

# 2 0 1 9 ACTIVITY REPORT

corem.qc.ca

JEAN-FRANÇOIS LEROUX, ENG. CHAIRMAN OF THE BOARD

# **MESSAGE FROM THE CHAIRMAN OF THE BOARD AND THE** PRESIDENT AND CEO



In 2019, for the third consecutive year, Corem grew its business during the first six months of the year to subsequently reach a stable level of activities. While metal prices remained high for gold, base metals and iron, operating mines remained cautious in their investments. The requirement of obtaining a return on their investments in innovation is driving Corem to develop and maintain a research and innovation program that is increasingly aligned with the needs of its members. Investments in our pre-competitive research program increased by 29% to \$6.6 million, compared with \$5.1 million in 2018, and were the highest in Corem's history.

In regard to collaborative projects, 2019 was a very active year for Corem. Several research partnerships were established with various organizations in Canada and internationally. Corem also continued to demonstrate its leadership in mineral processing innovation, with the support of several competitive financing programs.

In terms of members, Corem welcomed the operations of the Usina de Conceição I, and Usina 8 pellet plant of Vale S.A. in Brazil. The addition of Vale S.A. as new member has enabled Corem to consolidate its position as the research partner of choice for the iron ore industry. The hosting of a roundtable on agglomeration and thermal processes allowed us to review our research portfolio in this sector, and to establish our roadmap in technological development for the coming years.

The three-year plan of 2018–2020 for infrastructure and equipment investment continued in 2019. The inauguration of the hydrometallurgy platform in February 2019, and the announcement of funding for Phase 2 of the project by the Gouvernement du Québec, now makes it possible for Corem to support both

traditional and emerging sectors, such as graphite, lithium and rare earths, in their technological development on the laboratory, minipilot, pilot and demonstration scales. This unique platform is an essential tool in the development of the advanced processing of several minerals. This investment is also in line with the aims of the governments of Québec and Canada on the development of critical and strategic minerals, and will support the development of strategies for the electrification of transportation, energy and digital transition.

Regarding the governance of Corem, after seven years as a Director, including four years as Chairman of the Board, Mr. Paul Cousin announced his departure in December 2019. Mr. Jean-François Leroux, Director and Vice-Chairman of the Board since 2018, has accepted the position of Chairman. Four new directors were elected to the Board at the general meeting in June. Corem's management would like to thank all its directors and staff for their contribution to the continued success of the organization in 2019.

Finally, 2019 marks 20 years of innovation at Corem. On September 27, 1999, Corem was created following the transfer of the assets of the Centre de recherche minérale du ministère de l'Énergie et des Ressources naturelles of the Gouvernement du Québec. For the past 20 years, Corem has been a proud partner of operating and exploration mining companies and has supported them in their technological development. Moreover, close partnerships with the governments of Québec and Canada have made it possible to increase investments in research and innovation, to the benefit of a sustainable mining industry

# **GOVERNANCE**

# **BOARD OF DIRECTORS** (4 meetings in 2019)

DIRECTORS

**JEAN-FRANÇOIS LEROUX** (Chairman of the Board)

Glencore – Raglan Mine

JEAN CHÂTEAUNEUF

Canadian Malartic GP

**CATHERINE COBDEN** 

Canadian Steel Producers Association (CSPA)

FRANCIS FOURNIER (President & CEO)

Corem

**ANGELA HAMLYN** 

Canadian Institute of Mining, Metallurgy and Petroleum (CIM)

PATRICK MALENFANT

ArcelorMittal Mining Canada

**JEAN MORISSETTE** (Treasurer, Corporate Secretary)

Raymond Chabot Grant Thornton

ANDRÉ MORNEAU

Detour Gold

JOHN MULLALLY

Newmont North America

STÉPHANE RIVARD

IAMGOLD Corporation

ANDRÉ ZACCARIN

Université Laval

**OBSERVERS** 

**JOSÉE MÉTHOT** 

Québec Mining Association

**DENISE MORANVILLE** 

Ministère de l'Économie et de l'Innovation

Gouvernement du Québec

**CHRISTIANE MORIN** 

Ministère de l'Énergie et des Ressources naturelles

Gouvernement du Québec

**AUDIT COMMITTEE** (4 meetings in 2019)

**JEAN MORISSETTE** (Chairman of the Committee)

Raymond Chabot Grant Thornton

**JEAN CHÂTEAUNEUF** 

Canadian Malartic GP

STÉPHANE RIVARD

IAMGOLD Corporation

**ETHICS AND GOVERNANCE COMMITTEE** 

(4 meetings in 2019)

**ANDRÉ MORNEAU** (Chairman of the Committee)

Detour Gold

**JEAN CHÂTEAUNEUF** 

Canadian Malartic GP

**PATRICK MALENFANT** 

ArcelorMittal Mining Canada

**MANAGEMENT** 

**FRANCIS FOURNIER** 

President and CEO

**GIANNI BARTOLACCI** 

Director – Business Development

**GUILLAUME DUMAS** 

Director – Administration and Finance

**CLAUDE GAGNON** 

Director – Non-ferrous Sector

**MICHEL GARANT** 

Director – Ferrous Sector

SYLVIE LÉVESQUE

Director – Technical Operations and Mineralogy

HÉLÈNE TREMBLAY

Director – Human Resources



# OUR MISSION

Create innovative solutions in mineral processing for the benefit of a sustainable mining industry, working closely with our members, our customers and our partners.

# **OUR SERVICES**

Adapted to our clients, research and innovation are at the heart of our business model. Supported by our state-of-the-art installations and expertise, our services are offered to our clients under three models:

- Pre-competitive Research Program
- Research and collaborative innovation
- Contractual services

# THE VALUES THAT GUIDE US

# **CREATIVITY**

We are working to find possibilities where none are seen: we cultivate the art of doing otherwise.

# **INTEGRITY**

Through the veracity and exactitude of our words and actions we strive to uphold honesty.

# **ENGAGEMENT**

Our promise to our colleagues, organisation, members and partners is to offer the best of ourselves and to have our actions reflect those intentions.

# **TEAM SPIRIT**

We unite and work toward a common goal in a climate of confidence, openness and respect.

# HEALTH, SAFETY & SUSTAINABLE DEVELOPMENT

We work toward a safe and healthy workplace and we take actions to be part of sustained development and environmental awareness.

# COREM, A LIVING EXPERIENCE

Corem relies on our proven and recognized expertise, world-class pilot testing facilities and equipment, laboratories equipped with the latest technologies, and support from our wide network of research partners. Working within a sustainable development approach, where the environment and social acceptability go hand in hand with economic development, the Corem team distinguishes itself through its diversity. In 2019, Corem adopted and promoted five values that guide and enhance our daily lives. The implementation of a recognition program, the celebration of our 20th anniversary, and the organization of internal events for knowledge exchange, information sharing, and social activities are among the actions that create Corem, a living environment.

Corem, a healthy, safe and stimulating living environment, where everyone's work is valued and recognized, for the benefit of a sustainable mining industry.







**COREM IN NUMBERS** 

Annual budget

\$6.6M

Investment in the pre-competitive research program

197

Technological and contractual transfer projects

3

Licensed technologies

250

Projects per year

Patented technologies

(South Africa, Australia, Brazil, Canada, United States

# **DIFFERENT TYPES OF MINERALS TREATED**

**PRECIOUS** METALS

BASE **METALS** 

ORE

**IRON** 

**ELEMENTS** 

RARE EARTH AND CRITICAL

TITANIFEROUS ORE

MINERAL SANDS

**INDUSTRIAL MINERALS** 

# OUR FIELDS OF EXPERTISE







**PHYSICAL** SEPARATION



**FLOTATION** 



**EXTRACTIVE METALLURGY** 



**PELLETIZING** AND THERMAL **PROCESSES** 



**MINERALOGY** 

# HIGHLIGHTS

# STRATEGIC PLAN 2019–2023

In 2018, Corem implemented a strategic planning process that led is aligned with three themes, namely:

- Leadership in mineral processing in a changing innovation ecosystem;
- Efficiency of our operations;
- Profitable growth.

Key players in the mining industry are seeking to maximize the benefits of investments in innovation through better coordination and complementarity among the participants in the innovation ecosystem. In this business environment, Corem must therefore maintain its position as Canada's reference organization in mineral processing innovation, act as project coordinator to ensure effective collaboration between the right partners and improve its visibility and standing.

Innovation goes beyond the capacity of meeting the current needs to a new 5-year strategic plan for 2019 to 2023. This strategic plan of the mining industry. Companies are searching for complete solutions in increasingly shorter timescales. The ability to respond quickly and with flexibility requires continuous improvement of Corem's operations, and a network of Canadian and international partners. To address this challenge, Corem needs to develop a client-focussed culture, create new partnerships and enhance existing relationships with other research organizations, and do so by improving the management and monitoring of its activities.

> Expertise is at the core of an organization like Corem and at the heart of the benefits it brings to the industry. In the context of major investments in infrastructure and capital assets, Corem has maintained its growth objectives for 2019. The actions undertaken to pursue business development efforts, strengthen relations with leading organizations in the Canadian mining sector and ensure technology transfer by creating partnerships with equipment manufacturers continued.

> To address these issues, Corem's management has developed a detailed action plan aimed at growing the number of regular and corporate members, increasing research activities through our pre-competitive research program and collaborative projects, and increasing the number of strategic research partners.

# 20 YEARS OF INNOVATION

Jonatan Julien, Corem's founders, employees, retirees and their CEO of Corem, and Mr. Jonatan Julien. families.

On September 15, Corem celebrated 20 years of innovation at a Our quests had the opportunity to visit our two pilot plants and our family event attended by the Minister of the ministère de l'Énergie laboratories, which was followed by a gathering in the cafeteria et des Ressources naturelles of the Gouvernement du Québec, Mr. where speeches were given by Mr. Francis Fournier, President and







# **HISTORY**

Corem began operations on September 27, 1999, with the transfer recommendation to create Corem. Mr. Duc Vu, Associate Deputy of the assets of the Centre de recherche minéral (CRM) from the Minister of Mines, ministère des Ressources naturelles (MRN), was Gouvernement du Québec.

When Corem was created, Mr. Gaston Morin, Mr. Dan Tolgyesi Anchored in its environment, Corem is located in the Saint-Malo and Mr. Serge Vézina, all engineers, signed together as petitioners the Requête pour constitution en corporation et mémoire des conventions. They were part of the working group that led to the production during the Second World War.

also part of the coordinating committee of the project partners.

Industrial Park, which remains rich in Québec's industrial heritage. Québec City was a hub of the railway industry and munitions







# COREM IS GETTING A NEW LOOK!

To mark 20 years of innovation, Corem is getting a new look, with a brand-new logo specifying its field of expertise: Innovation in mineral processing. The new logo, with a contemporary colour scheme, reflects the infinite number of solutions Corem offers its members and clients in the field of mineral processing.









8 | COREM - INNOVATION IN MINERAL PROCESSING 2019 ACTIVITY REPORT | 9



# OUR MEMBERS, AT THE HEART OF OUR ORGANIZATION

Our members are at the heart of our innovation model. For 20 years, the satisfaction of our members and clients, and the attraction of new members, has been our priority. Our fourteen members, for whom Corem serves twenty-five different operational entities, represent a comprehensive and diverse range of minerals in the mining industry. In 2019, Corem welcomed into its membership a concentrator and pellet plant from Vale S.A. in Brazil which strengthen and demonstrate our leadership in the iron ore processing sector.













DETOUR GOLD















# **COREM ENSURES ITS LEADERSHIP**

## CONFERENCES, EXHIBITIONS, PARTICIPATION IN EVENTS

Corem continues its positioning efforts by ensuring the promotion of its leadership in mineral processing innovation, both in Canada and internationally. An increased presence at symposiums, conferences and exhibitions highlights the achievements of the Corem team.

#### **CONFERENCES**

- 51st Canadian Mineral Processor Meeting Proceedings Ottawa, January 22 to 24, 2019
  - Enhancement of mineralogical assessments through mass reconciliation for flotation improvement Authors: O. Gravel, G. Mahieu, P. Barbeau-Verreault, J.-F. Wilhelmy
- Phosphate 2019
   Orlando, Florida, March 25 to 27, 2019
  - Flotation circuit adjustment and collector reduction, Mine Arnaud's project Authors: P. Laflamme, A. Dorval
- CMP Côte-Nord Labrador (CMPCNL) Sept-Îles, April 17, 2019
  - Enhancement of mineralogical and performance assessments though machine learning applied to mineral processing Author: O. Gravel
- CIM Convention 2019 Montreal, April 28 to May 1st, 2019
  - R&D and Innovation applied to mineral processing Author: G. Bartolacci

- 7<sup>th</sup> North American Iron Ore Symposium (NAIOS) Montreal, April 28 to May 1st, 2019
  - A Canadian Perspective on the use of Biochar in Iron Ore Pelletizing Authors: O. Lacroix, M. Dubé
  - Recent developments in spiral testing facilities for iron particles recovery

    Authors: S. Goudreau, M. Renaud
  - Concentration and Pelletizing 2
    Authors: M. Garant, M. Renaud, Co-Chair Technical
    session
- Physical Separation '19
   Falmouth, United Kingdom, June 13–14, 2019
  - Ore sorting
    Author: D. Amariei, Chair Technical session
- METEC and 4<sup>th</sup> ESTAD 2019
   Düsseldorf, Germany, June 24 to 28, 2019
  - Evolution of pellet microstructure during reduction: A comparison between Corem R180 and ISO DR90 Authors: G. Laforest, M. Dubé, O. Lacroix
- 11<sup>th</sup> International Heavy Minerals Conference Proceedings Cape Town, South Africa, August 5–6, 2019
  - In-truck ore grade detection using apparent density measurements Authors: J. Giroux, M. Fillion, M. Consuegra, F.A. Fortin, G. North, D. Michaud

# **CONFERENCES (CONT'D)**

- 11<sup>th</sup> International Heavy Minerals Conference Proceedings Cape Town, South Africa, August 5–6, 2019
  - In-truck ore grade detection using apparent density measurements Authors: J. Giroux, M. Fillion, M. Consuegra, F.A. Fortin, G. North, D. Michaud
- CMP Nord-Ouest québécois (CMPNOQ)
   Val d'Or, September 12 to 14, 2019
  - L'intelligence artificielle et son application en traitement du minerai

    Author: O. Gravel
- SAG Conference 2019, International Semi-autogenous grinding and high-pressure grinding roll technology Vancouver, B.C., September 22 to 26, 2019
  - Investigation of a novel HPGR and size classification circuit

    Authors: P. Pearce, C. Gagnon, B. Klein, R. McIvor, S. Makni, F. Wang, A. Kumar
  - Selection of HPGR technology for the Côté gold project: Evaluation of the impact on cost and metallurgy
     Authors: S. Makni, R. Lapointe, C. Croteau, D. Sato

- 5° ABM Week Sao Paolo, Brazil, October 3 to 5, 2019
  - On the difference between isothermal and nonisothermal reduction tests: A comparison between Corem R180 and ISO DR90 Authors: G. Laforest, M. Dubé, O. Lacroix
  - The proof of concept of groundbreaking development to pelletizing agglomeration: Corem layered pellets Authors: B. Barbabela Silva, M. Dubé, M. Garant
- XPlor 2019 Montreal, October 23–24, 2019
  - Collaborating partner, organization of two sessions in geometallurgy Author: G. Bartolacci, S. Lévesque, L. Pérez-Barnuevo, Session Chairs
- Québec Mines Québec City, November 18 to 21, 2019
  - Valorisation des données minéralogiques par apprentissage machine appliqué aux procédés de traitement du minerai

    Author: O. Gravel

## **PARTICIPATION IN EVENTS**

- CMP National, Ottawa, Ont. January 22 to 24, 2019
- SME Annual Conference & Expo, Denver, Colorado, USA February 24 to 27, 2019
- Phosphates 2019, Orlando, FL, USA March 24 to 27, 2019
- CMP Côte-Nord/Labrador (CMPCNL), Sept-Îles, Qc April 17, 2019
- 92<sup>nd</sup> Annual Meeting of the Minnesota Section of SME, Duluth, MN, USA – April 15 to 17, 2019
- QMA Convention 2019, Québec, Qc June 6, 2019
- World Gold 2019, Perth, Australia September 11 to 13, 2019
- Physical Separation, Falmouth, Cornwall, UK June 13– 14, 2019
- COM Copper 2019, Vancouver, B.C., June 18 to 21, 2019
- METEC 2019, Düsseldorf, Germany June 25 to 29, 2019
- COPPER 2019, Vancouver, B.C. August 17 to 22, 2019
- CMP Southern Ontario, Ont. September 5, 2019
- CMA 2019, Niagara Falls, Ont. September 8 to 12, 2019
- SAG & HPGR 2019, Vancouver, B.C. September 22 to 26, 2019
- CMP NOQ, Val d'Or, Qc October 2 to 4, 2019
- ABM Week 2019, São Paulo, Brazil October 1 to 3, 2019
- CMP Eastern Ontario, Timmins, Ont. October 18, 2019
- CMP Ottawa-Montreal-Québec (CMPOMQ), Montreal, Qc
   November 14, 2019
- Newfoundland and Labrador's Premier Mineral Exploration and Mining Conference and Trade Show, N.L., Canada – November 6 to 9, 2019
- CMP BC/Yukon, Vancouver, B.C. December 4–5, 2019

## **PUBLICATION**

• ZINCK, J., OLSEN, C., Les résidus miniers : une source de revenus et de bénéfices environnementaux ?, Ressources Mines et Industrie, Vol. 5 no 6, p. 10-11

# **EXHIBITIONS (BOOTH)**

- PDAC, Toronto, ON March 3 to 6, 2019
- CIM Convention & 7<sup>th</sup> NAIOS 2019, Montreal (Qc) April 28th to May 1<sup>st</sup>, 2019
- Objectif Nord, 15<sup>th</sup> Edition, Québec (Qc) April 9, 2019
- XPlor 2019, Montreal October 23–24, 2019
- Québec Mines, Québec, QC- November 18 to 21, 2019



# INNOVATION THROUGH COLLABORATION

# CRUSH-IT! CHALLENGE

Natural Resources Canada's Crush-it! Challenge allowed Corem to demonstrate its leadership in mineral processing as a member of four winning projects out of the six semi-finalists, two of which are led by Corem and two others in which Corem contributes as a partner. The Crush-it! challenge aims to encourage the development of technologies to reduce the energy consumed during the comminution of ores by at least 20%.

 HPGR (High Pressure Grinding Rolls) - Development and Demonstration of HPGR Grinding and Novel Classification to Mineral Separation Circuit Feed Sizing in Replacement of Ball Milling

This project is aiming at replacing ball mills by HPGR, which could cut energy consumption by 50%. Ball consumption, an additional indirect energy consumer, would also be eliminated. With the support and contributions of mining companies and equipment manufacturers, Corem and the University of British-Columbia are assessing the potential energy benefits and are exploring circuit and machine design parameters that provide optimal circuit performance.





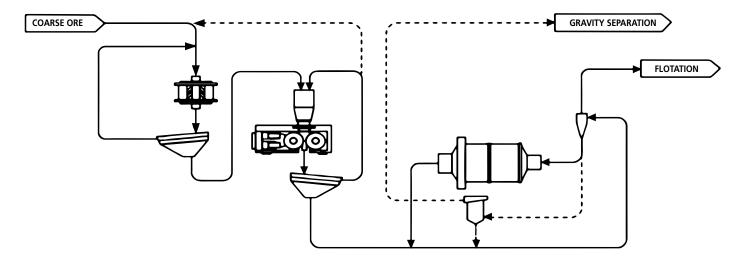




## • IntelliCrush

Corem, in partnership with IVADO and BBA, was chosen as a semi-finalist for its IntelliCrush project. This project aims to develop an intelligent system for the co-creation of eco-efficient grinding circuits using artificial intelligence. This system will be based on Corem's knowledge and data from the last twenty years, the characteristics of the ore to be ground to suggest optimal grinding circuits, and the knowledge to be acquired to improve the proposed circuit.

# IntelliCrush



"Corem works to find well adapted solutions for members"

# Jean-François Leroux

Manager, Mill operations & Energy production services GLENCORE

"With the Corem team we developed a detailed process from just a few grams in the lab to several pilot scale projects of 100 metric tonnes."

# - Geneviève Pichet

Director, Technical studies and Special projects MASON GRAPHITE

"We find all the expertise needed under one roof at Corem"

# - Paul Cousin

Vice President, Operational Sustainability AGNICO EAGLE



# **COMPLETE AND EFFICIENT SOLUTIONS**

Companies are looking for complete solutions in increasingly shorter timescales. The ability to respond quickly and with flexibility requires continuous improvement of Corem's operations and collaboration with a network of Canadian and international partners. In this regard, Corem has accelerated the development of partnerships in 2019 through the Crush-it! challenge, and also for several projects in its pre-competitive research program. These partnerships with colleges, universities, research organizations, and industry and innovation associations enhance Corem's ability to create more value for the mining industry.

# RESEARCH PARTNERS, INDUSTRIAL PARTNERS

The continuous development of our expertise and investments in our equipment and infrastructure are among the actions through which we ensure the improvement of our operational efficiency. The development and implementation of new tools allows us to constantly advance in our desire to better meet the needs of our members and clients.

# PRE-COMPETITIVE RESEARCH PROGRAM

The pre-competitive research program remains an important pillar for Corem. Its collaborative approach allows our industrial members to pool their issues, their financial, human and material resources, share in the risks, results and benefits of the research program. Our approach aligns with the needs of the industry, and the commitment of our members on both the Pre-Competitive Research Committee and the Board of Directors ensures that our works respond to industry issues, while maximizing the benefits of its innovations.



\$0.5M Comminution









## VALUE OF THE RESEARCH PROGRAM

In 2019, more than fifty innovation projects were started, continued or completed. The impact of the work carried out in the pre-competitive research program is significant.

Since 2007, the benefits recorded show that for every dollar invested by our members in the research program, more than \$7 is generated in their operations.

\$6.6M

Total investment in 2019

REAR

+ 28% compared to 2018

# PRE-COMPETITIVE RESEARCH COMMITTEE

(3 meetings in 2019)

**REPRESENTATIVES** 

**MARCUS TOMLINSON** (Chairman of the Committee)

Newmont

**MAYCON ATHAYDE** 

Vale S.A.

PHILIPPE BARBEAU-VERREAULT

Glencore Canada Corporation – Mine Raglan

**STEVE BEAUDIN** 

Metal 7

**SIMON-PIERRE BLOUIN** 

Niobec

JEAN CHÂTEAUNEUF

Canadian Malartic GP

JEAN-FRANÇOIS DUPONT

Detour Gold

**JEAN GIROUX** 

Rio Tinto, Iron & Titanium

**CORY HENNESSEY** 

Iron Ore Company of Canada

**DENYS LAPLANTE** 

Ministère de l'Énergie et des Ressources naturelles Gouvernement du Québec FRANÇOIS LAVOIE

Quebec Iron Ore

**GUILLAUME MALTAIS** 

Glencore Canada Corporation – Matagami Mine

JEAN-SÉBASTIEN MAROIS

Niobec

**DAVID NEWHOOK** 

Greenstone Gold Mines

ROMAIN PRÊCHEUR

ArcelorMittal Mining Canada

STÉPHANE RIVARD

IAMGOLD Corporation

FRANÇOIS ROBICHAUD

Agnico Eagle

**OBSERVER** 

**TESFAYE NEGERI** 

CANMET

# **MEMBERS**

#### **AGNICO EAGLE**

LaRonde Division, Cadillac (Qc) Goldex Division, Val-d'Or (Qc) Meadowbank Division (Nunavut) Meliadine Division (Nunavut) Kittila Division (Finland) La India Division (Mexico) Pinos Altos Division (Mexico)

## ARCELORMITTAL MINING CANADA

Mont-Wright Concentrator, Fermont (Qc) Pelletizing Plant, Port-Cartier (Qc)

#### CANADIAN MALARTIC GP

Canadian Malartic, Malartic (Qc)

#### **DETOUR GOLD**

Detour Lake Mine, Cochrane (Ont.)

#### **GLENCORE**

Matagami Mine, Matagami (Qc) Raglan Mine, Katinnig (Qc)

## **NEWMONT**

Eleonore Project, Rouyn-Noranda (Qc)

# IAMGOLD CORPORATION

Westwood Complex, Rouyn-Noranda (Qc) Essakane Mine (Burkina Faso)

## NIOBEC

Niobec Mine, St-Honoré-de-Chicoutimi (Qc)

## **QUEBEC IRON ORE**

Lake Bloom Mine (Qc)

# **RIO TINTO ENERGY & MINERALS**

**IOC Mining Company** 

- Concentrator, Labrador City (N.L.)
- Pelletizing Plant, Labrador City (N.L.)

Rio Tinto Iron & Titanium

- OPP Plant, Sorel-Tracy (Qc)
- QIT Madagascar Minerals (Madagascar)
- Richards Bay Minerals (South Africa)

#### VALE S.A.

Usina 8 – Pelletizing Plant, Vitória E (Brazil) Conceição I – Concentrator Serra do Esmeril, Itabira - Minas Gerais (Brazil)

# JUNIOR MEMBER

# **GREENSTONE GOLD MINES**

Geraldton-Beardmore Greenstone Belt (Ont.)

# ASSOCIATE MEMBER

## METAL 7

Sept-Îles (Qc)

# **PARTNERS**

# RESEARCH

- AMIRA International, Melbourne, Australia
- Canada Mining Innovation Council (CMIC), Ottawa, Ont.
- Centre de technologie minérale et de plasturgie (CTMP), Thetford Mines, Qc
- Natural Resources Canada (CanmetMINES), Ottawa, Ont.
- Universities
  - Curtin University, Perth, Australia
  - British-Columbia, Vancouver, B.C.
  - INRS-ÉTÉ, Québec, Qc
  - Laval, Québec, Qc
  - McGill, Montreal, Qc
  - Queens, Kingston, Ont.
  - Toronto, Toronto, Ont.

# **INDUSTRIAL**

BBA

- Copper Mountain

- Derrick

- FLSmidth

- IVADO

- MeGlobal - Metal 7

- Metcom

- Multotec

- Newmont, Mine Porcupine

- Outotec

- Paul Wurth

- ThyssenKrupp

Scantech

- Weir Minerals



1180, rue de la Minéralogie Québec (Québec) Canada G1N 1X7

corem.qc.ca

2<sup>nd</sup> quarter 2020 ISBN 978-2-922734-30-0 (PDF) Legal deposit: Bibliothèque nationale du Québec Legal deposit: Library and Archives Canada Financial partners





Canada Economic Development for Quebec Regions

pour les régions d

