



Trinity Consultants Canada is a leading environmental consultancy that brings together trusted advisors, scientists and engineers to help clients solve their most complex challenges. With deep local roots and the strength of a global organization, Trinity Consultants Canada delivers innovative, scientifically sound and future-ready solutions that help industry, government and Indigenous communities navigate complex regulatory landscapes, secure project permits and approvals to achieve better environmental outcomes. They are internationally respected leaders with decades of proven expertise in Water & Ecology, Environmental Health and Safety (EHS), Built Environment and Life Sciences.

Our Water & Ecology teams are recognized leaders in environmental assessment, permitting and monitoring, offering key services to sectors including renewables, mining, ports and terminals, marine shipping, linear development, liquefied natural gas (LNG), ecological restoration, municipal wastewater, energy, and forestry.

Our Expertise

Trinity Consultants Canada provides a comprehensive set of services to assist clients with water management associated with mining and mineral processing facilities. We draw upon expertise from various disciplines, including hydrology, hydrogeology, geochemistry, lake and river hydrodynamics, and numerical modelling, to provide an integrated package of mine water assessment services. Our team conducts in-depth field monitoring programs and numerical modelling to provide data on water quantity, water quality, and effluent mixing processes that informs various water management aspects of proposed new projects, operating facilities, expansions, and closed sites. These numerical analyses provide valuable input to designs for freshwater supply, process water management, mine drainage control and operational optimizations, as well as regulatory approvals.

We complete quantitative assessments that use deterministic and stochastic approaches to simulate seasonal and climate variabilities and event-based scenarios. Our experts collaborate with clients to select the modelling tool that aligns with the project needs and take a 'fit-for-purpose' approach to numerical modelling.

Our Services

- Surface water level and flow (hydrometric) monitoring
- Water quality monitoring
- Flow and chemistry data logging instrumentation selection, procurement, and installation
- Site-wide water balance (SWWB) development and modelling (GoldSim™)
- Climate change effect predictions
- Water quality and mass balance modelling (GoldSim™)
- Geochemical speciation and reactive transport modelling (PHREEQC, MIN3P)



- Effluent and thermal plume delineation
- Dye tracer studies
- Mixing zone and hydrodynamic modelling (CORMIX™)
- Pit lake stratification and hydrodynamic modelling (CE-QUAL-W2)
- Assimilative capacity studies and effluent discharge limit development
- Effluent toxicity assessment
- Sediment and tailings dynamics modelling (transport, erosion, and deposition)
- Water quantity and quality effects assessment
- Corporate water stewardship support
- Regulatory approvals and permitting support

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CONTACT OUR TEAM!

For more information about how we can help your organization, please contact us.

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