

Environmental Geochemistry and ARD/ML Assessment Services

Trinity Consultants' Minnow Aquatic Environmental Services team provides cost effective geochemistry and acid rock drainage/metal leaching (ARD/ML) assessment services. We provide geochemical services for all stages of the mining life-cycle, including geochemical baseline assessments for greenfield and brownfield projects, support to engineering designs, assistance with adaptive mine waste management throughout operations, prediction studies as part of site expansions and/or design of closure strategies, and specialized investigations at decommissioned sites. Our geochemistry studies are customized to focus on the specific needs of the project to assist with prediction, control, and management of mine site drainage. Through this approach, we develop 'fit-for-purpose' studies that satisfy technical and regulatory requirements while providing added-value by balancing practical and proven methods with innovative approaches.

Our Services

- ▶ ARD/ML assessment and prediction
- ▶ Mineralogy and solid-phase characterization
- ▶ Rock core, tailings, and mine rock sampling plan development and field implementation
- ▶ Laboratory programs: static and kinetic testing
- ▶ Mine rock and tailings field test program design, instrumentation, and monitoring
- ▶ ARD management and mine waste monitoring plans
- ▶ Site-specific geochemistry operational procedure development
- ▶ Geochemical source term development
- ▶ Site-wide water balance and water quality modelling
- ▶ Geochemical speciation and reactive transport modelling
- ▶ Groundwater and pore water hydrogeochemistry
- ▶ Sediment geochemistry, sediment-water exchanges and diagenetic processes
- ▶ Treatment solids characterization
- ▶ Regulatory approvals and permitting support



Our Specialty Services

- ▶ Isotope chemistry: stable isotopes, radioactive isotopes, and age dating
- ▶ Radiochemistry, radionuclide mobility, and radioactivity studies
- ▶ Forensic geochemistry and chemical fingerprinting
- ▶ Cyanide chemistry and degradation modelling
- ▶ Nitrogen species chemistry: nitrate, nitrite, and ammonia
- ▶ Explosive residue (ammonia/nitrate) management plans
- ▶ Quarry and borrow material geochemical suitability

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For more information about our environmental geochemistry services, contact us today!

