



CANADA'S WATER INDUSTRY WATER AND WASTEWATER SOLUTIONS FOR THE MINING SECTOR

According to Global Water Intelligence, the mining industry is the second largest industrial user of water in the world after the power generation industry. Mining uses between seven and nine billion cubic metres of water per year. Due to potential environmental risks, much of the mining industry monitors the water that flows from its sites, and in many parts of the world it is required to take steps to prevent pollution.

To help the mining industry minimize its environmental impact, many Canadian firms offer innovative water and wastewater solutions, including options that conserve limited water supplies, systems that treat and reuse effluent within operations, and technologies that recover value, such as metals from wastewater streams.

These companies are helping their clients produce higher-quality effluent, save money through efficiency and compliance, and, protect the safety of water supplies.

In 2011, the annual capital expenditure on
**MANAGING WATER IN
THE MINING INDUSTRY**
was approximately

\$7.7B¹

¹ Water for Mining: Opportunities in Scarcity and Environmental Regulation. Global Water Intelligence. 2011



NEWTERRA > newterra.com

When a global mining company needed to expand its operations at a mine in Zambia, it looked to **newterra** (Ontario) to engineer and build its sewage treatment system. newterra delivered a 26-container modular sewage treatment system to not only address the mine's growth, but also the 8,000-person community supporting the project. This pre-built, pre-tested system required minimal site work at the remote location and is designed to be scalable for future growth. Treatment units can be added if the mining community grows, and later removed if capacity requirements decrease. The modular design also allows the plant to be moved in the future without leaving any assets in the ground. Sewage is treated to the high standards established by the World Health Organization (WHO), thus allowing reuse for irrigation, dust control and other applications, or direct discharge to the local river. Incorporating ultraviolet disinfection provides tertiary treatment to eliminate potential discharge of harmful pathogens, such as cryptosporidium and giardia.

Bringing leadership and innovative solutions to the world.

WATER
INDUSTRY

CANADIAN COMPANIES WORKING GLOBALLY

When it comes to water and wastewater solutions for the mining sector, Canadian companies are leading the way. Here are some examples of firms at work around the world.



TERRAGON ENVIRONMENTAL TECHNOLOGIES INC. > terragon.net

Setting up a mining camp for hundreds of workers is challenging, since these camps are often in remote regions. When potable water and sewage cannot be managed by local infrastructure, mining firms must carefully consider solutions to ensure worker health and hygiene, as well as discharges to the environment. Additionally, when there is no water or only a limited source of water available onsite, they may have to truck in water at a significant cost. With its treatment and onsite greywater reuse solutions, **Terragon Environmental Technologies Inc.** (Quebec) offers a cost-effective alternative that makes use of the camp's shower and laundry activities. The firm has developed robust automated electrochemical greywater treatment approaches that do not rely on biological treatment or the addition of chemicals. For a remote mine in Ecuador, Terragon determined that the use of treated greywater for laundry and toilet flushing could reduce both the potable water requirement and the sewage generated by the camp by an impressive 70 percent.



BQE WATER > bqewater.com

Mine water treatment and management planned with a long-term view can support and improve the performance of mining operations. At the Dexing Mine in China, low-grade ore waste dumps are generating copper-laden acid mine drainage. To treat the mine water, **BQE Water** (British Columbia) designed, built and commissioned a ChemSulphide® water treatment plant upstream of a HDS circuit in 2008 to remove and recover copper as a commercial grade concentrate. In 2014, a second ChemSulphide® water treatment plant was built and commissioned to provide excess water treatment capacity and support future mine expansion activities. The plants permanently remove copper from the environment and generate revenues from copper concentrate sales, ensuring that mine water treatment is both environmentally and economically sustainable.



FILTERBOXX WATER AND ENVIRONMENTAL CORP. > filterboxx.com

Due to a commitment to health and safety best practices, a senior gold producer in Canada that was operating a large and remote mine in northwestern Ontario wanted to reuse water in its operations. As a result of past practices, the site's tailings pond also served as a sewage lagoon. This had the potential for certain risks. To address the problem, the producer procured a new wastewater treatment plant from **FilterBoxx Water and Environmental Corp.** (Alberta) to mitigate risk, reduce any danger of airborne pathogens in the mine, improve water quality, and help meet the requirements of the Musselwhite Agreement with local First Nations. Due to the site's remote location, the system had to be robust, effective, and simple to operate. The FilterBoxx packaged membrane bioreactor plant met these requirements with ease.

**MORE CANADIAN
FIRMS OFFERING WATER
AND WASTEWATER
SOLUTIONS FOR THE
MINING SECTOR:**

- > Aquatic Informatics Inc.
- > Aslan Technologies Inc.
- > Bionest, Bishop Water Technologies
- > Eco-Tec Inc.
- > ENPAR Technologies Inc.
- > H2Flow Equipment Inc.
- > Island Water Technologies
- > Kontek Ecology Systems Inc.
- > Newterra
- > NuFlow
- > Renix
- > WSP Canada
- > Xogen Technologies Inc.

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