study performed by the Water Institute at the University of Carolina estimated that approximately 1.5 billion people worldwide use sewer systems without treatment, and more than 50 per cent of global surface waters are impaired by untreated wastewater. These few examples offer evidence that many communities and countries beyond Brazil are affected by widespread wastewater pollution.

Moving Forward

Wastewater treatment is a complex process that requires a combination of solutions, rather than a one-size-fits-all approach. Currently, adding a conventional wastewater treatment plant before discharging to surface waters is the most common remedy to untreated sewer flows. These facilities can be designed for varying levels of wastewater

treatment, depending on the discharge location and requirements. However, they can be very costly, both in construction costs and infrastructure maintenance required for adequate treatment during storm water events ranging from low-flow to peak. Additionally, many of the materials required to build treatment plants are not environmentally friendly or sustainable and can have capacity problems during large storm events. While treatment plants are often conceived to be the only – or the best – option available, there are many other more affordable and effective treatment systems that communities can adopt.

For example, water re-use and soil based treatment offer two viable and sustainable wastewater solutions that can decrease discharges or even recharge local aquifers. Water re-use enables municipalities to decrease discharge into surface waters and thereby decrease demand on the local potable watershed. Centralized sewers and wastewater treatment plants relocate a vast amount of water across watersheds. One way to limit this transfer is to install a water re-use system that provides advanced treatment to produce effluent of sufficient quality to allow reuse for toilet flushing, cooling, irrigating, and even for drinking water, among other uses.

Read the whole article here: <http://www.sowma.ca/onsite-treatment-offers-solutions-for-global-wastewater-pollution/>

Onsite Wastewater Practitioner Training

The next available training session dates are:

Days 1 – 4 – November 28, 29, 30, 2018, Regina, SK

Days 5 – 8 – December 11, 12, 13 & 14, 2018, Regina, SK

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