

Support throughout the mining lifecycle

EXPLORATION



- Geological and geophysical surveys
- Resource and reserve estimation
- Resource modeling
- Market-based valuation scenarios
- Hydrogeological services
- Geochemical services
- Project evaluation and due diligence
- Preliminary mine and process design
- Risk assessment and management

PERMITTING



- NEPA, federal, state and local environmental studies, assessments, and monitoring
- Baseline studies and impact assessments for hydrology, hydrogeology, geochemistry, cultural resources, vegetation and soils, wildlife, aquatic resources, and wetlands
- Air quality testing and monitoring
- Regulatory analysis and negotiations support
- Development of mitigation measures and management plans
- Decarbonization assistance
- ESG and sustainability monitoring, reporting, and plan development
- Data review and synthesis using machine learning
- Tribal, indigenous people, and first nations engagement

DESIGN



- Technical reporting: NI 43-101, SK 1300, and JORC scoping, pre-feasibility, and feasibility studies
- Mine engineering
- Processing plant design
- Material handling, pumping, and piping systems
- Tailings management and mine backfill design
- Water management and treatment
- Ventilation and air quality control
- Power supply and distribution
- Automation and control systems
- Site characterization, in-situ testing, instrumentation installation, foundation evaluation, stabilization design, and site preparation
- Geotechnical design for highwalls, underground, mine rock storage, and tailings storage facilities
- Infrastructure design including roads, bridges, railroad tracks/yards, and port facilities
- Equipment and building foundations, support, and structural steel design
- Waste characterization and management systems

CONSTRUCTION



- Construction plans, specifications, and contract document support
- Construction review, administration, observation, management, and EPC
- Project controls
- Contractor procurement and coordination assistance
- Startup and commissioning assistance
- Environmental compliance
- Engineering and owners team support

OPERATION



- Operation assessment, plant betterment, and industrial sustainability services
- Industrial inspections and improvement/upgrade design
- Process evaluation, monitoring, modeling, digital twins, machine learning, and optimization
- Dam safety reviews
- Tailings storage facility operations, maintenance, and surveillance (OMS) manuals
- Threshold establishment and near-real time instrumentation monitoring and alerting
- Tailings dam breach analyses, inundation mapping, and emergency action plan development
- Environmental compliance
- Renewable power generation

CLOSURE AND RECLAMATION



- Facility decommissioning and demolition services
- Contaminated surface water, groundwater, soils, and acid mine drainage remediation design
- Closure and reclamation studies
- Landform design
- Public engagement



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