# British Columbia Mineral Exploration and Mining Capabilities Guide



Electronic versions of this guide are available in Chinese, English and Spanish at: www.amebc.ca/capabilitiesguide.htm www.mining.bc.ca/capabilitiesguide.htm

dist.

The Canadian province of British Columbia (B.C.) is endowed with a wealth of mineral resources. The extraction and processing of these valuable minerals have attracted considerable investment to the province over the past 150 years. With significant reserves of metals and aggregates, British Columbia's vast mineral potential continues to be regarded as one of the most promising in the world.

Mining is a fundamental human activity that provides materials we all need in a modern society. In the past, some mining practices were found to be unsafe, fostering a global misconception that mining is inherently damaging to the environment and threatening to the health and safety of its workers. Today's modern mining industry can operate with demonstrable results of environmental stewardship, worker well-being and regulatory compliance. Industry and government in B.C. are leaders in a global trend to develop and employ advanced environmental, health and safety policies, services, and technologies.

The purpose of this guide is to provide information on many of the companies and organizations that have played a key role in establishing the province of British Columbia as one of the safest and most environmentally-sustainable mining jurisdictions in the world.

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Foreign Affairs and International Trade Canada Affaires étrangères et Commerce international Canada



Ressources naturelles Canada THE MINING ASSOCIATION

BRITISH COLUMBIA



▲ NovaGold Resources geologists at Galore Creek, northwestern B.C.

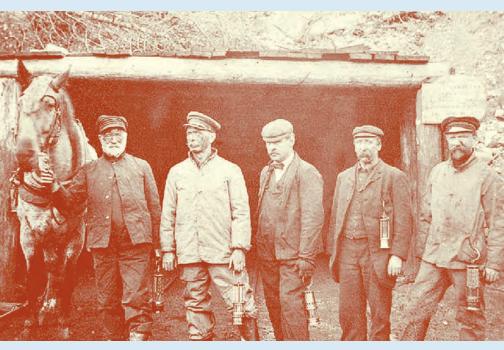




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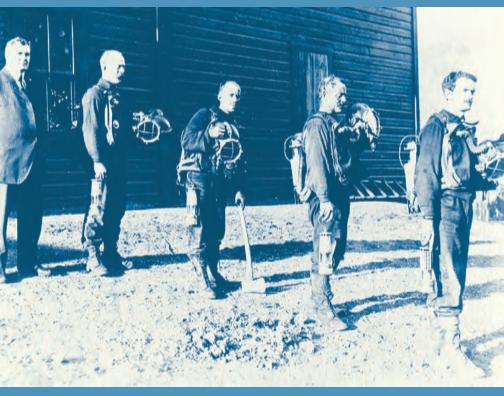
Miners with safety lamps at Coal Creek Mine in Fernie, B.C., circa 1900.

# The importance of protecting workers and protecting the environment has a long and proud history in British Columbia.

Canada's indigenous peoples mined the province's mineral resources for thousands of years before the Hudson Bay Company extracted its first coal outcrop in 1835. The "gold rushes" of the 1850s and 1860s drew thousands of people to the province and, with their arrival, British Columbia's modern mining industry was born.

In recognition and response to the mining practices of the 19th century, the Crown Colony of British Columbia appointed its first Minister and established its first Ministry of Mines in 1871.

Since that time, both the Government of British Columbia and industry have been working tirelessly to improve mining policies and practices, ensuring the health and safety of workers, while minimizing mining's environmental footprint and demonstrating its value to society.



▲ Mine rescue team suited up for a routine rescue drill, circa 1930.

From the beginning of B.C. 's mining history, significant emphasis has been placed on collaboration between the mine operators, workers and what has evolved to become the B.C. Ministry of Energy, Mines, and Petroleum Resources (EMPR).

As a result of these early established relationships, B.C. became one of the first jurisdictions in the world to establish mine rescue and safety training programs in 1912, and to support reclamation research through the formation of the Technical & Research Committee on Reclamation (TRCR) in 1977.

This spirit of stakeholder cooperation has grown over the past century, and remains the foundation for the achievements in environmental, health and safety capabilities for which B.C. is now internationally renowned.

One of the most significant of these achievements has been the development and ongoing refinement of the *BC Health, Safety and Reclamation Code for Mines* and its successful application and history of compliance.

To learn more about the *BC Health, Safety, and Reclamation Code for Mines* please visit: www.em.gov.bc.ca/Subwebs/mining/Healsafe/ mxready/MinesAct\_Regs\_Code.pdf



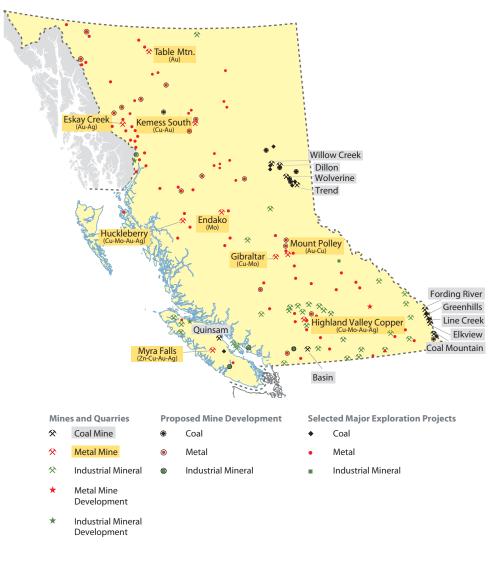
The mining industry is a crucial part of B.C.'s economy, currently contributing over US\$7.4 billion, annually. The inclusion of environmental, health and safety technologies is critical to ensuring the long-term sustainability of this multi-billion dollar industry.

While protecting the health and safety of over 28,000 workers and the numerous ecosystems surrounding more than 1,000 exploration and mine sites in B.C., and many more around the world, companies in B.C. have developed the diverse technical and geographic experience necessary to provide sustainable solutions in a variety of conditions.

Routine safety inspection at Myra Falls underground mine, the only mine in B.C. to be operated within a provincial park.

- Currently, 11 coal and 9 metal mines operate in B.C.
- There are 617 exploration projects underway in B.C. and in 2006 there were 30 new mineral discoveries.
- 60% of all Canadian exploration companies are based in B.C., raising \$3.2 billion in equity capital.
- B.C. is home to over 800 mining companies and is a world centre of mining expertise and investment.

# Operating Mines and Selected Major Exploration Projects in British Columbia, 2006





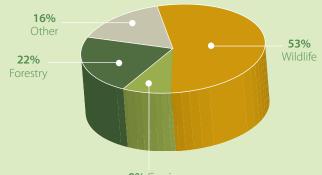
Mine rescue team participating in the annual Mine Rescue Competition, co-sponsored by industry and government. Protecting workers and the environment involves considerable effort and coordination – not to mention the right experience and technologies to answer some of the tough questions encountered along the way.

Protecting the environment starts with a deep respect for the land. Conducting thorough environmental impact assessments and developing effective mitigation plans are key elements to enable projects to move forward efficiently in the mine approval process. Environmental management plans that include water treatment, reclamation and remediation ensure the mine site's long-term ecological integrity.

Collaboration between mine operators, workers, industry, government and research institutions has led to the development and implementation of world-class technologies and services that are protecting both workers and the environment throughout B.C. and in mining regions around the world.



▲ Wildlife inhabiting reclaimed mine site in the Quesnel area.



### **Uses of Reclaimed Mining Land**

**9%** Grazing

The graph above illustrates how B.C.'s innovative environmental technologies and services have led to effective and efficient reclamation of mine sites into land with natural levels of biodiversity. This reclaimed land has been restored to natural productive states suitable for many post-mining uses.

# B.C.'s environmental technologies and services ensure that mineral exploration and mining have the lowest ecological impact possible.

From the exploration stage, through the operational mine life-cycle, to the reclamation and closure of the site and beyond, the application of British Columbian expertise has considerably reduced mining's ecological footprint.



▲ Planting trees on a reclaimed section of Fording River Coal Mine, southeastern B.C.

Beginning with the exploration stage, and continuing during environmental impact assessments and mine-site construction, B.C. has the technology and expertise necessary to ensure mineral exploration and mining is conducted in the safest and most environmentally-sound manner.

B.C. companies are well equipped to provide solutions for environmental challenges facing active and closed mines. From treatment of waste water to the secure management of mine tailings, B.C.'s expertise demonstrates that mines can be operated in a socially acceptable and environmentally responsible manner.



As a mine reaches the end of its functional life, B.C.'s world-class remediation and reclamation technologies and services play an instrumental role in post-mining land-use planning.

Societies around the world have realized the importance of minimizing the ecological footprint of their activities. B.C. companies are ready and willing to share their experience and expertise in supporting sustainable mining practices.

In total, B.C. has used less than 0.05% of its land mass for mining purposes.



Open Pit and Underground Mining



Throughout the three phases of mining – exploration and development, production, and closure and reclamation – B.C.'s health and safety technologies and services allow the mining sector to ensure the immediate safety and the long-term health of prospectors, geologists, contractors and miners.

Despite the scale and high productivity of modern mining operations, mining has been the safest heavy industry in B.C. for eight of the last ten years.

Our highly trained and experienced professionals use clear, science-based standards to protect workers and all those involved in the mining process.

# B.C. offers a comprehensive array of health and safety technologies and services that safeguard all involved in the mining process.

B.C. geoscience consultants undertake the geotechnical risk assessments necessary to design safe and stable mine sites. Geological, mining, structural, mechanical and electrical engineers design and equip high-tech mines with ventilation systems that ensure fresh air supply. Lighting and communication technologies developed in B.C. allow for safe and efficient movement in and around mines.

B.C. companies provide solutions for ensuring personal safety though effective integration of an array of equipment including hearing and eye protection, protective clothing, air filters and sophisticated breathing apparatus. Advanced training in first aid and the development of specialized mine rescue teams for each individual mine operation minimizes the risks to workers.



# Mining is the safest heavy industry in B.C. In 2005 the worker injury rate was 1.9 per 100 worker years. – WorkSafe BC

The critical importance of considering health and safety in all aspects of mineral exploration and mining is the hallmark of the modern B.C. mining industry. Due to a fundamental belief in human rights in an era with an unprecedented high demand for skilled workers, the moral and business case for ensuring the well-being of a company's valued human resources is clear.

B.C.'s mining health and safety capabilities not only help to ensure the long-term health of those involved in the mining process, but they also make economic sense. With fewer injury claims, health insurance and compensation costs are reduced. A safe and healthy workplace attracts and retains talented and dedicated workers. Safe, environmentally sound mineral exploration and mining maximize employee contributions, reduce training costs and allows workers to realize their maximum career potential.

Mining equipment being operated by a highly-trained underground miner at Myra Falls Mine.



# Finning Safety Training Program



**Finning (Canada)** is committed to achieving and sustaining health and safety excellence in all of its operations, creating a safety culture that protects staff, contractors, the general public and property. Working closely together with its mining customers throughout British Columbia, Finning has helped to promote a healthy, injury-free mining environment.

Moving beyond the traditional role of a company selling, leasing and servicing the heavy equipment required to operate a mine, Finning collaborates with its clients to develop and implement customized preventative and responsive health and safety programs that, in addition to minimizing the risk to workers, also reduces operating costs through increased productivity and fewer lost time injuries. From corporate policy to actual implementation, Finning provides mining companies with the operator training and equipment orientation required to support a health and safety regime that covers all components of a mine and its surrounding operations. A host of safety training modules gives each and every worker the means to operate Finning equipment in the safest possible way. Finning employees also participate in daily safety meetings and pre-job discussions and job hazard assessments to ensure a proactive safety process that increases awareness of health and safety risks.

Finning's commitment to promoting health and safety in the mining sector extends beyond its direct clients. As a member of the Canadian Association of Equipment Distributors and the Canadian Society of Safety Engineers, Finning shares its safety best practices, statistical information, and makes presentations at professional development programs and conferences.

Finning is proud of the leadership role it has taken in making mining one of the safest industries in B.C. Looking forward into the future, Finning is continually refining its equipment and training programs to make mining in B.C. even safer.

## PerCan - Peru Minerals and Metals Public Sector Assistance Project 1999-2002



With the support of the Canadian International Development Agency (CIDA), over 25 technical specialists from the B.C. Ministry of Energy and Mines (now the Ministry of Energy, Mines and Petroleum Resources (EMPR)) collaborated closely with the Peruvian Ministry of Energy and Mines (MEM) and the National Institute of Mining Cadastre and Concessions (INACC) to improve mining practices in Peru.

Focusing on human capacity building, EMPR specialists transferred B.C. expertise, knowledge and technology that allowed the Peruvian government to develop locally appropriate solutions to the environmental, health and safety challenges of mining in Peru.

For three years, CIDA and EMPR were in Peru facilitating the revision and streamlining of Environmental, Health and Safety regulations and guidelines. One major component of the project was the creation of the Environmental, Health & Safety Inspection and Monitoring System. Drawing from B.C. regulatory and technical expertise, the EMPR and CIDA officials partnered with MEM and INACC to develop inspection guides, computer-based monitoring systems and training guidelines and manuals for government staff and contract inspectors. Since its inception, the new inspection and monitoring system has resulted in a noticeable decrease in mine-related accidents and the overall footprint that mining has on the environment in Peru.

Another area in which the project has made a meaningful difference is through the creation of the *Guide for the Preparation of Mine Emergency Response Plans*. Building on B.C. expertise in mine rescue training and planning, the guide sets out guidelines for equipping and training specialized mine rescue teams that are able to respond to the diverse range of surface and underground mines in Peru. Dedicated to the project's emphasis on human capacity building, CIDA and EMPR developed mine rescue courses that enabled the Peruvian government to continue to strengthen its mine rescue capabilities long after the completion of the project.

# Teck Cominco E-Scrap Program

Annual Inc.

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Using existing furnace capacity at its metallurgical complex in Trail, B.C., **Teck Cominco** is building a new business that will divert thousands of tonnes of discarded electronic equipment, or "e-scrap", from landfills in western Canada and the United States.

In November 2004, a 14-day, 225-tonne trial was conducted and the recycling model was evaluated. In the end, 100% of the e-scrap was successfully processed with no measurable increase in the facility's emissions. In June 2005, the B.C. Ministry of Environment (MoE) authorized a one-year permit for the Trail furnace to process bulk e-scrap in an environmentally safe manner. The facility has an established stack, effluent and ambient air quality monitoring program.

The e-scrap marketplace is evolving and expanding. According to Environment Canada, in 2005 more than 156,000 tonnes of electronic scrap accumulated in Canada and 2.2 million tonnes in the United States. Teck Cominco's response is to market its new service and work with partners in and around Trail to deliver efficient e-scrap recycling.

The City of Vancouver recently began investigation into the opportunities to create a zero waste environment. "After several months researching electronic waste, the City of Vancouver shipped 50 pallets of obsolete electronic waste from the city-wide corporate services computer upgrade program to Teck Cominco for a trial process. An encouraging component of Teck Cominco's process is that not one ounce of this waste will enter the landfill," reports Victoria Wakefield, Sustainable and Ethical Purchasing, City of Vancouver.

The Company has committed substantial resources to being part of the e-scrap solution. It looks forward to the day when residents of British Columbia, Western Canada and the Pacific Northwest can drop off their old computers, printers, telephones and televisions knowing they will be processed in an environmentally responsible way.

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	Environment Technologies   Consulting		Health and Safety	
	& Services	constanting	& Services	consulting
1984 Enterprises Ltd.			✓	~
Advanced Drilling Ltd.	√		√	
Allnorth	√	~	1	~
ALS Laboratory Group	√			
AME BC	√	~	√	~
AMEC	~	~		
Anthony Hodge Consultants		 ✓		
APEGBC	√	~	√	~
Arbutus Consulting		~		
Arktos Developments			√	
B.C. Ministry of Economic Development	√		 ✓	✓
B.C. Ministry of Energy, Mines & Petroleum Resources		 ✓	 √	
BGC Engineering Inc.	, ,	· ·		· · ·
BI Pure Water	√		√	
Bioteg	, ,			
Canadian BioEnergy Corporation	, ,		✓	
Cantest	√	~		
CEMI	√			
CON-SPACE Communications Ltd.			√	
Dept. of Foreign Affairs & International Trade	√	√	· ·	√
Dudley Thompson Mapping	, ,		· · ·	
EBA Engineering Consultants				~
Ernst & Young	√	· ·	✓	· · ·
Finning (Canada)	, ,	· ·	· · ·	· · ·
Fraser Milner Casgrain	· √	· ·		
Gartner Lee		· ·		√
Gemcom	√		√	
Golder Associates	· √	√	· ·	√
Hatch	, ,		· ·	
Hatfield Consultants		√		√
Hemmera		· ·		· · ·
Herold Engineering	~		√	
Hillsborough Resources Limited	· ·		· ·	√
Hunter-Dickinson Inc.	· · ·	· ·	· ·	· ·
IRL Supplies			×	
Jacques Whitford				✓ <i>✓</i>
Keystone Environmental		 ✓		 ✓
Klohn Crippen Berger	√	 ✓		
Knelson Gravity Solutions	 ✓	v		
Knight Piesold	v	√		√
KPMG	√	✓ ✓	√	✓ ✓
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#### BRITISH COLUMBIA MINERAL EXPLORATION AND MINING CAPABILITIES GUIDE | 29

	Environment		Health and Safety	
	Technologies & Services	Consulting	Technologies & Services	Consulting
Lorax	$\checkmark$	$\checkmark$		
Madrone Environmental Services	$\checkmark$	~		
McElhanney	~	~		
MDA	~		✓	
Merit		~		~
Microbial Technologies Inc.	~	~		
Mining Association of British Columbia (MABC)	~	~	✓	~
Mining Suppliers, Contractors, & Consultants Assoc	. ✓	~	✓	~
Natural Resources Canada (NRCan)	~	~	✓	✓
Nautilus Environmental	~	~		
Northgate Minerals Corporation	$\checkmark$	~	✓	✓
Northwest Community College	~	~	✓	~
NovaGold	~	~	✓	~
NVI Mining	~	~	✓	~
Piteau Associates Engineering Ltd.		~		~
PricewaterhouseCoopers	~	~	✓	✓
Rescan Environmental Services		~		✓
Rescan Tahltan Environmental		~		~
Resource World Magazine	~		✓	
Robertson GeoConsultants Inc.		~		
Royal Roads University	~	~	✓	✓
RST Instruments Ltd.	~		✓	
Sandwell Engineering Inc.	~		✓	
Savona Equipment Ltd.	~		✓	
Seacor Environmental Inc.		~		
Snowden		~		✓
Sperling Hansen Associates	~	~		
SRK Consulting		~		✓
Steve Jan Consultants		~		
StrataGold Corporation	~	~	✓	✓
Strategem Pacific Consulting		~		
Taseko Mines Limited	$\checkmark$	~	✓	~
TRCR	~	~		
University of British Columbia	$\checkmark$	~	✓	~
Wardrop Engineering	~	~	✓	~
Weatherhaven	~		✓	

**Note:** Associations and governmental organizations listed above do not provide the actual capabilities checked off, but are able to refer appropriate companies.

## 1984 Enterprises Inc.



**1984 Enterprises Inc.** is a leader in providing occupational health and safety (OH&S) solutions to the mineral exploration and development sector. The company's safety personnel help companies navigate the increasing complex OH&S regulatory environment while developing on-site safety programs that prevent workplace accidents and limit corporate liability.

The Company specializes in providing safety audits, risk assessments and designing safety programs that protect employees. In addition, 1984 Enterprises provides on-site safety personnel, trained in advanced first-aid, or if necessary, registered nurses and emergency medical technicians. All of the Company's employees are trained in OH&S accident reporting and regulatory requirements and meet or exceed the national and international safety standards.

We can help expedite mining and drilling permits by developing safety protocols that meet all of the regulatory requirements. 1984 Enterprises Inc. has been helping Canadian and international companies meet OH&S standards for 25 years and our work is recognized by all provincial and territorial government mines divisions and OH&S.

1984 Enterprises has conducted site audits, due diligence and risk assessments for a wide variety of clients in North and South America, and Asia. Our clients span the spectrum in size from single drill rig operations to camps with several hundred employees.

Our mission is to eliminate fatal accidents, reduce the frequency and severity of nonfatal accidents, minimize health hazards and promote improved safety and health conditions in the mining industry.

T: 604-736-8142

F: 604-736-8119 E: info@1984inc.com Suite 1000-355 Burrard Street Vancouver, British Columbia Canada, V6C 2G8

## Advanced Drilling Ltd.



Advanced Drilling Ltd. based in Surrey, B.C., a division of Cabo Drilling Corporation, provides core and specialty drilling services for the mining industry.

The key to employees working in a safe and environmentally responsible manner is based on management's requirement that safety and good environmental stewardship shall not be compromised for the sake of production. Competent, highly experienced workplace supervision in both the shops and at drill sites is the key component in ensuring workers are working safely, responsibly, and can continue to do so.

Our organization strives to hire individuals who are appropriately trained, are safe and are environmentally responsible or possess the skill and mind sets to be developed into workers who can meet the required criteria.

Environmental health and safety requires diligence, flexibility, and a constant willingness to improve and review practices to ensure that all practices support those goals. Our company requires our workers to demonstrate and hopefully exceed compliance with existing company policies and governmental regulations.

Earl Masarsky, General Manager T: 604-888-0033

Health and Safety ☑ Technologies and Services

Environment ☑ Technologies and Services □ Consulting

□ Consulting

## Allnorth



Allnorth provides comprehensive engineering, project and construction management services to the mining industry. We have human resources in excess of 60 personnel and are dedicated to supplying trained personnel on short notice; this is considered to be the norm not the exception.

We are currently active in several projects including: Northern Energy and Mining Ltd, Belcourt Saxon-Coal, Kemess, Pine Valley, Western Canadian Coal (Dillon and Wolverine), Nova Gold (Galore), Endako, and Teck-Pogo. We've been managing large and complex projects for over 25 years. In that time, we've developed and refined our practices and techniques to be as efficient and cost effective as possible. Having knowledge of what is required during the construction phase and implementing this during the design phase to maximize efficiency is why Allnorth is the consultant of choice for design build mining projects. We have worked with many construction contractors who prefer our services because they know we'll get them the information they need when they need it.

We are in the professional services industry providing more than engineering services; we deliver lasting customer relationships built on trust, quality of service and a complete dedication to projects.

#### The services we offer include:

- Structural Engineering
- Civil Engineering
- Surveying
- Project Management
- Construction Management
- Materials Testing
- · Permitting and Compliance
- Environmental
- Mapping

**Darby Kreitz**, President T: 604-602-1175 F: 604-602-1176

#### Health and Safety

☑ Technologies and Services

Environment ☑ Technologies and Services 301-1281 West Georgia Street Vancouver, British Columbia Canada, V6E 3J7

☑ Consulting

☑ Consulting

#### ORGANIZATIONAL PROFILES | 33

ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES Environmental Division ( ALS Laboratory Group

Mineral Division - ALS Chemex



## ALS Laboratory Group

**ALS Laboratory Group (ALS)** is a diversified, international network of analytical testing facilities operating in 22 countries on six continents. Through its Mineral Division (ALS Chemex) and its Environmental Division (ALS Environmental), ALS offers mining, exploration, and consulting companies in B.C. and around the world the geoanalytical and environmental monitoring services they require to determine the viability of mines and to move them into production.

**ALS Chemex** is a leading provider of assaying and analytical testing services. Using a variety of analytical techniques and instrumentation, the company provides analysis for gold and other precious metals; pathfinder elements; uranium; acid-base accounting; and several other elements and characteristics relevant to a mining or exploration project.

**ALS Environmental** assists mining companies and mining consultants in their studies of the impact that a mine will have on water, vegetation and wildlife in the area that surrounds it. The company offers all required analyses to complete routine characterization of water and effluent as outlined in the Metal Mining Effluent Regulation (MMER); exposure assessment and toxicity identification of water and tissue; and biological services such as benthic sorting, counting and identification, and acute toxicity testing for Rainbow Trout, Daphnia Magna and Microtox.

T: 604-253-4188 F: 604-253-6700

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## AME BC



The **Association for Mineral Exploration British Columbia (AME BC)** represents over 3,900 members who are directly or indirectly engaged in mineral exploration in British Columbia and throughout the world. Through leadership, partnerships, and advocacy, AME BC promotes a sustainable environment and business climate for the mineral exploration industry on behalf of its members. AME BC is regarded as the predominant voice of mineral exploration and related issues in British Columbia.

#### **Highlights include:**

**Mineral Exploration Roundup:** The world's premier technical mineral exploration conference held annually at The Westin Bayshore, Vancouver.

**First Nations & Community Relations:** A recognized expert in indigenous community engagement for the minerals sector.

**Health & Safety:** Initiatives include Safety Guidelines for Mineral Exploration in Western Canada, Canadian Mineral Exploration Health & Safety Annual Report (with Prospectors & Developers Association of Canada), and Exploration Field Safety Awareness workshops.

**Partnerships:** AME BC has developed partnerships with educational institutions and organizations to both increase understanding and knowledge of the mineral exploration sector. Partnerships include British Columbia Institute of Technology First Nations Training and Education, Memorandum of Understanding with the Council of Tourism Associations, and Integrated Resource Management Business Group.

**Mine Permitting Advocacy:** Advocates for an environmental assessment process that brings certainty to the mineral exploration and mining sector and communities while protecting the environment.

Land Use and Access Advocacy: Working with First Nations and stakeholders to ensure that mineral exploration and mining are compatible with other land uses.

**Geoscience Advocacy:** Funding for geological mapping to encourage new discoveries for a sustainable minerals sector.

**Member Communications:** *Mineral Exploration* magazine, *AME BC News* e-newsletter, AME BC Speaker Series

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☑ Consulting

☑ Consulting

ame



**AMEC** is an international consulting firm offering comprehensive environmental, engineering and project management services to a wide variety of industries and regulatory agencies. The company employs approximately 22,000 people working from a network of offices throughout Canada, the US and the UK, as well as regional offices and projects worldwide.

We have the perspective to design and execute effective environmental programs that not only meet regulatory expectations, but integrate seamlessly through all mining phases. With more than 30 years experience, AMEC's mining team has conducted environmental investigations for mining projects throughout all mine phases from exploration through construction, operation and closure. AMEC's expertise includes mine feasibility analyses, mine environmental approvals and permitting, mine construction and mine closure and reclamation.

#### **Pre-Project Planning**

- Water quality and acid rock drainage assessment
- Hydrology/hydrogeology/watershed management
- Environmental baseline studies
- Environmental impact assessments
- Safety plans and training

#### **Regulatory and Permitting**

- Regulatory optimization & consultation
- Mine approval and permits
- Environmental, fisheries and navigation permits
- Fisheries compensation plans
- Water licenses and land use permits/leases

#### **Construction and Operation**

- Rock mechanics
- · Dam embankment design
- Spill prevention
- Mine water management
- Geotechnical engineering including seismic
- Environmental mitigation and monitoring

#### Closure

- Contaminant assessment and cleanup
- Liability assessment and management
- Soil and groundwater remediation engineering
- Acid rock drainage treatment
- Long-term monitoring
- Human health and ecological risk
   assessment
- Reclamation and revegetation
- Cost estimating for bonding purposes

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**Environment** ☑ Technologies and Services



Anthony Hodge Consultants Inc.

**Anthony Hodge Consultants Inc.** is dedicated to working with organizations that seek to contribute to the well-being of both people and the environment, not one at the expense of the other. This is the domain of applied sustainability.

Clients include corporations, First Nations, not-for-profit organizations, governments, and communities. For over 25 years we have offered value added by bringing leading-edge ideas to practical application. We have championed the design and application of the "Seven Questions to Sustainability" assessment framework.

#### Specific services for the mining and minerals industry include:

- 1. establishing effective working relations between First Nations and mining companies;
- development of corporate sustainability policies, strategies, and assessment and reporting systems;
- 3. bringing a sustainability perspective to:
  - a. early project appraisal;
  - b. project risk analysis;
  - c. project planning, licensing and approvals; and
  - d. internal corporate reviews;
- 4. provision of third-party sustainability audits and reviews; and
- 5. internal corporate sustainability training and professional development.

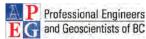
R. Anthony Hodge, President T: 250-384-6606

F: 250-384-6608

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767 Matheson Avenue Victoria, British Columbia Canada, V9A 6E4



## The Association of Professional Engineers and Geoscientists of BC (APEGBC)

The Association of Professional Engineers and Geoscientists of BC (APEGBC) has the mandate of administering the Engineers and Geoscientists Act for the

protection of health, safety and welfare of the public as it relates to the practice of professional engineering and geoscience. APEGBC is dedicated to protecting the public and the environment through setting and maintaining high academic standards of entry and professional practice, registration, enforcement, discipline and practice reviews.

APEGBC supports the concepts of sustainability and environmental protection. To promote and articulate these values, APEGBC created Guidelines for Sustainability over 10 years ago. Our active Sustainability, Environment and Geoscience Committees bring together engineers and geoscientists with considerable expertise in these fields. APEGBC also promotes excellence in sustainable building practices and environmental design through our annual awards.

With over 23,000 members, APEGBC is one of the largest professional associations in the province. Professional engineers and geoscientists have a tremendous, but not always obvious, impact on public safety and quality of life in B.C. APEGBC grants the designations of P.Eng. and P.Geo. under the *Engineers and Geoscientists Act of BC* and only licensed engineers and geoscientists are allowed by law to use the title professional engineer or professional geoscientist. All professionals practicing engineering and geoscience in B.C. must be registered with APEGBC.

T: 604-430-8035 F: 604-430-8085

#### Health and Safety ☑ Technologies and Services

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#### www.apeg.bc.ca

200-4010 Regent Street Burnaby, British Columbia Canada, V5C 6N2

☑ Consulting



## Arbutus Consulting

**Arbutus Consulting** provides the skills and experience to create quality initiatives that fit your unique business and community needs, and the commitment to delivering on time, on budget and on strategy. We draw from extensive experience to offer strategic counsel on working with Aboriginal communities and organizations and with multi-sector collaboratives in the following areas:

- Aboriginal Relations and Development
- Strategic Philanthropy
- Community Development

#### **Aboriginal Relations and Development**

First Nations are increasingly building connections with the mainstream economy to acquire more tools for community development and self-sufficiency. These connections create value when community development is combined with the knowledge and understanding needed to steer the opportunities through to successful completion.

#### **Community Development**

Community development offers innovative, value-creating and sustainable opportunities for engagement. Leading development initiatives combine the right mix of financial and human investments to:

- Transfer business expertise,
- · Create or open markets to businesses,
- · Develop human resources and employment opportunities,
- · Build relevant education & training, and
- · Build community capacity.

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RKTOS

## Arktos Developments Ltd.

Arktos Developments Ltd. (ADL) is the world's leading manufacturer of the patented high-mobility, amphibious Arktos Craft. Because of their unique design and stability, Arktos Craft have an unsurpassed ability to safely maneuver through ice-rubble fields, significant side slopes, steep grades, muskeg, guicksand and any other water transition zones while carrying heavy loads. With applications including exploration, geophysical survey, rough terrain transportation, and evacuation, Arktos Craft have the highest proven all-around level of amphibious capability of any craft in the world.

ADL's flagship product is the 52 Person Arktos Evacuation Craft. This Craft is approved by the U.S. Coast Guard for drive-off application on bottom-bearing structures in U.S. waters that are seasonally surrounded by ice, an equivalent to a domestic lifeboat, ADL has sold Arktos Craft in Canada, the Chinese Bohai Delta (as amphibious seismic survey craft), the U.S. Beaufort Sea, Kazakhstan for the massive Northern Caspian Sea oil development and has completed considerable work with its service Craft in the Canadian Tar Sands.

ADL is currently developing the new Arktos Multi-Task Craft for applications as an amphibious crane craft-Arktos MultiTask-50 Craft: a patrol craft for Arctic waters and islands-Arktos Sovereignty Patrol Craft; a drill craft-Arktos Sampler II; a tug craft with a high bollard pull on land and water-Arktos AmphibiousTug-50.



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#### **Health and Safety** ☑ Technologies and Services



## B.C. Ministry of Economic Development, Investment Services Branch



The **Ministry of Economic Development** promotes investment in British Columbia's technology sector.

Our mission is to stimulate economic growth by providing small business throughout British Columbia with access to capital and talent from both domestic and international markets, with the long-term goal of accelerating investment, commercialization and opportunity.

#### Attracting Foreign Direct Investment and Worldwide Talent

We work with industry associations and companies themselves to promote investment opportunities and bring capital and talent to British Columbia. Also, we work with companies to help them become "investor ready," and structure opportunities for companies to connect with investors.

Todd Tessier, Director, Investor Services Branch www.investbc.com

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Environment ☑ Technologies and Services PO Box 9324 Stn Prov Govt Victoria, British Columbia V8W 9N3

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## B.C. Ministry of Energy, Mines and Petroleum Resources



The **Ministry of Energy, Mines and Petroleum Resources** works with British Columbia's mining and mineral exploration industry to ensure that it is socially and environmentally responsible, profitable and sustainable in the long term. Building partnerships and maintaining relationships with stakeholders is fundamental to the British Columbia mining and mineral exploration industry's long-term success.

The Ministry is responsible for health, safety and some environmental regulations at exploration and mine sites and has played an important role in helping make British Columbia's mines among the safest, most environmentally responsible, and high tech in the world. The Ministry also manages the exploration and development of mineral resources to ensure the involvement of communities, First Nations and environmental organizations.

British Columbia creates a positive environment for sustainable development in mineral exploration and mining with policies and programs that enhance the province's global competitiveness to attract international investment. The Ministry collects new geoscience information and maintains databases with internet access, such as **MapPlace.ca**, that provide a world-class inventory of British Columbia's mineral, coal and aggregate reserves and resources. This information is used to attract industry investment, assist government's stewardship of British Columbia's rich mineral resources and to protect Crown lands.

#### Mining and Minerals Division

Ministry of Energy, Mines and Petroleum Resources T: 250-952-0596

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#### www.gov.bc.ca/empr

PO Box 9320 Stn Prov Govt 1675 Douglas Street Victoria, British Columbia V8W 9N3

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## **BGC Engineering Inc.**



The mining team of **BGC Engineering Inc. (BGC)** offers a comprehensive range of services for the industry. These cover almost every aspect of mining including: environment and permitting, geotechnical designs, mine planning and costing, feasibility studies, and closure and reclamation. Our mining and geotechnical engineers have delivered innovative, practical and cost effective designs for a variety of project types, in a variety of environments.

Geotechnical designs for tailings impoundments, waste dump stability, open pit excavations and underground openings have been the core of our mining services to date. BGC also offers mine design services that are integrated with our geotechnical and geo-environmental knowledge and insights. We have dubbed this our 'common-sense' approach to mine design, and it ensures that the overall project objectives are met. In contrast to mining projects that suffer from a lack of this kind of insight and diligence, we have often exceeded the objectives of our clients.

BGC also provides risk assessment services for the mining industry, and based on our geotechnical expertise on a large number of projects, can highlight problem areas for operators. Our work at a number of operations has demonstrated valuable improvements and importantly, minimized risk for companies.

Please go to our website at **www.bgcengineering.info** to discover more.

T: 604-684-5900 F: 604-684-5909 E: info@bgcengineering.ca

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#### www.bgcengineering.info 500-1045 Howe Street Vancouver, British Columbia

Canada, V6Z 2A9

☑ Consulting

## BI Pure Water Inc.



The challenges and complications associated with the clean and safe water delivery to small and remote communities are very different from those of large urban centers. To successfully address the requirements of such communities, an extensive knowledge of water treatment units, designed for different purposes is required. This is the kind of knowledge and expertise that our team of experienced engineers, at **BI Pure Water Inc.**, has gained since its establishment. For the past 12 years we have been involved in more than 200 small and large projects in order to provide safe drinking water, originated from surface, river, or ground water recourses, to the end users. We have designed, manufactured, and installed multifunctional water treatment plants designated for different applications, including potable drinking water, and treated water for industrial applications.

Mining camps and miners communities, which are usually located at remote sites, are specifically very vulnerable to water contaminants, in terms of individual health concerns. At the same time, the considerably large quantities of water which is used for running mine industry facilities, if not decontaminated and recycled properly, becomes a major safety issue due to its short and long term environmental impacts.

BI Pure Water Inc. has a vast experience of providing water treatment plants for both of these two mining-related requirements: potable safe drinking water for the miners, and recycled-treated industrial water. Recently commissioned water treatment plants, designed and built for five different size mining camps (Novagold) located North of Smithers in British Columbia, Canada are among the facilities which BI Pure Water Inc. has proudly delivered to the Canadian mining industry.

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## BioteQ

BIOTEQ

**BioteQ** is an industrial technology company that is in the business of treating contaminated water, primarily in the mining industry, to produce clean water together with saleable co-products for sale or recycle. At the heart of the Company's business is patented technology to generate sulphide reagent for use in the treatment of metal-contaminated water, while simultaneously producing value-added products. Selective recovery of copper, zinc, nickel, cobalt and other saleable metals can result in a profitable operation and/or can significantly offset water treatment costs.

The Company has partnered with global resource leaders and will finance, build and operate, or provide turn-key plants for a number of applications including:

- Treatment of acid mine drainage with selective recovery of saleable metal concentrates.
- Treatment of leach solutions, metallurgical bleed streams and effluents from leaching operations, smelters, refineries and metal processing plants for metal recovery, sulphate reduction, and environmental discharge.
- Integration with conventional water treatment plants for the reduction and elimination of waste sludge or residues, and/or the production of value-added products from sludge.
- Generation of low-cost sulphide reagent to replace chemical sulphide reagents for use in mineral flotation plants, pulp mills, cyanide regeneration and other industrial uses.

BioteQ will also share the capital and operating costs in joint venture with the property owner, operate the plant, and share in the process benefits and metals recovered.

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#### **Rick Lawrence**

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#### www.bioteq.ca

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## Canadian BioEnergy Corporation

**Canadian Bioenergy Corporation (CBEC)** is Western Canada's leading supplier of premium biodiesel. Since 2003, the company has pioneered the introduction of biodiesel to regional markets. Canadian Bioenergy has established effective relationships with petroleum distributors to ensure that high-quality biodiesel is widely available to government, commercial and industrial fleets. The company currently operates terminal locations in Vancouver and Calgary to supply custom biodiesel blends for more than 20 large fleets throughout B.C. and Alberta. CBEC is in development stage engineering and permitting for a large scale (114 million litres/year) production plant to be located in central Alberta adjacent to agricultural, petroleum and transportation infrastructures.

Biodiesel can assist the mining industry achieve EHS objectives. Biodiesel is better for the environment, reducing greenhouse gas emissions by up to 78%. It also creates a healthier working environment, with substantial reductions in particulate matter, unburned hydrocarbons and carbon monoxide. Biodiesel is biodegradable, non-toxic and has a flash point significantly above petroleum diesel, which makes it safer to use, handle and store.

Canadian Bioenergy's ASTM-certified products are mixed with petroleum diesel at blends ranging from 5-30% for immediate use in unmodified diesel engines in all climates. For more information on Canadian Bioenergy or biodiesel, visit **www.canadianbioenergy.com** or call 604-960-0354 x22.

Adam Reid Levine, Vice President, Sales T: 604-960-0354 F: 604-960-0356 E: alevine@canadianbioenergy.com

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#### **Overview**

**Cantest** is 100% Canadian, employee-owned, with its head office in Vancouver, British Columbia. The Environmental Quality group provides comprehensive analytical services in support of regulatory compliance for consultants, municipal, provincial and federal governments, industry and the natural resource sector. Projects include soil and water contamination, drinking water analysis, eco-toxicology, acid rock drainage, industrial hygiene and microbiology, with additional expertise in the area of environmental pharmaceutics (PPCP) analysis, material science and pilot projects. With its analytically diverse scope of offerings, industry-leading turnaround times, detection limit capabilities and many other assets, Cantest helps environmental clients succeed with their projects.

#### **Acid Rock Drainage and Control Test Programs**

Cantest is well equipped with the technology, experience and services to offer quality analytical solutions in support of mining operations. Acid rock drainage (ARD) prediction tests are used to approximate weathering conditions of waste rock dumps or tailings in order to estimate environmental impacts. Cantest's ARD services include: metal leaching, geochemical analysis, static and kinetic testing and customized ARD testing.

Mine sites can utilize blending, layering or underwater disposal of various types of mine rock as methods of ARD control. In order to predict the performance of these and other potential control methods, Cantest offers customized column and subaqueous test programs.

#### **EcoToxicology Services**

With over 30 years of ecotoxicology experience, Cantest's services include evaluation and monitoring of chemicals, contaminants, industrial effluents and environmental effects using: aquatic & terrestrial toxicology, effluent permit toxicity testing, water effects ratio (WER) testing, toxicity identification and reduction evaluations (TIEs & TREs) and Metal Mining Effluent Regulations (MMER)–sublethal toxicity testing.

#### **Customized Testing**

Cantest has the ability to construct and operate customized ARD and ecotoxicology test methods. Investigations can be designed to address clients' specific environmental objectives.

#### **Leanne Harris**

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## Canadian Environmental and Metallurgical Inc. (CEMI)

**Canadian Environmental and Metallurgical Inc. (CEMI)** offers water treatment consulting including a wide range of laboratory testing services to assist our clients in the preparation of environmental impact studies and to resolve existing effluent treatment problems. CEMI has developed a reputation as an organization with exceptional understanding of water treatment, providing innovative and practical treatment solutions. Since 1998, CEMI has completed numerous environmental and water treatment studies for mining companies and government agencies in Canada, USA (EPA, State of Colorado), Australia, Dominican Republic, Peru, Chile, and Brazil.

#### The type of services provided includes:

- Environmental Testing including ABA, Humidity Cell and Column Testing;
- Direction and analysis of test work for Water Treatment by HDS and other techniques;
- Planning and monitoring pilot plant operation;
- Process selection and flowsheet development;
- · Equipment sizing and selection;
- · EPCM for new water treatment plants;
- Commissioning & Start-Up; and
- Plant audits and assessments.



CEMI operates a metallurgical and environmental Laboratory in British Columbia, Canada that is equipped to carry out a wide range of testwork including acid/ base accounting, column leaching, leach extraction tests, cyanide detoxification studies and effluent treatment. We have an isolated and dedicated room for humidity cell and column testing with temperature control to maintain high quality of results. The laboratory is staffed with technical and professional personnel with comprehensive experience in the mining industry. A vital aspect of CEMI's testing service is the ability to provide onsite pilot plant testing to develop baseline information to establish reliable design parameters for a treatment plant.

T: 604 264-5536 E: cemilab@cemi.bc.ca

www.cemi.bc.ca 6927 Antrim Avenue Burnaby, British Columbia Canada, V5J 4M5



## CON-SPACE Communications Ltd.

**CON-SPACE**, headquartered in Canada, was incorporated in 1991. The Company employs administrative, engineering, manufacturing, marketing and sales personnel, operates subsidiary offices in the United States and the United Kingdom and has a worldwide distribution network.

The Company began operations by responding to the need for proper voice communication for those working in confined spaces. Prior to the Company's inception no other product existed to provide the type of communication that CON-SPACE now designs and manufactures. CON-SPACE started out marketing Hardline Communication systems to provide reliable two-way voice communication within concrete or metal surroundings, typically the nature of most confined space areas where radio signals cannot penetrate or escape.

CON-SPACE has grown to serve the portable two-way radio market as well with its SR65i Radio Accessory products, which improve the functionality of portable two-way radios by making them virtually hands-free and usable while wearing facemasks, protective clothing and/or working in high-noise environments. This opened the door to new markets for CON-SPACE including Fire Departments, HazMat operations, various sectors of Law Enforcement and the Military.

The Private Label (Original Equipment Manufacturer) sector of CON-SPACE's business has become a substantial factor in the Company's sales growth, accounting for more than 30% of its sales. CON-SPACE continues integrating new communication equipment into its product lines and that of other safety companies, turning what could potentially be a competitive environment into positive partnerships within the industry.

CON-SPACE is listed on the Toronto Venture Exchange as a Tier 1 Company. Its sales and markets have unlimited potential and are expanding year after year. All equipment designed, developed and manufactured by CON-SPACE is a direct result of user input. Extensive research is done to find materials that will not fail under extreme conditions. All units are subjected to exhaustive testing and rigorous field trials. In short, CON-SPACE is committed to "Safety in Communication."

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Foreign Affairs and International Trade Canada Affaires étrangères et Commerce international Canada

## Department of Foreign Affairs and International Trade

As part of **Foreign Affairs and International Trade Canada,** the Trade Commissioner Service is a network of more than 900 trade commissioners working in Canadian embassies, high commissions, consulates and trade offices located in more than 140 cities around the world and in 12 regional offices across Canada. We promote Canada as a dynamic partner for business, investment and science and technology.

We support companies offering leading edge environmental, health and safety solutions to the exploration and mining sector by providing:

- Market and sector specific information
- Qualified contacts
- Business leads
- Inbound/Outbound Missions

Canadian companies interested in exporting their technologies and/or services abroad are encouraged to register for the Virtual Trade Commissioner – www.infoexport.gc.ca/ie-en/login.jsp

We also assist foreign companies interested in sourcing Canadian solutions and/ or investing in Canada through our global network of missions overseas. See **www.infoexport.gc.ca/ie-en/EServices.jsp** 

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 $\blacksquare$  Consulting



## Dudley Thompson Mapping Corporation (DTM Corp.)

DTM Corporation provides aerial photography, satellite imagery, LiDAR data, scanning, aero-triangulation, digital mapping and orthophoto services to the mining industry. The principals, Nick Dudley and Mike Thompson have a combined experience of 36 years in the mapping sciences. Our focus is on accuracy, guality and timing of products and services using state of the art technologies and tools. DTM employs a highly trained team of photogrammetrists with a combined experience of 60 years. It is this experience that has given DTM a stellar reputation for quality and accuracy in engineering level topographic mapping.

Safety starts with high quality engineering level mapping that can be used and relied on for all aspects of a project whether it be exploration, feasibility, construction or environmental issues.

Nick Dudley, President Mike Thompson, VP www.dtm-global.com

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## EBA Engineering Consultants Ltd.

**EBA Engineering Consultants Ltd. (EBA)** provides a broad range of engineering and scientific consulting services to clients in domestic and foreign markets. EBA has progressively expanded over the last 40 years and today clients are served by more than 600 engineers, scientists, technologists, and support staff from offices located in Western and Northern Canada.

Our vision is to be a world-class team in everything we do, delivering innovative solutions anywhere in the world.

EBA provides high-quality environmental and engineering services to the mining industry through integrated, multi-disciplinary teams. Our people have extensive experience, strong technical skills, and seasoned project management capabilities. Our services support our mining clients throughout all phases of environmental assessment, permitting, design, development, and closure.

#### Environmental

- Cumulative Effects Monitoring
- Environmental Effects Monitoring
- Environmental Management Systems (EMS)
- Environmental Site Assessments
- Fish and Wildlife Surveys
- Site Remediation
- Water Quality Monitoring
- Vegetation Surveys
- Environmental Audits

#### Geological/Geotechnical

- Permafrost Expertise
- Tailings Dam Design
- Rock Engineering Solutions
- Winter Road Expertise
- Geological/Geotechnical
   Investigation and Characterization
- Pit and Cut Slope Design and Stability
- Underground Design
- Instrumentation
- NI 43-101 Qualification
- Soil and Rock Lab Testing
- Hydrogeology
- Geothermal Heating Systems

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☑ Consulting

## ERNST & YOUNG

Quality In Everything We Do

Ernst & Young

**Ernst & Young** is a global leader in professional services. Our Canadian practice serves companies from 13 cities across the country and is part of the worldwide Ernst & Young network of firms comprising 114,000 people in 140 countries. Our people offer a wealth of hands-on knowledge, experience and insights in the provision of audit, tax, transaction advisory, and risk advisory services.

#### **Global Mining and Metals Center**

Our clients around the world expect to be served by professionals who combine technical capabilities with a thorough understanding of their industry operating processes, growth drivers, regulatory considerations, and market dynamics. Our Global Mining and Metals Center connects teams around the globe who share information on current and emerging trends in the mining and metals sector to help clients manage risk, optimise performance, and increase operational effectiveness. The Center is where people and ideas come together to help mining and metals companies meet the issues of today and anticipate those of tomorrow.

#### **Our Core Service**

Our Risk Advisory Services practice offers a suite of strategic, outsourcing, and industry-focused operational services tailored to help companies evaluate and enhance their internal audit and risk management functions. Our professionals apply the insights gained from working with hundreds of the world's top companies. We bring you the benefit of our investments in methodology, technology, knowledge, learning systems, and people—all focused on addressing risk challenges in a rapidly changing global marketplace.

#### **Our Mining Sector Practice in Canada**

In Canada, Ernst & Young's Mining practice comprises approximately 300 experienced professionals who have served a broad range of mining clients, from junior exploration companies to global mining houses. Our professionals work with virtually all major mining companies in North America and throughout the world as either their auditor or alternative service provider.

**Ian Slater,** Mining & Metals Industry Leader **www.ey.com/ca** T: 604-891-8372 E: ian.p.slater@ca.ey.com

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## Finning (Canada)

FINNING. CAT

**Finning (Canada)** sells, rents, finances and provides product support services for Caterpillar equipment, ranging in size from small skid steer loaders all the way up to three-storey high Cat 797 mining trucks, hauling 400-ton payloads. Finning's Power Systems division provides an equally exhaustive range of diesel and gas engines for virtually every need.

Finning (Canada)'s 3,500 employees throughout British Columbia, Alberta, Yukon and the Northwest Territories, help their customers reshape the world, providing unrivalled products and innovative service solutions to the mining, construction, forestry, petroleum, governmental and agricultural business sectors.

For more than 70 years, Finning has built an impressive support network and range of services, enabling customers to achieve maximum productivity from their Caterpillar investment. Wherever a customer works in Western Canada, there's Finning support nearby – either from one of Finning's 400 well-equipped field service trucks or at a Finning parts, sales and service facility found in more than 80 western Canadian communities.

Finning (Canada) is committed to achieving and sustaining health and safety excellence in its business operations. As a leader in the heavy equipment industry, Finning seeks to create a safety culture that protects staff, customers, contractors, the general public and property. Finning is also committed to annually reduce the impact of its operations on the global environment Ultimately, Finning's goal is to achieve an environmentally responsible, healthy, injury-free workplace where safety is a core value that influences everything employees do.

A comprehensive Environmental, Health and Safety program is put into practice daily by Finning employees. These efforts are making a difference. Through a comprehensive workplace injury reduction strategy – "Getting to Zero: living each day injury free" – Finning has made significant strides, reducing lost-time injury frequency by over 90 per cent since 1999.

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☑ Consulting



## Fraser Milner Casgrain

FRASER MILNER CASGRAIN

In the global business of mining, Canada is the leading player. And in Canada, **Fraser Milner Casgrain** LLP is one of the leading law firms in the mining industry. Our mining clients include issuers listed on the Toronto, TSX Venture, New York, American and London stock exchanges. We also act for investment banking firms and global financial advisors. Our clients own or finance properties in Canada, the U.S., Latin America, Asia, Europe, Africa, and Australia.

We combine strong technical skills, innovative problem-solving techniques and practical business advice with unparalleled understanding of the mining sector. Our long-standing involvement with the industry means that we know how it became what it is today, and where it's headed in the future. Our colleagues in other practice areas, such as tax, securities and environmental law, work with us to ensure seamless service for our clients, whether in mergers and acquisitions, public or private securities offerings, joint ventures or corporate reorganizations. FMC has a leading edge reputation for obtaining regulatory approvals for mining clients facing complex environmental and aboriginal law issues.

That seamless service extends throughout our firm. With offices in Vancouver, Edmonton, Calgary, Toronto, Ottawa and Montreal, our clients can access our full range of expertise. With our depth of experience, we often act as a bridge between the applicable regulators and mining companies or their technical consultants.

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## Gartner Lee Limited

Gartner Lee

**Gartner Lee** has been providing professional science-based environmental strategies and solutions to mining and other business sectors for over 30 years. The Company now has 16 offices in Canada and an international office, and has successfully completed thousands of projects across Canada and in more than 40 countries.

The Gartner Lee mining team's thorough understanding of environmental, socio-economic and business issues faced by industry proponents, government agencies and local communities including Aboriginals, stems from experience in both private and public sectors. The team has a reputation for providing clients cost-effective, high quality technical services on time.

#### **Expertise includes:**

- Strategic environmental planning
- Exploration impact assessment & review
- Geographic information systems applications
- Siting studies & route selection
- Environmental assessment
- Environmental permitting & approvals
- Environmental compliance
   monitoring
- Environmental optimization of operations
- Environmental effects monitoring
- Human health risk assessment

- Ecological risk assessment
- Economic analysis & business planning
- Hydrology & surface water quality investigations
- Hydrogeology & watershed studies
- Surface & groundwater interaction assessment
- Fish & wildlife habitat assessment
- First Nations liaison & impact benefits agreements
- Public/stakeholder consultation, facilitation & mediation
- Closure planning, remediation & reclamation

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#### www.gartnerlee.com

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☑ Consulting



## Gemcom Software International Inc.

When mining companies seek to increase mine productivity, they turn to **Gemcom** for technology and services – home to world-renowned mining solutions like GEMS, Surpac, Minex, Whittle and InSite. Founded in 1985, Gemcom has a global reach delivering comprehensive solutions in all major mining centres in more than 90 countries. Every major mining company, including BHP Billiton, Codelco, CVRD, De Beers and Newmont, is a Gemcom client.

Gemcom works in partnership with its clients to address their business goals and unique mining challenges by implementing collaborative software systems and best practices spanning exploration, geology, mine planning, production scheduling, and performance management. Gemcom's solutions incorporate database technology offering data management, security and auditability.

Gemcom leverages its mining, business and IT expertise to answer key industry issues such as:

- Shortage of skilled mining professionals;
- Regulatory compliance;
- Increasing costs and rising demand.

#### **Mine Performance Management**

Gemcom InSite 2.0 has been developed to help mining companies address some of the key challenges they are facing, such as the increasing globalization of operations, an acute shortage of technical skills, the drive for continuous improvement, compliance assurance and environmental monitoring. InSite helps companies to meet these challenges by providing web-based access to:

- Global key performance indicators;
- Comprehensive operational performance data, including production metrics; cost measures, safety and environmental indicators;
- Role specific decision-support knowledge;
- Automated reports.

#### **Mine Safety**

Gemcom GEMS geology and mine planning software incorporates a "Drillhole Excavation Warning System" to ensure potentially hazardous intersections between drillholes and excavations are identified early, which enables mitigating actions such as equipment repositioning or barricading to be undertaken.

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## Health and Safety

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## Golder Associates

**Golder Associates** is an employee owned international group of consulting companies that has been delivering quality technical solutions and helping our clients for over 45 years. We provide the foundations for successful and sustainable mining operations using proven approaches developed from our experience on mining projects around the world.

Our reputation rests on our wealth of practical mine operations experience and technical innovation. Our health and safety capabilities are a key component of this reputation. Worldwide, Golder has experienced and knowledgeable staff available to assist in assessment and control of exploration, and mining activities.

#### Health and safety disciplines include:

- Mining Engineers
- Geotechnical Engineers
- Certified Safety Professionals
- · Certified Industrial Hygienists
- Registered Occupational Hygienists
- Construction Safety Officers
- Certified Safety Program Auditors
- Trainers

#### Selected services include:

- · Mine Design and Development
- Mine Stability
- Mine Support
- Corporate Safety Programs
- Safety Program Auditing
- Occupational Hygiene
- Air Quality Assessment
- Community Impact Assessment
- Risk Assessments and Work Procedures
- Hazardous Material Surveys
- Safety Training

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#### Health and Safety

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☑ Consulting

## Hatch



Hatch's mining expertise covers all types of mine activities in all climates - from

the Arctic to deserts; from mountains to jungles; from grassroots to retrofits and improvements.

Our extensive experience has been gained from the deepest underground mines, largest open pits in the world, and in alluvial and marine deposits.

#### **Development Work**

- · Mine planning and development
- Underground
- Open pit
- Alluvial
- Marine
- · Grade control, blast design, rock mechanics
- · Hydrogeology and dewatering

#### **Specialized Services**

- Deep mines to more than 3,500 metres in depth
- Winder, hoisting and shaft engineering including duty cycle, risk assessments and safety testing
- · Ventilation and refrigeration systems
- Paste backfill systems and backfill stations
- · Mine safety and accident investigations

T: 604-689-5767 F: 604 689-3918

#### Health and Safety ☑ Technologies and Services

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#### www.hatch.ca

Oceanic Plaza, Suite 400 1066 West Hastings Street Vancouver, British Columbia Canada, V6E 3X2

□ Consulting



## Hatfield Consultants Partnership

Hatfield Consultants Partnership and our Indonesian joint-venture partner PT Hatfield Indonesia provide environmental and socio-economic services to mining clients worldwide. Hatfield has extensive domestic and international mining experience and can assist companies with their environment consulting needs related to Environmental Health and Safety (EHS), including environmental effects monitoring (EEM), environmental impact assessments, social impact and community consultations, biodiversity assessments, fisheries and wildlife studies, remote sensing and GIS studies, and reclamation planning.

Hatfield offers practical and innovative solutions to help our client meet regulatory and management requirements for mine development, operation or decommissioning. In addition, Hatfield has experience in corporate social responsibility reporting and monitoring. The services provided by Hatfield are an integral part of ensuring a sustainable and safe operation at the immediate mine site and in the surrounding area at both the environmental and social levels.

Hatfield's clients include oil sands, copper, nickel, iron, gold, diamonds, coal and gravel mining development. In Canada, Hatfield is the overall project manager for the oil sands Regional Aquatics Monitoring Program (RAMP) in Alberta, and has provided environmental monitoring services for Highland Valley Copper in British Columbia for over 10 years. Recently Hatfield completed detailed fisheries impact assessments for a planned expansion of the Kemess mine in NE British Columbia, and is undertaking a large scale EIA for a coal mining development in Alberta. In Lima, Peru, Hatfield is currently monitoring the environmental and social impacts of 18 mining operations throughout the Mantaro Valley. Hatfield has maintained an office in Indonesia for over 17 years, and provides a wide range of environmental services to Indonesian mines, including those operated by Freeport, Newmont, and Inco. Hatfield also maintains a Thai-based joint venture company, Pro-En Envirosciences, to service mining clients in Thailand, Vietnam, Laos and Cambodia. Through our long standing partnership with PUMA SA, a Chilean-based engineering and environmental services company. Hatfield has considerable experience with the mining sector in Chile, Bolivia and Peru.

<b>Grant Bruce</b> , Vice President T: 604-926-3261 F: 604-926-5389 E: gbrucel@hatfieldgroup.com	www.hatfieldgroup.com
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HEMMERA

## Hemmera

**Hemmera** is a progressive consulting firm that provides professional services and specialized expertise in environmental engineering, geoscience, life sciences, planning and management. Since its establishment in 1994, Hemmera has grown into a highly respected multi-disciplinary company with over 75 staff members. The firm has primary office locations in Vancouver and Victoria, and a strong project presence across British Columbia, Alberta and Manitoba.

Hemmera is experienced in providing innovative solutions to our Mining industry clients during the planning, permitting, operation and closure phases of their projects.

#### We are proud to provide the following mining-focused services:

- Environmental baseline studies including hydrology, sediment, water quality, aquatic biology, air quality, and dustfall assessments
- Environmental assessment (under federal, provincial, and territorial legislation)
- Public and First Nations consultation and agreements
- Permitting (including Fisheries Act authorizations and compensation)
- Ecological and human health risk assessment
- Mine waste management (ARD, tailings, waste rock, low-grade ore)
- Development of environmental effects monitoring (EEM) programs
- Water management, groundwater modeling, and dewatering
- Environmental Management Systems
- · Mine audits and corrective action recommendations
- Reclamation and closure planning, including costing

Hemmera is focused on supporting our clients and partners in addressing environmental challenges, and creating opportunities for sustainable growth and development. By striving to provide the best service to our clients, Hemmera has had the privilege to take on increasingly challenging projects, add to our existing roster of exceptional professionals, contribute to the technical, scientific, and regulatory environments within which we work, and give back to the communities in which we live. For a complete list of Hemmera's broad engineering, geoscience, life sciences and environmental planning and management services, please visit our website at **www.Hemmera.com**.

T: 604-669-0424 F: 604--669-0430 E: office@Hemmera.com

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#### www.Hemmera.com

Suite 250-380 Burrard Street Vancouver, British Columbia Canada, V6Z 2H3

☑ Consulting

## Herold Engineering Limited



**Herold Engineering Limited** is a Vancouver Island-based consulting civil and structural engineering company with a staff level of 37 employees including 16 professional engineers involved in a wide variety of building, industrial, marine, bridge and municipal infrastructure projects throughout British Columbia.

Our highly skilled group of professionals and support staff provide the expertise required to design and manage efficient structural and municipal engineering projects for a wide variety of public and private sector clients.

We pride ourselves in our ability to provide an excellent level of service to the Mining Industry throughout British Columbia in a timely and competent manner.

#### Structural:

- building design
- steel work design
- steelwork connection design
- concrete industrial structures

#### **Municipal:**

- water systems
- sewage systems
- drainage
- land development
- roadways

#### Transportation / Marine:

- bridges
- barge ramps
- docks and floats
- marine structures
- marine walkways

T: 250-751-8558 F: 250-751-8559 E: mail@heroldengineering.com

#### Health and Safety

☑ Technologies and Services

Environment ☑ Technologies and Services 3701 Shenton Road Nanaimo, British Columbia Canada, V9T 2H1

□ Consulting

## Hillsborough Resources Limited

Hillsborough Resources Limited is an established coal mining company that operates the Quinsam underground thermal coal mine in Campbell River, British Columbia, serving the local and west-coast U.S. cement industry. The Corporation holds a 20% interest in the Peace River Coal Limited Partnership, which has substantial metallurgical coal properties both in operation and under development near Tumbler Ridge, British Columbia. In addition, the Corporation is developing the proposed Wapiti thermal coal mine in the same region. Hillsborough also holds the Bingay Creek metallurgical coal property located in the Elk Valley region of southeast British Columbia.

HILLSBOROUGH Resources Limited

TSX:HLB

Hillsborough takes a holistic approach to mitigating risks and is committed to sustainable mining practices. Risk may include human, environmental, financial and operational. The safety of employees is the most important element to the efficiency and productivity of any successful operation. Quinsam currently employs 96 people, and holds one of the best safety records of any mine in Canada. Recognition of company safety achievements includes receipt of the John T. Ryan Safety Award in both 2001 and 2003. Quinsam has also won the B.C. Small Underground Mine Safety Award in every year since 2000. At all of Hillsborough's operations "Safety is Job #1".

Hillsborough's sustainability policy also includes recognizing and accepting its responsibility to conduct its operations with the highest regard to environmental stewardship. Hillsborough's commitment is reflected in the time, resources, and overall effort devoted to research, environmental monitoring, government permitting, mine planning, resource utilization and reclamation activities.

Exploration, mining, and related activities are carried out in an environmentally sustainable manner by incorporating applicable legislation and regulations and by continually improving environmental management systems, programs, and performance. Hillsborough is committed to minimizing any impacts to the environment.

David Slater, President & CEO T: 604-684-9288 F: 604-684-3178 E: info@hillsboroughresources.com

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☑ Consulting

 $\blacksquare$  Consulting

## Hunter Dickinson Inc.



Hunter Dickinson Inc. (HDI) is a private corporation and an acknowledged leader in the global mining industry. From its head office in Vancouver, Canada, HDI provides comprehensive services to nine publicly traded companies active around the world in all phases of mineral exploration and development.

Behind every Hunter Dickinson company is a multi-disciplinary team of mining professionals, with an exceptional breadth and calibre of expertise.

The HDI team is composed of industry leaders in the fields of geoscience, engineering, the environmental sciences, finance and investment, property acquisition, regulatory and government affairs, and community development. Leading-edge technology, management tools and information support our people. The exceptional human and capital resources that support every HDI company have allowed us to outperform competitors in a number of important ways.

T: 604-684-6365 F: 604-684-8092 E: info@hdgold.com

#### Health and Safety ☑ Technologies and Services

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#### www.hdgold.com

1020-800 West Pender Street Vancouver, British Columbia Canada, V6C 2V6





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## Jacques Whitford

## Jacques Whitford

**Jacques Whitford** is a leading provider of environmental, health and safety, geotechnical and planning solutions throughout the mining operations lifecycle, from initial pre-feasibility and permitting through processing, monitoring, closure and reclamation.

Established in 1972, Jacques Whitford has grown to a multi-disciplinary firm of Environmental, Engineering, Scientific, Planning, and Management professionals who have delivered exceptional solutions to clients in more than 85 countries worldwide. Our team of over 1600 staff have provided consulting services to clients in China, Central and South America, the Middle East, Africa, Southeast Asia, Russia, Central and Eastern Europe and the Caribbean. We currently have over 40 offices in Canada, the United States and internationally, as well as a network of key relationships ready to respond to our clients' needs around the world with local knowledge and expertise.

#### We have substantial international experience in disciplines such as:

- · environmental impact assessment, planning and permitting
- air quality management
- water resources management
- socio-economic studies
- siting and land use management
- · geotechnical, geologic and materials engineering
- environmental management systems and integrated health, safety and environmental management systems
- · monitoring and audit programs
- occupational health and safety
- · development of environmental regulatory regimes and best practices
- training and capacity building
- corporate and community sustainability planning

Our mining sector clients have included mine exploration, development and processing companies, government regulatory and planning agencies, indigenous communities, international financial institutions and aid agencies. We work closely with clients to provide sustainable solutions balancing environmental, economic and societal needs and meet corporate responsibility commitments.

Jag Bilkhu, Director-International Operations T: 604-436-3014 F: 604-436-3752 E: international@jacqueswhitford.com

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☑ Consulting



## Keystone Environmental Ltd.

**Keystone Environmental Ltd.** is 60 full time professional and technical staff providing award-winning expertise to the mining industry. We have worked on many projects including closure of the Island Copper Mine plant site which was the first mine in B.C. to receive a risk-based Certificate of Compliance.

#### Our expertise covers the following activities:

- · Environmental Baseline Assessments;
- Environmental Impact assessments;
- Riparian Area Regulations;
- · Geologic and Hydrogeologic Investigations;
- ARD/ML Prediction;
- ARD/ML Mitigations Plans and Treatment System Engineering Design;
- · Human Health and Ecological Risk Assessments;
- Regulatory and Stakeholder Liaison.

Keystone Environmental provides pragmatic and innovative approaches to all of our services. We are known for our communication and consensus approach with clients and will continue this practice with regulatory bodies (MOE and Federal) and stakeholders. Keystone's projects vary in size, complexity, industry served and end point (e.g., Permitting, Environmental Assessment Approvals, Certificate of Compliance, determinations).

Quality, Health and Safety is positioned in our organization chart directly below the Principals and is based on the ISO quality model. Keystone has a formal corporate health and safety program based on a continuous improvement approach, with implementation of planned job observations, job safety analysis, "last minute risk assessments" for field activities (conducted immediately before the activity), and other planning and implementation tools to protect our employees, contractors, clients and the public from risk, injury and environmental incident.

Keystone Environmental Ltd. is a federally incorporated Canadian, employee owned company.

T: 604-430-0671 F: 604-430-0671 E: keyinfo@keystoneenviro.com

Health and Safety

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#### www.keystoneenviro.com

320-4400 Dominion Street Burnaby, British Columbia Canada V5G 4G3

☑ Consulting



## Klohn Crippen Berger

Preserving natural resources is good for the world and good for your corporate image. When you respect the people and places affected by your projects, everybody wins.

Klohn Crippen Berger is an international engineering and environmental consulting firm. We offer value-added solutions to our industry and government clients in the following sectors: mining, oil sands, oil and gas, hydropower, transportation and water resources.

Our experienced team can help you to meet the technical, environmental and social challenges of your projects. From concept through to closure/commissioning, we prepare our clients to attain Canadian and international standards.

#### Our core environmental and socioeconomic strengths include:

#### Environmental

- Permitting
- Owner representation
- Baseline studies
- Impact/risk assessment
- Wildlife/fish assessment
- Soil/water assessment
- Management systems
- Field monitoring
- Mitigation programs
- Contaminant evaluation
- Air quality assessments
- Environmental protection
- Site reclamation
- Compliance

#### Socioeconomic

- Owner representation
- Community consultation
- Socioeconomic profile
- Cultural studies
- Community development
   assessments
- Assessment of economic benefits
- Infrastructure assessment
- Long-term sustainability initiatives
- Residual/cumulative effects
   assessment
- Skills transfer
- Headquartered in British Columbia, we have offices in Canada, Australia and Peru. Our staff includes specialists with broad language, cultural and geographical experience. Klohn Crippen Berger is an award-winning firm with a long history of quality service.

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Len Murray T: 604-669-3800 F: 604-669-3835 E: mining\_environment@klohn.com

#### www.klohn.com

500 - 2955 Virtual Way Vancouver, British Columbia Canada, V5M 4X6

# KNELSON

## **Knelson Gravity Solutions**

Established in 1978, the Knelson Concentrator has revitalized the use of gravity separation technology in the precious metal industry. Developed by Byron Knelson and utilizing the principle of enhanced gravity separation; the Knelson Concentrator can be found at various processing plants with more than 3,000 units in operation worldwide. Requiring no chemical reagents, the Knelson Concentrator provides simple, reliable and trouble-free operation in an environmentally safe manner.

**Knelson Gravity Solutions (KGS)** has extensive gravity recovery expertise, along with strong R&D, design engineering, manufacturing, training, and maintenance skills. This, combined with their global network, enables KGS to offer total gravity solutions worldwide.

Although used primarily in precious and base metal industries, the potential of the Knelson Concentrator is limitless. The largest application that KGS is currently researching is the reduction of ash and sulphur content of coal. This will help coal-fired generating stations and steel manufacturing plants meet increasingly strict sulphur emission standards, which are designed to alleviate the problem of global warming. Furthermore, the Knelson Mercury Recovery Unit is available to remove native mercury from materials including: tailings disposal sites and old mine workings. These contaminated environments may now be revitalized with the aid of an efficient, chemical-free process, while recovering residual gold values as a by-product.

In 2003, the NRMCA Environmental Innovation Award honourable mention was also awarded to Knelson and stands as further testament to KGS's environmental commitment. This award recognizes manufacturers and engineers for creative ideas and innovations that result in increased environmental protection.

KGS's environmental commitment has been evident since its inception when the first chemical-free centrifugal gravity concentrator was developed. Working closely with customers, suppliers and all regulatory authorities, Knelson continually strives to introduce innovative technologies integral in reducing the environmental impact of global processing industries.

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T: 604-888-4085 F: 604-888-4013 E: knelson@knelson.com www.knelson.com 19855 98 Avenue Langley, British Columbia Canada, V1M 2X5



## **Knight Piesold**



Our largest area of business is providing geotechnical and environmental services to the global mining industry. We are committed to sustainable mining that recognizes social, environmental and economic responsibilities. Our specialized expertise related to tailings and mine waste management, waste characterization, heap leach pads, rock mechanics, water management hydropower and environmental services is directly relevant to upholding these principles.

The mining industry is truly global and our clients operate throughout the world. We have active assignments on all continents (except Antarctica) that provide our staff with a global perspective and the opportunity to see the world.

Ken Brouwer, Managing Director E: kbrouwer@knightpiesold.com

## Health and Safety Technologies and Services

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#### www.knightpiesold.com

400-750 West Pender Street Vancouver, British Columbia Canada, V6C 2T8



## KPMG Performance Registrar Inc.



**KPMG Performance Registrar Inc. (PRI)**, a wholly owned subsidiary of KPMG LLP, offers management system assessment, training and registration services to assist mining organizations and their suppliers in meeting the requirements of nationally and internationally recognized voluntary standards.

KPMG PRI provides industry-focused teams who can help you better understand, control and measure your sustainability, environmental and safety risks.

#### Our services include:

- ISO 14001 Environmental Management Systems
- OHSAS 18001 Occupational Health and Safety Management Systems
- ISO 9001 Quality Management Systems
- Mining Association of Canada Towards Sustainable Mining (TSM) Verification
- Annual Sustainability Reports
- GRI 3 Reports
- Greenhouse Gas Emissions Verification

#### Management System Specialists:

Our engagement team has over 10 years experience conducting management system registrations for a variety of industries and government entities and is well positioned to provide workable, practical strategies for your management system needs.

#### "One Window" Integrated Certification:

We have the ability to provide wide-ranging integrated management system registration services for combinations of voluntary standards (e.g., for integrated ISO 14001, OHSAS 18001 and TSM systems).

#### **Pre-Assessment Services:**

Our engagement team can assess your current performance against voluntary standards through a formal pre-assessment to identify potential weaknesses in management systems and your readiness for third-party registration.

**Chris Ridley-Thomas**, Vice President T: 604-691-3088 E: cridley-thomas@kpmg.ca

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#### Lorax

Lorax Environmental Services Ltd. is a privately-owned, environmental consulting company that provides leading-edge environmental, geochemical and project management services to the mining industry. Our corporate goal is to provide the highest caliber services in the most cost-effective and timely manner and, where appropriate, implement innovative techniques and approaches to address the environmental issues faced by our clients.

Lorax has a team of highly gualified and experienced professionals capable of conducting and managing projects during all phases of development. The practical experience of Lorax's scientists is supplemented by our close association with academic institutions.

The scope of Lorax Environmental Service Ltd's expertise in mining-related environmental issues encompasses exploration through reclamation and post-closure.

#### A diverse range of disciplines relevant to the mining process are addressed by Lorax's team of consultants, including:

Geology

- Hydrogeology
- Oceanography/limnology

- Geochemistry Hydrology
- These areas of expertise are applied to various projects including:
- Environmental Impact Assessment
   Mine closure and reclamation planning
- Acid Rock Drainage and Management 
   Three dimensional visualization of
- Pit lake studies
- Project permitting

- Biology
- processes
- Numerical modelling

New projects will benefit from Lorax's experience with environmental management and project permitting. Existing operations also benefit from years of experience in dealing with environmental issues in the mining sector. Every project is unique and requires a custom solution.

T: 604-688-7173 F: 604-688-7175 E: info@lorax.ca

www.lorax.xa

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### Madrone Environmental Services



**Madrone** is a mid-sized consulting firm offering a broad spectrum of professional environmental services to the resource development sector. Based in British Columbia since 1988, we are used to working in environmentally contentious areas. We help our clients navigate some of the most stringent environmental legislation in the world and find cost-effective and scientifically sound solutions to environmental challenges. With our diverse expertise, we provide an integrated examination of the issues and produce environmental management options that address both the big picture and the details.

#### Our services include:

- complete environmental impact assessments
- EIA project management
- terrestrial ecology inventory and mapping
- wildlife inventory and management
- sensitive ecosystem and rare species management
- fisheries inventory and habitat assessment
- aquatic ecosystem assessment and management
- hydrologic analysis
- · terrain hazard mapping and analysis
- soil assessments and site reclamation plans
- archaeological assessments and excavation
- aboriginal use assessments
- forest and silviculture planning
- agricultural suitability assessments
- aggregate resource exploration
- mapping and GIS analysis







Ken Hughes-Adams, Managing Principal T: 250-746-5545 F: 250-746-5850 E: ken.hughes-adams@madrone.ca

1081 Canada Avenue Duncan, British Columbia Canada, V9L 1V2

### McElhanney



**McElhanney Consulting Services Ltd (McElhanney)** is a Canadian consulting company, established in 1910, providing services in engineering, GIS, web map services, 3D visualization, training, digital mapping and orthophoto production, remote sensing and satellite image processing, surveying, land information, wildlife habitat research, and ecosystem mapping. The company has a resource of more than 300 professional, technical and management staff across B.C. and Alberta, providing field services, production, data management and training to governments, engineering companies and the resource industry worldwide. We also have a surveying and mapping office in Jakarta to service the SE Asia and China regions.

McElhanney provides data acquisition, conversion and structuring services to build geographically related databases using surveying, aerial photography, satellite imagery, base mapping, digital orthophoto technology and other databases. McElhanney is also a licensed software distributor for MapInfo Corp, Earth Resource Mapping (ER Mapper) and ENCOM Technology (ENCOM Discover, Discover 3D, Discover Mobile, Compass, Profile Analyst).

Environmental work (wildlife habitat research, and ecosystem mapping) is provided through our Terrace and Smithers offices. Photogrammetric mapping, satellite data provision, MapInfo/ENCOM/Earth Resource Mapping GIS software and training are provided through our Vancouver office. Surveying and engineering services are available through all our offices.

Karl Kliparchuk, GIS Business Manager

Andrew McIntosh, Geologist

T: 604-683-8521

E: kkliparchuk@mcelhanney.com

E: amcintosh@mcelhanney.com

#### www.mcelhanney.com/mcsl www.MapsByAir.com 100-780 Beatty Street Vancouver, British Columbia Canada, V6B 2M1

### MDA's Geospatial Services



**MDA's Geospatial Services** provides Earth observation data, information products and services from a variety of aerial platforms and the majority of commercially available radar and optical satellites. Our global client base of over 600 clients extends into more than 60 countries.

Applications of Earth Observation data for the Geology Sector include: geological mapping, natural resource management and monitoring, terrain/land cover mapping, three-dimensional modeling (digital elevation models), and land surface deformation maps (InSAR).

Using radar and optical satellite imagery, our terrain map product provides a unique view of the geomorphological characteristics, geologic structures and different land cover types of an area of interest. The terrain map product offers a cost-effective and efficient means of exploring a large area in high detail from one's desktop.

InSAR (Interferometric Synthetic Aperture Radar) is a technique that uses satellite imagery to measure ground movement (or movement of a feature) with centimeter to sub-centimeter accuracy. This is a highly effective tool for precise monitoring of ground movement associated with mining activities.

Using InSAR, one can measure and monitor localized and regional surface deformation, remotely monitor wall/slope stability, and augment existing risk management programs. InSAR information can easily be integrated with other monitoring technologies/data sets such as GPS, inclinometers and tiltmeters.

In the summer of 2007, RADARSAT-2 – Canada's next generation commercial Earth observation synthetic aperture radar (SAR) satellite – will be launched. RADARSAT-2 offers unparalleled imaging flexibility, dual polarization and full polarimetric imaging options, high-resolution and a highly responsive programming and delivery ground segment.

For geology applications, the increased resolution and fully polarimetric capabilities of RADARSAT-2 will translate into more detailed mapping of terrain features or fine geological structures, improved identification of structural features and increased discrimination of different geologic units.

T: 604 244-0400 E: clientservices@mdacorporation.com

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Environment ☑ Technologies and Services www.mdacorporation.com/geospatial 13800 Commerce Parkway Richmond, British Columbia Canada V6V 2J3

□ Consulting

#### Merit Consultants International Inc.



Since 1983, **Merit Consultants International Inc. (Merit)**, a privately held Canadian company, has been providing Project and Construction Management services. Merit has worked with clients in the mining and resource industry worldwide, successfully participating in projects in the USA, Canada, Australia, Philippines, Papua New Guinea, Chile, Guyana, Myanmar, Peru and Portugal.

**Jay Collins**, President T: 604-669-8444 F: 604-669-8434

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#### www.meritconsultants.net

401-750 West Pender Street Vancouver, British Columbia Canada, V6C 2T8

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- ☑ Consulting



### Microbial Technologies Inc.

**Microbial Technologies, Inc.** was founded in 1989 by Dr. André Sobolewski. Drawing on his training as a microbiologist, he sought to bring to the marketplace emerging developments in biotechnology. More importantly, he brought relevance to academic knowledge by focussing on real environmental problems and developing practical solutions. This approach remains as true today as when the company was started.

The company's main focus is to solve new or difficult-to-treat environmental problems. To this task we bring a small complement of talented, knowledgeable staff members, providing a combination of solid theoretical grounding in Biology and Chemistry (a majority of our staff are PhD's) and practical experience in process development and engineering. In addition, our facilities include a well-equipped laboratory, where we develop and test solutions. As such, Microbial Technology's resources are geared towards the goal of finding cost-effective, workable solutions to environmental problems. Our success in this regard is clearly reflected in our track record, which boasts an enviable number of first-ever accomplishments.

We also make our expertise available more conventionally, as other consultants do. For example, we have responded to a need among First Nations in Canada by providing scientific and technical consulting services. Altogether, Microbial Technologies has been involved in over 100 different projects in the past 12 years. Our clients include Government, Industry (Energy, Forestry, Mining, Petrochemical), and First Nations.

The company is based in Roberts Creek, located on the beautiful Sunshine Coast of British Columbia, Canada.

T: 604-885-0568

F: 604-885-0598 E: info@microbialtech.com 1057 Roberts Creek Road-Unit 21 P.O. Box 193 Roberts Creek, British Columbia Canada, VON 2W0

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THE MINING ASSOCIATION

BRITISH COLUMBIA \*BC'S VOICE OF MINING SINCE 1901\*

### Mining Association of British Columbia

Since 1901, the **Mining Association of British Columbia (MABC)** has spoken on behalf of mineral producers and advanced development companies involved in the exploration, development and smelting of minerals in British Columbia, Canada. In doing so, it has come to be regarded as the predominant voice of modern mining, one of the largest industries in British Columbia. MABC communicates with senior decision-makers in government, communities, NGOs, First Nations and the media regarding environmental practices and regulations, taxation, infrastructure demands, labour issues, health and safety and international trade.

We are proud to state that the modern mining industry in B.C. has the safest record of any heavy industry in the province. However, MABC maintains an extensive focus on health, safety and disability management issues. The industry's diligence and commitment to safety is reflected in the numbers, and yet no one is, or will ever be, satisfied until there are no statistics to report. We attribute our success to the close working relationship between labour, management and government inspectors. For the continued safety of those who work in mining we are convinced that we have to continue to support the tripartite collaboration and that the mining industry must continue to be inspected by mining professionals. To encourage and promote high safety standards, MABC co-sponsors the provincial Mine Rescue Competition.

The modern mining industry in B.C. has also established environmental protection as a priority objective in the development, operation and closure of mines. In its ongoing efforts to update and improve environmental protection measures, the industry contributes to the advancement of the scientific understanding of mining's effect on the environment, as well as to the development of technology that will help minimize environmental impacts.

With the challenge of producing profitable mining operations in an environmentally sound manner, practices and regulations have evolved to ensure environmental protection. To promote excellence in mining and sustainability, MABC co-sponsors a Mining and Sustainability Award with the B.C. Government.

Throughout the life cycle of a mine, regulatory and monitoring processes ensure the industry complies with society's environmental objectives. These objectives are established primarily through laws and regulations, but they are also set out in commitments made by members companies of MABC.

T: 604-681-4321 F: 604-681-5305

#### www.mining.bc.ca

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Health and Safety ☑ Technologies and Services

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### Mining Suppliers, Contractors, and Consultants Association of British Columbia

The Mining Suppliers, Contractors & Consultants Association of British Columbia (MSCCA) membership provides equipment, products and related services to the B.C. mining industry. Formed in 1986, MSCCA comprises some 200 companies located in Vancouver and in mining communities throughout the province, as well as Alberta, Ontario and Washington State. It is affiliated with the Mining Association of British Columbia (MABC), which represents corporations engaged in operating and developing mine sites in B.C.

MSCCA is a strong partner with industry and others on initiatives related to sustainability, land use, First Nations cooperation, government relations and public awareness. It works closely with industry on environmental issues and health and safety in the mines. In addition, MSCCA is a major contributor to industry events and programs, education and charitable causes.

This support includes annual donations to the Mineral Resources Education Program of British Columbia and the Children's Hospital "Mining for Miracles" campaign.

**Terry Mulligan**, Executive Director T: 604-681-4321 F: 604-681-5305

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☑ Consulting



Natural Resources Canada

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### Natural Resources Canada

**Natural Resources Canada** is a Department of the Government of Canada that works to ensure the responsible development of Canada's natural resources. This includes conducting innovative science in facilities across Canada to generate ideas and transfer technologies.

The CANMET Mining and Mineral Sciences Laboratories (CANMET-MMSL), a Division of NRCan's Minerals and Metals Sector, provides expert scientific support for the mining industry, with emphasis on sound environmental performance. CANMET-MMSL has a long standing international reputation for technical excellence in mining and mineral processing, and is a recognized leader in developing technological solutions to reduce environmental liabilities and to improve mine workers' health and safety.

CANMET-MMSL environmental expertise is focused on the treatment of liquid and solid waste management, including treatment of acidic drainage, mine decommissioning and rehabilitation. A practical field course on acid rock drainage is delivered annually in B.C. and CANMET-MMSL also hosts the Mine Effluents Neutral Drainage (MEND) Program secretariat, which delivers annual workshops covering the latest advances in mining geochemistry. The mining group specializes in ground stability, mine air quality and ventilation, coal mining health and safety and mine mechanization and automation. CANMET research expertise also extends to mineralogy and metallurgical processing, including detailed mineralogical characterization, and new methods for improving process recovery, particularly for difficult ores.

For more information about CANMET-MMSL specialized services, publications and contact information, please visit our web site at: www.nrcan.gc.ca/mms/canmet-mtb/mmsl-lmsm/mmsl-e.htm

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☑ Consulting



### Nautilus Environmental

**Nautilus Environmental** is an environmental consulting and testing company specializing in the field of environmental toxicology. Offering a unique combination of expertise in toxicity testing, environmental chemistry and ecology, we provide services that increase the relevance of laboratory-based testing programs by extending their application and interpretation to site-specific conditions.

Nautilus has worked extensively with the mining industry in designing and implementing biological monitoring programs and other site-specific investigations.

#### Areas of particular expertise include:

- Development of site-specific water quality criteria as a component of application for discharge permits, including measurement and interpretation of Water Effect Ratios
- Conducting toxicity testing on aquatic, sediment and soil samples; for example, as required under the Metal Mining Effluent Regulations, and to establish baseline, operating, and post-closure conditions
- Design of biological monitoring tools to address site-specific questions, including controlled tests conducted within the environment itself
- Identification of causes of adverse effects associated with effluents, including toxicity observed in laboratory tests and adverse effects observed on biological communities in the receiving environment
- Evaluation of treatment strategies for reducing ecological effects associated with discharges
- Provision of clear and concise communication with clients, regulatory authorities and the general public, to facilitate understanding and resolution of environmental concerns

Operations in Burnaby include a 2,300 square foot laboratory facility, which is used for toxicity testing and a variety of other environmental programs and research-oriented investigations. Other offices and laboratories operated by Nautilus Environmental are located in Tacoma (WA) and San Diego (CA).

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### Northgate Minerals Corporation

**Northgate Minerals Corporation** (TSX: NGX, AMEX: NXG) is a gold and copper mining company focused on operations and opportunities in the Americas. Among Northgate's principal assets is the Kemess South mine located in north-central British Columbia, with record metal production set in 2007 of 310,296 ounces of gold and 81.2 million pounds of copper. Our Kemess North deposit contains a proven and probable reserve of 4.1 million ounces of gold and 1.4 billion pounds of copper. Northgate also owns the Young-Davidson property in northern Ontario, with a total gold resource base of 2.1 million ounces.

In operating one of the largest gold mines built in Canada in the last 20 years, Northgate is committed to safe and environmentally sustainable mining practices. Since taking control of the Kemess South mine in 2000, we have made enormous strides to raise the profile of safety among our 365 employees. Through good health and safety practices and the efforts of our employees, we have consistently finished in the top tier for mine safety in British Columbia, including winning the Edward Prior Safety Award from the B.C. Ministry of Energy, Mines and Petroleum Resources and the Edgar A. Scholtz Medal for Excellence in Mine Development.

Northgate also recognizes the importance of sustainable environmental practices, achieving excellent water quality and successful fisheries enhancements on a long-term basis. As a result of our achievements, the Kemess mine has been the recipient of a Citation for "Outstanding Reclamation Achievement" from the Technical and Research Committee on Reclamation of the Mining Association of British Columbia and B.C. Ministry of Energy, Mines and Petroleum Resources.

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☑ Consulting

### Northwest Community College

At the Northwest Community College School of Exploration and Mining safety training is a cornerstone and now it has added an environmental monitoring

safety training is a cornerstone, and now it has added an environmental monitoring program. The School is a partnership between Northwest Community College and Smithers Exploration Group, an industry organization. From its base in Smithers, B.C., the School offers its training programs in communities near remote mineral exploration sites in the northwest.

A recent study sponsored by the Mineral Association for Exploration British Columbia focused on safety in the mineral exploration industry. The NWCC School of Exploration and Mining makes that possible, with its extensive first aid and safety training.

The Mining Exploration Field Assistant (MEFA) program requires students to have their Occupational First Aid Level One before enrolling. The program takes place in bush camp classrooms, and the first training covers:

- Bear Aware
- · Communication and navigation skills
- Helicopter safety
- Wilderness safety
- Additional first aid

One of the newest courses at the School of Exploration and Mining is the environmental monitoring program Building Environmental Aboriginal Human Resources (BEAHR). It teaches the sampling technology and knowledge that fosters environmentally sound exploration and mining practises.

The first BEAHR graduates are from First Nations in northwestern B.C. They will use their training to supervise First Nations youth in basic reclamation assessment work at historic mine sites in the region.

The NWCC School of Exploration and Mining is committed to safety and environmental training that supports a world-class exploration and mining industry in British Columbia.

Andrea Kosalko, Manager T: 250-847-4461 E: akosalko@nwcc.bc.ca

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### NovaGold Canada Inc.

On February 10, 2006, **NovaGold Canada Inc.** signed a Participation Agreement with the Tahltan Nation for their support and participation in development of the Galore Creek project in northwestern British Columbia. The agreement supports the Tahltan Nation's principles of environmental stewardship, economic sustainability and self-determination, and ensures collaboration between both parties for mine planning, mine operation and environmental protection. Curtis Rattray, Chair of the Tahltan Central Council, said the Agreement "...establishes a high standard against which all proposed resource development projects in Tahltan Territory will be measured."

#### Some highlights include:

- Recognition of the Tahltan's traditional rights, title and interests to the project area as well as NovaGold's rights to explore and develop mineral resources in the Galore Creek Valley.
- Mutual cooperation during the review and permitting process and a commitment to mitigate any adverse environmental impacts.
- Establishment of measures and procedures that will fully engage the Tahltan in all aspects of environmental protection.
- Training and employment opportunities for Tahltan members throughout the mine life, with a process for ongoing dialogue regarding advancement.
- Opportunities for Tahltan businesses for the supply of goods and services throughout the mine life and during mine closure.
- Financial contributions by NovaGold to the Tahltan Heritage Trust Fund, which will be used to mitigate any adverse social and cultural impacts of mine development.

This comprehensive agreement demonstrates that large new mining projects such as Galore Creek can be developed with the active support of local First Nation communities.

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☑ Consulting

# MINING LTD.

### NVI Mining Ltd.

**NVI Mining Ltd (NVI)** is a wholly owned subsidiary of Breakwater Resources Ltd, a Canadian mineral resource company with mining interests in Canada, Chile and Honduras. NVI owns and operates the Myra Falls Operations (MFO). MFO consists of a base metal mine located at the south end of Buttle Lake in central Vancouver Island, with a storage and ship loading facility in Campbell River, 90 kilometres by paved highway to the east.

NVI produces zinc and copper concentrates with by-product silver and gold, from mining the numerous massive sulphide lenses that underlie the Myra Valley. These flat-lying sulphide lenses, which continue to be aggressively explored for, combine to form a world class "orebody" that has been mined since 1966.

MFO is unique, operating within Strathcona Provincial Park, the oldest provincial park in British Columbia. MFO exemplifies good environmental stewardship and NVI understands and accepts the obligations inherent in its "social license to operate" within a park. In doing so, NVI is fully committed to protecting the surroundings in which it operates as well as researching the means that will return the site to its natural park status upon the completion of mining.

NVI is also committed to safeguarding the health and well-being of its employees through good management systems and practices. This is embodied in corporate

and operational "Health and Safety" and "Environmental" policies. NVI makes a significant contribution to the region's economy and is the second largest private employer in the Campbell River area. In developing a more sustainable future, NVI is working with other communities-of-interest to ensure that nature's riches can be enjoyed by all in this natural wilderness setting.



**Kevin Weston**, Vice President T: 250-287-9271 Ext. 279

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ORGANIZATIONAL PROFILES | 85



#### Piteau Associates Engineering Ltd.

**Piteau Associates Engineering Ltd.** has completed over 100 mining assignments world-wide, covering feasibility, design, permitting, construction and operation for open pit and underground mines.

Our expertise has been applied to all segments of base metal, precious metal, coal, oil sands and industrial minerals mining projects.

We also have experience in all aspects of mine waste disposal and management. We have completed design, permitting and construction of waste rock dumps, involving several million cubic metres of weak rock founded on steep terrain or compressible soils. Many projects involved design of flow-through rock drains and have required assessments of potential for acid rock drainage.

Alan F. Stewart, President T: 604-986-8551 F: 604-985-7286 E: astewart@piteau.com

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☑ Consulting

# PricewaterhouseCoopers PRICEWATERHOUSE COPERS @

**PricewaterhouseCoopers** is the leading advisor to the mining industry in B.C. and around the world. We work with more mining explorers, producers, and service providers than any other professional services firm, and we provide financial and advisory services to the majority of the large international mining houses, among them the world's largest metal, industrial mineral and coal producers.

Our presence in traditional and emerging markets, and experience with private industry, institutions and government enables us to meet client needs at a moment's notice in the areas of:

- Audit and Assurance Services
- Transaction Services
- Global Risk Management Services
- Business Process Outsourcing
- Environmental Services
- Financial Advisory Services
- Global HR Solutions
- Tax

The firms of the PricewaterhouseCoopers global network (**www.pwc.com**) provide industry-focused assurance, tax and advisory services to build public trust and enhance value for clients and their stakeholders. More than 140,000 people in 149 countries across our network share their thinking, experience and solutions to develop fresh perspectives and practical advice. PricewaterhouseCoopers LLP (**www.pwc.com/ca**) and its related entities have more than 4,700 partners and staff in offices across the country.

For more information about our mining services in B.C., please call one of the contacts listed below, or visit our web site at **www.pwc.com/ca/mining**.

Audit and Assurance           Lenard Boggio         T: 604-806-7016           Michael Cinnamond         T: 604-806-7029           Dean Larocque         T: 604-806-7173	www.pwc.com
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### Rescan Environmental Services Ltd.



**Rescan Environmental Services Ltd. (Rescan)** offers a wide range of engineering, science, and socio-economic services to clients around the world. Rescan assists industries, institutions and governments in achieving sound environmental and social practices for the benefit of present and future generations. Rescan is committed to sustainable development, and is currently preparing one of the first integrated Social and Environmental Assessments under the new IFC (International Finance Corporation) guidelines for a mine development project in Argentina.

As a business strategy, Rescan has forged working partnerships with First Nations groups. Rescan believes in using this approach to defuse confrontation, provide employment and training to communities, and create opportunities for local people to participate in project planning on their traditional lands.

The Rescan Safety Program is a corporate priority. Our field teams are often in remote areas where safety awareness is critical for survival. All professional project staff have completed safety training courses, such as Occupational First Aid and

Wilderness First Aid, and Swift Water Rescue. Rescan produces its own in-house Safety Manual, addressing issues such as bear safety, First Aid, evacuation procedures and communication protocols. In addition, Rescan sponsors a series of in-house safety workshops for all staff, including Earthquake Safety and Bear Awareness seminars.



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### Rescan Tahltan Environmental Consultants

**Rescan Tahltan Environmental Consultants (RTEC)** is a 50/50 partnership between the Tahltan Nation Development Corporation (TNDC) and Rescan Environmental Services Ltd. (Rescan). It was designed to meet the business goals and mandates of both companies, and to contribute to sustainable development in Tahltan Territory (which encompasses large portions of the Stikine River drainage in north-western British Columbia). RTEC is headquartered in Dease Lake, B.C. It provides environmental and related management services for companies that want to invest in Tahltan Territory. RTEC delivers sound environmental and socioeconomic services to large-scale projects in the Tahltan tribal territory. This has been a successful partnership since its establishment in May 2004.



RTEC's role in many projects in the region is to provide environmental and socio-economic baseline studies, prepare the environmental assessment required for approval under the British Columbia and Canada environmental assessment processes, and to support companies in applying for permits required to develop the mine. The team at RTEC has the experience and expertise to deliver these services professionally and efficiently. For example, since 2004 RTEC has provided environmental and socio-economic

services to NovaGold Resources Ltd. for the Galore Creek Project, the most recently permitted mining project in British Columbia. RTEC has completed the baseline environmental studies and the Environmental Impact Assessment for submission to the BCEAO and CEAA. The Galore Creek Project is a major copper/precious metals resource located in northwestern B.C., within the Tahltan Nation Traditional lands.

RTEC integrates the traditional knowledge of the Tahltan Nation with the scientific excellence of Rescan which results in well-balanced environmental and socio-economic solutions. RTEC works closely with communities and facilitates sustainability and increased economic benefits to the region, incorporating fundamental RTEC values of respect, tradition, community empowerment, education and training.

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RESOURCEWC

### Resource World Magazine Inc.

**Resource World Magazine Inc.** is the publisher of Resource World Magazine, a unique magazine targeting a niche market in the resource sector. The magazine is designed and written to be an information resource for investors and an advertising platform for publicly traded resource companies. Resource World Magazine presents timely information relevant to the resource sector as well as content aimed at informing both experienced and novice investors in mining, oil & gas and alternative energy companies. The magazine's success is attributed to the quality of the non-advertorial content and the ability to deliver advertising opportunities to a highly targeted market.

Resource World Magazine supports the mining industry in its efforts to develop safe mining practices and has reported on innovative technology and policy aimed at improving safety standards and reducing the environmental impact of mining activity.

Resource World Magazine also produces Resource World Radio featuring interviews with professionals in the mining industry. Resource World TV has very recently been launched and provides resource companies with the opportunity to upload their video presentations.

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#### Robertson GeoConsultants Inc.

**Robertson GeoConsultants Inc.** is an employee-owned consulting firm specializing in geotechnical and environmental engineering for the mining industry. Our firm consists of a small team of specialty consultants with expert knowledge in geotechnical engineering, hydrogeology and geochemistry and their application to mining. We are international leaders in the design/audit/ review of mine waste facilities (tailings dams, waste rock dumps), assessment and management of groundwater and mine waste seepage (ML/ARD), and mine closure planning. Since incorporation in 1995, we have completed over 100 projects in 15 countries, including some of the largest mining projects in the world.

Our experience, integrity and quality of work is widely recognized in the environmental mining community, as demonstrated by our broad client base which includes many international mining companies, regulatory agencies and other consulting firms worldwide.

Robertson GeoConsultants Inc. takes an active role in the advancement of new environmental technologies applied to mining through participation in various research projects, industry initiatives and sponsorship of the Enviromine, Hydromine, Geotechmine and Geomine web sites for mining environmental technology.

For more details on our services and technologies please visit our website at **www.robertsongeoconsultants.com**.

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### **Royal Roads University**

The global challenge of sustainability brings with it new opportunities for collaboration across disciplines, between governments, scientists and business leaders, and among those committed to innovative responses to complex ecological, social and economic issues. **Royal Roads University's** programs provide the leadership skills and interdisciplinary knowledge that lead to sustainable solutions. Manage your education through Internet learning and short residencies.

As a key part of its mandate, the School of Environment and Sustainability is committed to applied, problem-solving research that supports our innovative partnerships with communities, business, industry, and the public sector. Focusing on current needs and trends related to sustainable societies, communities, and organizations, the School of Environment and Sustainability undertakes research to advance capacity building, collaboration and organizational effectiveness, dialogue, environmental protection, pollution mitigation, and resource stewardship.

# Specifically the MA/MSc in Environment and Management program offers graduates the ability to:

- Assess the environmental, social, cultural, political, legal, and economic elements of sustaining and enhancing environmental health and ecosystem well-being;
- Develop and evaluate goals, objectives and strategies, taking a range of perspectives into consideration; and
- Prepare, communicate and implement action plans.

As an example of how responsive Royal Roads University can be to industry's needs, in 2001 the university offered an intense two-week course specifically designed for the mining sector called "Managing Environmental and Social Concerns for Mining". This course attracted learners from South America, South Africa and Scandinavia as well as North America. Learning from experts and top-practitioners in the field, participants examined innovative and practical solutions.

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www.royalroads.ca	
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### RST Instruments Ltd.



Established in 1977, **RST Instruments Ltd**. offers a wide range of products for the geotechnical, mining and structural engineering fields on a global scale. These instruments are generally related to the measurement and monitoring of soil, rock, and/or groundwater. RST's products include: borehole packers, inclinometer systems/casing, extensometers, tilt meters, strain gauges, pressure cells, load cells, data loggers, groundwater monitoring systems and other specialized instruments.

RST takes much pride in their ability to provide custom engineered solutions to site-specific problems, either on a design-build basis, or in co-operation with the client. With over 25 years of experience, RST has a proven track record for quality, long-term stability, and product reliability. The company's 26,000 square foot modern facility incorporates CAD, CAM, and CNC manufacturing techniques. Such techniques assure high quality, at a reasonable cost, with timely delivery.

RST Instruments Ltd. is dedicated to offering exceptional geotechnical instruments with unmatched technical support and engineering experience.

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#### www.rstinstruments.com

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### Sandwell Engineering Inc.

Operating worldwide with more than 30,000 successful projects in over 80 countries worldwide, **Sandwell** is a leading engineering contractor. Our Mining and Bulk Handling Division has an international reputation for planning, engineering and project management. We are a leader in integrated systems for the transportation of bulk materials by road, ship, rail and conveyor, including storage, load-out, and related infrastructure.

With sustainable practices inherent to the way we do business, our HSEC framework is registered to ISO 14001, and OHSAS 18001 and builds on our ISO 9001 registration. We are committed to uphold sustainable practices and ensure the health and safety of those around us; assist in the protection, care, and wellbeing of our environment; and make a positive contribution to the communities in which we are active.

Sandwell delivers innovative solutions that enable clients to build and maintain competitive advantage.

Charles Birt, Mining and Bulk Handling Division T: 604-684-9311 F: 604-688-5913 E: cbirt@sandwell.com

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### Savona Equipment Ltd.



**Savona Equipment Ltd.** supplies mining and milling equipment for the mining, aggregate, soil remediation, mineral processing, and drilling industries. We are situated 20 minutes west of Kamloops, B.C.

Backed by 50 years of experience, Savona Equipment has the ability and expertise to supply you with complete Mine and Mill Packages, or individual items, from a few tons per day to several thousands. With our combined experience and ingenuity we can manufacture and supply your company with specialized equipment for virtually any application. Other abilities include appraisals and liquidations. We have ample storage facilities, and possess the experience and know-how to be able to satisfactorily fill all your needs.

We are equipped to assist your company in the design stage, and then manufacture custom equipment for your specific process of remediation, reclamation, tailings clean-up, and other environmental procedures.

At Savona Equipment we tackle environmental issues every day as we refurbish and recycle equipment. We transform idle used equipment into timely, functional, and cost-effective solutions for companies all over the globe.

T: 250-373-2424 F: 250-373-2323 E: sales@savonaequip.com

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□ Consulting

### Seacor Environmental Inc.



**Seacor Environmental Inc.** has the experience, regulatory expertise, and technical resources to thoroughly address and resolve your environmental challenges, helping to ensure the success of your mining projects.

Seacor is a national environmental consulting company. We help our clients reduce their environmental risks and liabilities, and provide superior payback on their investment in environmental management. Seacor achieves this by providing adaptive solutions, responsive service, and trusted experience through a range of environmental engineering services. Seacor's mission is to be the most trusted environmental consultant in Canada.

At Seacor, we understand the importance of complying with complex environmental rules and regulations while managing an efficient and economical mining operation. Seacor personnel have worked on mine sites around the globe, and have completed over 5,000 site assessments, investigations, remediation and reclamation assignments. We are experts in regulatory permitting and compliance.

#### Seacor's mining services include:

- Project Planning
- Environmental Management Systems
- Permitting
- Impact Assessment
- Closure Plans
- Risk Assessment
- Water Quality
- Fisheries and Wildlife Issues
- Air Quality

Toxicology

- Habitat Restoration
- Site Reclamation and Revegetation
- Mine Waste and Water Management Planning
- Contaminated Site Assessment & Remediation
- Due Diligence and Compliance Audits

T: 604-738-2500 F: 604-738-2508

#### www.seacorcanada.com

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### Snowden

**Snowden** delivers a comprehensive range of technical consulting services and independent advice to exploration and mining companies, as well as legal and financial institutions with interests in the mining sector.

Established in 1987, Snowden has expanded from an initial focus on geological and geostatistical consulting to offer an extensive range of services. These services include: economic geology, geological modelling, resource estimation, mine planning, optimisation, scoping and feasibility studies, geotechnical and rock engineering, preparation of independent expert reports, valuations, due diligence reviews, training, mentoring, and business improvement and technology solutions.

Now a subsidiary of the publicly listed Downer EDI group, Snowden employs over 180 experienced staff based in our offices in Australia, Africa, Europe and the Americas. Snowden's specialists are well recognised in their respective fields and have consulted on a significant number of projects across the globe covering an extensive range of commodities and environments/settings.

Snowden is focussed on clearly understanding our clients' requirements and providing the most practical, innovative and effective solutions.

Snowden's impressive list of international clients and ongoing relationships with these clients demonstrates our attention to quality and service as well as continuous development and improvement.

Snowden is committed to the delivery of international best practice. Snowden's highly experienced personnel offer a wide range of integrated skills to manage tasks of any nature and level of complexity in the mining and related industry, on a regional and global basis.

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#### ORGANIZATIONAL PROFILES | 97



### Sperling Hansen Associates Inc.

**Sperling Hansen Associates Inc.** is an engineering consultancy specialized in providing solid waste management services to municipal and corporate clients. The company was formed in 1995 by Dr. Tony Sperling and Poul Hansen, past president of Highland Valley Copper, one of the largest copper mines in the world.

Located in North Vancouver, British Columbia, Canada, the company presently has a staff of nine qualified engineers and scientists with skills and experience to complete even the most demanding environmental management related projects including:

- landfill design;
- site selection;
- operation and closure plans;
- transfer station design and operation plans;
- annual report preparation;
- leachate collection systems;
- wastewater treatment and pump stations;
- · landfill fire extinguishments and risk management and training;
- landfill gas control and utilization;
- environmental assessment and monitoring studies;
- environmental geochemistry;
- geotechnical engineering; and
- engineering design.

**Dr. Tony Sperling**, President T: 604-986-7723 C: 604-220-4862 F: 604-986-7734 8 -1225 East Keith Road North Vancouver, British Columbia Canada, V7J 1J3





**SRK Consulting** is an independent, international consulting practice serving mainly mining industry clients. SRK offers services from exploration through feasibility and production to mine closure. Formed in 1974, SRK now employs more than 600 professionals internationally in 30 permanent offices on 6 continents.

SRK Consulting employs leading specialists in various fields. Examples of services include due diligence studies, engineering studies (scoping, pre-feasibility and feasibility), mine waste management, permitting and mine closure. Recent clients include major and medium-sized mining companies, exploration companies, banks and government departments.

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☑ Consulting

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## SteveJan Consultants Inc.

**SteveJan Consultants Inc.** has been providing professional environmental consulting services to the mining industry since 2002. The firm is built around the founder's 25 years of experience in mineral processing and environmental management.

#### SJCI specializes in the following services:

- · Environmental auditing-spanning from internal overviews to full ISO certifications;
- · Environmental Management Systems-development and implementation;
- Mine Closure and Reclamation-plan preparations through to implementation;
- Due Diligence Studies for mining acquisitions; and
- Preparation of Environmental Impact Studies and Mine Permit Applications.

#### Our projects have also involved the following services:

- Project Management: Overseeing multi-disciplinary projects utilizing professional consultants, contractors, and site resources;
- EHS Programs: Development and delivery of environment, health and safety programs;
- · Environmental Baseline Studies: design and implementation; and
- Tailings Facility Management Systems: preparation and implementation.

We are dedicated to responsible mining and programs such as the Mining Association of Canada's towards Sustainable Mining initiative.

#### **Recent Projects:**

- BHP-Billiton-Escondida Mine, Chile
- Boliden AB, Sweden
- IamGold-Linden & Omai Mines, Guyana
- Ketza River Mine, Canada
- Lundin Mining, Sweden
- Placer Dome-Pueblo Viejo Mine, Dominican Republic
- NovaGold Resources-Galore Creek
   Project, Canada
- Ozernoe GOK, Buryatia, Russian Federation
- Sherwood Copper-Minto Mine, Canada
- YZC-Wolverine Mine, Canada
- Yukon Government, Canada
- Roca Minerals-MAX Moly Mine, Canada

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**Steve Januszewski**, Principal T: 250-850-9002 F: 250-926-0285 E: sjci@telus.net 405-9 Adams Road, Campbell River, British Columbia Canada, V9W 1R9

### StrataGold Corporation



**StrataGold Corporation** is a gold exploration and development company focused on two advanced-stage gold projects: Dublin Gulch, Yukon and Tassawini, Guyana.

StrataGold believes Health & Safety, as well as Social & Environmental sustainability, are key organizational pillars which enable project advancement and add value to our operations. StrataGold believes excellence in Health & Safety is a fundamental responsibility of every employee, manager, officer and director. In addition to protecting lives, safety driven operations provide for long-term sustainable business growth.

StrataGold strives to integrate our Health & Safety Program into every facet of corporate culture. Our developing Health & Safety Program focuses on three key areas:

#### 1. Prevention

- a. through employee specific training
- b. direct communication and involvement of all staff in policy development
- c. documentation and follow-up

#### 2. Mitigation

- a. through employee specific training
- b. targeted Health & Safety systems development
- c. continuous improvements

#### 3. Response

- a. through employee specific training
- b. comprehensive contingency planning
- c. rapid response and evacuation planning

Through community engagement, we focus our efforts on economic opportunities, environmental management and those principles of Health and Safety which are important to the local communities. Management views this as a learning opportunity and strives for excellence and continuous improvement in every aspect of our business.

For more information, please visit us at www.stratagold.com.

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#### www.stratagold.com

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☑ Consulting

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# Stratagem Pacific Consulting

**Stratagem Pacific Consulting** was formed in 1995 to provide quality and innovative services associated with cultural, environmental, economic development and natural resource issues.

Particularly, Stratagem Pacific specializes in developing positive relationships between different stakeholders including industry, First Nations, government, environmental NGOs, and the public through strategic planning, negotiation and communication. The company's reputation is built upon a foundation of creativity, honesty, diplomacy and integrity in addressing the key issues that impact our province.

Stratagem Pacific brings a professional knowledge and depth of experience to current issues regarding natural resource management, economic development and social license of operation. The Firm develops working models that bring together representatives from diverse interests to discuss, clarify and resolve complex issues.

Stratagem Pacific acts as both catalyst and facilitator, helping clients build and strengthen vital industry, governance and public connections.

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### Taseko Mines Limited



**Taseko Mines Limited** (TSX: TKO; AMEX: TGB) is focused on creating wealth through the operation, development and acquisition of mineral projects. Its main assets are the Gibraltar copper-molybdenum mine, the Prosperity gold-copper project and the Harmony gold project.

#### Gibraltar

Taseko's Gibraltar copper-molybdenum mine, located in south-central British Columbia near Williams Lake, is undergoing a major expansion and modernization. By 2008, annual production capacity will be increased to 100 million pounds of copper and 1.3 million pounds of molybdenum. Additional resources from an ongoing drill program is expected to extend the mine life well beyond the current 15 years.

#### Prosperity

Prosperity, located 140 kilometers southwest of Williams Lake, hosts a sizeable porphyry gold-copper deposit amenable to large scale open pit mining. Extensive exploration, engineering, environmental and socioeconomic studies have been completed prior to 2001. In late 2005, supported by improved metal prices, project work was re-initiated. Environmental Assessment of the project is progressing and the final feasibility study is expected to be completed in the first half of 2007.

#### Harmony

Harmony, located on Graham Island off British Columbia's west coast, hosts a large gold deposit. Detailed engineering studies are required to fully assess its potential and, as such, the project represents a longer term development opportunity for the Company.

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### British Columbia Technical and Research Committee on Reclamation



The **Technical and Research Committee on Reclamation (TRCR)** originated in the early 1970s, in response to a demonstrated need in British Columbia for greater government-industry communications in the area of environmental protection and reclamation associated with mining. Committee membership is drawn from the corporate sector; the Ministry of Energy, Mines and Petroleum Resources; the Ministry of Environment, the provincial Environmental Assessment Office, Natural Resources Canada – CANMET, the Mining Association of British Columbia, Association for Mineral Exploration BC and British Columbia universities and colleges.

Since 1977, the TRCR has annually sponsored the British Columbia Mine Reclamation Symposium to foster the exchange of information, papers and ideas on reclamation.

To promote excellence in reclamation, the Committee annually presents the British Columbia Mine Reclamation Award and several citations for excellence in mine reclamation. Citations are provided for the reclamation of exploration sites, metal mines, coal mines, placer operations, sand and gravel operations, and industrial mineral operations.

The TRCR also sponsors studies focusing on single issues such as: re-sloping waste dump faces, materials handling and cost, rock drains, environmental management of cyanide, metal uptake by vegetation, effects of molybdenum on cattle and fish, and metal leaching/acid rock drainage.

Further, the TRCR co-sponsors the annual BC MEND International Metal Leaching and Acid Rock Drainage Workshop. Each year, this workshop reviews the best practices and results of a different aspect of metal leaching and ARD prediction and mitigation. Unique features of the workshop include a focus on sustainability and large scale case studies.

The TRCR also regularly co-hosts annual symposiums with the Canadian Land Reclamation Association.

www.trcr.bc.ca

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### University of British Columbia

**The University of British Columbia (UBC)** is host to the Norman B. Keevil Institute of Mining Engineering, one of the world's leading mining engineering schools. Mining and Mineral Processing Engineering at UBC has a long tradition dating back to the establishment of UBC in 1915. The Institute is committed to being a leader in education and research in a new era where mining assumes a more responsive and responsible role in the world.

In education and training the Institute offers programs leading to Bachelor's, Master's and PhD degrees. Typically 35 to 40 engineering students enter the Bachelor's program annually. The COOP type of degree is particularly popular in providing a very strong component of learning in industry during the degree. There are over 80 Master's and PhD students working on research that covers four main areas: surface and underground mine excavation; mineral processing; mine environmental management; and mining with communities. There is also a Certificate program that allows students to study though web-based courses and professional development short courses that are given in the summer in Vancouver or at mine sites. This year a new International Master's of Engineering program in Mining is being introduced. This is aimed towards the growing demand for advanced mining education for graduates from China. The degree will not only provide advanced courses but also COOP work term employment opportunities with Canadian mining companies.

The Norman B. Keevil Institute of Mining Engineering invites you to consider us for your mining educational needs. We also are very well equipped to help you in any collaborative research to address significant mining issues.

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### Wardrop Engineering



**Wardrop** is an internationally recognized, employee-owned Canadian multidisciplined engineering firm with offices in Canada, Africa, China, India, the United Kingdom and the USA.

Wardrop has the people, the services, and the global presence you need to help you through all stages of your mine's life cycle. Our commitment to the mining industry is total.

Our multinational roster of highly qualified professionals in geology, mining, processing, environmental and engineering and construction management offers the mining industry a wide range of diversified services from front-end consulting through project execution to mine closure solutions.

Our team, with worldwide project experience, understands the challenges of doing business internationally. We bring specific strengths and expertise that focus on and bring the most innovative solutions to our international client's needs.

As a result of our quality work, and our timeliness to comply with deadlines, our clients who are comprised of major players in the mining and banking community trust in Wardrop to provide unique and customized solutions towards completing successful projects.

Wardrop – the name for excellence, worldwide. We invite you to visit our webpage to know more about our market sectors and services at **www.wardrop.com** 

We enable the maximum economic performance of global mining projects throughout the resource life cycle...

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#### Weatherhaven



**Weatherhaven** is a leading provider of portable shelters, camps and systems for remote sites around the world. Our team of employees can design, manufacture, transport, install, dismantle, repair, and overhaul all camp-related shelter systems. We can also provide custom camps to meet your specific requirements.

Exploration typically takes place in remote areas with no road access – from lush jungles in the humid tropics to harsh, frozen tundra. Whether your project is intended for hot or cold climates, we can design a camp for all destinations, no matter how inaccessible. Regular customers in this category include mining exploration and drilling companies, seismic crews, and research organizations. Exploration camps can include accommodation, kitchens, dining halls, wash houses, offices, core shacks, recreation facilities, and first-aid centres.

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□ Consulting

### Notes

### Notes

### Annual Mining Events in British Columbia

AME BC Roundup – January www.amebc.ca/roundupoverview.htm

BC Mining Week – May www.mining.bc.ca

BC Government Mine Rescue Competition – June www.gov.bc.ca/empr

TRCR Reclamation Symposium – September www.trcr.bc.ca

MABC Asia Pacific Forum on Mining and Minerals – October www.mining.bc.ca

MABC Mining & Sustainability Event – November www.mining.bc.ca

Electronic versions of this guide are available in Chinese, English and Spanish at: www.amebc.ca/capabilitiesguide.htm www.mining.bc.ca/capabilitiesguide.htm















THE MINING ASSOCIATION OF BRITISH COLUMBIA



Foreign Affairs and International Trade Canada Affaires étrangères et Commerce international Canada



Natural Resources Canada Ressources naturelles Canada



