

2023

Innovation in
mineral processing

Activity Report | **corem**



esrem

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Chairman of the Board's message

The year 2023 has been marked by stability, as the pandemic years brought their share of human and operational challenges in a changing external environment. The mining sector remained vigorous, with prices for several metals rising or remaining stable. Access to financing remains a challenge for many projects under development in critical and strategic minerals, a sector that now accounts for nearly 35% of Corem's activities.

The year 2023 ended with a 14% growth in Corem's activities, supported by high demand for contract research and the development of collaborative projects in the critical and strategic minerals sector. Considering these positive results in a context of significant changes to our external environment, the Board of Directors began reviewing its strategic plan with the management team at the beginning of the year. All Corem's actions

will be guided by five strategic axes for the years 2024 and 2025, namely updating the business model and our business strategy, developing a plan to maintain our infrastructure, actions related to human resources and optimizing operational efficiency.

In terms of governance, we continued to review our practices for the Pre-competitive Research Committee, with the aim of increasing the agility and efficiency of our research program delivery and maximizing the economic and environmental benefits for our members. The Board of Directors welcomed a new director and two new observers for the Quebec government in 2023.

As Chairman of the Board, I would like to thank all the members of the Board and the staff of Corem for their efforts and the results achieved in 2023 for the benefit of a sustainable mining industry.

JEAN-FRANÇOIS LEROUX, Eng.

CHAIRMAN OF THE BOARD





President and CEO's message

Corem's value proposition is based on our expertise and access to state-of-the-art technologies and infrastructure and we have maintained our capacity to meet the needs of our members and clients. We also continued our efforts to develop partnerships, setting up a research program for the critical and strategic minerals sector in collaboration with the Centre technologique des résidus industriels (CTRI) in Rouyn-Noranda.

Our pre-competitive research program remained at the heart of our activities. Our investment in this program was slightly lower than the previous year, at \$6.4M. The economic benefits for every dollar invested by our members exceeded \$10 by the end of 2023, in addition

to sustainable development benefits. We welcomed Bahrain Steel as a member in 2023 for its pellet operation. This addition strengthens our position in this sector. We also welcomed FLSmidth Inc. as an associate member.

The occupational health and safety of our workforce remained a priority. It is thanks to our dedicated staff that, in 2023, we succeeded in putting in place the measures needed to process ever more complex ores with new regulations for certain types of dust.

I would also like to take my turn in thanking all Board members and Corem staff for their contribution to the organization's success.

FRANCIS FOURNIER, Eng., F.

PRESIDENT AND CEO

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.

The values that guide us



Creativity

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



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.



Integrity

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



Health, safety, and sustainable development

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



**“ Innovation is change that
unlocks new value. ”**

– Jamie Notter

Our members, the core of our organization



AGNICO EAGLE



ArcelorMittal

RioTinto | IOC

Newmont
ÉLÉONORE



MINÉRAI DE FER QUÉBEC
QUÉBEC IRON ORE

GLENCORE



Niobec ^(Nb)
UNE COMPAGNIE DE MAGRIS RESOURCES



 **IAMGOLD**[®]
CORPORATION

KINROSS

METAL 

"Corem is a partner of choice for the mineral resource development process. It contributes from the analysis of a deposit's potential to the development of the optimal treatment process. Pre-competitive research work has led to the integration of innovations into Bloom Lake Plant 2, which went into operation in the summer of 2022. After more than a year of operation, these innovations have demonstrated higher productivity and improved the cost efficiency of a higher purity concentrate. In 2023, Corem played a key role in two feasibility studies thanks to its unique expertise in North America: one for a pellet plant and the other, recently published, for the Kami project."

– **Benjamin Légaré, Eng., M.Sc.**
Senior Corporate Metallurgist
Quebec Iron Ore

Members

Agnico Eagle

LaRonde Division, Cadillac (Que.)
 Goldex Division, Val-d'Or (Que.)
 Meadowbank Division, Baker Lake (Nunavut)
 Meliadine Division, Rankin Inlet (Nunavut)
 Kittila Division, Kittila (Finland)
 Detour Lake Division, Cochrane (Ontario)
 Canadian Malartic Division, Malartic (Québec)

ArcelorMittal Mining Canada

Mont-Wright Concentrator, Fermont (Que.)
 Pelletizing plant, Port-Cartier (Que.)

Bahrain Steel BSCC E.C.

Pelletizing plant, Hidd (Kingdom of Bahrain)

IAMGOLD Corporation

Westwood Complex, Rouyn-Noranda (Que.)

Glencore Canada Corporation

Raglan Mine, Katinniq (Que.)

Hecla Québec

Casa Berardi Mine, Val-d'Or (Que.)

Kinross Gold Corporation

Paracatu Mine, Paracatu, Minas Gerais (Brazil)

Newmont

Éléonore Project, Rouyn-Noranda (Que.)

Quebec Iron Ore

Bloom Lake Mine, Fermont (Que.)

Niobec

Niobec Mine, Saint-Honoré-de-Chicoutimi (Que.)

Rio Tinto IOC Mining Company

Concentrator, Labrador City (N.L.)
 Pelletizing plant, Labrador City (N.L.)

Associated member

Métal 7

Sept-Îles (Que.)

FLSmidth Inc.

Midvale (Utah)

Partners

RESEARCH

- AMIRA International, Melbourne (Australia)
- Canada Mining Innovation Council (CMIC), Ottawa (Ont.)
- Centre technologique des résidus industriels (CTRI), Rouyn-Noranda (Que.)
- IVADO, Montréal (Que.)
- National Research Council of Canada (NRC)
- Natural Resources Canada (CanmetMINES), Ottawa (Ont.)
- Universities
 - Curtin University, Perth (Australia)
 - British-Columbia, Vancouver (B.C.)
 - École Polytechnique de Montréal (Que.)
 - INRS-ÉTÉ, Québec (Que.)
 - Laval, Québec (Que.)
 - McGill, Montréal (Que.)
 - Queens, Kingston (Ont.)
 - Toronto, Toronto (Ont.)

INDUSTRIAL

- BioCarbon Industries
- Draslovka
- Cyanco
- FLSmidth
- H2Flow
- Jumine
- MeGlobal
- Métal 7
- Metcom
- Multotec
- National Carbon
- Outotec
- Paul Wurth
- Scantech
- Weir Minerals

"The partnership between the CTRI and Corem creates a new synergy propelling our research on critical and strategic minerals towards the development of innovative technologies for our Quebec industrial partners. In an environment and approach based on collaboration, our teams come together to push back the frontiers of knowledge, demonstrating that joining forces can transform challenges into opportunities and pave the way to a sustainable future."

- **Hassine Bouaffif, Ph.D.**

General Manager

Centre technologique des résidus industriels

Governance

Board of directors

(5 meetings)

Directors

Jean-François Leroux (Chairman of the Board)
Glencore – Raglan Mine

Marc Lafontaine (Vice-Chairman of the Board)
Agnico Eagle

Jean Morissette (Treasurer, Corporate Secretary)
Raymond Chabot Grant Thornton

Catherine Cobden
Canadian Steel Producers Association (CSPA)

Francis Fournier (President and CEO)
Corem

Angela Hamlyn
Canadian Institute of Mining, Metallurgy and Petroleum
(CIM)

Angela Kourouklis
Quebec Iron Ore

Rémi Lapointe
IAMGOLD Corporation

Romain Prêcheur
ArcelorMittal Mining Canada

Rolf Stösser
IOC Mining Company of Canada

André Zaccarin
Université Laval

Observers

Youssef Dehbi
Ministère des Ressources naturelles et des Forêts
Gouvernement du Québec

Josée Méthot
Quebec Mining Association

Marco Blouin
Ministère de l'Économie, de l'Innovation et de l'Énergie
Gouvernement du Québec

Strategy committee

(4 meetings)

Jean-François Leroux (Chairman of the Committee)
Glencore – Raglan Mine

Angela Kourouklis
Quebec Iron Ore

Marc Lafontaine
Agnico Eagle

Romain Prêcheur
ArcelorMittal Mining Canada

Audit committee

(4 meetings)

Jean Morissette (Chairman of the Committee)
Raymond Chabot Grant Thornton

Rémi Lapointe
IAMGOLD Corporation

Rolf Stösser
IOC Mining Company of Canada

André Zaccarin
Université Laval

Management

Francis Fournier
President and CEO

Sylvie Lévesque
Deputy CEO

Claude Gagnon
Scientific Director – Mineral Processing

Michel Garant
Director – Member and Client Relations

Benoît Levasseur
Scientific Director – Mineral Processing

Nathalie Morneau
Director – Finance and Digital Solutions

Francis Pelletier
Director – Organizational Development and Human Resources

Éric Tremblay
Director – Infrastructure and Operational Planning



The pre-competitive research program is the core of Corem's activities and consists in the development of research projects on common issues in the mining industry. It is during the meetings of the pre-competitive research committee (PRC) that our members and our researchers establish the orientations of the program. Photo taken during the 74th PRC.

Pre-competitive research committee

(3 meetings)

Representatives

Jean-Sébastien Marois (Chairman of the Committee)
Niobec

François Robichaud (Vice-Chairman of the Committee)
Agnico Eagle

Maycon Athayde
Quebec Iron Ore

Gnouyaro Palla Assima
Agnico Eagle

Steve Beaudin
Métal 7

Yves Breau
Kinross Gold

Edwin P. Mackay
Bahrain Steel BSCC E.C.

Jérémie Gallet
ArcelorMittal Mining Canada

Nijad Hamzeh
IOC Mining Company of Canada

Jean-Nicolas Allaire
Newmont – Éléonore

Blair Kelly
IOC Mining Company of Canada

Rémi Lapointe
IAMGOLD Corporation

Mike Lefler
FLSmidth Inc.

Benjamin Légaré
Quebec Iron Ore

Nadia Ouellet
Glencore – Raglan Mine

Stéphane Marcoux-Gagné
Hecla Québec

Jean-Philippe Thivierge
Agnico Eagle – Canadian Malartic

Observers

Tony Di Feo
CanmetMINES

Sandra Côté
Ministère des Ressources naturelles et des Forêts
Gouvernement du Québec



Squads

EXECUTIVE



Leader
Jean-Sébastien Marois
Niobec

PHYSICAL
SEPARATION



Leader
Benjamin Légaré
Quebec Iron Ore

COMMINUTION



Leader
Jean-Philippe Thivierge
Agnico Eagle - Canadian Malartic

AGGLOMERATION
AND THERMAL
PROCESSES



Leader
Blair Kelly
IOC Mining Company of Canada

FLOTATION



Leader
Nadia Ouellet
Glencore - Raglan Mine

EXTRACTIVE
METALLURGY



Leader
Yanick Dumais
Agnico Eagle

LOGISTICS /
ADMINISTRATIVE

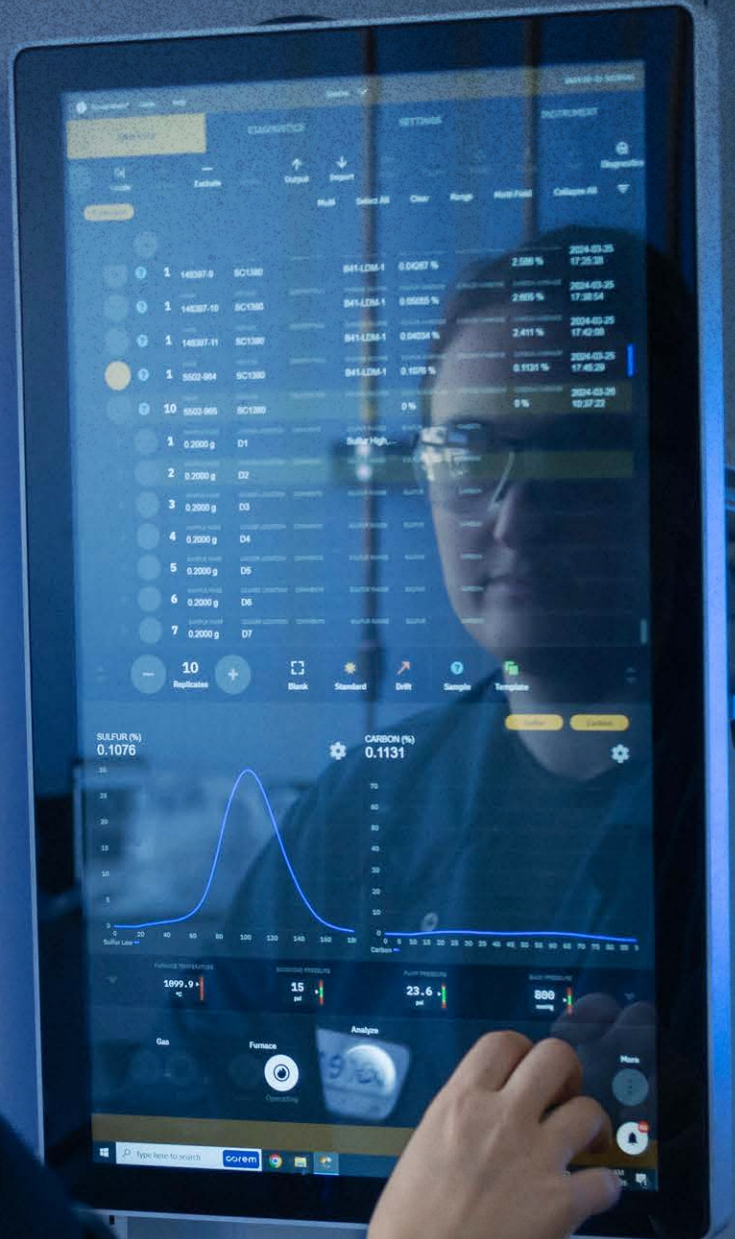


Leader
Jérémie Gallet
ArcelorMittal Mining Canada

INNOVATIVE
SOLUTIONS



Leader
Frank Roberto
Newmont



“ The heart and soul of the company is creativity and innovation. ”

– Robert Iger



Highlights

Decarbonization

Climate change is having an increasingly visible impact on a global scale. The effects of human activity on greenhouse gas (GHG) emissions, mainly due to the use of fossil fuels, have led to global warming.

Around the world, various initiatives are being put in place to limit global warming to 1.5 °C, including GHG reduction targets for 2030 as well as the achievement of carbon neutrality by 2050. Several sectors and processes contribute to global emissions, and the energy used by corporations accounts for around 25% of GHG emissions. The mining and metal processing industry falls into this category. In 2023, Corem continued its efforts to support the decarbonization of its members and clients, among others on the following topics:

- Optimizing processes for concentrating iron ore into high-purity concentrate for the direct reduction process, including validation of new technologies offering significant yield gains.

The use of direct reduction and electric arc furnaces for steel production reduces GHG emissions by 37% compared to blast furnace and basic oxygen furnace processes. Corem is contributing to the development of processes enabling the production of high-purity iron

ore ($> 67\% \text{Fe}_{\text{tot}}$) required for the use of direct reduction and electric arc furnaces.

- Demonstrating the feasibility of using biochar as a substitute for coke breeze or anthracite in the iron ore pelletizing process.

Replacing fossil carbon with biogenic carbon from sustainable biomass could contribute to carbon neutrality.

- Using green hydrogen in steel production for the process of direct reduction using electric arc furnaces.

Bench-scale simulation of direct reduction is a process mastered at Corem. The total or partial replacement of natural gas by hydrogen is an avenue being considered by steelmakers to achieve carbon neutrality.

In 2023, Corem began looking for industrial partners to carry out such a project. Bench-scale simulation of these new conditions could help identify new quality criteria required for iron ore products, and thus enable their optimization.



Critical and strategic minerals

Corem played a significant role throughout 2023 in the development of critical and strategic minerals (CSM), which are essential resources for achieving carbon neutrality objectives. Corem's expertise and infrastructure are key to the successful development of the Quebec and Canadian battery industry. In 2023, Corem played a dynamic role in the Quebec CSM network, with one of its representatives on the steering committee and researchers involved in defining and guiding the various research areas covering the entire CSM value chain.

Corem's commitment has helped catalyze research and development efforts aimed at meeting the growing needs for these minerals. By actively participating in initiatives such as national workshops and international economic missions, Corem has provided valuable expertise and helped define the policies and strategies needed to ensure the sustainable supply of these resources.

Corem has been a key player in this crucial area for the future, as 2023 marked a significant milestone with the conclusion of a 3-year research initiative aimed at optimizing the extraction and purification of rare earth elements, a critical resource at the heart of many emerging technologies. Corem's research has led to the development of an innovative new process that specifically targets the removal of cerium, an element often present in large quantities and which can complicate the separation of rare earth elements. By developing an effective method for removing cerium prior to the separation of other rare earth elements, Corem has paved the way for more efficient and economically viable extraction and purification processes.

In terms of new initiatives, 2023 will have seen the materialization of the collaboration between Corem and the Centre technologique des résidus industriels (CTRI) as part of the Éléments08 initiative. This collaboration

represents a major step forward in the establishment of a collaborative approach to pre-competitive research projects on lithium addressing crucial aspects of the exploitation and valorization of this resource, including geometallurgy, hydrometallurgy, and the responsible management of mine tailings. By combining the expertise of the two research centres, these projects aim to develop innovative solutions for optimizing lithium extraction, processing, and recovery, while minimizing the environmental impact associated with its exploitation. Another project targets the hydrometallurgical process for nickel extraction and purification, by optimizing operating parameters and leaching efficiency using glycine. The active participation of the industry in these projects is key to their success. By working closely with companies in the sector, Corem and the CTRI ensure that the research carried out is relevant, applicable, and aligned with real industry needs. This collaborative approach also promotes the transferability of research results to practical, commercial applications.

Thanks to its recognized expertise in the mineral processing of critical and strategic minerals (CSM) and its infrastructure, including its hydrometallurgical platform, Corem launched and carried out more than a dozen research projects in 2023, thereby contributing to the development of the Canadian and Quebec circular economy focused on renewable energies.



Metallurgy 4.0

Several projects carried out with the help of Corem's Mineralurgy Analytics and Technology (MAT) team were launched during 2023, responding to the growing demand from our members to integrate metallurgy 4.0 into their operations.

In 2023, Corem continued to develop an anomaly detector for flotation circuits. This technology, developed in collaboration with a Quebec-based startup, combines a camera with machine-learning software to transform visual data into usable information, enabling real-time monitoring of hydrodynamic conditions. This innovation allows operators to optimize flotation processes through simple, understandable measurements, thus improving operational efficiency.

Continuing their work on flotation optimization, Corem's teams of mineralogy and MAT experts have been working on harnessing the power of automated mineralogy techniques to unlock the potential of extensive mineralogical data as a way to advance the understanding of flotation processes in the circuits of several of Corem's members. Integrating advanced data science and machine learning, this methodology compiles data analysis, process optimization, and applied mineralogy, resulting in actionable insights for better decision-making. The ongoing development of flotation processes to follow up on the results generated during 2023 illustrates the fusion of technology and science for operational excellence in mineral processing.

Finally, by advancing hydrodynamic measurements in flotation cells, Corem is introducing cost-effective, reliable methodologies and innovative tools to improve flotation performance through in-depth scientific

process characterization. By developing systems for the continuous measurement of water quantity, flow rate, and bubble size distribution in the froth and collection zones of flotation cells, this project sets new standards in the accuracy and applicability of these measurements. The portable installation of the new technology called C.H.E.P. now makes it possible to quantify the frother potential in process water, representing a significant advance in the auditing of flotation processes.

During 2023, Corem's expert teams developed various approaches accelerating the industry's adoption of technologies via several key aspects of digital transformation tailored to the mineral processing industry to reduce costs and improve performance by promoting the implementation of various 4.0 technologies in selected Corem member plants.

"Based on their skills and know-how, Corem was the partner of choice for Alcoa to test our AIF3 regeneration process at a pilot scale. From our laboratory results, Corem's team of technicians and engineers helped with the equipment selection and specification and worked with our scientists to define the test plans."

– **Jayson Tessier, Eng., Ph.D**
Smelting and Casting Technology Director,
Operational Excellence
Alcoa



Environmental approach

Corem contributes to the development of a sustainable mining industry through its research activities, which propose solutions to reduce the environmental impact of its members' and clients' mining operations. And it is organically that the environmental approach finds itself at the core of its operations.

Corem has adopted an environmental policy with a corporate commitment to protect the environment in three major ways: 1) preventing pollution and protecting the environment, 2) contributing to the fight

against climate change and reducing pollution, and 3) collaborating with its stakeholders by favouring suppliers, partners, and clients whose business practices respect the environment.

Environmental management system

At the operational level, Corem maintains and continually improves an ISO 14001-certified environmental management system. Following the example of innovative solutions developed for the mining industry, Corem monitors all its solid, liquid, and gaseous emissions, with the aim of reducing the environmental impact of its activities. This year's highlights include the improvement of liquid discharge management plans by taking predictive action as early as laboratory studies,

as well as the reuse of citric acid from processes for pH balancing in thickeners. In terms of waste, Corem aims to reduce and valorize its residues. For example, the recycling of industrial batteries and nitrile gloves is now an integral part of established processes. These actions are taken by the eco-responsible committee, which proposes and implements solutions to improve the environmental management system.



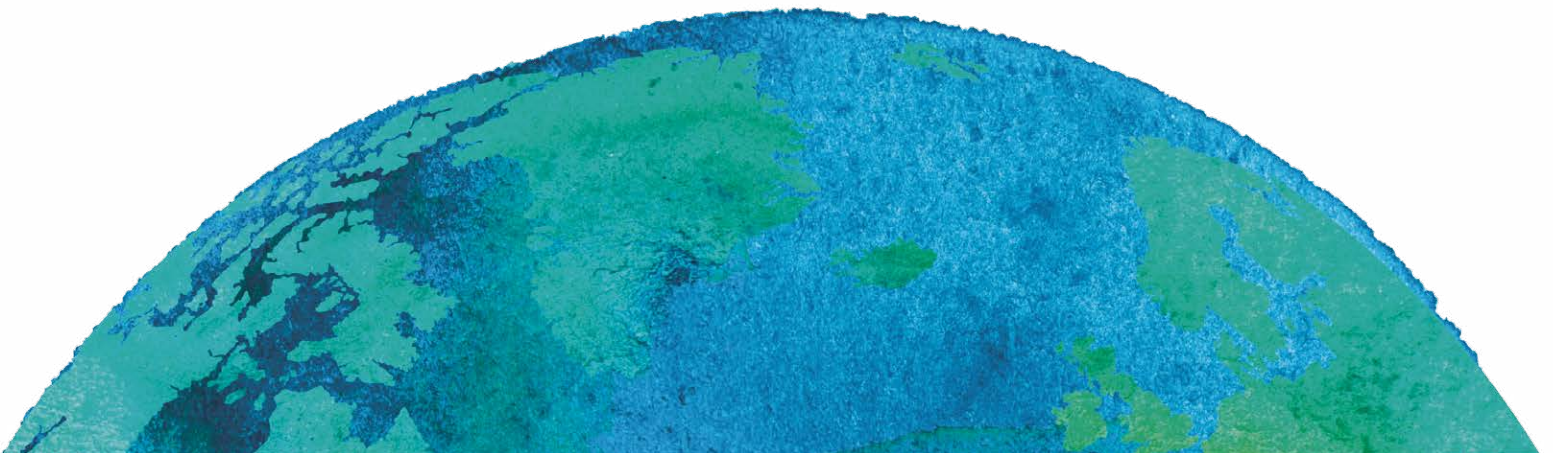
Pollution prevention and environmental protection

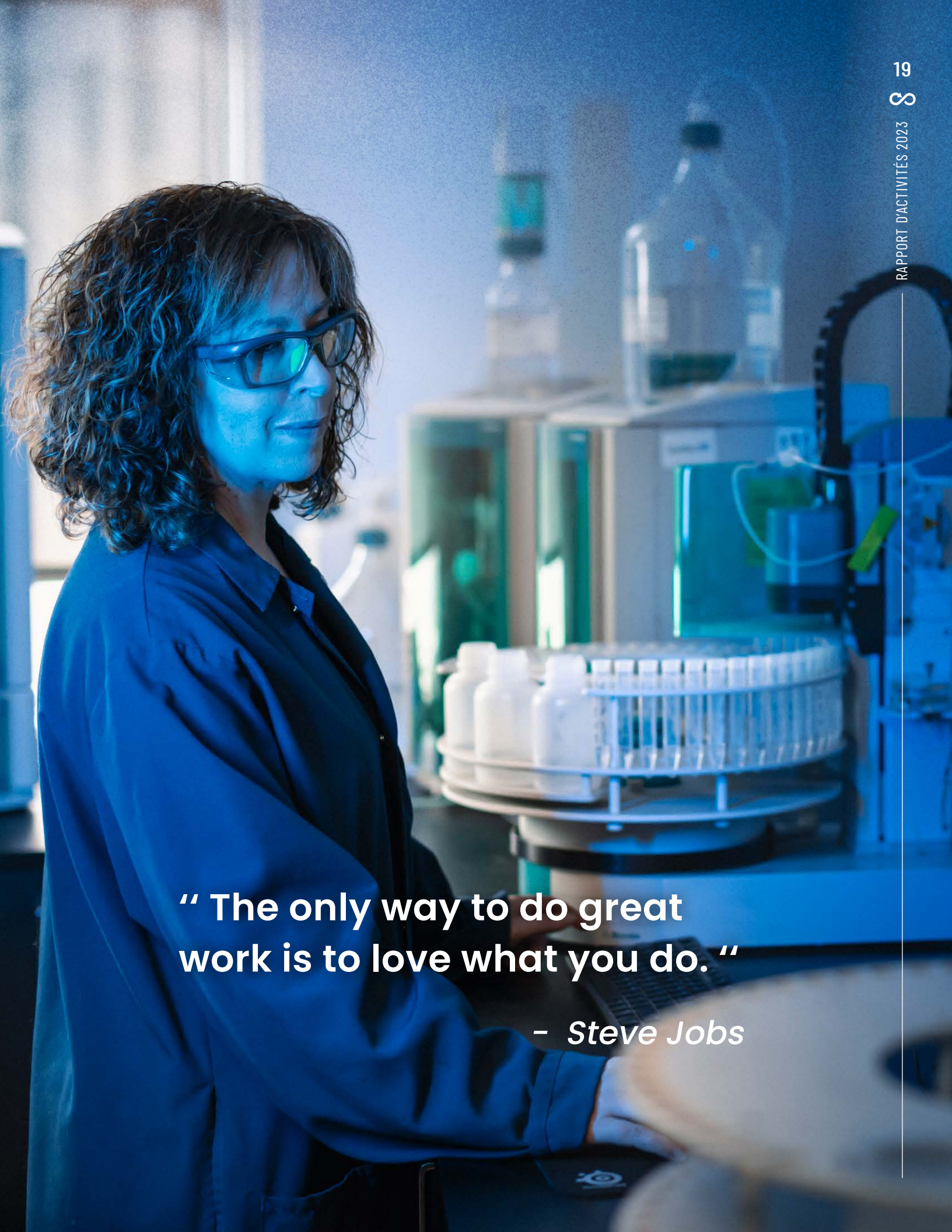


Contribution to the fight against climate change and the reduction of pollution



Collaboration with Corem's stakeholders





“ The only way to do great work is to love what you do. ”

– Steve Jobs

Corem, a living environment

Corporate/OHS

The results of the organizational survey conducted at the end of 2022 enabled us to put in place and deploy actions to ensure the attraction, retention, and loyalty of our personnel, the main pillar of our value proposition. These include consolidating our ties with our college and university partners, increasing the means and frequency of corporate communications, and setting up a management development program.

Occupational health and safety remain a top priority for our workforce. We have pursued our continuous improvement efforts in order to adapt to ever-changing standards and maintain the highest health and safety standards. Corem is proud to have completed 2023 without a single accident incurring loss of time. We continued to deploy preventive and proactive measures that enable us to process and work with increasingly complex minerals.



Being strongly invested in our commitment to social responsibility and collective well-being, we are proud to have significantly exceeded our initial goal for the United Way campaign (Centraide). The amount raised demonstrates the power of the importance of working together to bring about positive change.

"My motivation is having the opportunity to work with people who have multiple experiences, which allows me to develop my expertise in the field."

– **Edgar Pérez**, Researcher

"I would say that my relationship with my colleagues, the diversity of the company, and the trust I'm given are at the roots of my motivation at work."

– **Jean-Philippe Plourde**, Laboratory Technician

"Knowing that I work for an organization that has a collaborative approach, where every team member is valued, listened to, and encouraged to develop their skills and potential to the fullest, is my greatest motivation for working at Corem."

– **Mawuli William Dogbey**, Administrative Assistant

Being in contact with professionals in the field and their minerals coming from different parts of the world, I have the opportunity to participate in the development of the mining industry."

– **Davi Silva Braga**, Researcher





Social club committee

Social club: *Les Mine-Héros*

Corem has a very active social club that contributes to the corporative environment. Under the name “Les Mines-Héros,” a number of activities take shape. In addition to the traditional activities of sugar shack, barbecue, Capitales de Québec, corn roast, hockey pool, golf, and Christmas dinner, we have enjoyed original activities such as an Easter egg hunt, a bowling happy hour, and a food truck, among others. All this is possible thanks to an energetic, devoted committee determined to offer our “Mines-Héros” entertaining times in a dynamic, professional setting.



Valentine's Day candy bar



Annual BBQ



5 @ 7 bowling

Corem in numbers

\$22M

ANNUAL BUDGET

\$6.4M

Investment in the pre-competitive research program

\$10

Operational benefits per dollar invested by our industry members

220

Technological transfers and contracts

290

Number of projects annually

3

Licensed technologies

3

Patented technologies

(South Africa, Australia, Brazil, Canada and the United States)

Types of ore processed

PRECIOUS METALS

BASE METALS

TITANIUM-BEARING ORES

CRITICAL AND STRATEGIC MINERALS

IRON ORE

MINERALIZED SANDS

INDUSTRIAL MINERALS

Our fields of expertise



COMMINUTION



PHYSICAL SEPARATION



FLOTATION



MINERALURGY ANALYTICS AND TECHNOLOGY



EXTRACTIVE METALLURGY



PELLETIZING AND THERMAL PROCESSES



MINERALOGY

Influence

The year 2023 was marked by an initiative to rebrand Corem, aimed at aligning our outreach objectives with our visual identity.

Simultaneously, a review of our content strategy was undertaken across our various internal and external communication platforms.

These efforts have produced significant results, reflected in the statistics for our digital platforms. By optimizing communication in a strategic and committed way,

Corem contributes to strengthening its online presence, reaching its target audiences, and consolidating its position as a key player in the mineral processing industry. In addition, by promoting effective communication, Corem provides increased visibility for its members and partners.

Social media



Web site



Participation in events

- **55th Annual Meeting of the Canadian Mineral Processors 2023, January 17-19, 2023, Ottawa, Canada**
 - *The effects of discharge design on wet ball milling performance.* Authors : R. McIvor, S. Makni
 - *Assessment of the turn-by-turn mass balance in a gravimetric separation spiral.* Authors : L. Boisvert, C. Rochefort, C. Bazin
 - *Process to reuse nitrogen compounds for dissolution of precious metals.* Authors : É. Proulx, C. Bolduc, N. Bélanger P. Laflamme, B. Levasseur
- **État de l'or et des métaux stratégiques au Québec, February 7-9, 2024**
 - Participation of Francis Fournier in a panel discussion
- **SME Annual Conference & Expo 2023, February 26 to March 1st, 2023, Denver, Colorado, United States**
 - *The effects of discharge design on wet ball milling performance.* Authors : R. McIvor, S. Makni
- **Conference CMP CNL 2023, April 5-6, 2023, Fermont, Québec, Canada**
 - *Durabilité dans l'industrie du minerai de fer : comment FER ça vert avec du biocharbon ?* Author : D.S. Braga
- **SME MN Conference, April 17-19, 2023, Virginia, MN, United States**
 - *Advanced metallurgical characterisation of direct reduction pellets – A summary of the last three decades at Corem.* Authors : M. Dubé, G. Laforest, M. Garant
- **Conference Comminution '23, April 17-20, 2023, Cape Town, South Africa**
 - *Drop weight testing for fine particle characterization.* Authors : S. Makni, R. E. McIvor
- **CIM Convention, April 30 to May 3rd, 2023 Montréal, QC, Canada**
 - *Evaluation of degradation of iron ore product and ironmaking materials due to handling: Drop test.* Authors : M. Dubé, G. Laforest, P. Robert
 - *Sustainability in the Steel Industry: The potential and results of Biochar applications for iron ore pellet plants.* Authors : D. Braga, M. Dubé, M. Alba, R.S. Sampaio
- **METEC and 6th ESTAD, June 12-16, 2023, Düsseldorf, Germany**
 - *Evaluation of iron products quality for direct reduction: Towards a simulation test.* Authors : G. Laforest, M. Dubé
- **9th Brazilian Symposium on Agglomeration au cours de ABMWEEK 2023 Convention+Expo, August 1st-3, 2023, São Paulo, Brazil**
 - *Comparison of Brazilian and Canadian scenarios: potential and results of biofuel applications in iron ore pelletizing plants.* Authors : D.S. Braga, M. Dubé, M. Alba, R.S. Sampaio
- **62nd Conference of Metallurgists, August 21-14, 2023, Toronto, ON, Canada**
 - *Extraction of Ni from Asbestos Flotation Tailing Using the Gly-Leach™ Technique.* Authors: H. Emami, E. Oraby, M.-P. Hamelin, G. O'Malley, J. Muinonen, P. Laflamme
- **Conference SAG 2023, September 20-23, 2023, Vancouver, British Columbia, Canada**
 - *Development of Fine High-Pressure Grinding for Mineral Processing Plants.* Author : R. McIvor
 - *Evaluating the Impact of HPGRs on Concentration Process Metallurgical Performance.* Authors : S. Makni, R. McIvor, A. Kumar, F. Wang, B. Klein
- **5th edition of the Symposium on Iron Ore Pelletizing and its Sustainable Development, September 25-27, 2023, Québec, Qc, Canada**
 - *The Corem R300, an updated laboratory scale test method, for the evaluation of iron products quality for direct reduction.* Authors : G. Laforest, M. Dubé
- **État du fer au Québec, October 4-5, Québec, Québec, Canada**
 - Participation of Francis Fournier in a panel discussion
- **Conference Flotation '23, November 6-9, 2023, Cape Town, South Africa**
 - *Peptide-base collectors for the flotation of sulphide minerals.* Authors : M. Alvarez-Silva, B. Mejía-Bohórquez, A. Garnier, B. Levasseur

Exhibitions

- CIM Convention, April 30 to May 3rd, 2023 Montréal, QC, Canada
- PDAC, March 5-8, 2023, Toronto, ON, Canada
- Xplor 2023, October 30 to November 2nd, 2023, Montréal, QC, Canada
- Québec Mines et Énergie, November 20-23, 2023, Québec, QC, Canada

Publications

- McIvor, R.E., Finch, J.A., Makni, S. The truth about population balance modeling, CIM Journal, June 2023.
- L. Boisvert, M. Sadeghi, C. Rochefort & C. Bazin. Axial or turn-by-turn particle recovery in a spiral Concentrator. CIM Journal, October 2023.
- McIvor, R.E. Replacement of Wet Ball Milling with High-Pressure Grinding Ahead of Mineral Separation, Mining, Metallurgy & Exploration, November 2023



PDAC, March 5-8, 2023



Xplor 2023, October 30 to November 2nd, 2023



CIM Convention, April 30 to May 3rd, 2023



État de l'or et des métaux stratégiques au Québec, February 7-9, 2024

Ministerial Visits



Visit to Corem facilities by ministers François-Philippe Champagne and Jean-Yves Duclos, and industrial partners.



Maïté Blanchette Vézina, Ministre des Ressources naturelles et des Forêts, during a visit to Corem.



Symposium

Corem organized the 5th edition of the Symposium on Iron Ore Pelletizing and its Sustainable Development, which took place from September 24 to 27, 2023. This event was an opportunity for participants to discuss existing problems in the industry, share knowledge and expertise, and establish contacts with the international community in this field.

The Symposium was distinguished not only by its scope and international reach, but also by its concrete commitment to environmental preservation. In addition to making sustainable development the main theme of the technical and scientific sessions, Corem was committed to organizing an event with low environmental impact. This initiative took shape in the use of digital visual aids rather than paper, the elimination of all single-use products, and the prioritization of local suppliers and products.

250

ATTENDEES

21

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