

lundin mining

2018


SUSTAINABILITY REPORT



Lundin Mining Corporation is a diversified Canadian base metals mining company with operations in Chile, Portugal, Sweden, and the USA, primarily producing copper, zinc, nickel, and lead.



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OUR COMMITMENT TO THE UN GLOBAL COMPACT
 Lundin Mining Corporation joined the United Nations Global Compact in 2016, supports the Ten Principles on human rights, labour standards, environment and anti-corruption, and promotes the UNGC's 17 Sustainable Development Goals. The results of our 2018 activities are presented in our annual Communication on Progress, located in the Index section of this report.

MESSAGE FROM THE PRESIDENT AND CEO



MARIE INKSTER, PRESIDENT AND CEO

As we introduce our *2018 Sustainability Report*, we do so in recognition of our responsibilities as stewards of the natural resources in the regions in which we work and with respect for our communities and stakeholders. Lundin Mining continued to demonstrate strong business and sustainability performance across our operations in 2018.

We refreshed our *Mission and Values* statements, corporately and at each mine site early in the year, renewing our commitment to responsibly mining base metals vital to society, creating meaningful value for our stakeholders. We recognize the important role of the metals we produce and are committed to mining these metals responsibly. We demonstrate this commitment through living our core values of Safety, Respect, Integrity and Excellence in all aspects of our decision-making. Our *Responsible Mining Policy*, updated in 2018, outlines our policy commitments and principles for responsible mining.

Sustainability in our business includes securing the assets needed to continue mining, extending the lives of our profitable operations and the employment and economic benefits they bring to the communities where we operate. During 2018, through the success

of our exploration programs and significant investment in our operations, including major expansion projects, we increased our mineral resources and reserves, extended mine lives and are well positioned to increase production and economic benefits. Global political events clouded the outlook for base metal demand, leading to declining prices for much of the year. Despite this, we were able to produce according to plan and continue with significant investments in our assets and host communities.

We have demonstrated sustainable improvements in our safety, environmental, social and operating performance over the past several years. This year's *Sustainability Report* once again advances the level of reporting of key aspects related to the sustainability of our business. Lundin Mining's goal of strengthening our approach to sustainability

continues to drive our progress. In 2018, we initiated the development of a Five-Year Sustainability Strategy to further advance the integration of the United Nations Global Compact (UNGC) Principles and Sustainable Development Goals (SDGs) into our business and will report on the completion of this strategy in future reporting.

Our overall safety performance was better than target for a sixth consecutive year, again placing our Company in the top third of western-world miners. We achieved a strong overall Total Recordable Injury Frequency rate with notable safety performance from our two largest operations. Candelaria surpassed a record in total days without a recordable injury (525 days) and Neves-Corvo achieved its best-ever summer safety results. Health and safety challenges encountered in the year were addressed with immediate implementation of Health and Safety Action Plans.

Our environmental performance is another achievement of which we are proud. Effective environmental management is integral to the success of our operations, from day-to-day activities on-site to corporate strategic planning. We classify incidents on a significance scale, with Level 3 or above reported to the Board of Directors and disclosed in our annual sustainability reports. We are pleased to report there were no significant (Level 3 or above) incidents at any of our operations in 2018.

Lundin Mining recognizes the need for effective approaches to managing climate-related responsibilities, especially in consideration of the remote locations in which we operate, the energy-intensive nature of the sector, and the sometimes-limited availability of renewable energy in national energy mixes. We also note that the commodities we mine, including copper, zinc, nickel and lead, are critically important in the technologies and innovations required for a low-carbon future. In 2018, climate change was included as a key component of Lundin Mining's Five-Year Sustainability Strategy, which continues in development. With increasing global focus on climate change adaptation, we monitor related regulatory and event trends in the context of emerging risk tracking to anticipate potential sustainability opportunities as well as risks.

Related to air emissions, we had multiple dust control, greenhouse gas (GHG), energy conservation and green energy initiatives that are showing positive results. All of our operations participated in a global GHG Emissions and Energy Efficiency benchmarking program that concluded in 2018. Our operations continue to focus on identifying opportunities to improve energy efficiency and reduce GHG emissions. We take a structured and transparent approach to our GHG data reporting. In 2018, all of our operating mines were in full compliance, with particulate emissions measured below permitted limits.

We are fully committed to sustainable water management, implementing a comprehensive water management planning process to ensure responsible use of this resource. In 2018, all of our operations took an important step towards gaining a better understanding of the extent to which our activities could impact on water resources that benefit the ecosystem and other users, including beginning to assess water stress levels in the catchments in which we operate. The findings will inform how we prioritize our water management actions in the future.

Commitment to our core values guides all aspects of our business, including community relations. In 2018, we implemented a new Community Investment Policy that focuses on being a catalyst and partner in sustainable development for the regions where we operate. The policy favours community investment and stakeholder engagement initiatives rather than direct monetary donations, reducing the risk of communities reaching financial dependency on our operations. During the year, we further refined our Stakeholder Engagement Standard. Our social performance teams continued to refine and implement site-level, five-year social performance strategic plans that anchor decisions and ensure the best allocation of resources in a systematic and consistent approach when engaging with communities, employees and other stakeholders.

On the workforce front, we continue to advance and actively promote greater gender diversity. Our Diversity and Inclusion Policy was updated in 2018 and includes our efforts to recruit a diverse workforce, create a respectful and inclusive environment, invest in initiatives in our communities that are reflective of our commitment and provide education to our employees on these and other topics focused on diversity and inclusion. We continued with multiple women-in mining initiatives, internships and new graduate-hire programs. Further, a formal [Board Diversity Policy](#) was completed during the year and published in early 2019.

Lundin Mining has been reporting on our sustainability performance in a comprehensive, standalone document since 2011. I am proud to introduce this report as President, CEO and Director. I believe you will find our *2018 Sustainability Report* a comprehensive, fulsome disclosure of our past performance, commitments and aspirations for the future. We look forward to further building upon our reputation as a responsible miner.

Marie Inkster
President and CEO

ABOUT THIS REPORT



Lundin Mining Corporation has produced an annual sustainability report since 2011, providing updates on the economic, safety, environmental and social issues that are of greatest interest to communities near our operations, our employees, our investors and other stakeholders.

* More detailed information regarding our financial and operational results and information for the reporting period can be found in the Annual Information Form, 2018 Annual MD&A and Financial Statements, and the Information Circular. Unless otherwise stated, all references to "\$" means United States dollars. "Lundin Mining" or "Company" refer to Lundin Mining Corporation and / or its subsidiaries. This report contains non-GAAP ("generally accepted accounting principles") measures. These performance measures have no meaning within GAAP under International Financial Reporting Standards as issued by the International Accounting Standards Board and, therefore amounts presented may not be comparable to similar data presented by other mining companies.

ABOUT THIS REPORT



<p>SUSTAINABILITY REPORTING FRAMEWORK AND CYCLE</p>	<p>REPORTING PERIOD</p> <p>January 1, 2018 – December 31, 2018</p>
<p>DATE OF LAST REPORT</p> <p>December 31, 2017</p>	<p>REPORTING CYCLE</p> <p>Annual</p>
<p>REPORTING FRAMEWORK</p> <p>2018 will be our second report using the new Global Reporting Initiative (GRI) Standards (plus the Mining & Metals Sector Supplement).</p>	<p>IN ACCORDANCE OPTION</p> <p>This report has been prepared in accordance with the GRI Standards: Core option.</p>
<p>REVIEW</p> <p>This report has been reviewed by Lundin Mining's Health, Safety, Environment and Community (HSEC) Committee of the Board; and Lundin Mining senior management, including the CEO; COO; CFO; SVP Legal and General Counsel; VP of Environment; VP of Health, Safety and Risk; VP of Technical Services; Director of Sustainability and Regulatory Affairs; and Director of Sustainability and Social Performance.</p>	<p>INDEPENDENT ASSURANCE</p> <p>2018 is the third year Bureau Veritas provided independent assurance of the audit of Lundin Mining's 2018 Sustainability Report for the selected indicators in accordance with AccountAbility's AA1000AS. The moderate assurance level under AA1000AS 2008 is approximately equivalent to the limited assurance level under other standards, such as ISAE 3000 (Revised) Assurance Engagements. 2008, Type 2 to a moderate level of assurance. Bureau Veritas' Letter of Assurance can be found in the Index of this report.</p>

This year's assurance process included a representative site visit and data audit at our Candelaria Mine in Chile, as well as a detailed audit of selected Global Reporting Initiative (GRI) data collected from all mine operations used in the development of this report. At all Lundin Mining operations, the independent assurance process was conducted for the following performance indicators, according to GRI Standards:

- Safety – Total Recordable Injury Frequency Rate (TRIFR) and Lost Time Injury Frequency Rate (LTIFR);
- Water – total amount of water withdrawn from all sources and total amount of water discharged;
- Energy – total energy consumption within Lundin Mining operations, including electricity and liquid and gaseous fuel consumption;
- Greenhouse gas (GHG) Emissions – Scope 1 and Scope 2 (location-based and market-based) emissions;
- Stakeholder Engagement – as it relates to the AA1000AS 2008 principles of inclusivity, materiality and responsiveness; and,
- Grievance Mechanism – grievances filed during the year, including number, description, action taken and outcome.

Report Scope and Data

Our 2018 Sustainability Report covers operating mines that are majority-owned and managed by Lundin Mining through its subsidiaries and includes the following sites:

- Candelaria Complex (Chile) 80% interest
- Eagle Mine (USA)
- Neves-Corvo Mine (Portugal)
- Zinkgruvan Mine (Sweden)

This report also includes summary-level information with respect to mine closure-related activities for Storliden (Sweden), a closed site. The Company is also working with local authorities and local communities to assess environmental conditions and future reclamation options for a historical third-party-owned-and-operated processing and tailings site at Ämmeberg, Sweden.

ABOUT THIS REPORT

The scope of this report focuses on operations within Lundin Mining's control in 2018 and does not, therefore, include data from the Freeport Cobalt Oy business, including the cobalt refinery in Kokkola, Finland, operated by Freeport-McMoRan Inc. in which the Company holds a 24% (non-operating) equity interest. As well, certain labour practice indicators and performance data regarding employees, health and safety, and training are also included in this report for our corporate headquarters in Toronto, Canada, as well as for our exploration projects and sites. While our local operations may use slightly varying terms (e.g., Los Diques TSF), the report wording has been standardized to use

the term "tailings facility" throughout. While the report period is defined officially by the December 31, 2018 end date, early 2019 key developments have been provided, where relevant, for additional context.

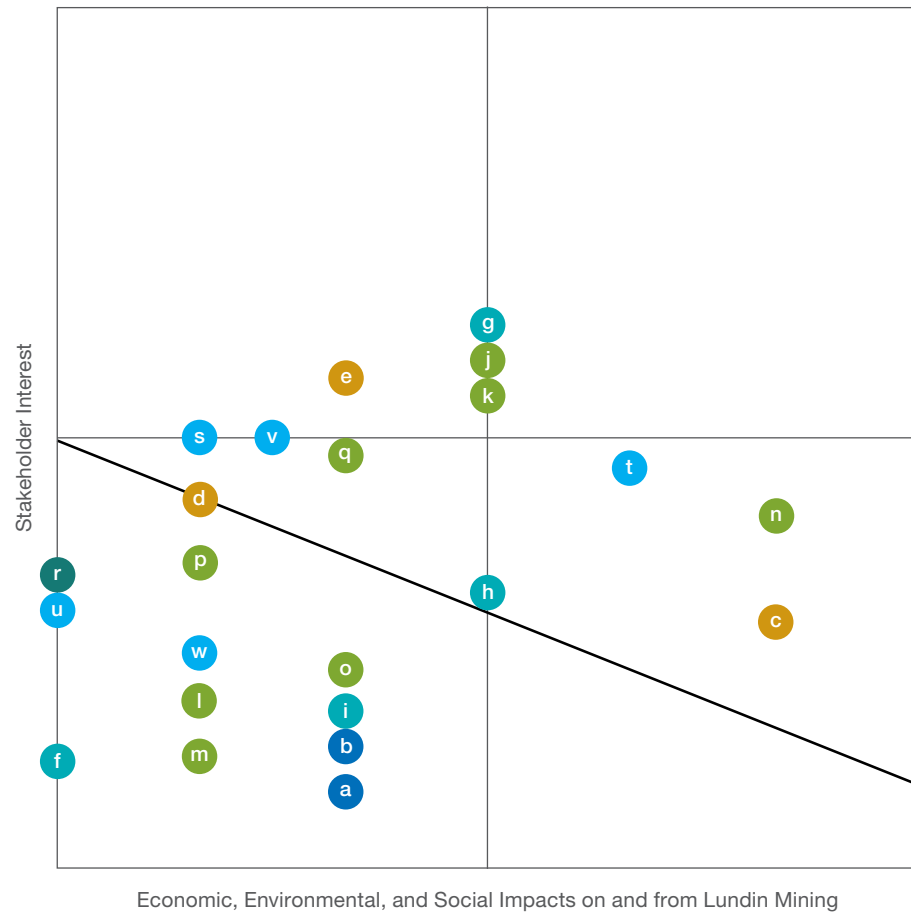
Defining Our Report Content

Our 2018 Sustainability Report focuses on topics that are most material (of greatest interest) to our business and stakeholders. In our most recent assessment, we undertook a comprehensive update of our materiality approach through an extensive internal and external consultation process, in alignment with the new GRI Standards. This process identified material sustainability topics, based on their importance

to stakeholders, and the potential economic, environmental and societal impacts of Lundin Mining's activities.

This matrix shows the results of our most recent materiality assessment, mapping the topics that were identified through the consultative process described in detail in previous Sustainability Reports. The topics that rank above the diagonal line reflect priority topics identified for Lundin Mining specifically, as well as for the mining industry in general, by the internal and external stakeholders surveyed. In addition to these priority topics, four areas of additional focus for the Company are included in this report: Governance, Human Rights, Biodiversity and Product Stewardship.

Materiality Matrix



- GOVERNANCE**
 - a) Governance
 - b) Ethics and Anti-Corruption
- ECONOMIC**
 - c) Economic Performance
 - d) Transparency of Payments
 - e) Local Economic Impact
- OUR PEOPLE**
 - f) Diversity
 - g) Health and Safety
 - h) Labour Relations
 - i) Training and Professional Development
- ENVIRONMENT**
 - j) Water
 - k) Reclamation and Closure
 - l) Energy
 - m) Waste
 - n) Tailings and Waste Rock Management
 - o) Air Emissions and Other
 - p) Biodiversity and Land Management
 - q) Climate Change
- MATERIALS AND PRODUCT STEWARDSHIP**
 - r) Product Responsibility and Stewardship
- SOCIAL**
 - s) Stakeholder Engagement
 - t) Indigenous Relations
 - u) Human Rights
 - v) Community Development
 - w) Cultural Heritage

ABOUT LUNDIN MINING

Lundin Mining Corporation is a diversified Canadian base-metals mining company with operations in Chile, the United States of America, Portugal, and Sweden, primarily producing copper, zinc, nickel, and lead. In addition, Lundin Mining holds an indirect 24% equity stake in the Freeport Cobalt Oy business, which includes a cobalt refinery located in Kokkola, Finland. The Company's headquarters are in Toronto, Canada, with exploration activities at all sites. Additional greenfield exploration activities are also being conducted in South America.

In early 2018, Lundin Mining undertook a collaborative consultation process to refresh and renew our Mission and Values statements and engaged with our operational, exploration and corporate teams in a series of site visits and corporate presentations, led by our senior management team. The Company's updated Mission and Values are summarized as follows:

OUR MISSION
We responsibly mine base metals vital to society, creating meaningful value for our stakeholders.

OUR VALUES

SAFETY
We hold health and safety as our top priority in everything we do.

RESPECT
We embrace diversity, inclusion, open dialogue and collaboration.

INTEGRITY
We do what is right and honor our commitments.

EXCELLENCE
We set high standards and challenge ourselves to deliver superior performance.



OUR OPERATIONS



**Lundin Mining
Head Office
(Toronto, Canada)**

Number of employees **72**

Number of contractors **4**



Eagle, USA
NICKEL / COPPER



Interest **100%**

Number of employees **196**

Number of contractors **269**

Mine type: underground

Current mine life:
6 years to 2024



Candelaria, Chile
COPPER / GOLD / SILVER



Interest **80%**

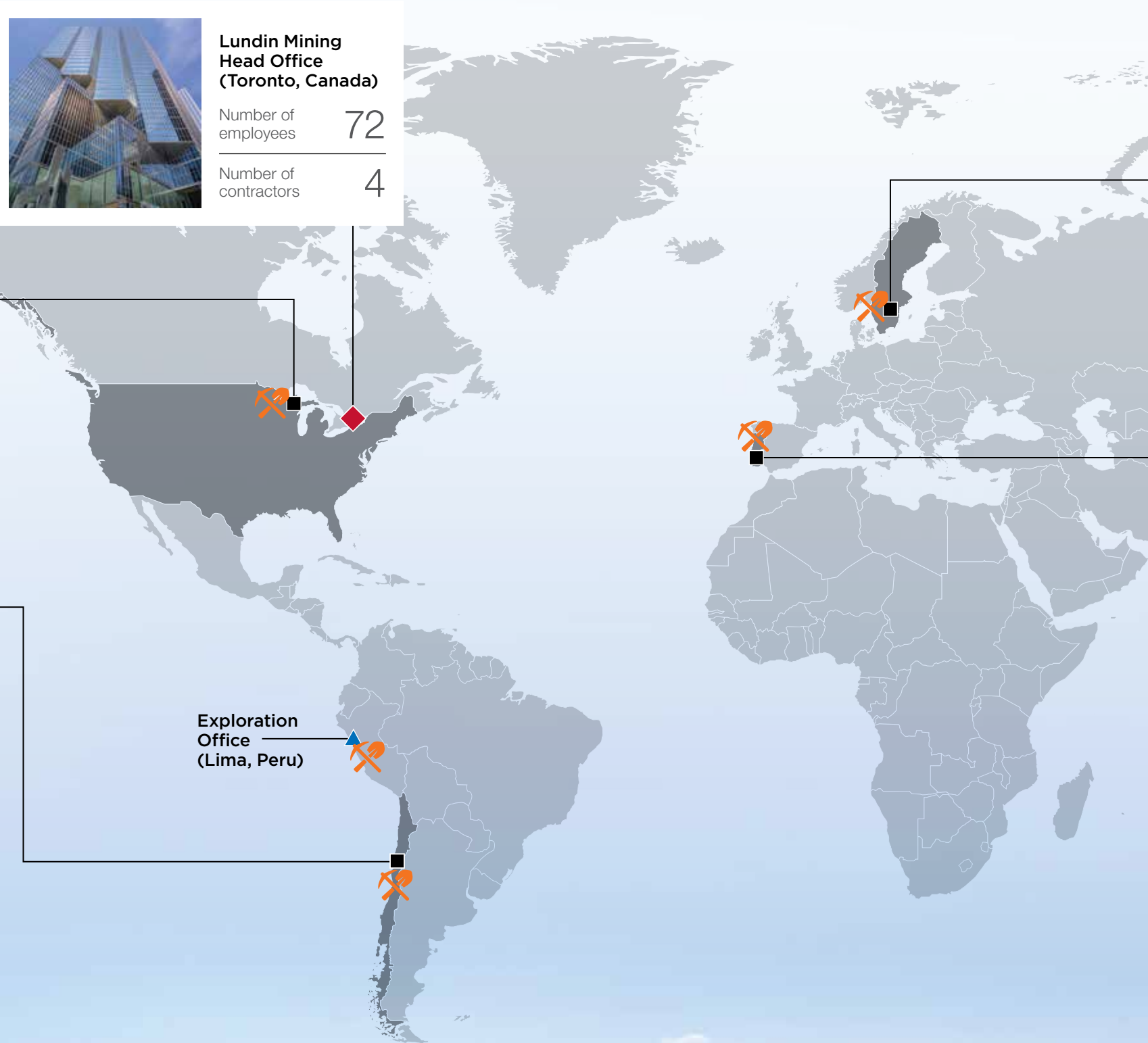
Number of employees **1,451**

Number of contractors **3,919**

Mine type:
open pit / underground

Current mine life:
22 years to 2040

- Operations
- ◆ Head Office
- ⚡ Exploration Activities
- ▲ Exploration Office
- Copper
- Zinc
- Nickel
- Lead
- Gold
- Silver



Zinkgruvan, Sweden
ZINC / LEAD / COPPER



Interest **100%**

Number of employees **401**

Number of contractors **65**

Mine type: underground

Current mine life:
12 years to 2030



Neves-Corvo, Portugal
COPPER / ZINC / LEAD



Interest **100%**

Number of employees **1,209**

Number of contractors **1,296**

Mine type: underground

Current mine life:
12 years to 2030



Exploration Activities

Number of employees **17**

Number of contractors **11**

- Candelaria, Chile (Copper, Gold)
- Eagle, USA (Nickel, Copper)
- Neves-Corvo, Portugal (Copper, Zinc)
- Zinkgruvan, Sweden (Zinc, Copper)
- Peru (Copper)

ABOUT LUNDIN MINING



Eagle Mine – Aerial View

OUR OPERATIONS Candelaria

The Candelaria Mining Complex, comprising two adjacent copper mining operations, Minera Candelaria and Minera Ojos del Salado, produces copper concentrates from open pit and underground mines located near Copiapó in the Atacama Region of Chile, as well as the operation of the Punta Padrones port facility near the community of Caldera. Candelaria provides copper ore to an on-site concentrator with a nominal processing capacity of 75,000 tonnes per day (“tpd”) or 27.4 million tonnes per annum (“mtpa”). Minera Ojos del Salado comprises two underground mines, Santos and Alcaparrosa, and an on-site concentrator with a nominal throughput capacity of 3,800 tpd.

Construction of the new Los Diques tailings facility was completed and tailings deposition from the Candelaria processing plant commenced in early 2018. Future phases of Los Diques, planned to start in 2019, have been initiated ahead of schedule, taking advantage of synergies with the current project and the availability of mined rock from the open pit.

Exploration in the underground mines and neighbouring surface areas continued to be highly successful during 2018. This success has led to increases in all the underground mine lives and the introduction to the mine life of a new open mineable deposit called Española,

which is located 3.3 km southwest of the Candelaria primary crusher. Major capital initiatives continued during 2018, including upgrades to the open pit mine equipment fleet; a mill optimization program aimed at increasing reliability, throughput and copper recovery; and the development of a new southern section of the Candelaria underground mine. The current estimated mine life of the Candelaria Mining Complex extends to at least 2040.

Eagle Mine

Eagle Mine is an underground, high-grade nickel and copper mine located in western Marquette County of Michigan’s Upper Peninsula in the USA. Ore from the mine is transported by truck approximately 100 km to a processing plant with a capacity of 2,000 tpd (730,000 tpa) located in Humboldt township.

In 2015, exploration activities led to the discovery of Eagle East, a high-grade nickel and copper deposit, located approximately 2 km east of the current Eagle Mine deposit. Mine development to extend the underground to the Eagle East deposit received regulatory approval in mid-2017 and, by late 2018, the access decline construction was substantially complete and infill drilling of the orebody had commenced ahead of schedule. First ore production from Eagle East is forecast in late 2019, and the overall mine life of Eagle is estimated to 2024.

Neves-Corvo

Neves-Corvo is a copper, zinc and lead underground mine located approximately 100 km north of Faro, Portugal, in the western part of the Iberian Pyrite Belt. The mine has been a significant producer of copper since 1989 and, in 2006, commenced the treatment of zinc ores. Existing facilities include a shaft with a total hoisting capacity of 4.7 mtpa, a copper plant with 2.5 mtpa processing capacity, and a zinc plant with 1.2 mtpa capacity. The zinc plant has the flexibility to process zinc or copper ores.

In May 2017, the Zinc Expansion Project (ZEP) was approved that, at completion, will see zinc ore mining and processing capacity increase to 2.5 mtpa. Development of the ZEP project, includes a new underground material-handling system, hoisting shaft upgrades and a semi-autonomous grinding (SAG) mill and associated processing facilities. The project is expected to double zinc production from early 2020 through the investment of approximately €320 million (\$385 million). The current copper and zinc mineral reserve estimates at Neves-Corvo will support a forecast life of mine to 2030.

Zinkgruvan

The Zinkgruvan Mine, located 200 km to the southwest of Stockholm, has been producing zinc, lead and silver on a continuous basis, under different owners, for over 160 years. The operation consists of an underground mine, processing facilities and associated infrastructure, with a nominal ore production capacity of 1.4 mtpa.

During 2018, increased exploration drilling was successful in delineating additional inferred mineral resources in the new Dalby area of the mine. Infill and exploration drilling are ongoing and conceptual feasibility-study work has commenced. The current mineral reserve estimates at Zinkgruvan support a forecast mine life to 2030.

Exploration and New Business Development Group

The strategy of the Exploration and New Business Development Group is to support production growth, economic viability and sustainability of Lundin Mining by:

- Further developing and expanding mineral resource and mineral reserve potential at existing operations, with the goal of extending mine life; and,
- Greenfield exploration seeking new business / discovery potential.

The total exploration expense for 2018 was \$75 million, an increase of approximately \$3 million from 2017 levels. The majority of exploration activity for 2018 was directed towards near-mine targets at Candelaria and Eagle East. For more information, we invite you to visit the Exploration section of our website: <http://www.lundinmining.com>.



Eagle Mine – Drillcore Samples

Our Customers and Markets

Lundin Mining’s principal products and sources of sales are mineral concentrates of copper, zinc, nickel and lead, transported in bulk by covered truck or rail to outbound ports for shipping, or transported directly to smelter facilities for further processing. Concentrates are mainly sold under multi-year sales contracts to a variety of smelter customers in Europe, Asia and the Americas. The end users of our products are global. For additional detail, please refer to the Materials and Product Stewardship section of this report.

Our Supply Chain

Lundin Mining relies on an international network of suppliers for the provision of products and services required to support business activities at our mines. The largest categories of suppliers across our operations in 2018 included, in alphabetical order: cement, chemicals, construction, electrical, energy, engineering, equipment and parts, exploration drilling, explosives, fuel, maintenance, mechanical, mining contractors and transportation. In recognition of the increasing importance of supply chain practices, Lundin Mining completed a Company-wide benchmarking review of supply chain management systems and initiated the development of a Responsible Sourcing – Supply Chain Standard as part of the Responsible Mining Management Standard implementation program.



ABOUT LUNDIN MINING

Memberships and Associations

Involvement with memberships and industry associations enables Lundin Mining to keep current regarding matters of public policy, emerging-sector and sustainability trends, regulatory updates, stakeholder interests, and the sharing of industry best practices. In 2018, Lundin Mining was a member or participant in the following industry associations:

Corporate

- [Mining Association of Canada](#)
- [European Association of Mining Industries, Metal Ores & Industrial Metals \(Euromines\)](#)
- [European Copper Institute](#)
- [International Zinc Association](#)
- [International Lead Association](#)
- [Prospectors and Developers Association of Canada](#)
- [United Nations Global Compact](#)
- [Canadian Institute of Mining, Metallurgy and Petroleum \(CIM\)](#)
- [International Network for Acid Prevention \(INAP\)](#)
- [Standards Council of Canada](#)

Eagle

- [Michigan Manufacturers Association](#)
- [Michigan Chamber of Commerce](#)
- [American Exploration and Mining Association](#)
- [Lake Superior Community Partnership](#)
- [Invest UP](#)

Candelaria

- [Chilean Mining Council \(Consejo Minero\)](#)
- [National Mining Society \(SONAMI\)](#)
- [Atacama Regional Development Corporation \(CORPROA\)](#)
- [Red Ambiental Atacama](#)
- [Comité Regional de Seguridad Minera Atacama \(CORESEMIN\)](#)
- [LICEO Jorge Alessandri Rodriguez High School \(Members of advice committee\)](#)
- [Chile-Canada Chamber of Commerce](#)

Neves-Corvo

- [National Association of Extractive and Transforming Industry \(ANIET\)](#)
- [Setúbal Port Community](#)

- [Portuguese Shippers Council](#), member of the [European Shipper's Council](#)
- [BCSD \(Portugal is a member of the WBSCD – World Business Council for Sustainable Development\)](#)
- [Energy Association for Industrial Consumers \(APIGCEE\)](#)

Zinkgruvan

- [Swedish Association of Mines, Mineral and Metal Producers \(SveMin\)](#)
- [Swedish Association of Industrial Employers \(GAF\)](#)
- [AFA Insurance](#) is owned by Sweden's labour market parties: the Confederation of Swedish Enterprise, the Swedish Trade Union Confederation (LO) and The Council for Negotiation and Co-operation (PTK)

OUR APPROACH TO RESPONSIBLE MINING

At Lundin Mining, we have a firm commitment to responsible mining, which is underscored by our daily actions and supported by governance, defined processes and guidance. Examples of documents supporting our responsible mining activities include:

- Our **Responsible Mining Policy (RMP)**, updated in 2018, outlines the Company's policy commitments and principles for responsible mining;
- The Company's **Responsible Mining Framework (RMF)** outlines our commitment to develop and implement management systems and operating practices that take into consideration applicable international guidelines, and defines the way we manage material economic, social, health and safety and environmental issues;
- Our **Responsible Mining Management System (RMMS)** standard specifies the requirements applicable throughout the Company for the management of health, safety, environment and community (HSEC) aspects of our business; and,
- HSEC Technical standards and guidance documents provide both support to the RMMS as well as establishing the foundation for the continued development of the Company's Five-Year Sustainability Strategy.

As previously indicated, our integrated HSEC management system, the RMMS, is supported by effective technical standards, procedures, guidance, training, auditing and corrective-action programs to encourage continual improvement and enhanced environmental performance and compliance. For more details on our Responsible Mining Policy and Responsible Mining Framework, please visit the Corporate Responsibility section of our website: <http://www.lundinmining.com>.

RMMS (HSEC) Audits

Third-party health, safety and environmental audit programs have been routinely carried out at our operations since 2015, being temporarily placed on hold in 2017 to allow for the introduction and implementation of Lundin Mining's integrated RMMS at all sites. The RMMS improved upon our existing management system, and updated and bolstered our social management components. Since its inception, our audit program has been effective in providing an assessment of compliance performance, challenges and successes, and is a vital part of a continual improvement program across our operations. Starting in 2019, the new RMMS audit program will be conducted at regular intervals to assess HSEC performance and compliance.

Results of the prior audit program, including corrective actions, have been provided to our operations for review and resolution and are reported to Lundin Mining management and the HSEC Committee of the Board. This process will continue under the new RMMS program.

In addition, the environmental management systems of our Candelaria Complex, including Candelaria and Ojos de Salado, have been certified for several years under the international ISO 14001 Standard, an international standard for effective environmental management system performance, with the most recent recertification in January 2019 for a period of three years.

HSEC Committee

The HSEC Committee of the Board provides oversight of health, safety, environmental and social issues. Consisting of three standing members, the HSEC Committee meets quarterly. Informed by quarterly reports from key departments, the committee is responsible for reviewing the effectiveness of Company governance in these areas, including implementation of the RMMS; ensuring compliance with applicable legal and regulatory requirements; and reviewing performance, leadership and external reporting on these matters.

Sustainability and Transparency



Our commitments to sustainability and transparency received special recognition in 2018, when Lundin Mining's 2017 Sustainability Report was selected as the first place winner of the UNGC Canada Peer Review Program. Lundin Mining joined the UNGC in 2016, and we were honoured to be publicly recognized for our commitment to transparency and for our integration of the UNGC's Ten Principles and 17 SDGs into our business. Additional recognition included the selection of Lundin Mining's 2017 Sustainability Report as one of the top-three sustainability reports for the category of Non-Renewable Resources by the Finance and Sustainability Initiative (FSI / IFD) for the third year in a row.



LUNDIN MINING AND THE UNGC SUSTAINABLE DEVELOPMENT GOALS

In January 2016, the 17 United Nations Global Compact (UNGC) SDGs of the 2030 Agenda for Sustainable Development officially came into force. World leaders had previously committed to adopting these goals in September 2015 at a historic UN Summit, supported by the global business community. On the path to 2030, countries confirmed their commitment to mobilizing efforts to advance positive change in these 17 priority areas. Since Lundin Mining joined the UNGC in 2016, we have undertaken programs at both site and corporate levels to advance the SDGs and these results have been annually reported in our UNGC Communications on Progress (COP). Lundin Mining's most recent annual Communication on Progress can be found in the Index of this report.

Our Mission, Values and Responsible Mining Policy continue to align with the Global Compact's Ten Principles on human rights, labour, the environment and anti-corruption, as well as the 17 SDGs. We continue to advance our efforts to further integrate the SDGs into our business strategy, day-to-day operations and our organizational culture by creating shared value, fostering partnerships and demonstrating environmental and economic performance. In 2018, we initiated the development of a Five-Year Sustainability Strategy to further advance the integration of the UNGC Principles and SDGs into our business and will report on the completion of this strategy in future reporting.



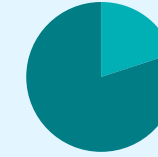
As you progress through this report, you will note various SDG icons within the report text. In addition, we have also included a wide selection of feature stories to further demonstrate our Company-wide commitment to the SDGs. These feature stories are accompanied by the following graphic to highlight the most relevant SDGs achieved in each case:



2018 PERFORMANCE HIGHLIGHTS

Renegotiated our Candelaria electrical power purchase agreement, achieving:

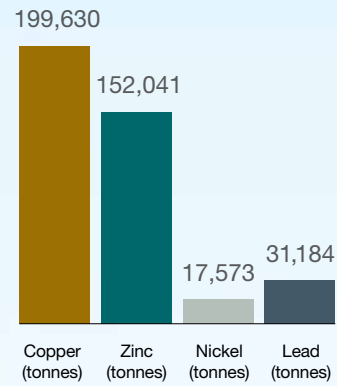
Increase of renewables to 80% of the energy mix, starting in 2023



Future option for the self-generation of up to 20 MW of electrical energy requirements

OVERALL REDUCTIONS
in both energy intensity and GHG emissions intensity, per tonne rock mined, from 2016 to 2018

2018 Metal Production Statistics (contained metal)



* Candelaria's copper production has been reported on a 100% basis.

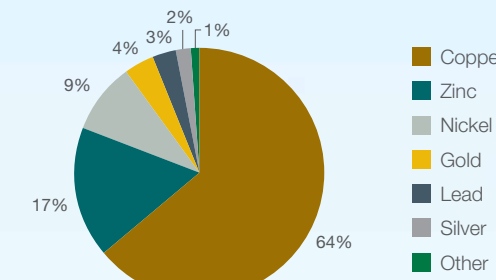
DIVERSITY IMPROVEMENTS,
including Increase of women on our Board to 25%

Sixth consecutive year outperforming our TRIF reduction target (achieved 0.67 TRIF)

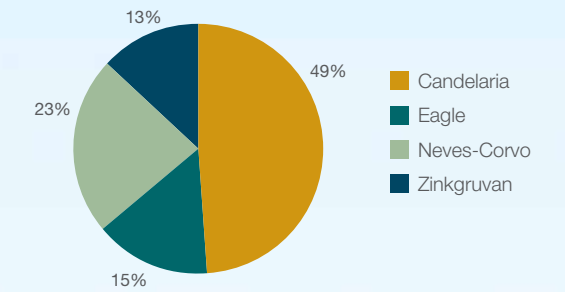
Reduction of Lost Work Days by 12% (1,094) from 2017 (1,223) and by 26% from 2016 (1,473)

\$12M
Total community-investment expenditures of approximately \$12 million

2018 Statistics Revenue Breakdown by Metal



2018 Statistics Revenue Breakdown by Mine



REDUCTION OF LOST DAY SEVERITY RATE (SR) BY 14%, FROM 2017 TO 2018 (14 TO 12); AND BY 40% WHEN COMPARED TO 2016 LEVELS (20)

2.5x

Re-use of Lundin Mining's total water withdrawn by approximately 2.5 times

\$1.58B

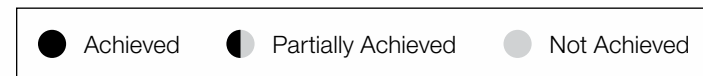
\$1.58 BILLION (OR 95%) OF OUR GOODS AND SERVICES WERE PROCURED LOCALLY (12%) OR NATIONALLY (83%)

Co-hosting of "Lakeside Pride Askersund" by our Zinkgruvan mine, to celebrate diversity, inclusion and equality



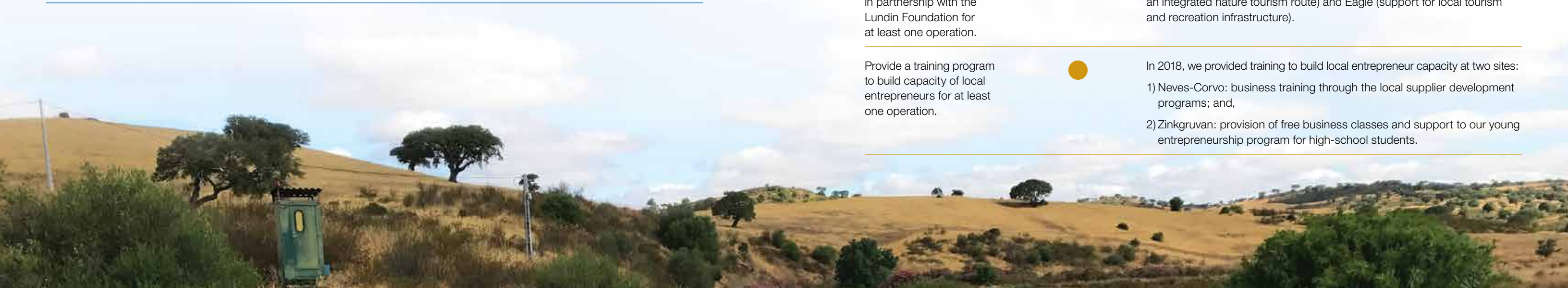
OUR PERFORMANCE AGAINST 2018 TARGETS

Our annual sustainability targets are aligned with our Responsible Mining Policy and help us achieve continuous performance improvement in key sustainability areas. In establishing our targets, we consider the results of internal risk assessments, stakeholder feedback and monitoring and continuous improvement of existing processes and procedures. Level of completion of activities is shown by the following symbols:



2018 Target	Result	Highlights
GOVERNANCE		
Executive Risk Committee to approve updated risk likelihood and impact definitions aligned with finalized risk tolerance definitions.	●	Management responsibility for Risk Management was reassigned to the new position of Vice President of Health, Safety and Risk. This work was deferred to 2019 and will be undertaken as part of a broader review and update of Lundin Mining's Risk Statement and Framework.
Enhance quarterly risk monitoring and reporting by operations.	●	Risk review discussions were added to the quarterly Operations Team meetings.
Ensure key projects / initiatives benefit from a broad-based risk assessment.	●	This work is ongoing and will be further progressed during 2019.
Broaden the current Diversity Policy to encompass diversity and inclusion.	●	In March 2016, the Corporation adopted a written Diversity Policy, which was amended in 2019, to the Diversity and Inclusion Policy. This new policy includes efforts to recruit a diverse workforce, create a respectful and inclusive environment, invest in initiatives in our communities that are reflective of our commitment and provide education to our employees on these and other topics focused on diversity and inclusion.
Anti-corruption compliance training for senior corporate and site management.	●	Anti-corruption guidelines were inserted into the Code of Conduct. The program was rolled out to senior corporate management, site management and the Board.

2018 Target	Result	Highlights
HEALTH AND SAFETY		
Ensure zero fatalities.	●	There were no fatal injuries.
Achieve a Total Recordable Injury rate of 0.70 or better.	●	Lundin Mining achieved a TRIF of 0.67.
Develop Occupational Health Exposure Profiles for each operation.	●	Occupational Health Exposure Profiles were developed for all sites.
ECONOMIC		
Continue to promote local procurement at all sites.	●	Further development of operational five-year social performance strategic plans, including continued focus on local procurement. In 2018, a minimum of 80% of goods and services were locally procured at each site. Our work with the Lundin Foundation included several site-specific local procurement and supplier development projects focused on advancing local procurement throughout 2018.
Enable the growth of economic diversification at all sites.	●	Development of community investment plans to increase strategic investments and partnerships that reduce community financial dependency. Undertaking of studies to understand the scope and nature of economic diversification opportunities, including Neves-Corvo's first regional socio-economic impact study, a regional economic assessment at Zinkgruvan, support for artisanal fisheries at Candelaria and identifying new economic development opportunities to support social closure planning at Eagle.
Advance growth opportunities at existing operations and / or new sites.	●	Eagle and Neves-Corvo continued to pursue significant expansion projects, Eagle East and ZEP, respectively, with a total expected investment of approximately \$490 million. Our 2018 exploration program contributed to the expansion of our mineral resources and reserves with significant increases achieved at Candelaria during the year.
Create a new economic diversification and local procurement program in partnership with the Lundin Foundation for at least one operation.	●	In 2018, nature tourism was identified as an industry that could drive regional economic diversification at two operations, specifically including the development of programs at Neves-Corvo (Portugal Wildscapes, an integrated nature tourism route) and Eagle (support for local tourism and recreation infrastructure).
Provide a training program to build capacity of local entrepreneurs for at least one operation.	●	In 2018, we provided training to build local entrepreneur capacity at two sites: 1) Neves-Corvo: business training through the local supplier development programs; and, 2) Zinkgruvan: provision of free business classes and support to our young entrepreneurship program for high-school students.



OUR PERFORMANCE AGAINST 2018 TARGETS

● Achieved ● Partially Achieved ● Not Achieved

2018 Target Result Highlights

HUMAN RESOURCES

Continue to build a culture of trust and mutual respect. ● Human Resources actively facilitated an open-door approach with our employees and hosted regular forums where direct communication between employees and management was enabled and concerns were effectively addressed.

Solidified positive working relationships with all unions, as evidenced by no labour disruptions in excess of one week at any operation during the reporting period.

Ensure our working environments position Lundin Mining as an “Employer of Choice” with motivated employees at all levels of the organization. ● Accentuated the importance placed on employee development and demonstrated an understanding of the inspirational value of training initiatives. Despite a 5% reduction in the number of employees Company-wide in 2018, training hours increased by 4%.

Further improvements to progress with diversity, as well as to the number of women retained for new positions, inclusive of the senior management roles. ● Prioritization and launching of diversity initiatives at all operations. Most operations reporting the setting of workforce gender representation targets for the next five years. To support diversity initiatives, training programs have been launched in surrounding communities, with extra focus placed on encouraging more female job applicants. In 2018, the percentage of female employees increased marginally at all operations.

ENVIRONMENT

Achieve RMMS conformance in stages by Q1 2019. ● The RMMS roll-out process continued successfully in 2018, with corporate checkpoint visits to all mine sites to progress RMMS implementation prior to the upcoming 2019 audits. Corporate updates to supporting HSEC technical standards also progressed successfully in 2018.

Continue to demonstrate measurable progress on key water- and closure-related initiatives. ● Mine site visits were conducted by corporate employees in 2018 at all sites to advance and support site-level initiatives in closure planning; strategic permitting; and environmental management, including surface and groundwater.

Ensure operating environmental performance improvement through the enhancement of communications, site visits, audits and facility inspections. ● No Level 3 or above environmental incidents were reported in 2018. Each site tracked and reported on its top 5 environmental risks in 2018, and created plans to address them, with monthly reporting to corporate senior management. All operations’ environmental team webinars were complemented by an annual environmental team workshop to advance communications and performance. As the RMMS was still in the implementation phase there were no formal audits; however, site visits were conducted at each of the sites to support site-level RMMS integration.

2018 Target

Result

Highlights

ENVIRONMENT

Progress efforts to reduce Scope 1 and Scope 2 (market-based) emissions per tonne of concentrate produced by 1% between 2015 and 2018. ●

Company-wide efforts to reduce Scope 1 and 2 GHG emissions progressed in 2018. Various successful initiatives were implemented, such as renegotiation of Candelaria Complex’s Power Purchase Agreement (PPA) to significantly increase the percentage of renewable energy starting from 2023 at our largest mine; and Eagle Mine’s Lean Six Sigma (LGBC)™ programs, which included the optimization of haul-truck loading, resulting in fuel reductions. Compared to emission intensity values recorded in 2016, on a per-tonne-rock-mined basis, Lundin Mining demonstrated reductions in both GHG emissions intensity and energy intensity. To further these and other sustainability initiatives, Lundin Mining initiated development of a five-year, Company-wide Sustainability Strategy in 2018 that will include a review and refinement of emission metrics and targets to ensure the most accurate representation of operational conditions and improvement.

SOCIAL

Monitor and communicate outcomes from implementation of five-year social performance strategic plans. ●

In 2018, sites were provided guidance on how to monitor, communicate and update their five-year social performance strategic plan. Outcomes, such as engagement with priority stakeholders, meaningful community investments and grievance management, are reported monthly to the Corporate Senior Management, inform quarterly HSEC reports and are publicly disclosed in this sustainability report.

Finalize and provide training on standards for stakeholder engagement, community investment and social impact management. ●

In 2018, we further refined our corporate standards and guidance documents for stakeholder engagement, community investment and social performance. Rather than being a standalone standard, it was determined that social impact management should be incorporated throughout the social standards. These standards will be finalized and implemented in 2019.

Develop standards and guidance notes for Indigenous Peoples’ engagement, local content, social-closure and grievance management. ●

Indigenous Peoples’ engagement and grievance management have been incorporated into our newly drafted Stakeholder Engagement Standard and Guidance. Similarly, local content has been incorporated into our Community Investment Standard and Guidance. Social closure will be included in a broader Closure Standard and Guidance, for development and implementation in 2019.

Develop a gender diversity strategy and plan for at least one operation, including community investments to promote science and technology education of women and advancement of economic empowerment of women. ●

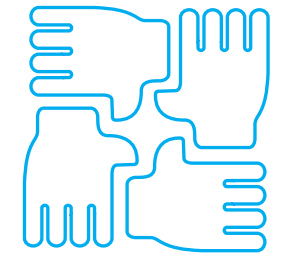
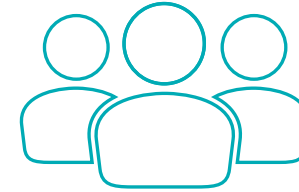
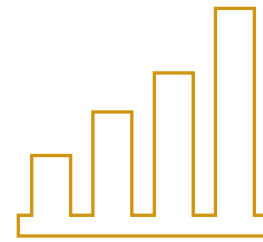
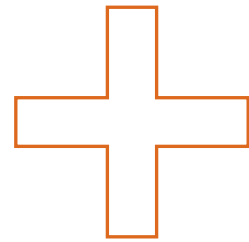
In 2018, Neves-Corvo initiated the development of a gender diversity strategy to increase the representation of women in the workforce, establish community investments targeting science education for girls and create opportunities for women entrepreneurs. A Diversity and Inclusion Policy was drafted in 2018; this policy strengthens the scope and depth of Company commitments in the current Diversity Policy (2016) and was approved in 2019.

Establish a community agreement for sustainable investments for at least one operation. ●

We established two new agreements at Candelaria during 2018: The Caldera and Copiapó Collaboration Agreements were signed by Candelaria Mine and the municipalities to promote sustainable development. Funding priorities will be economic development, social innovation, education and training, cultural activities, and health and well-being.



2019 SUSTAINABILITY GOALS



GOVERNANCE

Roll out the Diversity and Inclusion Policy to all employees and Board members.

Support the social team to conduct a Company-wide Human Rights Risk and Impact Assessment (HRRIA).

Executive Risk Committee to approve updated risk likelihood and impact definitions as part of a broader review and update of Lundin Mining's Risk Management Statement and Framework.

Improve risk management understanding and operational risk management practices through redeployment of the refreshed Risk Management Framework.

Support development and implementation of Human Rights Policy.

HEALTH AND SAFETY

Ensure Zero Fatalities.

Achieve a Total Recordable Injury Frequency (TRIF) rate of 0.60 or better.

Increase Zero Harm weeks over 2018 performance.

Meet 2019 Industrial Hygiene sampling plan targets.

ECONOMIC

Manage efficient, effective operating and capital expenditure, ensuring more productive operations and achievement of financial returns.

Advance growth through internal expansion and exploration initiatives, maximizing the value of our assets.

Maintain balance sheet strength and flexibility to act on compelling growth opportunities.

HUMAN RESOURCES

Measure and monitor employee engagement and develop action plans to address areas of opportunity.

Launch a competency-based performance appraisal framework to develop our future leaders.

Launch and implement our Diversity and Inclusion Policy that will formalize our commitment to diverse and inclusive workplaces.

Launch and implement formal Global Mobility Guidelines to ensure transparency and consistency to the management of our global workforce.

ENVIRONMENT

Complete first environmental conformance audits against the new RMMS across all sites.

Continue to demonstrate measurable progress on key water, closure, and permitting-related initiatives.

No Level 3 or above environmental incidents.

Advance development and implementation of the five-year sustainability strategy, with a focus on our sustainability pillars of Prosperity, Resilience and Stewardship, to provide direction and support to site-level initiatives.

Advance Company-wide climate change adaptation planning.

SOCIAL

Finalize development and implementation of our Human Rights Policy. Conduct a Company-wide Human Rights Risk and Impact Assessment (HRRIA).

Develop local procurement objectives and targets as part our Company-wide approach to economic development and diversification.

Focus community investments to support:

- economic empowerment of women,
- increase representation of women in our workforce and;
- education programs for girls in our host communities.

Develop action plans in response to community perception survey results for at least two of our sites.

Develop a Gender Diversity Strategy and Plan for at least one site.





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OUR APPROACH



Lundin Mining is committed to maintaining high standards of ethics, corporate governance, honesty and accountability in all aspects of our business by enacting robust corporate governance processes and ensuring our employees understand, and consistently meet, the Company’s Responsible Mining Management System, Responsible Mining Policy and Responsible Mining Framework.

Board of Directors

The Board of Directors (the Board) is primarily responsible for the oversight of management, as well as Lundin Mining’s strategy and business affairs. The Board ensures that appropriate governance mechanisms are in place to monitor the Company’s development, and that relevant information and reporting are provided, including progress and continuous improvement efforts with respect to its economic, environmental and social performance.

The Board has eight members (75% male and 25% female), five of whom are independent, non-executive directors. Standing Board committees include the following:

- Audit Committee
- Human Resources / Compensation Committee

- Corporate Governance and Nominating Committee
- Health, Safety, Environment and Communities Committee

Business Ethics

The Company and its subsidiaries and their respective directors, officers, employees, consultants and contractors (each a Company Representative), are expected to conduct business activities ethically and transparently, in accordance with our Code of Conduct, Ethical Values and Anti-Corruption Policy (the Code). The Code articulates definitions and expectations related to the avoidance of situations that may constitute a conflict of interest.

GOVERNANCE



Corporate – Social Performance Global Meeting 2018

The Code was translated into the working languages at our operational sites and made readily accessible in key locations at each operational site and on our internal website. Measures are in place to support employee reviews of the Code during the on-hire induction process and again on an annual basis. We also distribute our Code to contractors, suppliers, customers and service providers to ensure they understand Lundin Mining's expectations and conduct their activities in accordance with these standards.

Anti-Corruption and Anti-Bribery

In 2018, there were no known incidents of corruption. With respect to UNGC Principle Ten: Anti-Corruption, Lundin Mining has a zero tolerance policy for bribery and corruption by employees, officers, directors, consultants and contractors of the Company, with even the appearance of impropriety deemed unacceptable. We conduct internal audits of all of our business units and have robust internal financial controls and processes in place for monitoring and oversight with respect to the financial aspects of operations.

Whistleblower Policy

The Lundin Mining Board, through the Audit Committee and the Corporate Governance and Nominating Committee, has enacted the Whistleblower Policy to establish procedures for the receipt, retention and treatment by the Company and its subsidiaries of concerns reported from its directors, officers, employees, consultants and contractors regarding any known or suspected accounting, financial or auditing irregularities or any other known or suspected violations of the Company's Code of Conduct.

The Whistleblower Policy establishes a Company-wide protocol and line of communication for the confidential and, if desired, anonymous reporting (without fear of reprisal or retaliation) and investigation of any fraudulent, unethical, or illegal financial activity, or any behaviour that violates the Code. Individuals governed by the Whistleblower Policy are required to report any such improper conduct on a confidential and, if preferred, anonymous basis by submitting a report using the Corporation's independently hosted online and telephone reporting service, or by sending a letter to the applicable Committee Chair. The applicable Committee Chair is responsible for assessing and evaluating any such reports or letters, conducting investigations, and may engage management and / or independent advisors to assist in investigations and recommend appropriate action.

For more information on our Whistleblower Policy, please visit the Corporate Governance section of our website: www.lundinmining.com.

Ni

DID YOU KNOW?
Nickel is the 2nd most abundant element in Earth's core



Risk Assessment and Management

Lundin Mining has a systematic approach to identify, analyze, evaluate and manage material business risks. Our approach is based on the ISO 31000 Risk Management standard and follows a "plan-do-check-act" model that considers a broad spectrum of stakeholders and risk exposures, both internal and external. The approach is also intended to identify and leverage potential opportunities that may be identified through the risk assessment process.

We conduct risk assessments to evaluate operational, health and safety, environmental, social, business, financial and reputational risks and opportunities, among others, at both a site and corporate level. We rank identified risks based on the likelihood of event occurrence and the nature and degree of event impact on business strategies and objectives. Significant or "key" risk exposures are those that are assessed as having the potential to result in a major or catastrophic net impact on the organization and its stakeholders.

Our risk assessment process is iterative, based on both quantitative and qualitative data, and is incorporated into our business activities. Our risk performance results are reported to corporate senior leadership and shared across our operations monthly. We summarize enterprise and operational risk exposures in risk registers that are reviewed on a quarterly basis, and we track implementation and effectiveness of related risk mitigation strategies. Identified key risks are monitored and reported on a quarterly basis to the Executive Risk Committee (ERC), the Board HSEC Committee and the Board Audit Committee. Reports presenting a consolidated portfolio view of enterprise and operational risks, as well as related risk treatment actions, are submitted to the ERC for review and discussion on a quarterly basis.

Implementation of Lean Six Sigma program



As part of Eagle's implementation of its impressive Lean Six Sigma program, which supports the identification and assessment of opportunities for increased efficiency and continuous improvement, the mine identified that haulage trucks were not being consistently loaded according to manufacturer ratings. A Lean Six Sigma Green Belt (LGBC)[™] project was completed by the mine in 2018 resulting in solutions to this issue, such as installation of a real-time measuring system to ensure optimal payloads of each truck and development of clear operating procedures. These produced significant reductions of employee labour, fuel use, tire wear, maintenance and major rebuilds, equaling estimated cost savings of US\$1,140,000 per year. For example, savings of 30,000 gallons of diesel fuel were recorded, otherwise costing US\$74,000.



GOVERNANCE

At an enterprise level, we focus on proactively managing our most significant risks. These risks include, but are not limited to securing environmental and other permits critical to our operations; climate change and related risks; maintaining our social license and community support; addressing the evolving regulatory landscape; monitoring commodity price and currency exchange volatility; eliminating or controlling the environmental risks associated with mining activities, such as dust generation, water availability and groundwater contamination; ensuring tailing storage facility integrity; and eliminating, minimizing and controlling key operational and health and safety risks.

HUMAN RIGHTS

Lundin Mining conducts its business in alignment with the United Nations Guiding Principles on Business and Human Rights (UNGPs). Respect for human rights is a fundamental commitment, consistent with our *Mission* and *Values*, and is stated within our Code of Conduct, Ethical Values and Anti-Corruption Policy and the Responsible Mining Policy. In accordance with our *Mission* and *Values*, Lundin Mining initiated a review of Company-wide human rights practices, including the initiation of a Human Rights Risks and Impacts

Assessment (HRRIA), as well as the integration of human rights principles throughout the Stakeholder Engagement Guidance update in 2018. In 2018, Lundin Mining drafted our Human Rights Policy; the policy is expected to be approved by the Board of Directors in 2019.

As a signatory to the UNGC, Lundin Mining has committed to advancing all Ten Principles of the UNGC, including Principles One and Two: Human rights and respect for human rights as set forth in the United Nations Universal Declaration of Human Rights. We treat our employees, contractors, neighbours, local communities and host governments with dignity and respect.

To proactively manage our performance and reputation, Lundin Mining initiated the independent Company-wide HRRIA in 2018, which will be completed in 2019, using the frameworks of the UNGPs, Voluntary Principles on Security and Human Rights, UNGC and other codes and standards reflecting international best practices. In preparation for the HRRIA, internal workshops were conducted to build Company-wide understanding of human rights issues linked to the mining industry.

Lundin Mining fosters an inclusive and diverse workplace and does not tolerate harassment or discrimination against gender, age, race, national origin, marital status, sexual orientation, religious beliefs, disability, or any other personal characteristics protected by applicable law. In March 2016, the Corporation adopted a written Diversity Policy, which was amended to the Diversity and Inclusion Policy in 2019.

No credible human rights-related grievances were filed in 2018. There were no recorded incidents of discrimination at our operations during the reporting period.

With respect to UNGC Principles Three, Four, Five and Six: Labour, the Company supports freedom of association and collective bargaining, as described in the Code, and there are no operations where the right to exercise these labour rights may be violated or at risk. No operations are at risk for incidents of child labour or young workers exposed to hazardous or industrial conditions. Lundin Mining has strict proof-of-age requirements for its workforce upon hiring, at all sites, preventing anyone under the legal industrial working age from obtaining employment at any of our sites or operations. Similarly, our operations are not at risk for incidents of forced or compulsory labour. There were no reported or known incidents of forced or child labour practices at our operations in 2018.



Zinkgruvan – Environmental All Operations Meeting, September 2018



EXTERNAL COMMITMENTS

Lundin Mining's Responsible Mining Policy, Responsible Mining Framework, and our RMMS are

aligned with the Government of Canada's Enhanced Corporate Social Responsibility Strategy and other national and international initiatives. Under Lundin Mining's Responsible Mining Framework, the Company commits to develop and implement management systems and operating practices that take into consideration applicable national and international guidance and best practices, including the following:

- Organization for Economic Cooperation and Development Guidelines for Multi-National Enterprises*
- United Nations Guiding Principles on Business and Human Rights*
- United Nations Global Compact*
- Voluntary Principles on Security and Human Rights*
- International Finance Corporation Performance Standards on Social and Environmental Sustainability*
- Global Reporting Initiative*
- Prospectors and Developers Association of Canada e3 Plus*

* Voluntary initiatives

Museum of Natures' #CourageandPassion Exhibit Sponsorship – Commitment to Diversity and STEM

In 2018, Lundin Mining Board member Catherine Stefan spoke at the official opening of Ottawa's Museum of Nature exhibit, #CourageandPassion, which was co sponsored by the Company. The exhibit presents the challenges and accomplishments of pioneering Canadian female natural scientists, who forged a new path for the advancement of women in the STEM fields (science, technology, engineering and mathematics). Catherine spoke on the topic of female leadership in mining, advancing recognition of the scientists' contributions to mining and natural science, and of the need to promote inclusive environments where all workers feel empowered and supported to achieve their best.



Pb

DID YOU KNOW?
Over 50% of lead used or produced each year has been used before



OUR APPROACH



We are committed to Zero Harm and to providing our workforce with a safe, healthy and productive work environment wherever we operate.

Health and safety are first and foremost in all that we do. Our fundamental objective is to make sure that everyone who works at or visits a Lundin Mining site goes home safe and healthy at the end of every shift – every day.



We recognize that our performance, and our efforts to continually improve on our health and safety practices, directly affects both internal and external stakeholders, including our contractors and suppliers, and those who live and work in the communities in which we operate. We strive to set the example when it comes to health and safety, and we endeavour to share our safe work practices, as well as any lessons learned, with all who are interested.

Making It Happen

The success of our health and safety effort depends on collaboration, teamwork, engagement, commitment, active involvement and personal accountability. Our employees and contractors are involved in health and safety activities through working groups, project teams, business improvement initiatives or by way of designated health and safety representatives. Regular safety meetings are conducted at each of our operations, and all operations have active safety committees with both worker and management representation. In addition, portions of our workforce at Zinkgruvan, Neves-Corvo and Candelaria are represented by collective employee labour agreements that contain specific health and safety provisions.

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HEALTH AND SAFETY



Zinkgruvan – Underground Mine Employee

2018 SAFETY PERFORMANCE

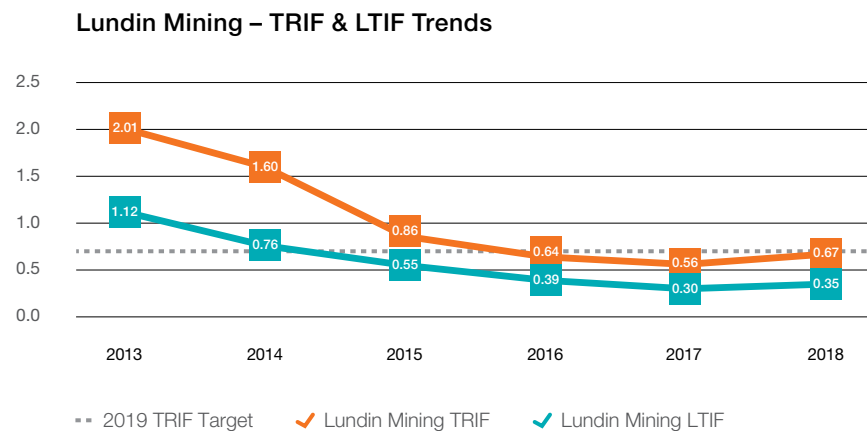
There were 64 total recordable injuries during 2018. This resulted in a Total Recordable Injury Frequency (TRIF) rate of 0.67 against a target of 0.70. While the count of total recordable injuries increased from 2017, it should be noted that 2018 marks the sixth consecutive year that Lundin Mining has met or outperformed against ever-increasing TRIF reduction targets.

The Lost Time Injury Frequency (LTIF) rate for 2018 was 0.35. Lost workdays were reduced for the third consecutive year, dropping from 1,223 in 2017 to 1,094 in 2018. Correspondingly, the lost time injury Severity Rate (SR) was reduced from 14 in 2017 to 12 in 2018.

Hours worked during 2018 were up 11% over the previous year. This increase was due to significant near-mine exploration efforts as well as the ramp-up of expansion projects and construction activities across our operations.

SAFETY PERFORMANCE COMPARISON ¹	2018	2017	2016
Total Recordable Injury Frequency rate (TRIF) ²	0.67	0.56	0.64
Lundin Mining Company TRIF target	0.70	0.80	0.90
Lost Time Injury Frequency rate (LTIF) ³	0.35	0.30	0.39
Lost workdays	1,094	1,223	1,473
Lost time injury Severity Rate (SR) ⁴	12	14	20
Fatalities	0	0	0
Total hours worked	19,019,632	17,117,550	14,405,437

- Our safety performance includes both employees and contractors.
- Total Recordable Injury Frequency rate (TRIF) is calculated as (total number of recordable injuries [including fatalities, lost time injuries, restricted work and medical treatment injuries] x 200,000) / total hours worked.
- Lost Time Injury Frequency rate (LTIF) is calculated as (total lost time injuries x 200,000) / total hours worked.
- Lost time Severity Rate (SR) is calculated as (total lost workdays x 200,000) / total hours worked.



10 **Formal Joint Worker-Management Health & Safety Committees**

756 **Formal Monthly Health & Safety Meetings held***

*Does not include pre-shift and tailgate safety meetings.



Health and Safety Management Systems

The Responsible Mining Framework, Responsible Mining Policy, and Responsible Mining Management System standard set the context for our health and safety management system. Workplace hazard identification and control, qualitative and quantitative risk assessments, Life-Saving Rules, High Consequence Protocols (HCPs), safe work procedures and permit systems, safe work observations, and incident reporting and investigation make up the remainder of our health and safety management system. Our approach is aligned to ISO 14001 and OHSAS 18001 requirements.

Our most significant risks are managed through implementation of 11 High Consequence Protocols. These protocols establish our mandatory safe work program requirements and are fundamental to our fatality and significant incident prevention efforts. Each operation must have training and formalized safe work procedures to address each HCP requirement.

HIGH CONSEQUENCE PROTOCOLS (HCPs)

- Obligation to Refuse Unsafe Work
- Energy Isolation and Lockout / Tagout
- Working at Heights
- Ground Control
- Explosives Management
- Machine Guarding
- Personal Protective Equipment
- Confined Space Entry
- Operation of Equipment
- Lifting and Rigging
- Hot Work

Responders at the Ready



Lundin Mining's emergency response and mine rescue commitment extends beyond the operational fence line. During 2018, teams from each of the operations actively participated with, and supported, local emergency response and fire agencies in nearby communities. While the Candelaria team's primary mission is to respond to operational emergencies, they are ready, willing and capable of responding to emergencies in the broader community or at neighboring mines. The Neves-Corvo Emergency Response team assisted a variety of local agencies with fighting nine forest and brush fires nearby in 2018. To help support emergency response capabilities in those communities, Neves-Corvo donated critical emergency response equipment to five community fire brigades, in addition to first-aid training at primary schools and nursing homes; providing free potable water to several communities along the water line from the Santa Clara Reservoir; providing water for Almodovar's public swimming pool; and providing additional irrigation water for nine farms along the water pipeline route. The Eagle and Zinkgruvan teams also participated in multiple joint exercises with local emergency response agencies to test cross-team capabilities and preparedness.



HEALTH AND SAFETY

Safety Leadership Involves Everyone



Over the past two years, a new safety leadership training model was introduced at Lundin Mining, initially through a series of courses at Eagle Mine. The training, entitled Managing Safety Performance™, provides a variety of tools and techniques designed to assist supervisors and managers with becoming more effective leaders. The training is based on the book *Alive and Well at the End of the Day* authored by Paul Balmert. In 2018, the training was expanded across Lundin Mining, when sessions were conducted at Neves-Corvo and Candelaria. Demonstrating their commitment to safety and Zero Harm, the Lundin Mining Executive Committee and senior operational leaders also attended Balmert safety leadership training in Toronto.



Health and Safety Reporting

Our health and safety performance results are reported to corporate senior leadership and shared across our operations monthly, and are reviewed on a quarterly basis by the Board HSEC Committee. Incidents that result in a reportable injury, and all high-potential, non-injury incidents are reported, analyzed and shared across the Company on a weekly basis to emphasize key learnings to prevent recurrence. Consolidated health and safety performance data are frequently evaluated to identify trends and to develop focused incident and injury prevention strategies. Our health and safety performance statistics, incident details, summary investigation findings and lessons learned are readily available and accessible to employees, contractors and visitors.

Measuring Our Performance

We measure our health and safety performance using a combination of leading and lagging indicators. These indicators and associated performance targets are established during the annual business planning process and are published in corporate and site annual safety action plans. These plans are shared with our employees and contractors.

Leading indicators help us identify strengths and weaknesses in our health and safety systems and procedures and highlight areas where we need to act to address potential issues and risks before they result in an incident, injury or illness. Leading indicators include occurrences like near-misses, planned workplace health and safety inspections, identified hazard reports, workplace safety observations and health and safety suggestions. More than 32,000 leading indicators were reported in 2018.

Our primary lagging indicator for measuring health and safety performance and benchmarking against our peers is the TRIF rate. Other lagging indicators used include LTIF rate, the Medical Aid Frequency rate (MAF) and lost time Severity Rate (SR). All rates are calculated based on a 200,000-hour formula. We follow the US Occupational Safety and Health Administration (OSHA) definition of medical treatment for classification of recordable injuries at all operations, and our reporting processes are aligned to the International Council on Mining & Metals (ICMM) [Health and Safety Performance Indicators manual](#).

Cu

DID YOU KNOW?
Ancient societies used **copper** for treating diseases and maintaining good hygiene



2018 SAFETY AT A GLANCE



994
REPORTED NEAR MISSES



26,467
WORKPLACE SAFETY OBSERVATIONS



2,799
PLANNED WORKPLACE HEALTH & SAFETY INSPECTIONS

0
Fatalities

33
Lost Time Injuries

0.35
Lost Time Injury Frequency Rate [LTIF]
(per 200,000 hours worked)

64
Total Recordable Injuries

0.67 | **0.70**
ACHIEVED | TARGET
Total Recordable Injury Frequency Rate [TRIF]
(per 200,000 hours worked)

19,019,632
HOURS WORKED EMPLOYEES + CONTRACTORS
(Up 11% from 2017 due to projects and construction activities)

~9,500
FULL-TIME EQUIVALENT (FTE) WORKERS
(Based on reported hours worked)

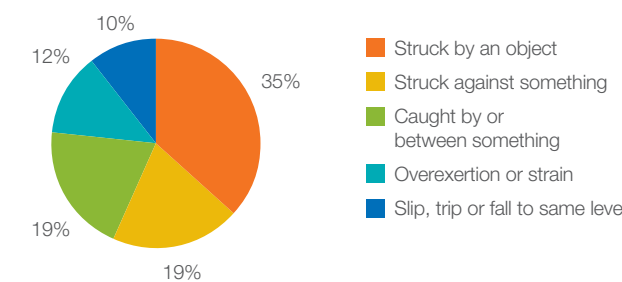
1,094
Lost Work Days

12
Lost Time Severity Rate [SR]

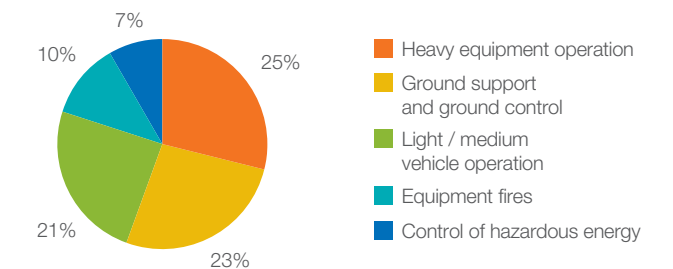
10
Zero Harm Weeks

61
High-Potential, Non-Injury Incidents

Top 5 Types of Incidents Resulting in Recordable Injuries



Top 5 Types of High-Potential, Non-Injury Incidents



HEALTH AND SAFETY



Eagle Mine – 1 year Recordable Injury-Free, Mill Operations



INDUSTRIAL HYGIENE AND OCCUPATIONAL HEALTH

The management of industrial hygiene and occupational health is fundamental to our overall health and safety program. While our safety efforts focus on the elimination of hazards that can result in an acute injury or immediate incident, our occupational health efforts are focused on identifying, monitoring and controlling exposures to workplace chemical, biological, physical or ergonomic agents that can lead to acute illness or to long-term chronic occupational disease. In 2018, we continued efforts to improve our industrial hygiene and occupational health assessments to better understand potential sources of exposure.

Industrial Hygiene

During 2018, all of our operations developed qualitative baseline exposure profiles. These profiles will assist us with performing future targeted sampling for industrial hygiene agents of concern while helping us to improve the effectiveness of our exposure-reduction and exposure-elimination efforts.

The industrial hygiene exposure profiles were based on collecting more than 3,700 workplace field samples. A total of 1,122 samples were taken to assess work areas for the presence and concentration of hazardous agents, while 709 of the samples were taken to assess potential worker exposure to those same agents. The remaining samples involved evaluation of things like illumination, vibration, airflow, heat and humidity.

2018 INDUSTRIAL HYGIENE SAMPLING PLAN - AGENTS OF CONCERN

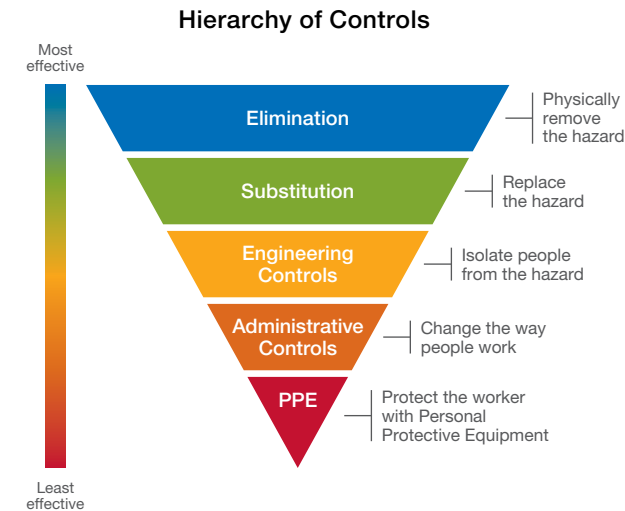
Diesel Particulate (DPM)	Silica	Respirable Dust / Total Dust
Oxides of Nitrogen	Radon	Heavy Metals
Temperature	Relative Humidity	Adequate Lighting in the Workplace
Noise	Ventilation	Metal Fume / Metal Dust

3,754
health assessments and fitness-for-work examinations conducted

1,122
workplace industrial hygiene samples collected

709
worker industrial hygiene samples collected

Once potential exposure sources are identified, we work to eliminate or minimize the source and the related risk to employee health by applying the hierarchy of controls.



Occupational Health

Our 2018 occupational health efforts saw 3,754 health assessments and fitness-for-work examinations conducted across Lundin Mining. These examinations included biological monitoring to assess potential worker exposure to contaminants, such as heavy metals; hearing tests; respiratory evaluations; and workplace drug and alcohol screenings. We operate professionally staffed on-site medical facilities at Neves-Corvo, Candelaria and Zinkgruvan, and we use outside medical service providers and community clinics at our other operations. Our employees also have access to Employee Assistance Programs and to confidential counselling services.

Pb

DID YOU KNOW?
Lead provides effective shielding from radiation during X-rays

Improving our Understanding and Management of DPM



We want to ensure that potential exposure to diesel particulate matter (DPM) in our mines remains below safe regulatory health limits. Our goal is to reduce the overall potential for DPM exposure to levels that are as low as is practically achievable. As part of this effort, in 2018, we introduced the use of a new, real-time DPM sampling technology in our mines. This technology was used in combination with traditional DPM field sampling and laboratory-based analytical testing to better evaluate the DPM levels in our mines. In total, we took 432 air samples to assess DPM levels during 2018. The data will help us better manage our operations and reduce potential DPM exposure risks in near term, while assisting us with the development of long-term strategies to reduce or eliminate known sources of DPM.



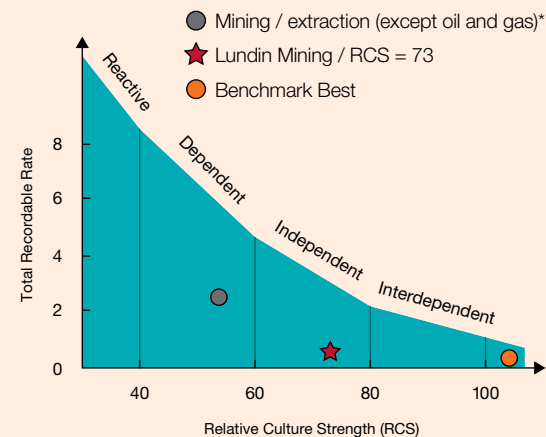
HEALTH AND SAFETY

Developing an Interdependent Safety Culture



In 2017 we conducted a company-wide safety-perception survey to establish a baseline measure of our safety culture against DuPont's Bradley Curve™. We had excellent participation from employees and contractors across Lundin Mining, with an 82% response rate. Using the results from more than 6,800 surveys, we achieved a relative safety culture strength (RCS) score of 73, indicating good advancement towards the interdependent safety culture¹ sector of the Bradley Curve. Data and other learnings from the survey were shared with our workforce during 2018. This data was then used to update annual safety action plans and to develop forward-looking strategies to further advance our safety culture efforts.

Lundin Mining Safety Culture Survey DuPont Bradley Curve™ Plot



* Industry average RCS from DuPont Safety Perception Survey database

¹ An Interdependent Safety Culture is one where safety is held as a value across the organization; where safety is led from the top and owned by everyone; where everyone makes a personal commitment to go home safe each and every day and where everyone looks out for the safety and well-being of others.

3 GOOD HEALTH AND WELL-BEING CRISIS MANAGEMENT PLANNING AND EMERGENCY PREPAREDNESS

While we focus on the prevention of incidents and emergencies, we also work to ensure that we are prepared to respond effectively if an event does occur. Lundin Mining has a formal crisis management and emergency preparedness program that covers all operations and corporate headquarters. Formal crisis management plans have been developed and implemented across the Company. Facilitated crisis management training and practice scenarios were conducted at each operation and at the Toronto headquarters during 2018.

In addition, each operation maintains emergency response capabilities and equipment suited to the working environment and the associated operating risks of the location. Site-specific emergency response plans are developed where appropriate to support the formal crisis management plans.

Emergency Responders and Mine Rescue Team members receive monthly in-house training on equipment and emergency response techniques. Practice exercises and simulated emergency scenarios, as well as external training, are also provided to ensure that team skills are maintained. During 2018, teams from Neves-Corvo, Candelaria and Eagle participated in a variety of regional and international competitions to test their skills and capabilities against their peers.

Zn

DID YOU KNOW?
Zinc is a health essential, being the second most abundant metal in the body



Eagle Mine – Confined Space Rescue Training

A range of emergency equipment is available to support emergency response activities at each of our operations. Emergency equipment can include site ambulances, fire response vehicles, specific secondary routes of escape, evacuation elevators or ladderways in our underground mines, individual self-rescuers, strategically located first-aid and emergency response equipment, contingency supplies, underground fresh-air stations, and underground refuge chambers. We have continued to upgrade our refuge chamber capabilities and now have 83 refuge chambers in service with 37 of those being newer “best in class” units that have stand-alone capability.

EMERGENCY RESPONSE TEAMS (SURFACE)	TRAINED EMERGENCY RESPONDERS	MINE RESCUE TEAMS (UNDERGROUND)	TRAINED MINE RESCUE TEAM RESPONDERS	UNDERGROUND REFUGE CHAMBERS	UNDERGROUND REFUGE CHAMBER COMBINED CAPACITY
12	152	9	117	83*	790

*Included 37 stand-alone capable units.

47
Underground Emergency Evacuation Drills Conducted

33
Surface Facility Emergency Evacuation Drills Conducted





OUR APPROACH



The economic sustainability of our business is important to all of our stakeholders. We continuously monitor our performance and objectives, conduct opportunity and risk assessments and integrate these findings into our economic strategy.

Our 2018 economic strategy focused on re-investing in sustaining capital expenditures to support the stable and sustainable future of our mines, advancing growth through internal expansion and exploration at our existing operations, and maintaining a strong and flexible balance sheet to move quickly on compelling growth opportunities.

We continued our emphasis on promoting economic diversification and advancing local entrepreneurship during 2018, through effective completion of several initiatives at our mine sites and Lundin Foundation projects. Each operation developed a Five-Year Social Performance Strategic Plan; engagement and investment activities are predicated on the socioeconomic context of the regions where we operate and business priorities.

Across the Company, strategic plans focus on the Company being a catalyst and partner in sustainable development for the regions where it operates.

Lundin Mining's 2019 economic strategy continues to be focused on stable base metals concentrate production, preserving cash flows from all operations, and continuing to maintain a strong balance sheet while pursuing growth opportunities both at existing operations and externally. The Company is focused on improving productivity through operational advancements, continuous improvement, and investment in value-added technology. The strategy positions the Company to maximize annual production, generating healthy cash flows and leading returns in a fluctuating and volatile commodity price environment.

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ECONOMIC PERFORMANCE



Zinkgruvan – New Control Room

ECONOMIC CONTRIBUTIONS



Lundin Mining's operations contribute to economic development and prosperity in regions where we operate. Beyond wages and salaries paid to employees and contractors; and taxes, royalties and fees paid to governments; we focus our major community investments on initiatives that advance sustainable development. These investments include education and skills training, economic diversification, infrastructure, business incubators, donations to local healthcare centres, and environmental education and conservation. Our goals include continuing to support our current economic diversification and local procurement programs in addition to creating new programs throughout 2019.

As defined by the Global Reporting Initiative (GRI), our Total Economic Value (revenues) generated in 2018 was approximately \$1.8 billion, and Total Economic Value distributed was approximately \$1.1 billion, as detailed in the following table.

IN US\$ 000'S	2018	2017	2016
Total Economic Value Generated	1,759,753	2,089,664	1,553,734
Total Economic Value Distributed	1,129,147	1,274,672	1,052,565
Total Economic Value Retained	630,606	814,992	501,169

LOCAL PROCUREMENT



Lundin Mining's procurement decisions and processes have a significant and positive impact on the local communities at our sites. In 2018, approximately \$1.58 billion of our goods and services were procured at the local or country level across the Company's operating sites in the United States, South America and Europe, up from \$1.23 billion¹ in 2017 (or 95%, up from 92% of total procurement). The shifts in percentages of procurement by local, national and international level were driven in large part by absolute increases in national-level procurement spending at Candelaria.

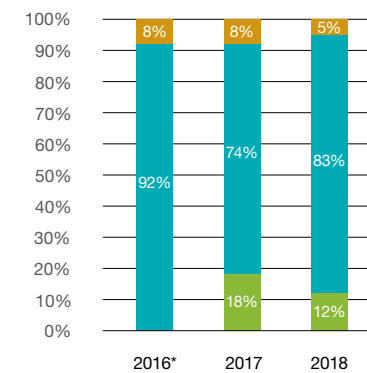
¹ Total goods and services procured at the local or country level was reported as \$688 million in the 2017 Sustainability Report. The Company has refined reporting systems as part of our evolving local procurement program and revised the 2017 total goods and services procured at the local or country level to \$1.23 billion.

Zinkgruvan and Neves-Corvo define local procurement to include all goods and services procured at the country level. At Zinkgruvan, our local-procurement rate is 96.2%, and Neves-Corvo's rate is 85.8%². Given the larger geographic scope of the United States and Chile, these sites distinguish between local-level procurement (Michigan state-wide and Copiapó province-wide procurement) and country-level procurement (all other in-country procurement). Eagle's local-level procurement rate was 35.9% and the country-level procurement rate was 51%, with a total national spend of 86.9%. At Candelaria, the local-level procurement rate was 12.4% and the country-level rate was 86.1%.

In 2018, goods and services that could not generally be sourced locally included specialized or heavy equipment, explosives, chemicals and certain types of specialized technical consulting services. Rail and vessel shipping are also services that are generally procured outside of local areas.

We worked closely with the Lundin Foundation in 2018 on local procurement projects at Candelaria and Neves-Corvo. These initiatives focus on building the supply chain group's capacity to develop and implement local procurement and entrepreneur training programs; this work will continue in 2019. Additional information on these programs can be found in the Social Performance – Community Investment section of this report.

Total Procurement



*Our 2016 data collection did not differentiate between national- and local-level procurement.

■ Local
■ National
■ International

Investing in Sustainable Artisanal Fishing in Caldera



In 2018, Candelaria announced a three-year commitment, through a Lundin Foundation program, to local fishermen and the nearby Punta Frodden Seafood Processing Plant, to achieve improved productivity, standards and sustainable practises. Technical expertise for the project will be provided by Geomar, a Chilean company that specializes in the export of seafood products with gourmet quality and sustainable practices. Through this program, local fishermen will be able to sell seafood products directly to exporters or national markets, avoiding intermediaries and increasing the revenue for their small businesses. The project aims to diversify the income sources in the region and create new jobs in operations for the plant.



² Neves-Corvo local procurement was reported as 72.1% in the 2017 Sustainability Report. The Company has refined reporting systems as part of our evolving local procurement program and revised Neves-Corvo's 2017 local procurement to 79.7%.

Pb

DID YOU KNOW?
Lead has been mined on all continents, except Antarctica



OUR APPROACH



Lundin Mining is committed to its employees. We work hard to strengthen our culture of respect and transparency, and practice a management style that both listens to employees and actively addresses their concerns.

The *Values* that Lundin Mining adopted in 2018 were developed as a result of a consultative process and reflect our approach to employees outlined in the About Lundin Mining section.

We believe that success depends on a skilled and motivated workforce and that employee engagement is key to employee retention. To effectively foster a meaningful work experience, we believe it is important that our employees have knowledge of the Company's direction and priorities and understand how their efforts and successes contribute to overall goals. To ensure that employees are kept up to date, employee communication channels are continuously improved and expanded. Employee training protocols and focused training initiatives further contribute to motivation and to workforce engagement.

Lundin Mining aims to create safe work environments that promote dignity and respect, and in which diversity and the contributions of all employees are recognized and valued.

OUR EMPLOYEES



At December 31, 2018, Lundin Mining globally employed 8,910 people: 3,346 employees (3,535 in 2017) and 5,564 contract workers (5,072 in 2017) across four operating mines in Chile, Portugal, Sweden and the United States, our exploration group, and our corporate office in Toronto, Canada.

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HUMAN RESOURCES

Contract employees are primarily engaged in maintenance, mine development, mining and project activities; temporarily replace workers on leave; or are assigned to short-term-focus projects. All contractors are included in our safety performance statistics and are held to the same HSEC standards as Lundin Mining employees, in accordance with our RMMS.

Reasons for minor fluctuations in staffing in 2018 included an increase in temporary workers for the Zinc Expansion Project at Neves-Corvo and an increase in seasonal workers at Zinkgruvan to address employee vacation absences.

Our Company-wide turnover rate for 2018 was approximately 13.2%, an increase over the 2017 rate of 5.4%. This increase in turnover can be largely attributed to a workforce reduction at the Candelaria operation in Chile. The decision to reduce headcount was made for the purpose of aligning skill sets and optimizing the operation's production processes. Termination agreements were successfully concluded with

105 identified employees. Additionally, the opportunity of a voluntary retirement plan was extended to employees who qualified, and this option was accepted by a majority of employees approached, for a total workforce reduction of 160.

Lower than average unemployment rates at several of the Company's geographic locations have increased the challenges of recruiting and retaining employees. At any operation where turnover increased in 2018, commitments were made to refocus on employee engagement and development.

As mining has traditionally been a male-dominated industry, the attraction and retention of female employees, particularly for operating positions at industrial sites, can be challenging. In 2018, Lundin Mining proactively recruited female applicants, promoted opportunities for women, and made good progress developing workplaces that accommodate the needs of female workers. For example, at our Candelaria Mine site, employees are provided time off for family-related matters, and

rest room facilities that accommodate breast-feeding mothers are in the planning stage. Our Eagle operation in Michigan voluntarily elected to introduce paid maternity and paternity leave. There is no legislated paid leave in the state; at Eagle, however, new mothers are granted three months of maternity leave with pay, at either 80% or 100% of full salary, and new fathers are also accommodated with two weeks of paid paternity leave.

In 2018, Lundin Mining increased the number and percentage of female employees at each operation. Commitments were also made at all operations to continually increase the number of women hired. Our Neves-Corvo operation formalized a target for female workforce participation and set a goal that 50% of all new employee / contractor roles would be filled by female candidates by 2020. To support such initiatives, community-centric training programs with direct emphasis on female applicants were launched, as were job-readiness programs and *Women in Leadership* training sessions.

Lundin Mining has gender-neutral compensation structures at all operations and offices, with salaries and rates of pay based on the responsibility and skill level required for each position, while also taking into account the experience level of the incumbent. Competitive remuneration practices facilitate the Company's ability to attract well-qualified employees. The premise of equal pay for work of equal value is systematically applied and regularly reviewed; should a discrepancy be identified, it is immediately addressed.

While some roles traditionally held by women (such as administrative / non-technical positions) are lower paid, equally experienced women are paid the same wages as men for the same position. Differences in compensation are a result of performance or seniority level and it is equally possible for a female or male holding the same role to have higher compensation.

In 2018, the female-to-male compensation ratio was 92%. The ratio of women's to men's salaries at operating sites ranged from 84% to 99%. This range is primarily a result of differences in the seniority and position level of women employed at the operations. For example, at Neves-Corvo, while the number of female employees is low, their average seniority is high, and the roles in which they are employed are largely highly paid managerial and senior technical positions. Conversely, at Candelaria, the majority of positions held by the female workforce are support-level roles.

Employee performance reviews are generally conducted annually or semi-annually, and at some operations, on a quarterly schedule. In 2018, approximately 67% of our global staff participated in a system-driven performance review process, with additional employees receiving performance reviews outside of the system. The performance of all employees (100%) at the supervisory, management or executive level is reviewed, at minimum, annually; and in most instances, semi-annually. Compensation for such positions incorporates a performance component and cash bonus incentive (CBI) compensation plans that consider metrics such as production, health and safety, environmental compliance and other corporate goals, as well as individual key performance indicators.

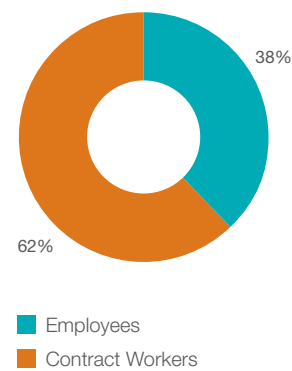


In August 2018, Zinkgruvan teamed with the Municipality of Askersund to organize its first "Pride" event, Lakeside Pride Askersund. This milestone event focused on celebration of the power of diversity, inclusion and equality. As the Municipality of Askersund's largest private employer, Zinkgruvan has taken a lead role in championing diversity and inclusion in the region, reflecting our core values. The variety of events in Askersund Harbour included art, film, music and fashion events, along with a hi-tech virtual reality mine tour. In honour of the first Lakeside Pride event, Zinkgruvan proudly celebrated the launch of an LGBT version of their mine logo.

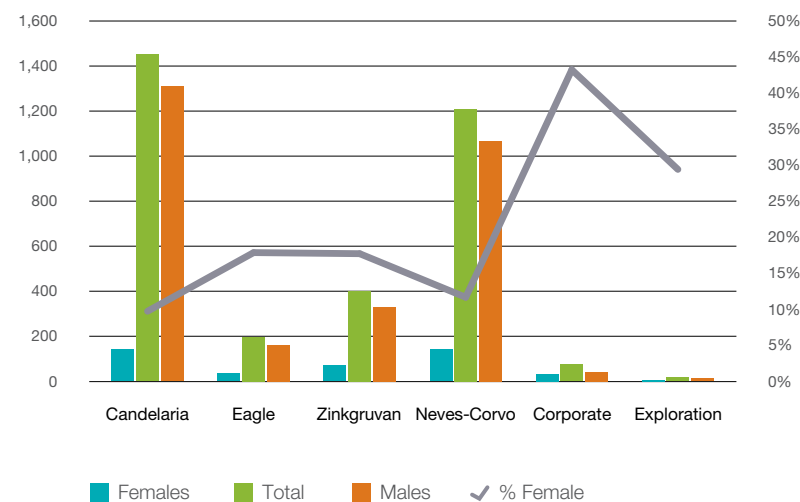


All permanent, full-time employees participate in one of various incentive plans, either at a corporate or at an operational level, which are linked to both corporate / operational and individual performance. The Company reviews its incentive plans annually and periodic revisions are standard, generally with increased performance-related measures as objectives.

Total Workforce 2018



Employees by Gender



HUMAN RESOURCES

Youth Engagement at Zinkgruvan Mine



At Zinkgruvan, one of our social goals is to increase engagement with youth, particularly young women, interested in science, technology, engineering and mathematics. With the adoption of new technology, like tele-remote operated equipment, we are not just transforming the way we mine but also cultivating the next generation of miners who will be leading this innovation in the future.



LOCAL HIRING



It is a priority at Lundin Mining to draw our workforce from our host countries, and specifically, regional and local communities, to ensure the economic benefit of employment remains, to the greatest extent possible, in our host communities. In part due to the developed regions where we operate, one of Lundin Mining's strengths is its ability to source its workforce locally. However, it is occasionally necessary to fill gaps by sourcing specific skills, levels of experience, or technical expertise, from abroad. This is particularly necessary for large-scale projects, such as for the Zinc Expansion Project at the Neves-Corvo Mine in Portugal. In 2018, our employees were almost exclusively from in-country, with expatriates accounting for only 0.95% of our employees across our operations.

	EMPLOYEES	EXPATS
Candelaria	1,451	3
Zinkgruvan	401	2
Neves-Corvo	1,209	22
Eagle	196	4
Total	3,257	31
% Expats	0.95%	

Contractors and suppliers are expected to have practices in place that support and parallel Lundin Mining policies and standards, such as our RMMS, and in this regard, we ask that our contractors and suppliers also adhere to a similar standard with respect to the prioritization of local hiring.



Eagle Mine – Mill Water Treatment Plant Work

LABOUR RELATIONS



Lundin Mining supports the unencumbered right to freedom of association and collective bargaining at all of our operations. The relationships between the Company, its unions and employees are distinct at each of our mines; however, what is consistent is that our approach focuses on employee representation based on trust and transparency, respectful dialogue and constructive, peaceful resolution of any concerns,

if and when they arise. We engage with union leaders regularly on matters of local labour laws, business changes and the negotiation of terms and conditions.

As of December 31, 2018, 84% of our employees across the Company had union representation, which is comparable to the 83% with union representation in 2017. The figure of 84% mainly represents non-managerial employees working at mine sites who are covered under collective bargaining agreements. Lundin Mining employees at Eagle Mine are not unionized, nor are our exploration group or our corporate office employees.

There were no strikes, lock-outs or work stoppages of significance at our operations in 2018. There is no history of worker militancy in the last six years or longer at any of our sites.

TRAINING AND PROFESSIONAL DEVELOPMENT

Ongoing communication and training are essential elements for employees and contractors to successfully meet our stringent health and safety commitments, to develop the skills and knowledge of our employees and to achieve the objectives in our Responsible Mining Framework.

Cu

DID YOU KNOW?
Copper is necessary for brain and neurological development





OUR APPROACH



We operate mines in four different countries, each with unique and diverse cultures, languages, landscapes and levels of economic development. Our social performance approach is tailored to adapt to these differing operational contexts.

Mining operations can generate significant direct and indirect social benefits for local communities, including employment and capacity-building opportunities, the stimulation and diversification of local economies, and business and community partnerships. Mining can also contribute to social impacts, including pressures on local infrastructure as a result of mine worker influx, increased traffic in communities and impeded access to cultural resources.

Understanding and proactively managing these benefits and impacts are integral to the success of our operations. For this reason, each site develops systems designed to optimize benefits, create shared value with host communities and anticipate potential social impacts of our activities. Our approach is to build strong

relationships with those affected by our operations; uphold fundamental human rights; invest in meaningful community projects and sustainable development; and respect cultures, customs and values, while engaging in open and inclusive dialogue.

In 2018, our social performance teams continued the refinement and implementation of site-level, five-year social performance strategic plans. These plans are an anchor for making decisions, and enable sites to allocate resources informed by an understanding and assessment of social risks, current and potential impacts, contextual changes, stakeholder engagement and social investment priorities.

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SOCIAL PERFORMANCE

Engaging with the Local Community



From stimulating the economy to protecting the area's natural resources, we believe that good community relations are as necessary for our business success as the effective engagement of our operations. An example of our engagement efforts is our Community Forums, which are a participatory and conversational get-together, held twice per year in the Spring and Fall. During the Forum we provide a quick update on our operations, introduce attendees to some of our team members and find out what's on everyone's mind. Most importantly, our Forums are designed as a two-way dialog between Eagle and the community. We encourage anyone to come and ask questions about our operations and activities. With this open and honest approach, we look forward to feedback that continuously improves the way that we operate.



The Social Performance Standard, Community Investment Standard, and Stakeholder Engagement Standard and Guidance were drafted in 2018 and will be finalized in early 2019. The management of social impacts will be addressed in an integrated manner, in alignment with the RMMS, upon approval from the VP Environment and the COO.

In 2019, the corporate team will also develop and implement training to build Company-wide capacity and competency for best practices and for meeting policy commitments articulated in the revised Responsible Mining Policy. The revised policy includes new commitments to workplace diversity and inclusion, expectations for suppliers and contractors, and respect for human rights aligned with the United Nations Guiding Principles on Business and Human Rights.



STAKEHOLDER ENGAGEMENT

Lundin Mining is committed to ensuring

open and inclusive dialogue and mutual understanding with our stakeholders during all phases of the mine life cycle. Our approach is based on clear communication, transparency and trust, and helps us to earn and maintain long-term community acceptance and access to resources. Effective stakeholder engagement creates value, manages risks and helps us to understand the interests and concerns of our stakeholders and communicate our business objectives. It also helps to identify, on an ongoing basis, emerging issues that could affect our business operations, as well as changing social situations that may influence stakeholders' quality of life and perceptions of the mine.

Each of our sites uses a systematic process to identify and prioritize stakeholders from direct and indirect influence areas, as well as those interested in or potentially affected by the site's activities. Special consideration is given to identify potentially vulnerable groups (either within the socio-economic or the political context, due to their specific identity or impacts from operations). To ensure continuous improvement, stakeholder mapping exercises are updated at least every six months or, in the case of abrupt local socio-economic change, at the earliest opportunity.

In 2018, we refined our Stakeholder Engagement Standard and developed the accompanying Guidance to ensure a systematic and consistent approach to engaging with communities, employees and other stakeholders identified through these mapping processes. Under these standards, each operation is required to have a site-specific Stakeholder Engagement Communication Plan that outlines an effective strategy for continually strengthening relationships with stakeholders and maintaining dialogue about the site's management of social impacts and its distribution and optimization of social benefits.

Common forms of stakeholder engagement across our sites include:

- Formal engagement activities, including community, one-on-one and committee meetings (e.g., health and safety), site visits, stakeholder perception surveys, grievance and suggestion mechanisms, and monitoring programs;

- Informal engagement activities, including delivery of presentations at events, timely response to information requests, social media and training sessions; and,
- Reporting, including our annual sustainability reports, government-focused revenue transparency reports, financial statements, compliance statements and news releases.

These tools are used regularly to engage with stakeholders on an ad hoc, monthly, quarterly, bi-annual or annual basis.

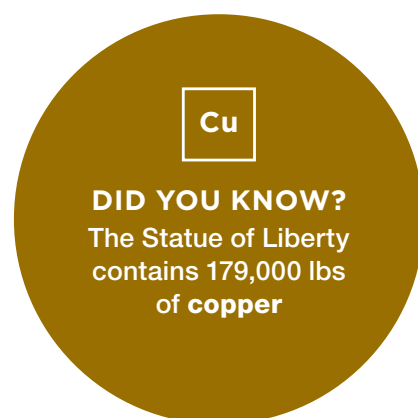
The table below provides an overview of stakeholder groups with whom Lundin Mining engaged in 2018, the types and frequency of engagement, some examples of key interests and concerns raised in 2018, and how the Company is responding to these concerns.

STAKEHOLDER GROUP	KEY INTERESTS AND CONCERNS RAISED IN 2018	LUNDIN MINING'S RESPONSE IN 2018	FREQUENCY AND TYPE OF ENGAGEMENT	OTHER KEY INTERESTS AND CONCERNS
Local Communities	Transportation, noise, dust and vibration issues	Conducting site assessments (where appropriate) and developing plans to minimize impacts of transportation, noise, dust and vibrations in the communities around our sites.	Regular and ad hoc meetings throughout the year. Timely response to requests for engagement. Community perception surveys.	Sharing the socio-economic benefits of mining activities, such as community investments, local hiring and local procurement.
Indigenous Peoples	Protection of environmental and cultural resources	Proactively provide information on operational activities and potential exploration areas. Involvement in community environmental monitoring program. Monitoring of environmental and cultural resources in regional operations and exploration areas. Engagement processes to discuss issues of interest, concerns and investment initiatives.	Continuous engagement with local Indigenous community members, within the context of identified concerns and opportunities for collaboration and partnership.	Sharing the socio-economic benefits of mining activities, such as community investments, local hiring and local procurement. The Company's awareness of cultural traditions.



SOCIAL PERFORMANCE

STAKEHOLDER GROUP	KEY INTERESTS AND CONCERNS RAISED IN 2018	LUNDIN MINING'S RESPONSE IN 2018	FREQUENCY AND TYPE OF ENGAGEMENT	OTHER KEY INTERESTS AND CONCERNS
Non-Governmental Organizations	Environmental and community development issues	Continuing and creating partnerships with local non-governmental organizations to build capacity and enhance social and environmental performance across our sites.	Regular meetings planned throughout the year (quarterly, at a minimum). Timely response to requests for engagement.	
Government	Environmental compliance and monitoring	Our sites have formal environmental management systems (standards and procedures) in accordance with the RMMS and monitoring requirements. Environmental monitoring is undertaken routinely at all sites and Company-wide environmental compliance auditing was initiated at all sites in 2015. Concurrent with the RMMS implementation, environmental technical standards were updated / developed and global compliance auditing against the new RMMS is planned for 2019.	Regular meetings or consultations. Timely and complete reporting where required.	Labour law compliance. Hiring of local labour. Health & Safety compliance. Infrastructure investments.
Employees and Contractors	Health & Safety Labour relations Reclamation and closure	Our sites have formal Health & Safety management systems (standards and procedures) in place. Trained staff on social impacts for consideration in closure planning. Closure workshops conducted at all sites in 2018 to support updated and comprehensive closure planning.	Each operating site maintains a Joint Health & Safety Committee (JHSC). Regular meetings. Union meetings and discussions.	Working conditions. Career advancement. Dependency upon mine for local employment.



STAKEHOLDER GROUP	KEY INTERESTS AND CONCERNS RAISED IN 2018	LUNDIN MINING'S RESPONSE IN 2018	FREQUENCY AND TYPE OF ENGAGEMENT	OTHER KEY INTERESTS AND CONCERNS
Customers	Health & Safety Environmental, social and governance (ESG) performance	Our sites are transitioning to full implementation of our new HSEC management system (RMMS) including supporting technical standards and procedures to address HSEC considerations. Lundin Mining has policies and systems in place to support effective ESG performance, including the Code of Conduct, Ethical Values and Anti-Corruption, Responsible Mining Policy and RMMS.	Regular contact. Timely response to information requests including ESG surveys to ensure accurate and updated information.	Reliable supplies. High-quality products. Information on any hazards.
Labour Unions	Collective bargaining	Mine management engages regularly and constructively with employees on issues such as schedules and working conditions.	One-on-one meetings. Group meetings.	
Shareholders / Investors	Operational and financial performance Capital allocation Growth by acquisition and brownfields investments	The Company transparently responds to questions and provides relevant disclosures through this report and other corporate filings.	Annual General Meeting. Fulsome and timely financial statements, MD&A and news releases. Quarter-end and event-specific conference calls. Formal meetings, analyst and investor briefings, site visits. Responding to information requests to ensure accurate and updated information. Presentations to analysts and investors.	ESG performance. Timely receipt of business-critical permits.

SOCIAL PERFORMANCE

STAKEHOLDER GROUP	KEY INTERESTS AND CONCERNS RAISED IN 2018	LUNDIN MINING'S RESPONSE IN 2018	FREQUENCY AND TYPE OF ENGAGEMENT	OTHER KEY INTERESTS AND CONCERNS
Lenders / Financial Institutions	Capital allocation Operational and financial performance Progress on capital development projects	The Company transparently responds to questions and provides relevant disclosures through this report and other corporate filings.	Regular financial and compliance statements. Timely response to requests for information.	ESG performance.
Suppliers	Local economic impact	Our sites have focused their attention on strengthening / supporting fair and open local procurement practices.	Monthly meetings with local contractors and annual trade fairs.	Financial health and payment terms.
Industry Associations / Regional Business Associations	Economic and regulatory performance	Transparent and proactive communication.	Ongoing membership for industry associations. Participation in industry forums and work groups.	



Eagle Mine – Geology Intern

Lundin Mining's sites and operations have continued to strengthen their approach to stakeholder engagement in 2018.

Engagement remains a priority for Eagle. In 2018, the site conducted a local community perception survey that received more than 900 responses. Results were positive, with 89% of respondents indicating that they think Eagle Mine has either a good or excellent relationship with the community. A focus on community capacity-building and transparent engagement initiatives, radio and print advertisements about aerial exploration activities, and community forums in 2018 has contributed to building a trusting relationship between Eagle Mine and the community. Eagle Information Centre in downtown Marquette continued to attract local stakeholders and tourists. Internally, engagement with employees has continued in 2018, with a specific focus on promoting diversity and inclusion of women in the workforce.



Local Elders in Peru

In 2018, Zinkgruvan developed a strategic stakeholder engagement plan and an updated stakeholder map as part of the site's communications plan and five-year social performance strategy. The site also created a register that documents all commitments the Company has made to its stakeholders, including written, verbal or perceived commitments. Meetings with several partners have been ongoing to create roadmaps for extended collaboration in 2019.

Neves-Corvo partnered with the University of Lisbon in 2018 to conduct the mine's first stakeholder perception survey. Findings were positive and will be used to inform stakeholder engagement, communications, community investments and operational activities. The site developed a stakeholder engagement plan and formalized a set of tools, procedures and forms; grievance processes; stakeholder meeting reports; and field-visit notes to ensure consistency. Meetings were held with the mayors and residents of the five municipalities nearest to the mine to forge constructive relationships and affirm the Company's commitment to its employees, contractors, suppliers and surrounding communities. Mine management held regular monthly meetings with union executives to discuss labour relations and matters of concern to employees. The introduction of both a revised production bonus and quarterly employee meetings with the Managing Director have contributed to positive employee relations.

At Candelaria, the team continued to engage constructively with residents of the nearby communities of Tierra Amarilla, Caldera and Copiapó in 2018. This included the signing of multi-year agreements with the municipalities of Copiapó and Caldera to promote sustainable development in the region. Community offices located in Tierra Amarilla and Caldera continued to provide stakeholders with opportunities to receive information on the operation and community projects, and to share their interests and concerns.

Zn

DID YOU KNOW?

> 5.2 million metric tons of zinc are consumed annually in the Western World

SOCIAL PERFORMANCE



Exploration – Community Workshop



Exploration – Amauta-Sancos Community Meeting

INDIGENOUS RELATIONS



Lundin Mining is committed to respecting and considering the rights, interests, concerns, traditional land uses and cultural activities of Indigenous Peoples within our sphere of influence, as articulated in our Responsible Mining Policy. For operations whose activities can directly or indirectly affect Indigenous Peoples, our RMMS standard requires establishment of formal procedures and processes to address Indigenous Peoples' engagement, economic inclusion and cultural heritage conservation, while ensuring we meet applicable legislative requirements. Our Stakeholder Engagement Standard and Guidance steer the relationships sites have with Indigenous Peoples by outlining specific requirements around engagement, communication, integration of community input,

monitoring and review. We currently have activities that take place in or near areas where Indigenous Peoples are located:

- Our Eagle Mine operations are located on ceded territory near the Keweenaw Bay Indian Community (KBIC) and Eagle's regional exploration interests are near the Lac Vieux Desert Band of Chippewa Indians, both of whom are part of the Anishinaabe group of Native American tribes.
- Our Candelaria operations are in the Atacama Region of Chile, where 3,000 people self-identify as Indigenous Colla community members.
- Our exploration project Amauta is located in southern Peru, Arequipa Region, District of Acari. The exploration site is located on the border of the traditional land of the Indigenous community Comunidad Campesina de Sancos (Sancos), self-identified as a Quechua group with 1,100 registered members.

Zn

DID YOU KNOW?
Zinc is critical for a healthy immune and blood system



Eagle Mine is committed to continuing constructive engagement with local tribes throughout the mine's operation. Through regular dialogue, we work with local tribes to identify common interests with respect to land (e.g., closure activities and mineral exploration), water (e.g., water-quality monitoring) and protection of cultural resources; to identify employment and economic development partnership opportunities; and to identify opportunities for investment. In 2018, Eagle continued to meaningfully engage with local tribes and had initial conversations regarding cultural monitoring of regional exploration areas. The social performance team is also engaging with the Marquette County Community Foundation, Superior Watershed Partnership, KBIC, and other community members to identify new opportunities for the Community Environmental Monitoring Program (CEMP) structure, which expired in December 2018, to determine if changes to the partnership are required to improve the effectiveness of the program.

In 2018, Candelaria continued to focus on deepening its relationship with the local Colla community through an engagement process focused on the key interests and concerns of Indigenous community members and opportunities for community investment initiatives. The new community office in Tierra Amarilla has a mural that reflects Indigenous heritage.

Lundin Mining Peru S.A.C. (Lundin Mining Peru) through its subsidiary Compañía Minera Mohicano S.A.C. (Mohicano) signed a seven-year community agreement, effective January 2018, with Sancos to obtain their permission to undertake exploration activities. Since late 2017, the Amauta team has dedicated significant effort to engage with Sancos to inform them on the scope of the exploration project in a transparent, inclusive and meaningful way, respecting their language and traditions.

In 2018, there were no disputes relating to land use, customary rights of local communities and Indigenous Peoples, or incidents of violations involving rights of Indigenous Peoples. As a result, grievance mechanisms were not used to resolve any issues.

Cu

DID YOU KNOW?
Copper is 100% recyclable – nearly 80% of copper that has been produced is still in use today



Candelaria – Copiapó City, Chile

SOCIAL PERFORMANCE

MANAGING IMPACTS



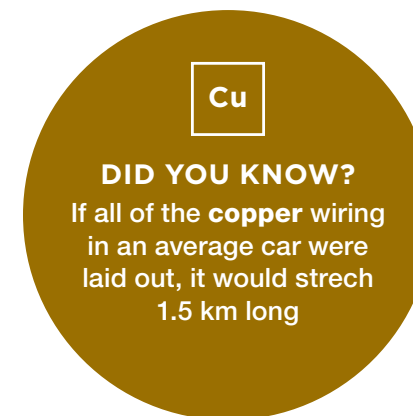
Lundin Mining operations are located immediately adjacent, or close to local communities. This proximity can result in a range of actual and potential impacts on local communities. The following table identifies the most significant social impacts for each location, based on site-level assessment, and reflects stakeholder perspectives from ongoing engagement efforts.

Selected Social Impacts from our Activities in 2018

SITE	ACTUAL SOCIAL IMPACTS FROM OUR ACTIVITIES	EXAMPLE MITIGATION MEASURES
Candelaria	<p>Impacts on local communities due to operational activities, such as dust, blasting and traffic.</p> <p>Impacts on economic development due to more than 20 years of operation in an area of low economic development, which has created dependency on the mine.</p>	<p>Scheduling of mine-related buses and traffic to reduce interactions.</p> <p>A bypass road is used for Copiapó and Caldera, and routes were modified in Tierra Amarilla to avoid residential areas.</p> <p>Creation of a citizen committee to monitor noise and vibration related to blasting.</p> <p>Social programs focused on economic diversification projects to identify opportunities for regional development not based on mine activities and to provide support for local entrepreneurs.</p>
Eagle	<p>Impacts on culture (impeded access to sacred sites) and the local economy (as the mine approaches closure). Grievances were related to traffic noise.</p>	<p>Continuing constructive discussion with local tribes regarding the identification of cultural resources in exploration areas and economic development opportunities.</p> <p>Working with the Lundin Foundation to undertake independent reviews of Eagle's community investment programs to measure impact, understand closure options and ensure the programs remain successful.</p>
Zinkgruvan	<p>Impacts on economic development due to high local reliance on the mine for jobs and economic growth.</p> <p>Grievances were dust and traffic-related.</p>	<p>Supporting local entrepreneurship programs and economic growth initiatives not related to the mine.</p>
Neves-Corvo	<p>Impacts on economic development due to more than 30 years of operation in an area of low economic development, which has created great dependency on the mine.</p> <p>Grievances were dust, traffic and noise for the small villages and farms.</p>	<p>Social programs focused on economic diversification projects to identify opportunities for regional development not based on mine activities to provide support for local entrepreneurs.</p> <p>Completing a regional socio-economic impact study (2018) with the University of Lisbon to better understand regional socio-economic impacts, risks and opportunities.</p>



Candelaria – Church Restoration



In 2018, Lundin Mining refined its Social Management Standards and developed accompanying Guidance to ensure that all sites develop appropriate assessment processes (implemented across the life cycle) to identify and assess the actual and / or potential social impacts.

In 2018, grievance management requirements based on best practices and international standards were incorporated into our Stakeholder Engagement Standard. All Lundin Mining operations have a grievance mechanism in place to ensure that stakeholders are able to voice concerns about Company activities and impacts, that these are documented in a transparent and accountable manner, and that they are addressed on a timely basis.

The table below lists the total number of grievances filed through grievance mechanisms at each of Lundin Mining's operations in 2018 and breaks out figures for grievances being managed or resolved.

OPERATION	TOTAL NUMBER OF GRIEVANCES	GRIEVANCES WITH ONGOING MANAGEMENT	GRIEVANCES RESOLVED
Candelaria	43	12	31 ¹
Eagle	9	3	6
Neves-Corvo	4	3	1 ²
Zinkgruvan	5	0	5 ³

¹ Four outstanding grievances from 2017 were resolved in 2018.

² An outstanding grievance from 2017 continues to be managed by the Environmental group.

³ One outstanding grievance from 2017 was resolved in 2018.

Compared to other operations, Candelaria had the most grievances in 2018. This is due to the operational footprint of Candelaria being much larger than other sites, the proximity of communities to the operation, the strength of the grievance mechanism and the stakeholders' awareness of the system. Most registered grievances included intermittent instability of the Wi-Fi connection (currently, free Wi-Fi is provided to 85% of Tierra Amarilla residents by the mine; however, the mine does not control the system), blasting or its associated potential for vibration, and transportation (traffic, dust, speeding vehicles).

SOCIAL PERFORMANCE

Eagle Mine's grievance procedure covers both Eagle employees and any contracted service. Therefore, when a community member expresses concern about a contractor, Eagle Mine takes ownership and works directly with the contractor to investigate the concern and report findings back to the community member. Of the nine community complaints received at Eagle Mine in 2018, five complaints involved transportation contractors. One transportation incident involved a near miss between a contracted haul truck and a community member. The incident was categorized by Eagle Mine as having significantly high potential for injury. The contractor was required to complete a tap-root investigation to understand what happened and how the incident could be prevented in the future. Learnings from the incident investigation were communicated to the community member involved and shared with Lundin Mining operations for awareness and education.

At Neves-Corvo, grievances were related to dust and noise impacts created by blasting and transportation infrastructure (mainly roads). The site's 2018 stakeholder perception survey raised previously unknown concerns in the neighbouring community of Corvo regarding these impacts; these concerns will be further investigated, and the site will increase its engagement with this community. New mitigation plans have been developed and systems installed (e.g., a seismographer) to address community concerns about dust, noise and other mining-activity factors.

Grievances filed with Zinkgruvan related to transportation; blasting (the impact of vibration on older infrastructure); low water-flow in a nearby creek; odour from an adjacent, disused mine shaft; and property access. In response to community concerns about heavy traffic, the site contacted all major suppliers asking them to avoid routing their trucks through the community of Ammeberg, if possible. In response to community concerns about dust, the site hired a contractor for dust control within the industrial area.

Pb

DID YOU KNOW?
In ancient times, **lead** was associated with Saturn, the Roman god of agriculture

Neves-Corvo – Acoustic Survey



COMMUNITY INVESTMENT



Lundin Mining is committed to providing sustainable benefits to local communities nearest our operations, working in partnership with governments, local businesses and non-government organizations to support meaningful and outcomes-focused initiatives. We recognize that social investment – including community investment, community development and capacity building – is an important benefit that mining operations can provide in partnership with other local, regional and national organizations and governments.

Partnerships With the Lundin Foundation

The Lundin Foundation is a Canadian non-profit organization principally supported through contributions from the Lundin Group of Companies. The Lundin Foundation works in partnership with Lundin Mining and other Lundin corporate partners, host governments and local communities to improve the management of, and benefit streams from, natural resource development projects.

Some of Lundin Mining's most impactful community initiatives are the result of our work with the Lundin Foundation. Lundin Foundation program staff work with our social performance teams at each site to address stakeholder priorities aligned with business needs or capacities. Lundin Foundation staff also work with Lundin Mining and other stakeholders to plan, implement and resource long-term community investment initiatives with a focus on market-based approaches. Our Community Investment Guidance outlines how the Company works with the Lundin Foundation to maximize shared value. We continue to leverage the Company's and Lundin Foundation's respective strengths to increase the impacts of our investments, deliver efficiencies and communicate the outcomes of investments.

Since its inception in 2007, the Lundin Foundation has disbursed more than \$56 million USD (\$76.3 million CAD) to implement projects across all Lundin companies into initiatives that enable local employment, nurture small business growth, and support financially viable social and environmental solutions.

Middle College Programs



The Marquette Alger Technical Middle College (MATMC) is a public tuition-free, early college program which offers an integrated high school and college program for students. MATMC enables students from throughout Marquette and Alger counties to earn a high school diploma, a significant number of college credits and a Technical Certificate from Northern Michigan University (NMU) at no cost to the student or their families. This program, created by the partnering of Eagle Mine, Marquette-Alger RESA, local school districts and NMU, will increase the technical skills that are currently in demand in Marquette County and create jobs for local people. Courses available address a variety of technologies including: clinical lab, radiography, surgical, electrical, building, automotive, aviation and industrial maintenance.



Ni

DID YOU KNOW?
Nickel gives glass its green colour

SOCIAL PERFORMANCE

Community Investment Initiatives

Many of our social investment projects are implemented over several years, with some of the results only being demonstrated over the medium-to-long term. This reality will be reflected within the sites' annual review of their Annual Community Investment Activity Plans, which consider the need for adjustments based on changing local circumstances, needs and priorities, capabilities, and emerging risks and opportunities. Information on the value of our 2018 community investment contributions can be found in the Funding Approaches for Community Investment section. The following tables highlight key community investment initiatives at each of our sites.

Eagle

PROGRAM (KEY ISSUE)	PURPOSE	OUTCOME
Marquette-Alger Technical Middle College	Creates opportunities for high-school students to earn college credits and develop local talent in high-demand career areas, such as skilled trades and health sciences.	13 students graduated, and 53 students are enrolled in the program.
Eagle Emerging Entrepreneurs Fund (EEEF)	Contributes to the long-term economic development of Marquette County by creating and retaining jobs, supporting growth outside of the mining industry. The fund provides affordable financing to high-risk clients who would otherwise be ineligible for traditional financing. The fund is operated in partnership with Northern Initiatives and targets small entrepreneurs.	EEEF enables early-stage and start-up businesses in Marquette County Michigan to access financing for promising business ideas. EEEF has enabled 37 entrepreneurs to access over US\$1.2 million in financing, with a repayment rate greater than 95%, and has created more than 60 jobs.
Accelerate UP!	Contributes to the long-term economic development of Marquette County by providing free business coaching to new and expanding businesses in the region.	Since inception, the program has supported the creation / expansion of more than 400 businesses in Marquette County.

Zinkgruvan

PROGRAM (KEY ISSUE)	PURPOSE	OUTCOME
Lakeside Pride Askersund 2018	In partnership with the Municipality of Askersund, Zinkgruvan organized this high-profile community event to celebrate diversity and inclusivity.	The event showcased Zinkgruvan as an employer that advances workforce diversity and strengthened the collaboration between the municipality of Askersund and Zinkgruvan.
Entrepreneur Development	Zinkgruvan continues to work on projects to advance local entrepreneur development, including engagement with local small-to-medium enterprises, and providing free business classes in collaboration with Nyföretagarcentrum (The Swedish Jobs and Society Foundation).	A workshop was held on supporting local businesses and entrepreneurs in the southern part of the Örebro region and training plans were developed, with course rollout planned for 2019.



Neves-Corvo – Entrepreneurship and Economic Diversification Course

Neves-Corvo

PROGRAM (KEY ISSUE)	PURPOSE	OUTCOME
Nature-Based Tourism	This initiative was developed in partnership with the Lundin Foundation, five municipalities and 20 tour operators to contribute to economic diversification in the municipalities surrounding the mine through the development of nature-based tourism opportunities.	The Lundin Foundation team, with support from Neves-Corvo, held participatory workshops, meetings and fieldwork in 2018. The team and partners developed a web-based mapping application containing information on tourism resources, tested the proposed tourism route on the ground and completed a feasibility study for tourism attraction.
Entrepreneurship Development Program	Neves-Corvo, through the Lundin Foundation and Lisbon University, provided business training to local entrepreneurs. The training program was launched in March 2018 and completed in August 2018. The program combined training with customized one-on-one support to small businesses and entrepreneurs in the region.	Seven students graduated from the program in 2018. Focus was on business planning; entrepreneurship and marketing; finance and accounting; health, safety and environment; contract monitoring and management; mine site registration and requirements; and how to prepare a tender.

SOCIAL PERFORMANCE

Candelaria

PROGRAM (KEY ISSUE)	PURPOSE	OUTCOME
Scholarship Program	In partnership with Atacamagica Foundation, Regional Education Ministry and Atacama University, this program aims to grant scholarships to students across the Copiapó province who are in the lowest 40% of family income. The scholarship includes support for tuition fees, housing, transportation, tutoring, materials and emotional needs.	During 2018, 76 students benefited from the program. Over 50% of scholarship recipients were women.
Local Suppliers Development Program	Develops local supplier capacity through personalized technical assistance, mentoring and networking opportunities, in partnership with the Lundin Foundation.	A total of 30 companies from Copiapó, Tierra Amarilla and Caldera participate in the program and provide services, including engineering, transport, hospitality, and civil and mechanical works.
Inventa Program	Inventa supports communities to solve environmental and social issues in Chile's Atacama region. Through a business incubation approach, entrepreneurs develop innovations to address water scarcity, energy access and other pressing challenges, such as waste management. The program was launched in partnership with the Lundin Foundation and Chrysalis (Universidad de Valparaiso) in 2016.	To date, Inventa has trained more than 535 people and incubated 13 environmental and social innovations. The third round of Inventa will support twice the number of innovations (30), provide later-stage business support to existing entrepreneurs, and focus innovations on specific environmental issues. Inventa entrepreneurs were short-listed for national environmental and start-up awards. Inventa has become a flagship program for Candelaria and Lundin Mining.

Amauta

PROGRAM (KEY ISSUE)	PURPOSE	OUTCOME
Connectivity for Rural Communities	Expanding access to cellular coverage in the rural areas where Sancos community members are located.	Cellular signal repeater antennas were installed in four locations to serve the localities of Santa Rosa, San Luis Baja, Palca, Chicalli, San Luis Alta and Cajas, improving the communication and connectivity in the region.
Capacity-Building	Strengthening the organizational capabilities and capacity of the Sancos community.	Donation of furniture and audio equipment for improving the Sancos' community centre. Technical and legal support to update Sancos' deeds and other legal documents to help advance their legal recognition as Indigenous Peoples.



Funding Approaches to Community Investment

Across Lundin Mining operations, our goal is to be a catalyst for sustainable development. Given that we operate in diverse socio-economic contexts, our local teams are skilled at identifying the priority areas of focus for investments that are most impactful for our host communities.

In 2018, Lundin Mining's social investments, comprising both Lundin Mining Corporation (LMC) direct investments and contributions to the Lundin Foundation, totalled \$12 million. The Company uses a combination of these funding approaches to community investment, as detailed below:

1. Direct Lundin Mining community investments in the communities and regions where we operate:

Total direct community investment expenditures across our operations and corporate headquarters in 2018 were approximately \$9.79 million (compared to \$6.07 million in 2017) and supported education, health, environmental concerns, community development, cultural programs and small business economic stimulation. The increase in community investment compared to 2017 reflects growing capacity across the Company to identify outcomes-focused partnerships. Candelaria increased investments in the municipalities of Caldera and Copiapó by establishing agreements with these municipalities and working collaboratively with local stakeholders to determine shared objectives for sustainable development. Our 2018 reporting includes community investments related to the Amauta Exploration Project in Peru.

Direct Lundin Mining Community Investments, 2018

	OPERATION / PROJECT	2018 LUNDIN MINING COMMUNITY INVESTMENT EXPENDITURES
Direct Community Investment	Candelaria	\$8,336,000
	Eagle	\$588,000
	Neves-Corvo	\$380,000
	Zinkgruvan	\$142,000
	Amauta	\$250,000
	Corporate	\$100,000



Eagle Mine – Summer Students with Pumps Donated to Houghton Flood Relief

Direct Lundin Mining Community Investments, 2015-2018

	2018	2017	2016	2015
In \$US 000s	9,796	7,946	4,650	14,828

2. Contributions to the Lundin Foundation in 2018 to advance programs in the communities and regions where we operate:

In addition to direct community investments, Lundin Mining also contributed \$2.2 million to the Lundin Foundation to support the development and implementation of social investment programs.



METALS

VITAL FOR SOCIETY AND A LOW CARBON FUTURE



COPPER

- **Copper** is naturally antibacterial, preventing the spread of disease
- **Copper** is critical to our cardiovascular health
- Wind farm turbines can each contain up to 30 tonnes of **copper**
- **Copper** has a variety of uses, from electrical wiring to electronics, plumbing, and transportation



Cu **Copper** ranks as the 3rd most consumed industrial metal in the world

ZINC

- Lundin Mining sponsors *Zinc Saves Kids* (<http://www.zincsavekids.org>)
- *Zinc Saves Kids* is an IZA initiative, supporting UNICEF in providing zinc supplementation to undernourished children
- **Zinc** metal coating increases structural strength and reduces corrosion in renewable energy wind turbines



Zn **Zinc** is currently the 4th most widely consumed metal in the world



Pb **Lead** is one of the most recycled materials, more than glass and paper

NICKEL

- **Nickel** is a key component in corrosion resistant alloys, such as stainless steel
- **Nickel** can be used for several decades without replacement
- **Nickel** is essential for vegetation cell health

Ni From 2011-2025, Lundin Mining's Eagle Mine will supply 1.5% of the world's **nickel**



LEAD

- Demand for **lead** is increasing, primarily to support increased renewable energy storage
- Hospitals and emergency services rely on **lead** batteries for back-up power
- 80% of **lead** is used to produce batteries, of which more than 99% are recycled



METALS

EVERYWHERE

Metals have been a key factor in the evolution of human civilization.

EVERYWAY

Metals are used in a multitude of industrial and consumer products.

EVERYDAY

Metals improve your quality of life.

REDUCE, REUSE, RECYCLE

Metals are part of a sustainable future.



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OUR APPROACH



Our stakeholders, ranging from employees, local communities and governments to our customers, suppliers, transportation providers and shareholders, are interested in understanding how our concentrate products are handled and transported, and the measures that we take to reduce any potential risks associated with these materials.

Consumers are also expressing increased interest in responsibly sourced and managed goods. Lundin Mining’s marketing initiatives focus on being a preferred, responsible supplier by providing sustainably developed, quality products; technical and marketing support; and dependable, on-time delivery. Concentrates are moved using a variety of methods, including truck and rail car, either in bulk or in containers, directly to smelters in North America and Chile; or to ports where they are exported to smelters in Europe, Asia, or South America. Lundin Mining’s concentrates are sold and transported in accordance with EU and international regulations, and shipments are always accompanied by appropriate and current documentation.

We routinely evaluate potential health and safety impacts associated with the production of raw materials and base metal ores and concentrates and have developed comprehensive Safety Data Sheets (SDSs) to accompany our concentrate during transport to ensure that the health of employees, business partners and service providers is protected at all stages of the product stewardship process. We continually evaluate potential risks associated with the production and transportation of our concentrates and take steps to address and manage any identified risks prior to proceeding with the activity. Lundin Mining maintains a strong focus on ensuring that the contractors we engage are appropriately equipped and trained and follow best-practice procedures to enable them to deliver our concentrates safely.

MATERIALS AND PRODUCT STEWARDSHIP



Candelaria – Punta Padrones Port, Caldera

OUR ACTIVITIES

The port facility at Punta Padrones in Chile is owned and operated by Lundin Mining. At Setúbal port, in Portugal, Lundin Mining owns and operates the rail car-unloading area, associated warehouses and laboratory, the conveyor belt and the ship loader. The ports at Otterbäcken, Sweden, and Trois-Rivières in Québec, Canada, are operated under contract by third parties, with oversight by Lundin Mining. To reduce any potential for off-site migration of dust, Lundin Mining has implemented various controls including transporting concentrate in covered trucks, containers, and covered rail cars to the outbound port areas, where additional concentrate management procedures, including truck washes and sweeper trucks, are utilized.



Public Tours at Eagle Mine

At Eagle we offer a behind-the-scenes look at the nation's only primary nickel mine! Mine and mill tours to the public are available yearly from June through September. The Eagle Mine tour (3.5 hours) is primarily a driving surface tour of the mine site with a walking tour through the water treatment plant. Visitors can see where the ore is brought up from underground and where it is stored and loaded into the haul trucks. Other surface facilities include the storage area for development (or waste) rock, the backfill plant, truck repair shop and the water treatment plant.



For each shipment, SDSs with information on the health, safety and environmental hazards of our concentrates are provided to Lundin Mining personnel, customers, and to those handling and shipping our products. In 2018, the Company developed and implemented site-level training to increase capacity and ensure continued accuracy in future SDS updates. This is one of many activities undertaken by Lundin Mining to stay current and compliant with constantly changing international regulatory requirements and as required by the Company's RMMS.

During 2018, no concentrate transport-related non-compliances were identified at our Neves-Corvo operation during routine checks by the Portuguese transport authority. In 2018, a decision was rendered on a prior minor 2017 non-compliance, resulting in a payment of €1,542 (an estimated \$1,770). There were no other transport-related non-compliances reported at the Lundin Mining operations. Of note, in 2018, Lundin Mining's Eagle Mine in Michigan received the Canadian National Railway (CN) Safe Handling Award, which recognizes all aspects of rail safety and regulatory compliance. We have not received any complaints regarding breaches of customer privacy or losses of customer data. There have also been no fines for non-compliance with laws and regulations concerning the provision and use of our products.

Caldera Historical Festival



During 2018, Candelaria supported the nearby community of Caldera in a theatrical re-creation of the arrival of "La Calderina," to celebrate the first train and railway in Chile. Referencing historical records, a local tourism company, Anariki, worked with the Candelaria Mine team and other community organizations, such as the Craft Association of Artisanal Fishermen of Caldera, to recreate the arrival of train, which had transported passengers, parcels and food between Caldera and Copiapó. The festival celebrated the historical and positive contributions of mining-related infrastructure developments to the advancement of the Atacama region.



Ni

DID YOU KNOW?
Many meteorites are composed of a **nickel-iron alloy**



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OUR APPROACH



Effective environmental management is integral to the success of Lundin Mining’s operations, from day-to-day activities on-site to corporate strategic planning.

Lundin Mining’s operations are committed to compliance with applicable laws and regulations, our Responsible Mining Policy (RMP) and Responsible Mining Framework (RMF), our integrated Responsible Mining Management System (RMMS), our corporate commitments, *Mission and Values*, and alignment with the UNGC Principles and SDGs.

Our primary objective is to minimize potential environmental impacts, throughout the life of our mines and post-closure, through robust engineering, construction and operations along with the implementation of environmental management controls and procedures that meet the individual needs of each of our operations in their unique environmental settings. To protect the environment, we apply the precautionary approach, such that where there are

threats of harm to the environment or to human health, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. We achieve this through effective use of environmental impact assessment to identify, quantify and eliminate or mitigate impacts; integration of environmental controls within our operations, with monitoring to evaluate their reliability and effectiveness and to identify potential opportunities for improvement; employment of risk assessment and management techniques to minimize the potential for unforeseen environmental impacts or incidents; and routine checking and continuous improvement through the environmental audit process. Each of our operations has also developed emergency preparedness procedures for potential environmental incidents.

ENVIRONMENTAL MANAGEMENT



Neves-Corvo – Weather Station

As previously stated, Lundin Mining also initiated the development of a Five-Year Sustainability Strategy in 2018, to provide Company-wide strategic sustainability governance and to demonstrate our Company-wide commitment to the UNGC SDGs, organized around our three Sustainability Pillars: Prosperity, Resilience and Stewardship. This strategy, which will support our continuous improvement in sustainability initiatives, including environmental management, is slated for completion in 2019 and will be reported on in more detail in future reports.

Environmental Management

Each of our sites operates in accordance with robust on-site environmental management controls and practices that have been designed to protect the environments in which we operate. Our operations carefully manage internal water flows, including mine water, process water, tailings reclaim water, and collected seepage and run-off, with a focus on containment and redirection for re-use and / or treatment prior to release to the environment. We also operate in accordance with strict storage and handling practices for chemicals and fuels (and associated waste products). A Hazardous Material Storage Plan for Candelaria and Ojos del Salado was submitted to the Chilean authorities in March and our Neves-Corvo operation also revised its hazardous chemicals management procedure in 2018. Zinkgruvan has upgraded its protection

measures in 2018 with welding of selected sections of the tailings pump lines to reduce the potential for leaks, as well as fuel-station rebuild for improved spill collection, containment for spare transformers and significant improvements to concentrate housing.

We routinely monitor surface water, groundwater, soils and biodiversity to confirm the effectiveness of our environmental protection procedures and to enable timely identification of any issues that may arise. We also periodically conduct additional studies and have established partnerships at selected sites with communities, educational institutions and universities with the aim of improving our ability to manage risks to human health and to the environment.

Environmental Permitting and Compliance

Our commitment to responsible and sustainable mining, as demonstrated by our health and safety, environmental and social performance, has established and cemented our credibility with our stakeholders, supporting our ongoing license to operate. As part of these efforts, permitting, approvals and compliance management are critical processes of our daily activities throughout the mine life cycle. These processes support the effective regulation of mining-related activities to prevent possible negative impacts to the natural environment, as well as the interests and rights of local communities, and to encourage sustainable mining practices. The RMMS, supported by effective technical standards, guidance, training, auditing and corrective action programs, underscores and strengthens our global compliance management performance.

Our mines operate under current valid environmental approvals and licenses and routinely submit applications for new permits, when required, as well as submitting compliance reports for existing permits, to demonstrate conformity with current legal and other obligations. In 2018, Lundin Mining developed custom-made strategic permitting and compliance tools, including the multi-departmental Obligations Register (OR) and Integrated Project-Permitting Schedule (IPS), for implementation at our Neves-Corvo ZEP project. These tools were developed to track permit conditions, obligations, and legal and other requirements associated with the ZEP permitting process, to support effective compliance performance for the project. The OR and IPS have demonstrated success in achieving optimal compliance performance for the ZEP project and are under consideration for site-wide application. At our Candelaria Mine, our team advanced



the management of permit conditions and obligations through the use of the SIGEA (a Chilean-based online obligations management platform). Through the use of these various tools and systems, at both the project and operational stages, we continue to demonstrate our commitment to improved management of our legal and other requirements and associated compliances.

Environmental Risk Assessment

Environmental risk assessments are routinely conducted at our operations in accordance with the requirements of our Corporate Environmental Standards and Procedures and the RMMS. Environmental risks that are deemed to be significant are managed in accordance with our Environmental Reporting Standard and tracked in the Company's risk reporting system, which is used to develop effective mitigating-action plans supporting effective responses, continuous improvement and ongoing planning processes. Operational and enterprise environmental risks are regularly reviewed and consolidated by our corporate environmental and risk teams, as well as reported to the HSEC Committee of the Board on a quarterly basis. Credible risk scenarios and appropriate mitigation approaches are identified and assessed on a routine basis.

Environmental Incidents and Compliance With Environmental Laws

Lundin Mining has developed a rigorous reporting system for unplanned health, safety, environment, community (HSEC) and security incidents, in accordance with our RMMS and supporting technical standards, including the Environmental Reporting Standard. The system classifies incidents in each of these categories on a severity scale of Level 1 (low) to Level 5 (high). In the Environment category, the severity of an incident is judged by the impact upon one or more of:

- Species, communities and habitats that comprise ecosystems of the natural environment;
- The degree of regulatory non-compliance; and,
- The potential concern to local communities.

Incidents that are classified as Level 3 or above are reported to the Board of Directors and are disclosed in our annual sustainability reports. There were no Level 3 or above incidents at any of our operations in 2018.

We are also continuing to track the December 23, 2016 appeal filed by Minera Candelaria with the Environmental Court, related to historical allegations of water management issues in 2013 and 2014, prior to Lundin Mining's acquisition of the mine (detailed on page 58 of our [2016 Sustainability Report](#)). In the second quarter of 2018, Minera Candelaria received notice that the Environmental Court appeal had been rejected and subsequently, the Company submitted an appeal of this decision to the Supreme Court. The appeal remained in process through 2018. Pending the decision, Minera Candelaria submitted a payment of approximately US\$4 million. In the second quarter of 2019, the Supreme Court overturned the Lower Court decision and remanded the case to the Environmental Court for rehearing by a new panel of judges.

In late 2015, at our Neves-Corvo Mine, a routine site inspection from the Environmental Inspection Authority was conducted. In April 2016, the Authority alleged that the mine had not formally reported two instances of regulatory non-compliance from 2014, related to a waste water discharge and noise event, in accordance with permit requirements. Neves-Corvo challenged this allegation and submitted a response to the authorities; however, at the close of 2018, a decision was issued by the Authority requiring the payment of the minimum fine in the amount of €22,575, to be paid in 2019.

An Environmental Offence Proceeding was issued to Neves-Corvo by the authorities in April 2018 for the historical operation of refrigeration equipment containing fluorinated gases in 2016 without prior notification to the Portuguese Agency for Environment. Use of this refrigerant was reported in March 2017 in annual environmental filings, and the matter was resolved with the payment of a €1,500 fine in June 2018.

Pb

DID YOU KNOW?
Over one million tons of lead is recycled each year

ENVIRONMENTAL MANAGEMENT



Eagle Mine – Humboldt Mill Concentrator Building at Sunrise

WATER MANAGEMENT



We are fully committed to sustainable water management, implementing a comprehensive water management planning process to ensure responsible use of this shared resource and to minimize any negative impact on water sources, receiving environments and associated ecosystems. Throughout 2018, our operations continued to commit to continuous improvements in water assessment and management practices through the implementation of our Water Management Group Standard, which includes requirements for evaluation of water-use efficiency, implementation of measurable improvements to prevent unnecessary pressure on shared resources and evaluation and minimization of environmental and social impacts on surface water and groundwater environments.

Our operations actively monitor the impacts of all of our water withdrawals and discharges, focusing on aspects such as water availability for other users, recreational value of water resources and receiving environments, water quality and aquatic biodiversity. In 2018, all of our operations took important steps toward gaining better understanding of the extent to which our activities could impact water resources that benefit the ecosystem and other users.

These include initiating assessments of water-stress levels in the catchments in which we operate, and the findings will inform how we prioritize our water management actions in the future. Our operations also renewed focus on water management in the contexts of extreme drought or flooding in changing climatic environments.

Water Withdrawal and Recycling

Lundin Mining’s operations have all developed water balances and are progressing site water management plans. Hydrometric data are used for operational control and reporting purposes. The volume of rainwater captured at our operations is estimated using locally measured precipitation and catchment surface areas. We seek to reduce water abstraction from natural water systems through operational efficiency, water re-use and water recycling wherever possible.

Reflecting the diversity of natural environments in which Lundin Mining’s operations are located, our mines rely on different sources of water for operational and potable water needs, including desalinated seawater, surface water, treated municipal waste water, mine water and groundwater abstraction wells. Surface run-off and snow melt, where available, are also sources of water at some of our operations. In recognition of the importance of responsible water use at our mines, these primary sources are significantly supplemented by water reclaimed from our tailings facilities and water treatment plants for re-use by our operations.



SITE	PRIMARY SOURCES OF WATER FOR USE BY OPERATION
Candelaria	Desalinated seawater; treated municipal waste water; mine seepage
Eagle	Mine Site: Utility and potable wells; mine dewatering
	Mill Site: Groundwater and rainfall / run-off entering the former pit; industrial and potable wells
Neves-Corvo	Santa Clara Reservoir; mine dewatering
Zinkgruvan	Lake Trysjön; Lake Åmmelången; mine dewatering

Our 2018 assessment of the potential for operational water withdrawal to have a significant effect on water sources identified only one of our operations, Zinkgruvan Mine, under the criterion that its lake sources are considered to have high value or importance to local communities. Part of the operation’s supply is sourced, under regulatory approvals, from local lake systems that cover an area of approximately 3.6 square kilometres. The lakes are not of protected status and are not known to be of significant biodiversity value.

Our measure of water recycling is primarily in the form of water reclaimed from our tailings facilities for re-use in our operations, with an increasing contribution from other internal flow streams, such as water treatment plants, as our operations increase their focus on internal water re-use efficiency. Overall, in 2018, Lundin Mining’s record of water recycling exceeded overall water volumes withdrawn and included recycling almost 79.2 million cubic metres of water, equal to using every cubic metre of Lundin Mining’s total water withdrawn approximately 2.5 times.

At Zinkgruvan, our team continues to responsibly manage conditions at Lakes Trysjön, Åmmelången and Viksjön. Water from the lakes is used for mineral processing activities and to maintain designated minimum flow rates at the Björnbäcken and Dalbyån Creeks. Zinkgruvan monitors water levels weekly at the lakes and adjusts its practices to minimize impacts on the community and environment. It achieved full compliance with the permitted water-level ranges at the lakes in 2018.



Eagle Mine – Aquatic Survey

Ni

DID YOU KNOW?

An estimated 40% of annual **nickel** use comes from recycling

ENVIRONMENTAL MANAGEMENT

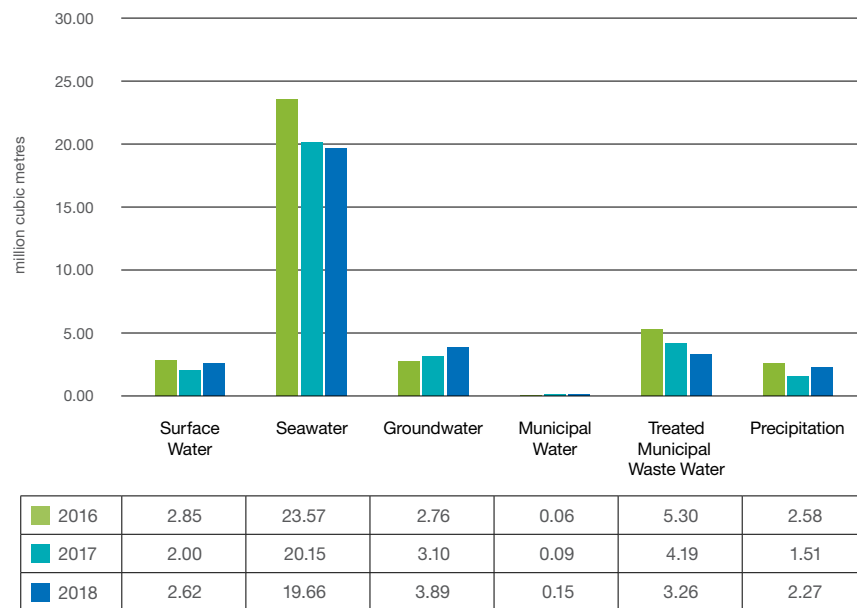
In recognition of the importance of the Sector 4 Copiapó River groundwater source to local communities, our Candelaria complex developed and operates a state-of-the-art water desalination facility at the port, Punta Padrones, to supply site-operation water requirements, thereby reducing pressure on precious water resources in the Atacama Region. Candelaria did not use any groundwater from local wells in 2018.

LUNDIN MINING'S WATER WITHDRAWAL 2018:

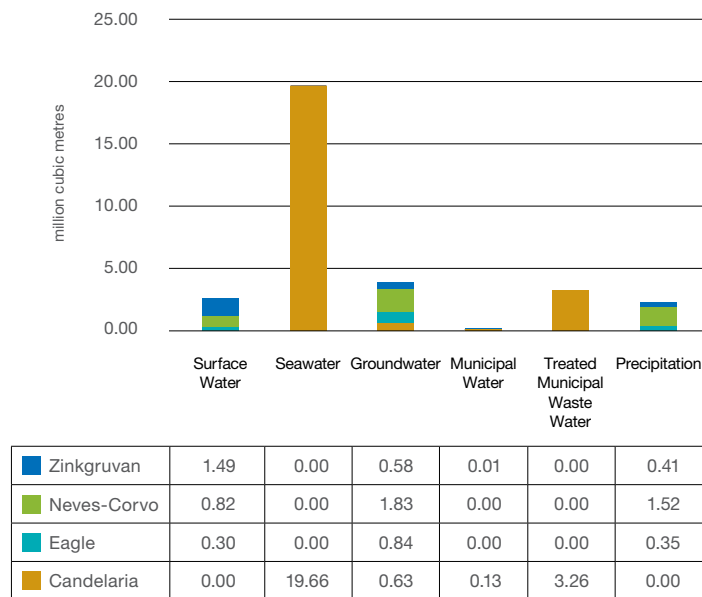
- Total of 31.8 million m³ withdrawn across all four operations
- 62% of total (19.6 million m³) was seawater withdrawn for treatment
- 7.8 million m³ of treated seawater pumped for use at Candelaria, the remainder returned directly to the sea

Our operations at Zinkgruvan and Neves-Corvo withdraw additional water for supply to local residents. These quantities are provided as a service to the local community and, therefore, are not included in our operational water withdrawal accounting.

Annual Water Withdrawal by Source 2016 to 2018



Water Withdrawal by Source, By Operation 2018



Key water withdrawal trends are summarized individually for our operations as follows.

Candelaria

Building on the responsible water stewardship activities demonstrated in our Candelaria Mine's approach to local groundwater, the operation is also gradually reducing its consumption of treated municipal waste water, in accordance with regulatory requirements, enabling these resources to be redirected to other users in this water-scarce region. The Alcaparrosa Mine environmental permit (approved 2018) added a new commitment to mitigate any effects on the aquifer related to use of groundwater that seeps into the underground mine by the cessation of groundwater extraction by Candelaria from its permitted well, which has been assigned for use by Aguas Chañar. The operation is working towards its objective of solely sourcing water from our existing desalination plant by July 2025.

Eagle Mine

Further to the receipt of regulatory approval in 2018, our Eagle Mine has initiated reporting on withdrawal from the Middle Branch Escanaba River at its Mill site. This water is not used in the mill operations; it is pumped directly to the wetland to compensate for regulatory changes in 2018, which permit the discharge of treated mill water directly to the Middle Branch Escanaba River, rather than the wetland.

Neves-Corvo

Neves-Corvo continues to promote sustainable practices consistent with its key water management objectives to reduce the consumption of fresh water, maximize water-storage capacity inside project boundaries and reduce discharges. The quantity of surface water withdrawn increased in 2018 reflecting an increased mill throughput rate. However, the site has achieved an overall reduction of approximately 48% in surface water withdrawal since 2015, continuing to demonstrate the benefits of the implementation of water infrastructure and management projects at Neves-Corvo in recent years.

Zinkgruvan

Zinkgruvan continued to advance a strong focus on responsible use of surface water, given the environmental and recreational value of the local lakes from which water is supplied. This operation also withdrew more water this year, to enable it to process an increased quantity of ore compared to last year. However, significant benefits have resulted from recent efforts to optimize the water balance, with Zinkgruvan withdrawing only 63% of the 2015 surface water withdrawal level in 2018.

Zinkgruvan – Lake Åmmelången



Cu

DID YOU KNOW?
Around 50% of Europe's copper demand is met by recycled material

ENVIRONMENTAL MANAGEMENT



Zinkgruvan – Water Sample Collection

Water Discharges

Water management at Lundin Mining's operations involves discharging treated water in accordance with regulatory requirements and corporate standards, which include consideration of the aquatic and terrestrial environments and the communities and users downstream of our operations. All of our operations have effective water-quality monitoring systems in place, along with routine regulatory reporting, to verify that off-site discharges are compliant with environmental regulatory requirements developed to protect people and the environment.

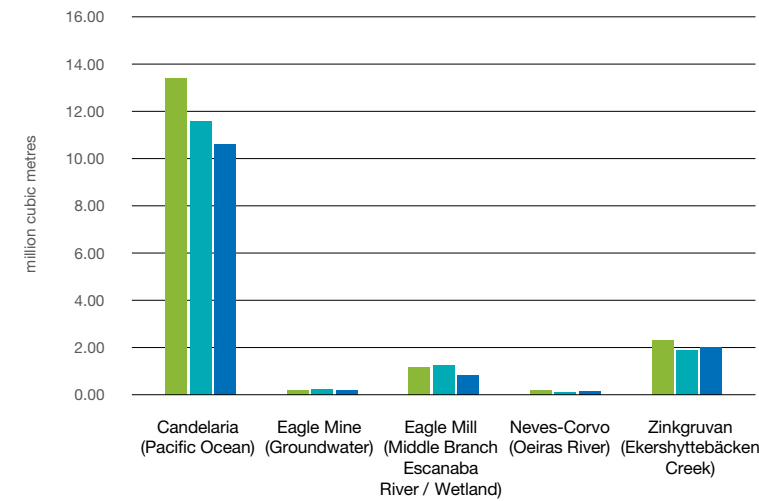
SITE	DESIGNATED DISCHARGE RECEIVING BODY
Candelaria	Desalination Plant: Pacific Ocean
	Mining and Mineral Processing Complex: Zero-discharge
Eagle	Mine Site: Groundwater discharge
	Mill Site: Wetland (adjacent to Escanaba River)
Neves-Corvo	Oeiras River
Zinkgruvan	Ekershyttbäcken Creek (Lake Vättern catchment)

Throughout most of 2018, our Eagle mill operation continued its usual practice of discharging its treated water to a neighbouring wetland, adjacent to the Escanaba River. On receipt of regulatory approval, Eagle commenced discharging this treated water directly to the Middle Branch Escanaba River. Concurrently, the operation was approved to withdraw water from the Middle Branch Escanaba River and discharge it directly to the wetland, to compensate for the changed flow regime. The discharge is not required to be regulated.

We report planned and unplanned water discharges from the designated discharge points at our operations, with all planned discharge quantities being measured by flow meters. Our Candelaria mining complex operates on a zero-discharge basis, with discharge only from the desalination plant at the coast. Due to the nature of our site operations, precipitation collected at our sites and entering our water management systems is included in our reported discharge quantities. None of our water discharges in 2018 were re-used by another organization.



Annual Water Discharged to the Environment, by Operation 2016 to 2018



2016	13.41	0.19	1.18	0.20	2.30
2017	11.58	0.23	1.25	0.09	1.88
2018	10.59	0.20	0.81	0.14	2.02

LUNDIN MINING'S DESIGNATED WATER DISCHARGE 2018:

- 13.7 million m³ discharged across all four operations

Our Candelaria operation and Eagle Mine discharged a smaller volume in 2018, as compared to 2017, consistent with reduced mill throughput rates at Candelaria and reduced precipitation requiring collection and management at Eagle. Our Neves-Corvo and Zinkgruvan operations both discharged an increased quantity, consistent with increased mill throughputs during the same period.

At Candelaria's desalination plant, at Punta Padrones, seawater is withdrawn and desalinated before discharge back to the ocean.

Therefore, Candelaria metal loads represent the original seawater chemistry and the desalination process. Candelaria does not discharge to a freshwater environment.

Our Neves-Corvo operation continues to benefit from water management infrastructure upgrades implemented in recent years. The increased flexibility in the system, for storage and recycling capability at the mine, allows the operation to reduce, and even cease, discharge according to natural water-flow rates in the Oeiras River. Due to increased precipitation and drought events over recent years, the site progressed an adaptive management approach for its discharge, culminating in permission from regulators to discharge in low-flow periods, with more stringent discharge limits.



Neves-Corvo – Monitoring of Water Quality

Cu

DID YOU KNOW?

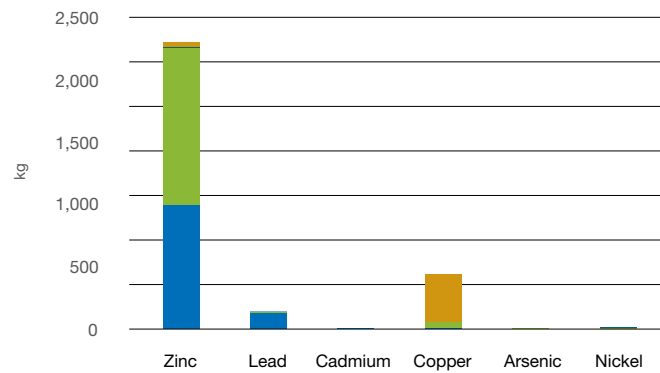
Average estimated copper use / person / lifetime = 1,300 pounds

ENVIRONMENTAL MANAGEMENT



Bahía Inglesa, Caldera, Chile

Metal Load in Our Permitted Water Discharges, 2018



	Zinc	Lead	Cadmium	Copper	Arsenic	Nickel
Candelaria (to sea)	46			381		
Eagle Mine (to groundwater)	1	0.1	0.02	0.1	0.1	0.2
Eagle Mill (to river / wetland)	4	0.4	0.1	0.4	0.4	5
Neves-Corvo (to river)	1,258	6	2	49	2	7
Zinkgruvan (to creek)	995	128	0.9	4		

Note: Blank = not measured.

Note: Candelaria metal loads represent a return of original seawater metal concentrations to the sea following the desalination process.

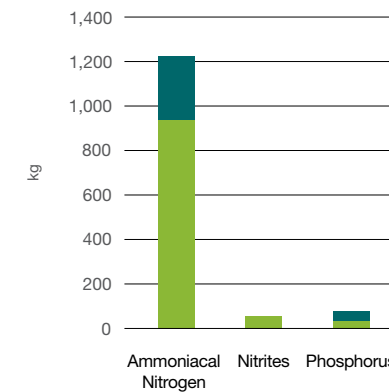
All of our operations treat their discharge water to achieve an acceptable quality prior to discharge to the environment. Candelaria's desalination process requires only pH neutralization prior to discharge back to the sea. Eagle uses a comprehensive treatment process, culminating in reverse osmosis and final pH adjustment for its groundwater discharge, and metals precipitation / sedimentation and ultrafiltration for its wetland discharge. Neves-Corvo's water treatment system is based on an oxidation process, followed by pH adjustment for metals and sulphates precipitation. A clarifying step is used to remove solids, and then a reverse osmosis process is completed for some of the water prior to discharge. Zinkgruvan's process is based upon residence time in a clarification pond.

The chemical load in our permitted water discharges at Neves-Corvo and Zinkgruvan increased for some parameters in 2018. At Neves-Corvo, this was due to increased annual precipitation resulting in emergency discharges on occasions; these were reported to the authorities. At Zinkgruvan, increased metal loads resulted from various contributing factors, including operational changes to reduce the pond size at the tailings facility and automatic sampling equipment issues. Both sites are addressing these issues with the aim of improvement for next year.

Since the chemical parameters measured by our operations are site-specific, discharge load data do not exist for all parameters at all sites.



N and P Species Load in Our Permitted Water Discharges, 2018



	Ammoniacal Nitrogen	Nitrites	Phosphorus
Eagle Mine (to groundwater)	0.096	0.005	0.002
Eagle Mill (to river / wetland)	285		43
Neves-Corvo (to river)	937	55	34

Note: Blank = not measured.



Eagle Mine – Tailings Management Facility

Candelaria's ocean discharge was in full compliance with permitted limits in 2018. Permitted levels were exceeded at our Eagle mill site discharge on five occasions and investigations into the source of the anomalies were immediately implemented. At Neves-Corvo, permitted levels were exceeded on five occasions as a result of the need to conduct emergency discharges during periods of unexpected elevated precipitation. Guideline levels were exceeded at our Zinkgruvan Mine for four parameters, for variable periods from January to May and October to December, as a result of operational changes at the Enemossen East tailings facility. Lundin Mining strives to be always-compliant with its water discharge licence conditions, and although the number of exceedances in 2018 are small in comparison to the hundreds of water-quality parameters

measured in our discharges each year, we recognize the importance of compliance, not only for regulatory purposes but also for protection of the environment and downstream users. As a result, each of our sites has implemented action plans to address the underlying conditions for these non-compliances, with the aim of improvement for next year.

There was one unplanned discharge at our operations in 2018, with no identified impacts on the aquatic environment. Heavy rainfall at our Neves-Corvo site necessitated the discharge of excess water from the site commencing in mid-March. Site management advised the authorities because permitted sulphate limit values were temporarily exceeded at the point of discharge. Discharge of treated excess water was continued until late-April when, in consideration

of low flows in the Oeiras River and respectful of flow-based permit limitations, the Company ceased discharging. The site's considerable investment in water management infrastructure in recent years enabled the safe and secure storage of the excess water on-site.

Ni

DID YOU KNOW?
Nickel steel is used for burglar-proof vaults and armor plate

ENVIRONMENTAL MANAGEMENT

Reclamation of San Esteban Tailings



Candelaria started removing the historical San Esteban (SE2) tailings facility in 2018. Over 1 million cubic meters of San Esteban historical tailings, acquired during a property transaction in 2009, were relocated to the existing Candelaria tailings facility which is designed in accordance with current physical stability standards. Candelaria also decommissioned a historical sanitary landfill, including the construction of an effective cover and rainwater management system.



5 Active tailings facilities

5 Inactive and closed tailings facilities

36 Tailings dam structures across all sites

TAILINGS, WASTE ROCK AND NON-MINERAL WASTE MANAGEMENT



Lundin Mining's operations generate mineral waste in the form of waste rock and tailings. Our comprehensive approach to their management provides us with confidence that potential environmental and social impacts associated with our mineral wastes can be reliably identified and minimized.

Efficient mining and mineral processing, along with disposal underground where practicable, allow our operations to minimize the quantities of these wastes to be stored on surface. Furthermore, a clear understanding of the characteristics of the wastes, the facility construction materials and the temporary and / or final settings in which they are placed enables our operations to minimize any risks associated with their disposal.

Operational and post-closure physical and geochemical stability of mineral waste deposits are a priority at Lundin Mining. Robust design, construction, quality control, inspection and monitoring are necessary to ensure the physical integrity of our waste facilities. An important environmental consideration for our mineral wastes is the potential for generation of acidic water, known as acid rock drainage (ARD), that can be formed when sulphide minerals, such as pyrite, in waste rock and / or tailings, are exposed to moisture and air. ARD, if present, can adversely affect the quality of waterways or groundwater by introducing undesirable levels of acidity and dissolved metals. Appropriate geochemical characterization programs allow us to understand and manage any ARD and / or metal-leaching risks associated with our mineral wastes. Equally important in determining the appropriate design for our disposal facilities is a comprehensive assessment of the disposal setting, addressing aspects including geology, geotechnics, hydrogeology, hydrology, seismicity, biodiversity and ecosystems, and of course, local communities.

Waste Rock Management

Almost 74.3 million tonnes of waste rock were generated across all of Lundin Mining's operations in 2018, of which 98% (72.4 million tonnes) was produced at Candelaria, due to the scale of its open pit operation. At Candelaria, the waste rock that is not used for construction of tailings facility embankments on-site is stored in terraced surface-waste depositories located immediately to the north of the open pit (*Deposito Esteril Norte*) and south of the open pit and plant area (*Deposito Esteril Nantoco*). Stability of the waste rock depositories is a high priority and their design is based on geomechanical and seismic parameters. The waste rock at Candelaria has been classified as having a low potential for acid generation – annual rainfall average is 17 mm and there is no groundwater infiltration. As a result, no specific ARD controls are required.

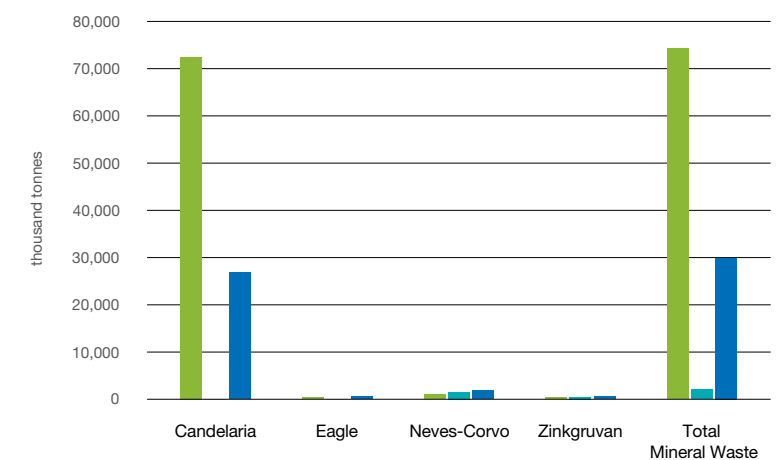
Expansion of the north waste rock depository for the Candelaria 2030 project was included as part of the permitting package. Candelaria's design of the proposed expansion included the reconfiguration of approximately 60 million tonnes of material to reduce the potential for "shadow effect," the influence that mining may have on the land surrounding its operations, thereby mitigating potential for environmental and visual impacts on the neighbouring Tierra Amarilla community.

At Eagle, the waste rock requires management to reduce the potential for generation of ARD. Returning waste rock to the underground workings is required by permit, since the mine will be flooded on closure and the oxygen-deficient environment is ideal for preventing the potential

generation of ARD. Since the mining schedule requires that waste rock is temporarily stored on surface at the mine, the potential for ARD is managed by lining the surface storage facility and collecting contact water for treatment at the mine water treatment plant. Since 2014, Eagle has progressively returned waste rock underground, with the dual benefits of stabilizing previously mined areas as well as controlling potential ARD. Waste rock from the development of Eagle East is either directly stored underground or trucked to the waste rock storage facility for subsequent return underground. At the close of the reporting period, 576,000 tonnes of waste rock were stored at the surface. Because of the use of waste rock as backfill at Eagle, it is anticipated that no waste rock will remain at the surface at mine closure.

Neves-Corvo's comprehensive Waste Management Plan is designed to mitigate the risk associated with the potential for ARD generation in its waste rock. Where possible, waste rock with acid potential is retained in the underground mine and used as backfill to stabilize previously mined areas. The remainder of the waste rock is ultimately used in the tailings facility for construction of berms and cell cover. The storage facility where waste rock is temporarily stockpiled at the surface incorporates a peripheral drainage system to allow collection and management of contact water, along with the use of engineering construction methods based on geological and geotechnical characterization studies to ensure overall stockpile stability.

Total Weight of Waste Rock and Tailings Generated 2018



	Candelaria	Eagle	Neves-Corvo	Zinkgruvan	Total Mineral Waste
Waste Rock	72,419	382	1,048	411	74,261
Tailings to Underground Mine	0	0	1,548	493	2,041
Tailings to Surface Facility / Former Pit	26,850	576	1,878	634	29,937



ENVIRONMENTAL MANAGEMENT

Zinkgruvan does not maintain waste rock stockpiles – all waste rock is used underground to stabilize previously mined areas or used in construction of on-site access roads or tailings facility embankments. Characterization studies for ARD potential have shown that the waste rock poses no immediate or long-term risk of generating ARD, owing to the low sulphide content and the high proportion of calcareous minerals with buffering capacity. As a precaution against the potential generation of elevated metals concentrations in water, usage of waste rock at the surface is restricted to tailings facility embankments and road sections where contact water is directed to the tailings facility.

Tailings Management

Lundin Mining operates four mines with five active tailings facilities and uses two widely accepted methods of tailings disposal:

- Underground disposal involves mixing tailings with products such as sand or cement, followed by disposal as a paste backfill or hydraulic backfill in previously mined areas of underground mines; and,
- Surface disposal involves placement in engineered surface impoundments or, in the case of Eagle, in a previously mined open pit.

The five active tailings facilities use various construction techniques for the main and secondary or perimeter dams, but none use upstream construction method. Lundin Mining also maintains and monitors five inactive tailings facilities, one of which is a rockfill combination centreline and downstream design, followed by rockfill upstream raises and buttresses (Enemossen tailings facility at Zinkgruvan).

Surface tailings impoundments can represent one of the more significant environmental risks for the mining industry. Lundin Mining takes considerable care to ensure our tailings facilities are well-designed, built in accordance with leading industry practices and standards, well-maintained, inspected, independently reviewed and carefully monitored.

Of the four Lundin Mining operations, Eagle Mine is the only operation that does not have a constructed tailings impoundment with dams.

Lundin Mining's RMMS includes specific tailings management technical standards. All Lundin Mining's operations manage their tailings in accordance with our Tailings Management Technical Standard developed in 2015 and currently under update. The Tailings Management Technical Standard requires that all tailings facilities, including major water-retention dams, are planned, designed, constructed, operated, decommissioned and closed in such a manner that:

- all structures are stable; and,
- all aspects comply with regulatory requirements and conform to Company standards, accepted international practices and any commitments to local stakeholders.

A requirement of the Tailings Management Technical Standard is for all sites to conduct regular geotechnical, hydrogeological and environmental monitoring to meet regulatory requirements and prevent the uncontrolled release of tailings and / or water to the environment. All sites employ surveillance systems, which may include surface prisms, piezometers, inclinometers, remote sensing and other technologies to monitor tailings dams and water levels. Trigger action response plans (TARPS) provide clear guidance on how to respond to predetermined trigger levels for surveillance activities.



Sites are required to identify a Responsible Person to ensure ownership and proper management of the tailings facility. The Responsible Person guarantees procedures for each facility, including an Operating, Maintenance, and Surveillance (OMS) Manual and Emergency Preparedness and Response Plan, are regularly documented and made available to site personnel. The Responsible Person is an appropriately qualified, experienced and site-dedicated individual employed directly by the site. This person typically has an environmental or engineering background.

Tailings dams are regularly inspected by trained operators and technical staff, sometimes as frequently as several times daily, with formal documented staff inspections at least quarterly.

Each active and inactive tailings facility has an appropriately qualified, licensed and experienced third-party geotechnical engineer to act as an external Engineer of Record or Design Engineer in the relative jurisdiction. Formal dam safety inspections are conducted at least annually by the external Engineer of Record, and reports are issued to the Responsible Person for action on recommendations.

Tailings and water dam safety-focused risk assessments are reviewed and updated at least annually and include input from site and corporate staff, the Engineer of Record and independent reviewers.



Neves-Corvo – Cerro do Lobo

A component of the Tailings Management Technical Standard is the requirement for regular independent third-party tailings reviews, which are recognized as a leading practice for effective tailings and water dam stewardship. The reviews are focused on impoundment stability and integrity.

In 2018, independent third-party tailings reviews were completed at all Lundin Mining operations with qualifying dam structures (according to the definition provided in the Canadian Dam Association's dam safety guidelines). No critical dam safety issues were identified during the third-party reviews. Results from the third-party reviews are carefully tracked, and progress updates are sent to the Board-appointed HSEC Committee each quarter.

INDEPENDENT THIRD-PARTY TAILINGS REVIEWS

- Require annual reviews by independent, qualified engineering specialists for all active and inactive facilities.
- Provide an expert, independent opinion as to whether the tailings facility design and performance meet accepted international practices from geotechnical and hydrogeological perspectives.
- Include all tailings facilities and water-retention structures at each site.
- Program performance is reported quarterly to the Board-appointed HSEC Committee.

ENVIRONMENTAL MANAGEMENT



Candelaria – Port of Punta Padrones Sediment Sampling Program

Candelaria

The Candelaria tailings facility is located northwest of the Candelaria open pit and receives tailings from both the main Candelaria and PAC processing plants within the mine complex. The physical stability of the tailings embankments is inspected and monitored on a continuous basis by Candelaria site staff and a monitoring report is submitted quarterly to the Chilean Mining and Geology National Authority. The tailings have been classified as having a low potential for acid generation and there are no specific ARD controls required. Appropriate freeboard is maintained during operation to provide additional security.

The Candelaria tailings facility was designed and built using the downstream construction method, with a low-permeability layer of compacted material at the base. Designed for zero discharge, an efficient water recovery system allows the drainage water to be collected and returned to the processing plant. The tailings are transported to the tailings facility through pipelines and spigots, and the clarified tailings water is collected and recirculated to the processing plant. Tailings will continue to be deposited into the Candelaria tailings facility until the end of 2019. At this point, the Main dam will have a maximum height of 170 metres (m) and contain approximately 310 to 315 million m³ of tailings.

The new Los Diques tailings facility, located to the southwest of the open pit and plant, was successfully commissioned in 2018. Los Diques will permanently replace the existing Candelaria tailings facility in mid-to-late 2019. The main Los Diques dam was constructed by the downstream method and currently has a height between 80 and 90 m. Ultimately, the Main dam has a maximum design height of 160 m and a capacity of approximately 600 million tonnes of tailings (340 million m³). Future phases of the Los Diques Main dam, planned to start in 2019, have been initiated ahead of schedule, taking advantage of synergies with the current project and the availability of mine waste from the open pit. This will lead to capital cost savings on future embankment raises.

The inactive San Esteban tailings impoundments were acquired in 2009 as part of a land acquisition by Candelaria to gain additional area for waste rock depository development to support the mine expansion. There are two such impoundments: San Esteban 1 (SE1) and San Esteban 2 (SE2). These facilities have never been used for tailings disposal by Candelaria. Candelaria started removing the SE2 impoundment in 2018 to provide for the expansion of the North Waste Depository. Final closure construction works for the SE1 impoundment will finish in 2019.

The inactive / closed Ojos del Salado tailings facilities consist of six rehabilitated legacy dams across three locations. These tailings facilities are associated with historic operations at the Ojos del Salado Mine. Three tailings dams are located near the mill and the other three are located to the north of the operation. All six tailings dams, which have a maximum height of 35 m, have been reclaimed, do not retain water and were permanently closed in 2012.

Cu

DID YOU KNOW?
Professional chefs prefer to cook with **copper** pots and pans as it delivers uniform cooking



Eagle Mine – Tailings Management Facility

Eagle Mine

At Eagle's Humboldt mill site, subaqueous deposition of tailings commenced at the existing Humboldt tailings facility in 2014. The Humboldt tailings facility is a former open pit that was also used as a gold-operation tailings storage facility after iron ore mining ceased in the 1970s. It measures approximately 110 m in maximum depth and has walls composed of bedrock, except at the north end of the facility, where a bentonite cut-off wall has been constructed. Tailings from the processing plant are thickened to 45% solids and, to date, approximately 1.4 to 1.5 million m³ of tailings have been placed at the facility by Eagle.

Eagle's tailings require management for ARD and Humboldt mill's proximity to the former open pit mine made subaqueous disposal an ideal management method. ARD generation from the tailings is managed through subaqueous deposition by restricting oxygen access to the tailings, thus preventing oxidation. To meet regulatory requirements, Lundin Mining undertook studies to demonstrate that the bedrock pit walls meet the hydraulic conductivity standard and are not a reasonable conduit of groundwater migration. A bentonite wall was constructed to further reduce permeability and ensure negligible groundwater flow. A risk assessment was completed for the facility, with mitigation of risks incorporated into the design, and quality control programs are in place to ensure that design specifications are met.

Eagle's Humboldt tailings facility has been constructed and is operated in compliance with applicable regulations, in particular, the Natural Resources and Environmental Protection Act. The act requires that the operator manage the Humboldt tailings facility in such a way that reasonably minimizes actual and potential adverse impacts to groundwater and surface water, and that the Company obtains a permit to fill an inland lake so that the surface water quality of Michigan State remains protected.

Added protection is achieved through water management, including maintaining water levels well below surface elevation to ensure water does not overflow into the environment. Water chemistry is a relevant aspect of tailings management at Eagle. The site water balance is positive, thereby requiring discharges at specified locations and subject to effluent-quality limitations. Water collected in the tailings facility is treated by a multi-stage water treatment system prior to discharge. The current water treatment plant includes polymeric technology (NALMET®) to precipitate heavy metals, ultrafiltration and reverse osmosis. Tailings water is reclaimed to the mill from the south end of the main basin and is treated for discharge from the northeast basin. In addition, ongoing inspections and water-quality monitoring are conducted to ensure that the facility functions according to design. A contingency plan has been developed to further mitigate any residual risk.

ENVIRONMENTAL MANAGEMENT



Neves-Corvo – Mocho-galego, or “Little Owl” (*Athene noctua*)

Neves-Corvo

At Neves-Corvo, the Cerro do Lobo tailings facility is located four kilometres southeast of the processing plants. The tailings facility is operated in accordance with the EU legislation on extractive waste (Directive 2006/21/EC), the International Commission on Large Dams (ICOLD) and Portuguese national legislation.

The current tailings disposal system at Neves-Corvo has provided safe and reliable tailings storage since the late 1980s. Neves-Corvo’s tailings contain pyrite and have been characterized as acid-generating. The site’s Waste Management Plan is designed to mitigate the risk associated with ARD generation in the tailings.

The tailings embankments at Neves-Corvo were constructed as water-retaining structures to allow subaqueous tailings deposition for ARD management. All tailings embankment lifts used downstream construction methods, and the current main dam height is 42 m. As this facility reached capacity for subaqueous tailings disposal in late-2010, thickened tailings technology was implemented. Thickened tailings are tailings that have been further dewatered than conventional slurry, enabling them to be stacked. As there is less water in the thickened tailings, there is reduced ability for them to flow, thereby reducing environmental risk. During 2018, sub-aerial deposition of thickened tailings was continued on top of the existing tailings facility, with the

tailings being retained by berms constructed of mine waste rock within the tailings basin. An internal drainage system has been designed to capture seepage water from the tailings facility. Comprehensive, routine monitoring and management of the tailings deposition process, tailings pore water pressure, and structural and hydraulic stability of the tailings perimeter impoundments all contribute to managing the risk associated with ARD.

Neves-Corvo aims to minimize the volume of tailings to be stored on surface by placing tailings (approximately 45% in 2018) underground as paste backfill and hydraulic backfill to support worked-out areas of the mine.



Zinkgruvan

At Zinkgruvan, the Enemossen and Enemossen East tailings facilities are located four kilometres south of the mine. The tailings management program at Zinkgruvan is based on the SveMin Dam Safety Guidelines, which incorporate cross-audits by SveMin member companies to ensure that standards are applied. The external Engineer of Record conducts safety inspections on an annual basis and prepares quarterly monitoring and performance reports for the tailings facilities. Formal safety inspections are conducted every three years by independent, expert consultants on impoundment design to ensure their continuing integrity and to ensure that rigorous programs of ongoing monitoring are in place.

Zinkgruvan’s tailings have been found to pose no immediate or long-term risk of acid-generating potential, owing to their low sulphide content and high proportion of calcareous minerals.

The Enemossen tailings facility reached its capacity in 2017. The mine is now operating under a new environmental licence that allowed for the construction of the new Enemossen East tailings facility adjacent and downstream to the original facility. Construction of the new facility began in 2016 and the starter facility was completed in 2017. Enemossen East has two main dams and is constructed as a water-retaining dam using the centreline construction method with engineered rockfill. It has a current maximum

height of 8 m, is permitted to a final height of about 30 m and will have capacity for 5 million m³ of tailings.

Approximately 44% of the tailings produced at Zinkgruvan were used as paste backfill material in the mine in 2018, thus reducing the quantity of tailings to be deposited in the surface tailings facility.

Pb

DID YOU KNOW?

Modern lead batteries are reliable and sustainable, and often used in renewable energy storage

Zinkgruvan Mine



ENVIRONMENTAL MANAGEMENT

Non-Mineral Waste

Responsible management of non-mineral waste at our operations is formalized at Lundin Mining through the implementation of comprehensive waste management plans. These plans specify how the different types of waste produced by our activities are to be managed, including identification of opportunities for waste minimization, recycling and re-use. All waste generated by the Company's operations in 2018 was stored and disposed of in accordance with applicable waste regulations and the site waste management plans. During 2018, approximately 22,500 tonnes of non-mineral waste were generated by Lundin Mining, of which 19,500 tonnes, or 87%, were classified as non-hazardous waste. Lundin Mining's waste-generation levels have remained broadly consistent over recent years.

Candelaria is our largest producer of non-hazardous waste, corresponding to the relatively large size of the operation when compared to our other mines. Eagle Mine records relatively high quantities of materials classified as non-hazardous waste, primarily due to the regulatory requirement to dispose of exploration drill cuttings from known sulphide zones to landfill, together with the waste from its water treatment plant crystallizer. Neves-Corvo's generation of non-hazardous-waste increased this year, due to activities associated with the mine's expansion project. Zinkgruvan generated a smaller quantity of non-hazardous waste, consistent with the relative scale of the operation.

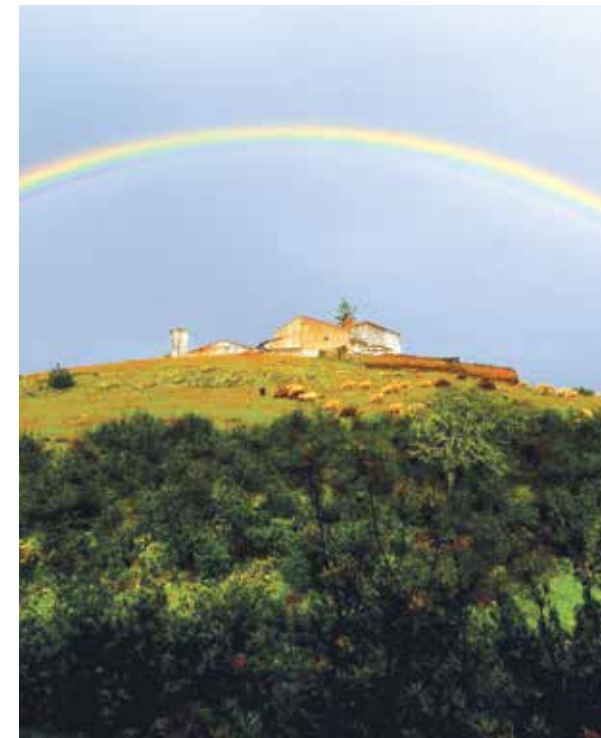
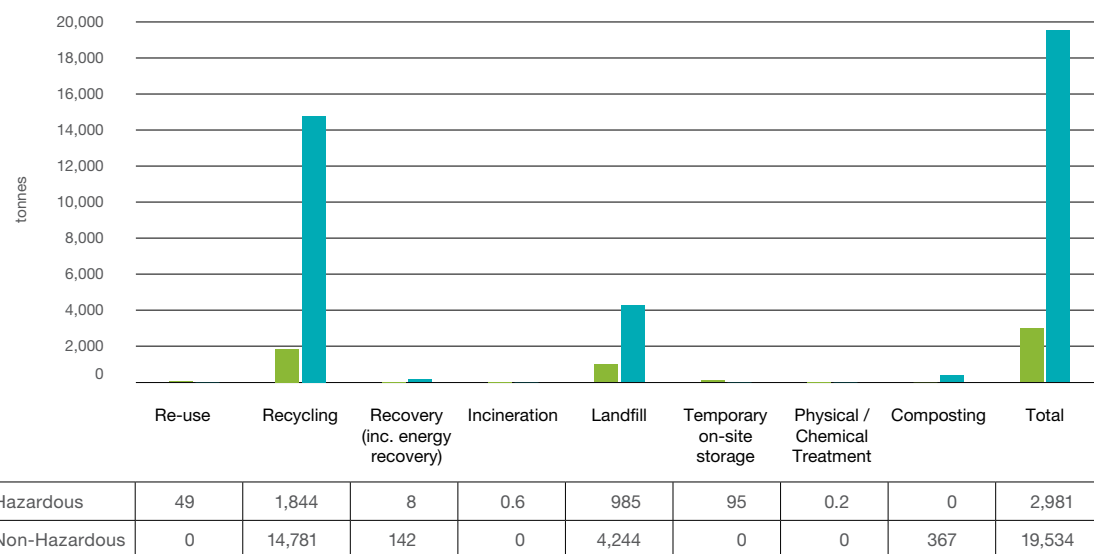
Similar trends are observed for hazardous-waste generation, with Candelaria being the largest producer, followed by Neves-Corvo and Zinkgruvan. By contrast, Eagle Mine generates a relatively low level

of hazardous waste. Hazardous waste generated at our operational sites is generally transported off-site, within country, for treatment and re-use or disposal, in accordance with applicable regulations and requirements. As demonstrated in the following chart, the majority of both hazardous and non-hazardous materials are recycled.

Cu

DID YOU KNOW?
Copper mining in England was traced back to 3,000 BC

Non-Mineral Waste by Disposal Method 2018



Neves-Corvo – Rainbow

CLIMATE CHANGE, ENERGY AND EMISSIONS



Adaptation to Climate Change

Climate change has become an increasingly significant global issue in recent years, and Lundin Mining recognizes the need for effective approaches to managing its climate-related responsibilities, especially in consideration of the remote locations in which we operate, the energy-intensive nature of our extractive industry sector, and the sometimes-limited availability of renewable energy in national energy mixes. We also note that the commodities we mine, including copper, zinc, nickel and lead, are critically important in the technologies and innovations required for a low-carbon future, such as solar panels, wind turbines, and batteries for associated energy storage. Furthermore, our commodities are among the most recycled materials on the planet, significantly contributing to the circular economy.

The 3 R's and Introduction of a Mobile Recycling Truck

In 2018, Candelaria launched a new initiative to raise awareness of improved waste management opportunities, including increasing awareness about the "Reduce, Reuse and Recycle" concepts. As part of this program, Candelaria designed and introduced a mobile recycling truck that is now deployed in the Atacama region. Collected materials are directed to a local waste management company.



ENVIRONMENTAL MANAGEMENT

In 2018, climate change was included as a key component of Lundin Mining's Five-Year Sustainability Strategy. From Lundin Mining's perspective, key factors which are considered to be particularly relevant in our response to climate change include:

- Assessment and implementation of opportunities to reduce our contribution as we conduct our operations which are unavoidably energy intensive;
- Assessment of potential climate-related risks to our business, including regulatory, physical, and other risk drivers;
- Adaptation of our infrastructure, activities and behaviour, within an appropriate timeframe, to increase our resilience against identified risks;
- Assessment of climate-related opportunities to our business, including technological developments and the ability to source lower carbon electricity and fuels;

- Reduction of risk of business interruption at our operations, so we may continue to provide the global market with the metal resources needed to support the global transition to a low carbon future; and,

- Engagement with peers, regulatory bodies and associations.

Our operational sites are located across a wide geographical area and in a range of climatic zones. Risks and opportunities associated with climate change at our operations are considered with reference to a range of source data, including selected climate change model projections. It is recognized that climate-related science continues to evolve at a rapid pace; climate change projections continue to be developed and refined, varying with predictive models, scenarios selected, timeframes and many other parameters. The temporal factor of mine life has also been considered in our assessment of climate change adaptation, noting that some of our operations have already observed changes to weather patterns and an increased frequency of extreme meteorological events.

Milestone: Renewable Energy Developments

In 2018, Candelaria took steps to further reduce its carbon footprint by initiating negotiations to review and update Candelaria's electrical Power Purchase Agreement (PPA) with their provider, AES Gener, resulting in a significant increase of renewables in the energy mix over current contract levels. This action was the result of pro-active and constructive collaboration between Candelaria's Mine Energy Champions and AES Gener. The new agreement, signed in 2018, will take effect in 2023 upon completion of the current 10-year contract and extend through 2035. Through the implementation of this renegotiated contract, an estimated 80% of Candelaria's energy use will be provided through renewable clean energy sources, with an option to self-generate up to an additional 20 MW.



Candelaria Located in the southern margins of the Atacama Desert, the Copiapó valley is characterized by an arid climate. Rainfall is irregular from year to year, and several years typically pass between significant precipitation events. General indications for this region are for an increase in temperature, with uncertainty about rainfall patterns.

Eagle Our Eagle Mine is located in a temperate climate zone. Projections indicate potential increases in mean annual temperature, with warming in all seasons, along with increases in mean annual precipitation.

Neves-Corvo Neves-Corvo Mine is located in a semi-arid region. In broad terms, the strongest period of warming in Southern Europe is projected to occur in summer, along with a decrease in precipitation, most notably during the summer months. A marked increase in extremes are projected for Europe, in the form of heat waves, droughts and heavy precipitation events.

Zinkgruvan Zinkgruvan Mine is located in south-central Sweden, at the northern extent of the temperate climate zone. Projections indicate warming, particularly during the winter months, and an increase in precipitation. An increase in extreme precipitation in Northern Europe in all seasons is also predicted.



Eagle Mine – Environmental Monitoring

Within the context of these broad climate change projections, the potential influence on our operations, and our approach to reducing and / or mitigating these influences are described further in this section.

Selected potential climate-related regulatory risks identified by our operations include:

- The potential for regulatory bodies to require businesses to reduce greenhouse gas (GHG) emissions in accordance with ambitious goals;
- Cumulative-effects concerns that may impact permitting of future expansions; and
- Financial impacts associated with the potential application of market-based options focused on lowering emissions, such as carbon tax or cap-and-trade.

ENVIRONMENTAL MANAGEMENT

To mitigate impacts to our business associated with potential regulatory risks, our operations continue to closely track regulatory developments in their respective jurisdictions with the support of corporate sustainability professionals.

Selected potential climate-related physical risks identified by our operations include:

- Flooding events of increased severity and / or frequency, with associated interruption to normal operations;
- Extreme rainfall events that could lead to the need for emergency discharge of untreated water;
- Prolonged periods of drought that could impact on availability of water supplies;
- Prolonged dry periods that could result in the need for increased management of dust / particulate emissions; and,
- Increased risk of wildfire on neighbouring land.

Our operations continually assess conditions and upgrade site responses and infrastructure, as required, to reduce the risk to our operations and the environment due to flood events. Candelaria Mine's primary water source is desalinated seawater, and a future requirement for additional water for the process due to anticipated climate-related changes could be satisfied by the existing seawater source and the high efficiency of water-use in Candelaria. Based on Eagle's estimated life of mine, and the design of its water management facilities, no change in the operation is expected and business interruption risk is expected to be low. Risk to Neves-Corvo's continued access to its primary water source, the Santa Clara Reservoir, is managed through intensifying the efforts to minimize the withdrawal of surface water by maximizing process-water recycling and by optimizing water management circuits and balances at the mine. Similarly, our Zinkgruvan operation regularly reviews its existing water balance and evaluates the inclusion of additional water management strategies.

Climate-related opportunities have also been identified by our operations. The most substantial business decision influenced by a component of climate change was the successful renegotiation of Candelaria's energy contract for supplying the mine operations from 2023 onwards. This provided an opportunity to dramatically improve the renewable mix of energy supplied by the grid and reduce the mine's carbon footprint by a substantial margin. Another benefit is the requirement of the supplier to build their capacity in the renewables space, particularly through the installation of a solar farm in the Atacama Region. In addition to the environmental benefits of this action, the new contract provides a positive business impact in the form of a measurable reduction in financial costs to the operation.

Opportunities associated with emerging low-carbon and more energy-efficient technologies are also being tracked by our operations and integrated into our business strategy. Opportunities currently being tracked include fuel-switching, use of renewable and lower-carbon footprint energy, and improving energy efficiency.

While acknowledging our responsibility to manage our own GHG emissions and adaptation to climate change, we also recognize the importance of our role in sustainably providing raw materials that are critical to support the global transition to a low-carbon future. A number of studies published in recent years by high-profile organizations, including the United Nations, World Bank, Euromines and OECD forecast a significant growth in demand for our products, in particular copper, lead and zinc.

Cu

DID YOU KNOW?
The average home contains approximately 400 pounds of copper



Energy and Emissions

Due to the typical energy-intensive nature of mining and mineral processing, managing energy consumption and GHG emissions is becoming increasingly important for Lundin Mining as we continue to increase our focus on our climate-related risks and opportunities. We are also committed to managing other emissions, including nitrogen oxides and sulfur oxides (NO_x and SO_x), particulates, noise and vibration, from our operations, each of which has the potential to be a significant environmental, health and / or social issue for mineral operations if not effectively managed.

All our operations track upcoming changes to regulations and policies, particularly in relation to energy and GHG, allowing them to plan for any adjustments required to future

energy management. As well, in accordance with the implementation of our RMMS, additional corporate governance was provided through an update to our GHG / Energy Efficiency Technical Standard and associated Guidance document in 2018. The Standard requires all operations to address a range of factors, including energy-use efficiency, identification of opportunities to reduce emissions, implementation of emissions controls, assessment of environmental and social air-quality impact, monitoring and evaluation of data, and training, as the foundation of the sustainability strategy.

In Europe, both our Neves-Corvo and Zinkgruvan operations comply with regulatory requirements through the completion of periodic energy audits and submission of formal plans for energy efficiency to the

authorities. Our Candelaria operation also conducts routine energy audits in accordance with regulatory requirements, and undertakes energy efficiency and GHG-reduction awareness workshops for operations staff and contractors. Eagle Mine's operations team has continued to identify opportunities for more efficient electricity and fuel usage, where possible, across its sites.

Energy Consumption

Typical of the global mining sector, the Company's energy consumption remains a significant input at all of our operational sites. At Lundin Mining, we are committed to a structured and transparent approach to our energy-consumption reporting. Details are provided in Appendix B.



Neves-Corvo – View of Operations

ENVIRONMENTAL MANAGEMENT



Zinkgruvan – Underground Mine Employees

Energy “Within” Lundin Mining

“Within” Lundin Mining, we define two categories of primary energy consumption:

- Fuel consumed at our operational and corporate sites, both by Lundin Mining and by contractors, for activities associated with our core business, such as in vehicles and for heating; and,
- Electricity consumed at our operational and corporate sites, both by Lundin Mining and by contractors.

ENERGY CONSUMPTION “WITHIN” LUNDIN MINING, 2018

- Energy from fuel consumption: 4,505,723 gigajoules (GJ)
 - Energy from electricity consumption: 4,547,174 GJ
 - Total energy consumption: 9,052,897 GJ

In terms of fuel consumption across our four operations, energy from diesel is consumed in the greatest quantities, followed by propane, gas oil, bio-pellets, gasoline, natural gas and finally biodiesel.

Energy Consumption Within Lundin Mining 2018



■ Energy from Fuel Within Lundin Mining
■ Energy from Electricity Within Lundin Mining

In 2018, our electricity supplies were 49% from renewable sources for Lundin Mining as a whole, while, in common with most mining operations, our fuel supplies were largely non-renewable (less than 1% renewable).

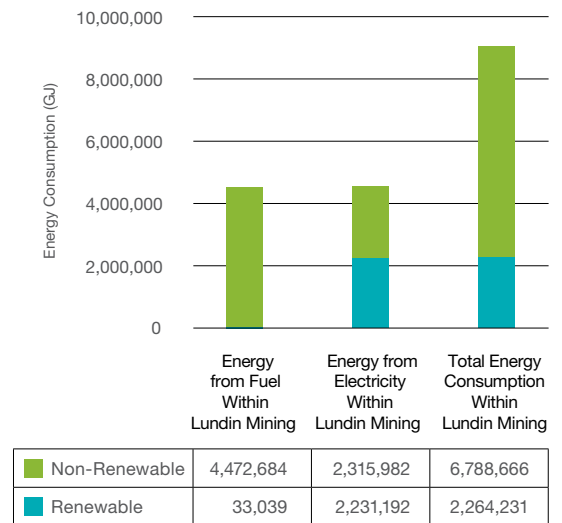
When comparing energy consumption by operation, there are significant differences that can be accounted for by the scale and nature of the operation. Candelaria is our largest operation and our largest energy consumer, with 6.7 million gigajoules (GJ) consumed across its mining complex and port site. To support advancements in responsible energy management, Candelaria initiated discussions in 2018 with its supplier to negotiate an increase of renewables in the energy mix, prioritizing wind and solar energy, commencing in 2023. The result of these discussions will be a significant increase to a minimum of 80% renewables in the energy mix and overall reductions in electrical costs, predicted to be almost half of the 2018 rate. Neves-Corvo was our second-largest energy consumer (almost 1.3 million GJ), reflecting its production levels, followed by our two smaller operations, Eagle Mine and Zinkgruvan. As expected, corporate headquarters energy use was very low in comparison to our operational sites.

Zn

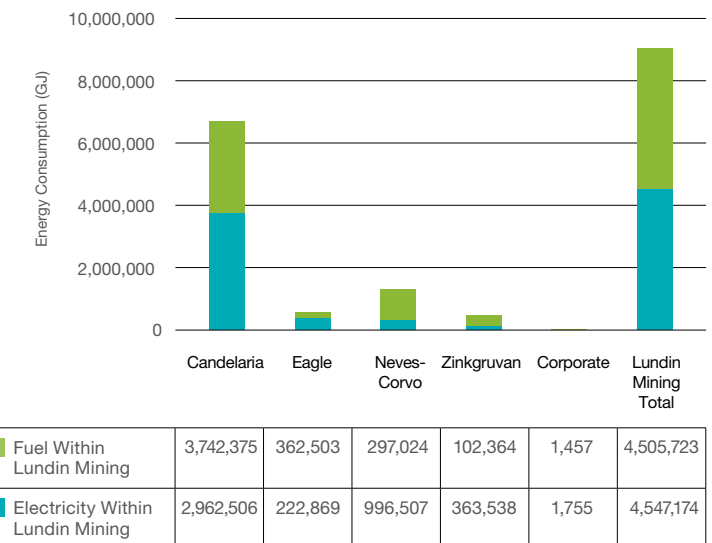
DID YOU KNOW?
Of the estimated 12 million tonnes of zinc annually produced, about 50% is used for galvanization



Renewable and Non-Renewable Energy Consumption Within Lundin Mining 2018

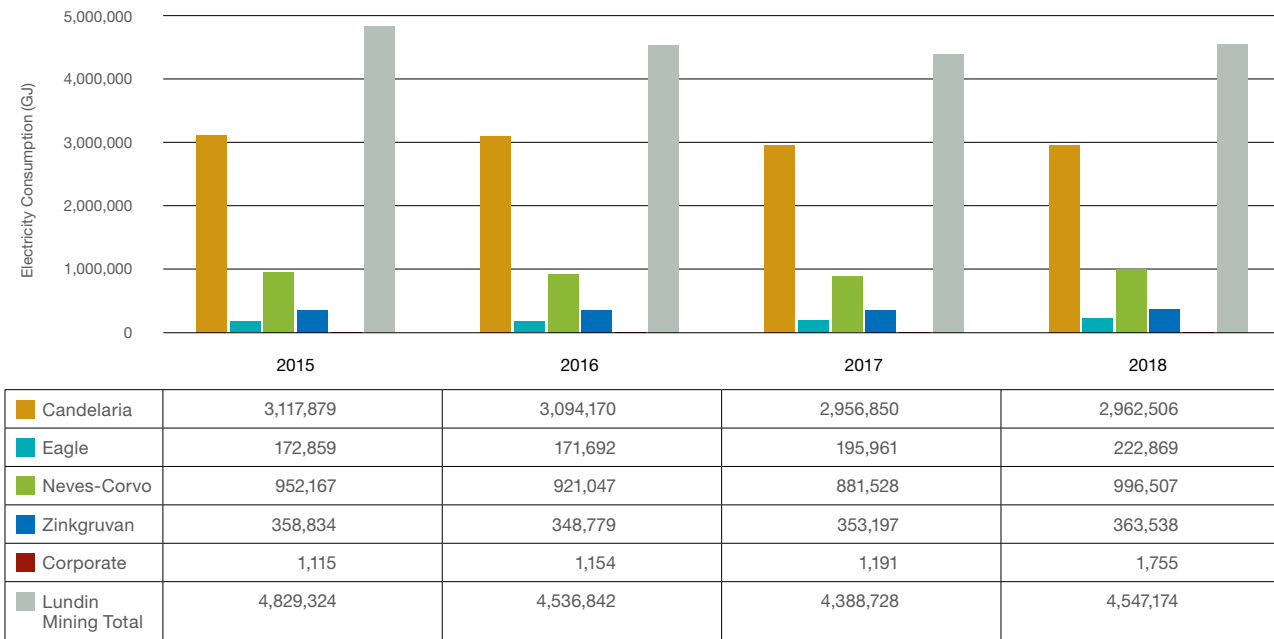


Energy Consumption Within Lundin Mining by Operation 2018



ENVIRONMENTAL MANAGEMENT

Total Electricity Consumption Within Lundin Mining: 2015 to 2018



Notes:

- 1) 2015 Candelaria data were recalculated in 2016.
- 2) Aguablanca, Spain 2015 data 226,471 GJ included in 2015 total consumption. Ownership of Aguablanca was divested in 2016.

Lundin Mining's total electricity consumption is heavily influenced by the relatively massive scale of our Candelaria operation, with Candelaria's reductions in consumption in recent years having a positive impact on our overall electricity-consumption levels. However, overall reductions for Lundin Mining have not been observed this year, due primarily to the mine expansion projects at our Eagle and Neves-Corvo operations. As would be expected, electrical power requirements increase with the expansion of these underground mines. In addition, electricity consumption increased this year at Eagle's mill site due to the harder type of ore that is being processed, requiring more energy to crush and mill. Neves-Corvo and Zinkgruvan also consumed additional electricity due to increased mill throughput.

The most significant increase in Lundin Mining's overall energy consumption in 2018 was fuel, with consumption increasing at all of our operations compared to last year. The largest increase was at Candelaria, which was involved in numerous projects, expansion-oriented and permit-driven, that required the mobilization of more equipment. Significant projects undertaken included

the reclamation of the historical San Esteban 1 tailings facility, with relocation of tailings material to the Candelaria tailings facilities, and the continued construction and commissioning of the Los Diques tailings facility. Other factors included the decline in ore grade compared to previous years, which would result in the need to move more material to obtain the same volume of concentrate as compared to recent years, consistent with mine age; extraction of non-mineralized rock to access new ore bodies; and increased waste rock haulage distances.

With expansion and new projects, increased fuel-consumption patterns at Candelaria are nearly inevitable; to offset these outcomes, the operation is focusing on achieving measurable improvements in efficiency to minimize resulting impacts. Examples include re-investment in a new mining fleet in 2018, with the addition of new energy-efficient vehicles, and introduction of shovels that were chosen for additional benefits beyond their fuel consumption, such as improved dust control and adding to the energy-efficiency profile of the mine. The shovels are more efficient and consequently require less running-time to complete the same work.



Eagle and Neves-Corvo's increased consumption of fuels is attributed to the expansion projects at these locations, both requiring the extraction of non-mineralized rock for project development. A smaller increase in fuel consumption at Zinkgruvan is attributed to normal fluctuations in site activities and fuel required for heating.

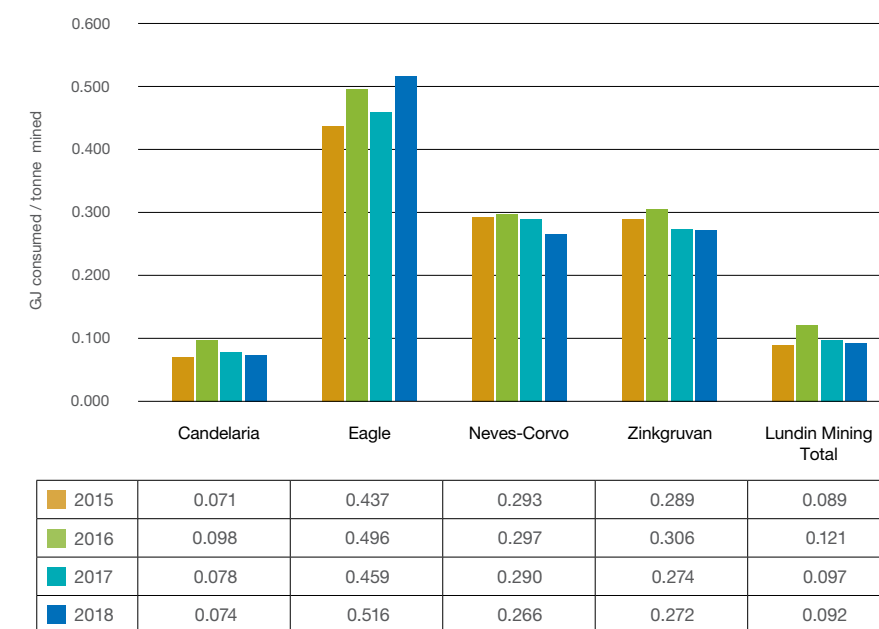
Energy Intensity

In combination with our total energy consumption, energy intensity enables us to analyze our energy efficiency. Energy intensity ratios define energy consumption in the context of an organization-specific metric, and in previous years, we reported our energy intensity in terms of production volume (per tonne of concentrate). Following a review in 2018, we consider that a ratio that expresses the energy required per unit of activity is a more representative intensity denominator for our operations. Our energy intensity is, therefore, expressed as energy consumed "within" Lundin Mining (fuel and electricity) per tonne mined

(ore + waste rock). A process to review and further refine our analysis to confirm a metric that most accurately reflects our activities and efficiency is planned for 2019.

Notably, a decreasing trend in energy intensity can be observed for Lundin Mining overall since 2016. This demonstrates that, although total energy consumption increased this year, efficiency improvements have been achieved in relation to our mining activities. Candelaria has the lowest energy intensity levels, reflecting the relatively large tonnage of ore and waste rock excavated at its large-scale, open pit operation. Our remaining three underground operations do not benefit from such efficiencies of scale, especially those located in colder climates, requiring additional energy for heating. For example, Eagle Mine has the highest energy intensity using this metric, since almost one-third of Eagle Mine's energy consumption is for heating and its ore is hauled 100 kilometres to the mill site, neither of which are reflected in terms of rock mined.

Energy Intensity (Within Lundin Mining), 2015 – 2018



Notes: Based on recalculated 2015 base year; "Total" includes corporate energy use.



Zinkgruvan – Heat Exchangers 2018

ENVIRONMENTAL MANAGEMENT

Energy “Outside” Lundin Mining

As a step toward tracking selected emissions associated with our value chain, we collect contractor data for fuel consumed during some transport activities that take place beyond our project boundaries to support our operations.

“Outside” Lundin Mining, we define two categories of primary energy consumption:

- Fuel consumed by contractors for transport of concentrate and our most significant imported raw materials; and,
- Fuel consumed by contractors for transport of some non-mineral wastes off-site and some personnel transport.

The data is allocated according to the categories defined in the [GHG Protocol Corporate Value Chain \(Scope 3\) Accounting and Reporting Standard](#).

Energy Consumption “Outside” Lundin Mining 2018

Category 4: Upstream Transportation and Distribution	Transport of concentrate and our most significant imported raw materials.	257,232 GJ
Category 5: Waste Generated in Operations	Transport of our non-mineral wastes.	3,849 GJ
Category 7: Employee Commuting	Transport of some personnel.	26,893 GJ

GHG Emissions

Typical of the global mining sector, our operations use significant quantities of diesel fuel to perform underground and open pit operations. Consumption of electrical power is also essential for our mineral processing operations and is a significant contributor to the GHG emissions for our operations, all of which are linked to their respective national grids for electricity supplies.

At Lundin Mining, we are committed to a structured and transparent approach to our GHG data reporting. Details are provided in Appendix B.

Scope Allocation

GHG EMISSION TYPE	GHG EMISSION SOURCE
Direct (Scope 1)	Fuel, refrigeration and air-conditioning equipment, and blasting agents used on-site by Lundin Mining and contractors for core business activities and in corporate offices.
Energy indirect (Scope 2)	Purchased electricity consumed on-site and in corporate offices.
Other indirect (Scope 3)	Fuel consumed “Outside” Lundin Mining for concentrate, some significant raw materials, some wastes and transport for some personnel.

Ni

DID YOU KNOW?
Approximately 3,000 nickel-containing alloys are used everyday



SCOPE 1 AND SCOPE 2 GHG EMISSIONS

In common with other companies in the mining sector, operating conditions at our mines change over time. Typically, changes relate to the ore (ore grade, hardness, depth and accessibility), expansion projects (extracting and hauling non-mineralized rock and creating new mine areas), haulage distances for ore and waste rock, and on-site construction (new tailings facilities, tailings facility embankment raises, drainage and water-storage projects). Annual changes also occur for some emission factors, particularly for electricity, as source-energy mixes fluctuate on an annual basis.

Biogenic CO₂ emissions in 2018 are not included in our Scope 1 accounting, in accordance with GHG Protocol requirements, and are reported separately at 2,579 tonnes CO₂e, reflecting an increasing trend in renewable content in fuels in Europe.

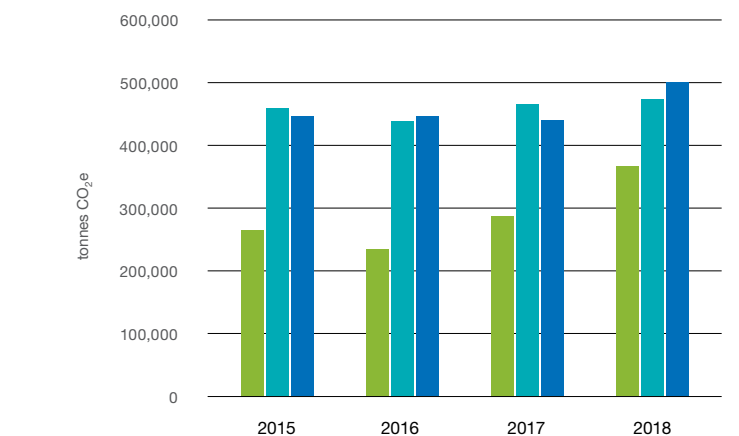
The trends in Lundin Mining’s total GHG emissions in 2018 correlate with those observed in energy consumption, with an increase in Scope 1 emissions reflecting the increased fuel consumption and the smaller increase in Scope 2 emissions reflecting the smaller increase in electricity consumption. Total Scope 1 and Scope 2 emissions have each increased since our 2015 base year. Fugitive GHG emissions from refrigeration and air-conditioning equipment at our operations are included in our Scope 1 emissions for the first time this year, calculated on a preliminary screening basis, the main purpose being to allow their relative contribution to our GHG emissions to be assessed. These emissions form only 0.14% of Lundin Mining’s Scope 1 emissions.

As previously discussed, in September 2018, Candelaria successfully negotiated a new electrical contract, a Power Purchase Agreement (PPA), to commence in 2023, that guarantees an electricity supply with a minimum of 80% renewable energy content. This contract is an important step towards reducing Candelaria’s carbon footprint and is expected to impact favourably on Lundin Mining’s market-based Scope 2 GHG emissions in the future.



Neves-Corvo – Lead Thickener

GHG Emissions: 2015 to 2018



	2015	2016	2017	2018
Scope 1	264,843	234,470	287,225	366,653
Scope 2 Location-Based	458,887	438,620	465,263	473,276
Scope 2 Market-Based	446,272	445,924	440,075	500,999

ENVIRONMENTAL MANAGEMENT

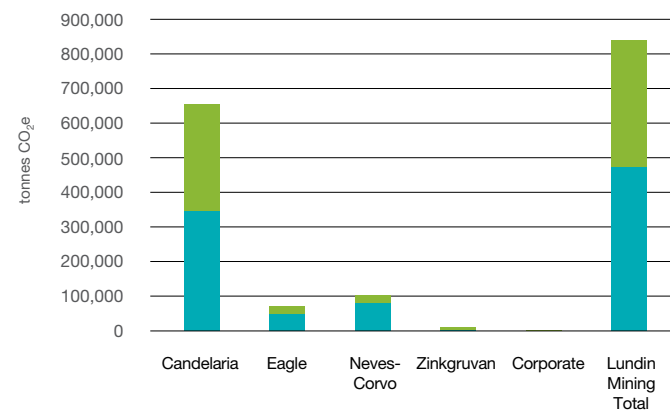
In our comparisons across operations and for our GHG emissions intensity calculations, we have used the location-based Scope 2 data.

With the exception of Zinkgruvan, which benefits from a low national electricity emission factor, electricity consumption is the greatest source of GHG emissions at our remaining operations. Candelaria's emissions reflect the large-scale operation, compared to our other sites; the open pit mining, with the associated vehicle movements over longer distances for haulage of ore and waste rock; and the several large construction projects, such as Los Diques.

Greenhouse Gas Emissions Intensity

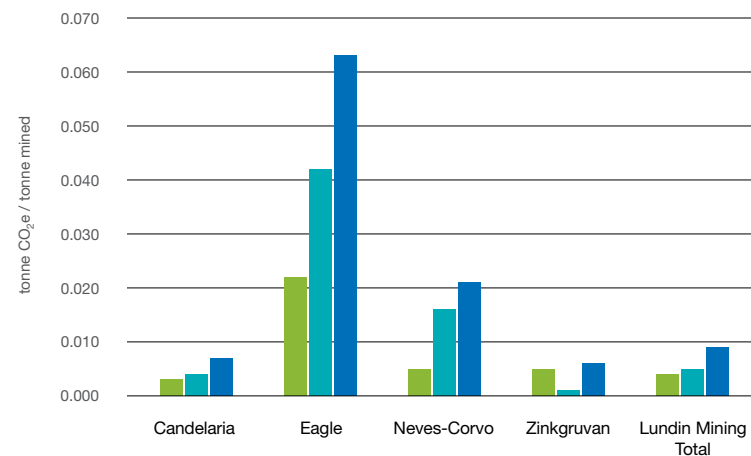
In combination with our assessment of our total GHG emissions, we also track our GHG emissions intensity, which enables us to analyze our efficiency in managing GHG emissions. As described for energy intensity, our GHG emissions intensity is expressed this year as GHG emissions (Scope 1 + Scope 2 location-based) per tonne mined (ore + waste rock), as opposed to per tonne of concentrate reported in previous years.

Scope 1 and Scope 2 GHG Emissions, by Operation 2018



Scope 1	310,894	24,666	23,051	7,968	74	366,653
Scope 2 Location-Based	344,901	47,161	79,116	2,070	28	473,276

GHG Emissions Intensity 2018



Scope 1	0.003	0.022	0.005	0.005	0.004
Scope 2 Location-Based	0.004	0.042	0.016	0.001	0.005
Scope 1 + Scope 2	0.007	0.063	0.021	0.006	0.009

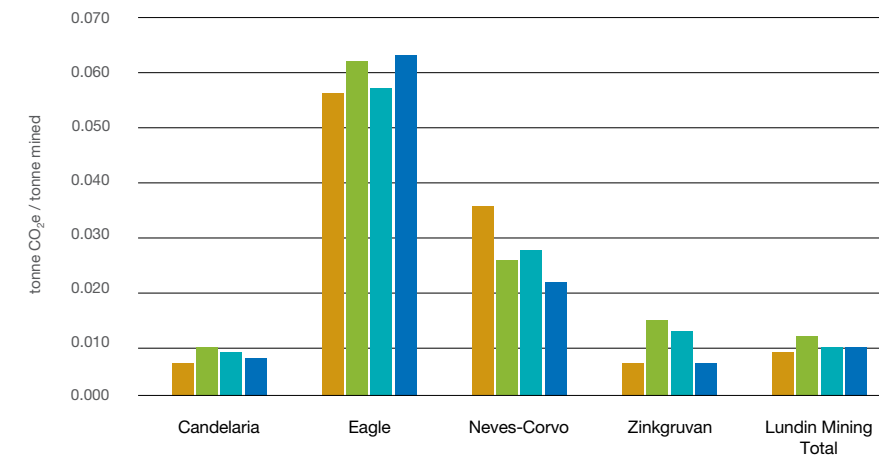
The GHG emissions intensity level at each operation reflects its individual situation, including internal factors, such as the type of mine, mine development activities and type of ore; and external factors, such as the renewable content of the grid electricity supply. The pattern of GHG emissions intensity data generally replicates that observed for energy intensity. The relatively low GHG emissions intensity at Candelaria reflects large-scale movement of rock at this operation and the relatively high intensity at Eagle reflects emissions associated with heating and ore haulage. Regional and national emission factors also influence these data, whereby our Zinkgruvan operation benefits from a lower emission factor, while Eagle has the highest emission factor of all of our operations.

Lundin Mining's GHG emissions intensity also replicates the decreasing trend described for energy intensity for Lundin Mining overall since 2016. The increase in emissions intensity at our Neves-Corvo operation in 2017 and our Eagle Mine in 2018 can be attributed

to development works associated with the expansion projects at those operations. Similar to energy, although total GHG emissions increased this year, associated with significant development and construction projects and factors associated with increasing mine age, efficiency improvements have been achieved overall in relation to mining activity.

In 2018, Lundin Mining initiated a review of a previously considered, preliminary, GHG-emissions-intensity target, based on trends from 2015–2017, to reduce Scope 1 and Scope 2 (market-based) emissions per tonne of concentrate produced by 1% between 2015 and 2018. Our preliminary intensity target was developed as a trial in tracking GHG emission trends across Lundin Mining operations. Subsequent detailed analysis determined that this metric was not the most representative in tracking GHG emissions at our operations. As a result, this metric is under adjustment and results will be presented in future reporting.

GHG Emissions Intensity, 2015 – 2018



2015	0.006	0.056	0.035	0.006	0.008
2016	0.009	0.062	0.025	0.014	0.011
2017	0.008	0.057	0.027	0.012	0.009
2018	0.007	0.063	0.021	0.006	0.009



Candelaria – Haul Truck

ENVIRONMENTAL MANAGEMENT



Recognizing and Promoting Energy Efficiency Initiatives



In 2018, Lundin Mining's global operations participated in a GHG Emissions Reduction and Energy Efficiency benchmarking program, which worked collaboratively with site staff to identify best practices and recommendations for improvement. Complementing this effort, our mines advanced initiatives to improve energy efficiency and reduce their carbon footprint.

In recognition of its efforts, Neves-Corvo Mine received the 2018 Award for Best in Energy Reduction by local authorities (DGEG – Direção Geral de Energia e Geologia and SGCIE – Sistema de Gestão dos Consumos Intensivos de Energia) for its commitment to energy efficiency over the course of the past 10 years. Our Zinkgruvan Mine also achieved improved energy efficiency following the completion of a US\$3 million investment in the installation of two heat exchangers, resulting in a decrease of the mine's historical dependency on heating oil. In addition to improved cost efficiency, the heat exchangers reduce energy consumption levels comparable to an estimated one hundred homes per year.



Concurrent with the review of the trial intensity target, ongoing efforts by Lundin Mining operations to reduce overall GHG emissions were advanced in 2018, with examples including the acquisition of improved fuel-efficient vehicles at Candelaria in late-2018, the renegotiation of Candelaria's Power Purchase Agreement (PPA) to include a greater percentage of renewables in the energy mix (completed in 2018, with implementation commencing in 2023), the completion of a Lean Six Sigma Green Belt (LGBC)™ project at Eagle Mine to optimize haulage truck loads with associated fuel reductions, and the initiation of the development of a long-term, Company-wide sustainability strategy. These efforts build upon the recommendations provided in our GHG emissions and Energy Efficiency Benchmarking program (2017), and associated GHG emissions reduction findings will be presented in future reports.

Scope 3 Emissions

In tracking selected emissions associated with our value chain, we calculate Scope 3 emissions from fuel used by contractors for transport of our concentrate product, import of some of our main raw materials, transport of some of our wastes and some personnel transport off-site.

Our calculated Scope 3 emissions were 20,435 tonnes CO₂e in 2018, of which 17,111 tonnes CO₂e was attributable to fuel used by contractors to transport concentrate to port.

GHG Emission Reduction and Energy Conservation Measures

The benchmarking program assessment commissioned by Lundin Mining in 2017, and concluded in 2018, identified that the GHG-reduction strategies that have been implemented, or are being considered, at each site form a solid foundation for a robust energy and GHG-reduction program. Our operations continue to focus on identifying opportunities to improve energy efficiency and reduce GHG emissions.

Systems to enhance data collection on our energy and GHG-emission-reduction initiatives require further development, as currently the benefits of a number of implemented initiatives are not being quantified. In some cases, initiatives have been undertaken without immediately transparent estimates of the anticipated reductions, yet reductions have been evident.

Our reductions in energy consumption are based on estimates of the annual saving of fuel (Scope 1) or electricity (Scope 2 location-based) to be gained through each energy-reduction initiative fully implemented by the end of 2018. The methodologies for estimating the energy savings vary across our sites, depending on the nature of the initiatives.

During 2018, 30 energy- and GHG-emission-reduction initiatives were assessed and / or undertaken across our operations. Within Lundin Mining, energy-reduction initiatives – fully implemented by the end of the reporting period and for which energy-saving data was available – resulted in estimated energy savings of 4,220 GJ, Scope 1 GHG-emission savings of 237 tonnes CO₂e, and Scope 2 GHG-emission savings of 69 tonnes CO₂e.

Key aspects of our energy- and GHG-reduction programs and initiatives under investigation or implementation in 2018, are described below for each operation.

Candelaria	<ul style="list-style-type: none"> Specialist committee, supported by specialist consultants, to progress the identification and implementation of energy-efficiency opportunities; Early-stage energy- and GHG-emission-reduction-assessment projects continued, including potential for re-use of wood and residual oil, and for installation of solar heating for dressing rooms; Continued implementation of an energy- and GHG-emission-reduction project comprising gradual replacement of lighting above and below ground; Trial of a fuel additive to reduce emissions; and, Successful renegotiation of PPA with energy supplier, for a guaranteed 80% renewable component (prioritizing solar and wind) in the electricity supply for the complex from 2023.
Eagle	<ul style="list-style-type: none"> Retention of a Continuous Improvement Lead and a Continuous Improvement Steering Committee to evaluate and implement selected staff-provided recommendations, including energy-reduction initiatives, and advance overall Lean Six Sigma training and project implementation; Assessment of new energy-saving projects in 2018 across the mine and mill sites, including lighting management in three new areas, modifications to reduce fan speeds between shifts, use of a fuel additive to reduce emissions and save on fuel consumption underground, and an ambient heating and cooling optimization project in a facility at the mine site; and, Completion of a Lean Six Sigma Green Belt (LGBC)™ project to optimize haulage truck loading, resulting in an estimated reduction of 23,000 gallons of diesel fuel.
Neves-Corvo	<ul style="list-style-type: none"> Early-stage energy- and GHG-emission-reduction-assessment projects progressed to implementation, including changes to lighting above and below ground; Implementation of energy- and GHG-emission-reduction projects continued, including several retrofit projects in the processing plant to improve efficiency; and, A project streamlining the use of blowers to save energy was fully implemented.
Zinkgruvan	<ul style="list-style-type: none"> Implementation of energy- and GHG-emission-reduction-assessment projects commenced, including lighting management in new areas; Implementation of energy-saving projects completed in 2018 including installation of new and more energy-efficient heat exchangers in two shafts; and, Maintenance of 100% renewable-energy source for electricity supply, supported contractually by Guarantees of Origin, since switching on January 1, 2017.
Corporate offices, Toronto, Canada	<ul style="list-style-type: none"> Office participation in "ForeverGreen," a tenant engagement program where one of the core components is energy efficiency and carbon-emission reduction; and, Design and construction of a new corporate office space with a focus on sustainability, including: <ul style="list-style-type: none"> consolidation of our two corporate offices (former UK and Toronto office location) into one Toronto-based location, incorporation of recycled materials wherever possible; and, selection and installation of energy-efficient equipment and automatic lighting shut-off systems.

ENVIRONMENTAL MANAGEMENT

Air Emissions

Eagle and Neves-Corvo are the only Lundin Mining sites with regulated nitrogen and sulphur oxides (NO_x / SO_x) air emissions. In accordance with Eagle's regulatory approvals, they adhere to operational use restrictions on their stationary engines, such as operating the back-up generator at the mine site for only a maximum 500 hours per 12-month period. At Neves-Corvo, samples from two boilers are analysed for a suite of parameters; in 2018 all samples were in full compliance with permitted limits.

Management of particulate emissions (dust) by mining operations is important for employees and contractors, the surrounding communities and the environment. This is particularly true at our Candelaria Mine, which is located in a desert area that is already subject to dusty conditions and where authorities publicized their intent to formally declare the nearby area of Tierra Amarilla as a saturated zone for particulate matter (PM 10) in early 2019. In this area, as with our other sites, we continue to monitor regulatory changes and participate in government initiatives to monitor new dust control activities.

All our operations have controls and procedures in place to manage emission of particulates both within and beyond our project boundaries, with associated monitoring to allow the effectiveness of controls to be routinely assessed and adjusted, if required. Controls include application of water on unpaved roads and operations areas, tailings embankments, open pit working faces and following blasting; sprinkler systems at ore passes, loading bays and stockpile areas; addition of binding agents; dust capture systems and air filters in indoor areas; wheel washes and sweeping of paved areas; and covering of concentrate and other materials for transport. Documented procedures and associated training of personnel as to the circumstances under which action is required are critical to the effectiveness of these measures.

Zn

DID YOU KNOW?
 > 2 million tons of zinc are recycled annually

In addition to compliance monitoring at all of our sites, particulate matter is routinely measured to assess any impact from Neves-Corvo's operations in the neighbouring villages of Graça, Corvo and Neves. Candelaria monitors particulates in the communities of Tierra Amarilla, Caldera and Nantoco for the authorities at official Community Status monitoring stations, the data representing the cumulative effect of a range of sources of particulates in the region, including from other mines and a smelter.

In 2018, all our operating mines were in full compliance, with particulate emissions measured below permitted limits. In recognition of the fact that measurements recorded at the off-site Community Status stations are contributed to by multiple local non-Candelaria activities, occasional exceedances of limits recorded at these locations are not considered by the authorities to be non-compliances.

Noise and Vibration Emissions

Lundin Mining continued to manage noise and vibration emissions from our sites throughout 2018 with the primary aim of minimizing disturbance to local communities.

Noise-mitigation works undertaken in recent years at Neves-Corvo and Zinkgruvan have reduced emissions and improved compliance. At our Zinkgruvan Mine, an innovative retrofit to the Cecilia vent shaft in 2018, to alter the direction of the noise emissions, has achieved a further measurable reduction in noise emissions. The operation also reduced noise by enclosing a cement silo and has upgraded its vibration monitoring system. Following on from previous noise-mitigation works at five shafts, further works were undertaken at two additional shafts at Neves-Corvo in 2018, enabling the mine to achieve full compliance with noise disturbance criteria at surrounding villages. All sites were in full compliance with regulated noise limits throughout 2018.

At our Candelaria Mine, a Participatory Vibration Monitoring program was implemented in 2018, to collaboratively monitor mine-related blasting events in a fully transparent manner with the nearby communities and local authorities.



BIODIVERSITY AND LAND MANAGEMENT



Lundin Mining considers its role in biodiversity stewardship to be a fundamental sustainability responsibility. Lundin Mining contributes to biodiversity management through the proper assessment of biodiversity conditions, minimization of habitat degradation and contributions to habitat restoration during the life of mine cycle.

All four of our operational sites have continued to progress the alignment of their existing biodiversity management plans to the corporate requirements, including compliance with the requirement to prepare and update their biodiversity action plans on an annual basis, identifying biodiversity risks and opportunities, and to inform the development of operational plans at each site.

Lundin Mining's objectives for biodiversity management include:

- Documenting existing biodiversity conditions in areas undergoing exploration programs;
- Considering biodiversity-related information and management systems during due diligence assessment programs;
- Undertaking comprehensive biodiversity baseline studies to document conditions prior to the development of new mines, or significant expansion beyond a current mine's footprint;
- Monitoring biodiversity management programs and promotion of sustainable management of living natural resources through the fostering of partnerships that seek to integrate conservation needs and development priorities;
- Considering opportunities for implementing actions to achieve similar biodiversity values after closure as those evidenced prior to the site's development, where possible; and,
- Aiming to include community-based knowledge in the development of the plans, where available.

Walking for Biodiversity

Continuing their open-door policy of encouraging local community groups to tour the mine and learn about environmental, biodiversity, and operational activities, Neves-Corvo launched a new initiative in 2018, "Walking for Biodiversity." More than 120 local people joined the program to celebrate the area's biodiversity and learn about Neves-Corvo's commitment to supporting biodiversity and environmental stewardship. Visitors toured the mine facilities, attended a workshop on local fauna and flora, and enjoyed meeting, greeting and eating at a group lunch.



ENVIRONMENTAL MANAGEMENT



Environmental Stewardship, Partnerships and Biodiversity



Back in 2007, Neves-Corvo signed an agreement with the Institute for the Conservation of Nature and Biodiversity (ICNB) to contribute to the European target of halting biodiversity loss. Despite the expiry of that agreement, Neves-Corvo has voluntarily continued biodiversity-related initiatives, including biodiversity studies, review of best available techniques in industrial effluent management and treatment, stewardship of the Oeiras River, conservation of aquatic communities, and following the management plan of the Natural Park of the Guadiana Valley. Partnerships are important to Neves-Corvo's initiatives and include the Animal Neutering and Cat Rescue program, the Oeiras River biomonitoring program, a soil remediation program with the University of Lisbon, and the Coimbra University aquatic biodiversity partnership. Bird conservation programs have also been developed jointly with the League for the Protection of Nature (LPN).

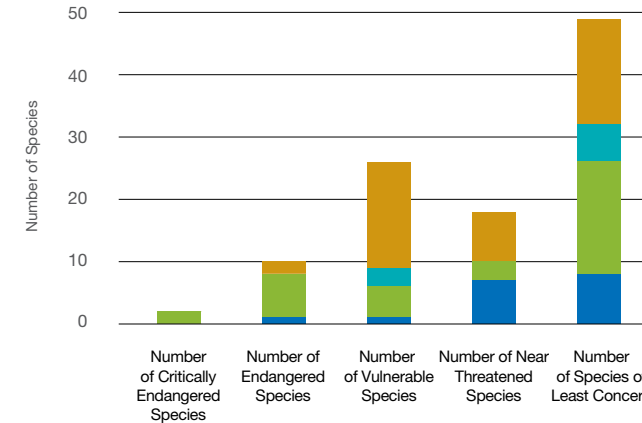


Zinkgruvan – Ekershyttebäcken Creek

Neves-Corvo's lands in Portugal lie adjacent to the Oeiras River, a High Biodiversity Value Area integrated in the Guadiana Valley Natural Park as part of the European Natura 2000 network. Conservation of the Oeiras River habitat is one of the highest environmental priorities for Neves-Corvo.

In Sweden, part of our Zinkgruvan operational area lies within the Knalla Nature Reserve, a popular area for hiking. A minor part of Lake Viksjön lies within this reserve and our Zinkgruvan operation plays an important role in managing the water level of the lake, while maintaining the flow rate of a nearby creek within a valley of high natural value. There are no protected or High Biodiversity Value Areas within or adjacent to our Candelaria or Eagle sites.

IUCN Red List and National Conservation List Species With Habitats in Areas Where Lundin Mining Has Operations



Species	Number of Critically Endangered Species	Number of Endangered Species	Number of Vulnerable Species	Number of Near Threatened Species	Number of Species of Least Concern
Candelaria	0	2	17	8	17
Eagle	0	0	3	0	6
Neves-Corvo	2	7	5	3	18
Zinkgruvan	0	1	1	7	8

Species of Interest

Habitats hosting two critically endangered and 10 endangered species, as defined by the International Union for Conservation of Nature (IUCN) Red List and national conservation lists, are located in regions where Lundin Mining has operations. The assessment and, where present, the monitoring and protection of these species is included in the relevant biodiversity management plans developed and implemented by each site. The 2018 data differ slightly for Neves-Corvo and Zinkgruvan, as compared to last year, benefitting from both the consideration of new data and the redefinition of boundaries to include only areas that could conceivably be affected by our operations.



Neves-Corvo – Training Centre Garden

Ni

DID YOU KNOW?
Nickel is essential for vegetation cell health

ENVIRONMENTAL MANAGEMENT



Water Discharge and Aquatic Biodiversity

A high priority for all of

Lundin Mining's operations is to minimize effects on receiving water bodies and related habitats. This is accomplished through the integration of robust water treatment and management facilities and comprehensive procedures for the management of all discharges, with effective monitoring for timely detection of any changes to aquatic biodiversity that might be attributable to our activities.

In 2018, no water bodies or related habitats were significantly affected by water or run-off discharges at Candelaria (ocean discharge) and coastal marine monitoring at our Punta Padrones Port Desalination Facility has continued to demonstrate that no negative impacts upon biodiversity have been recorded since the mine's port and desalination plant operations commenced.

In 2018, no water bodies or related habitats were significantly affected by water or run-off discharges at our Eagle operations. At Eagle's mill site, the water treatment plant discharged during most of 2018 to an existing wetland adjacent to the Escanaba River, which eventually discharges into Lake Michigan. The water treatment plant discharge is estimated to account for at least 5% of the annual average water volume in the wetland. While this wetland is not protected, does not contain any protected or endangered species, and does not have significant habitats or a high biodiversity value, Eagle maintains optimal water levels for the health of the wetland's vegetation in compliance with its permit conditions. At Eagle's mine site, Lake Superior is the final receiving water body for the treated mine site water, following its injection to groundwater within the mine's boundary. Monitoring is routinely undertaken and will be continued throughout operations, closure and the post-closure period.

The concerns at our Neves-Corvo Mine have been on improving water management and biodiversity initiatives while also monitoring and managing an effect that was reported in the past. In general, Neves-Corvo's strategy for the conservation of biodiversity is to preserve areas with no impact; improve conditions in areas with low impact; improve conditions in areas that have experienced high impact, after removal of the cause; and, in areas where impacts cannot be avoided, create new habitats or improve existing habitats in areas that have not been

affected. The historical Neves-Corvo water discharge into the Oeiras River, which was previously reported to have resulted in a localized biodiversity impact, continues to be monitored to ensure the successful performance of mitigation measures. While Neves-Corvo reported improved water chemistry in 2018, changing weather impacts observed in the region, including recent periods of extreme drought such as recorded in 2017, have resulted in prolonged river bed dryness, potentially contributing to stresses on species diversity in the river. In response, Neves-Corvo has implemented several partnerships with local universities to advance protection of river species, including rare bivalves. These efforts, including ongoing habitat protection, are supported through on-site water treatment and storage management initiatives, which remained a strong focus for the operation in 2018.

Our Zinkgruvan Mine, in continuous operation for over 160 years, also previously reported progress on a series of water-quality and ecotoxicology studies that commenced in 2015 to assess the potential, if any, for long-term risks to the aquatic community in the catchment areas of our regulated discharge, tailings facility and clarification pond. The studies have concluded that, typical of historical mining and industrial areas, there are selected elevated metal concentrations in water; however, the benthic communities in the creek that receives our discharge are thriving, with the number of taxa in the bottom fauna increasing since the 1990s. This is attributed to the contribution made by Zinkgruvan water discharges towards the maintenance of consistent water levels in the creek during periods of low flow, which are associated with naturally occurring seasonal water-level variability, thereby reducing negative impacts on aquatic fauna.



Some of the more significant biodiversity management actions implemented or continued, and our engagement activities for biodiversity conservation, are summarized below, by site.

Candelaria	<ul style="list-style-type: none"> • Extensive biodiversity monitoring programs to periodically assess desert flora and fauna in the mine complex region; • Coastal marine monitoring program continues to assess potential impacts upon aquatic life and fish resources from the desalination plant's seawater abstraction and discharge process in addition to the port facilities and concentrate shipment; and, • Relocation of species of cactus and reptiles from the footprint of the new Los Diques tailings facility and waste rock expansion projects.
Eagle	<ul style="list-style-type: none"> • Annual flora, fauna and aquatic surveys, and threatened or endangered species assessments at the mine and mill sites and surrounding areas; and comparison of results to baseline data to assess any changes that could be potentially attributable to mining operations; and, • Rigorous management of discharges to ensure the downstream water environment and the ultimate receiving water bodies for the discharges from the mill site (Lake Michigan) and the mine site (Lake Superior) are not adversely impacted.
Neves-Corvo	<ul style="list-style-type: none"> • Routine monitoring of flora and fauna (birds, mammals, reptiles, amphibians), and air and water quality; • Soil remediation and biomonitoring initiatives (including aquatic macroinvertebrates, fish and shellfish) in partnership with the University of Lisbon and Coimbra University; • Working with the League for the Protection of Nature, contributing to the conservation of three endangered species of bird prioritized by the European Union: Bustard, Lesser Kestrel and Little Bustard; • Working with the Institute for the Conservation of Nature and Biodiversity (ICNF) / Parque Natural do Vale do Guadiana (PNVG) to support several projects and management planning for the Guadiana Valley; • Implementation of an emergency response plan developed in collaboration with Évora University and PNVG to safeguard the Red Listed mollusc species <i>Unio tumidiformis</i> in the Oeiras River; and, • Further studies to evaluate the feasibility of applying Best Available Techniques in the treatment / management of water discharged to the Oeiras River.
Zinkgruvan	<ul style="list-style-type: none"> • Development of species inventories for areas closest to operations for natural values and biodiversity classification; • Biannual monitoring of the success of the relocation of a Swedish protected orchid (<i>Dactylorhiza incarnata</i>) to a nearby sheltered area, to protect flora species in an area of high natural value adjacent to the new tailings facility; • Commitment to transferring water from Lake Viksjön to supplement the flow rate in a creek that flows through a high natural value valley, maintaining water levels as agreed to in association with the previous approval of the tailings facility; and, • Nearby lakes are of high cultural value and, as such, the operation considers it to be a key priority to ensure these lakes are not adversely impacted.

ENVIRONMENTAL MANAGEMENT

Land Management

At the beginning of 2018, Lundin Mining was managing 5,706 hectares of land we own or lease that are occupied by our mining and processing activities and associated infrastructure. At the close of 2018, Lundin Mining was managing 5,802 hectares. Most of the land managed by Lundin Mining is located at our Candelaria Complex (4,961 hectares).

Land Management (Hectares)

	CANDELARIA	EAGLE	NEVES-CORVO	ZINKGRUVAN	TOTAL
Total land disturbed and not yet rehabilitated (Opening Balance)	4,865	55	605	181	5,706
Total amount of land newly disturbed within the reporting period	96	0.5	0	0	96
Total amount of land newly rehabilitated within the reporting period to the agreed-upon end use	0	0	0	0	0
Total land disturbed and not yet rehabilitated (Closing Balance)	4,961	56	605	181	5,802

Most of the land disturbance in 2018 was located at our Candelaria operation, associated with an increase in the footprint of the waste rock dump and existing tailings facility, and including the completion of the construction of the new Los Diques tailings facility. Eagle's slight increase was due to the construction of a new water-discharge outfall at the mill site.

MINE CLOSURE



Lundin Mining takes a responsible and integrated approach to mine closure planning, with the principal aim being to design, develop and operate our facilities to minimize their overall social and environmental impact upon their eventual closure. Lundin Mining's operational and closed sites have approved mine closure plans (MCPs), as required by Lundin Mining's Procedure for Mine Closure Planning. The MCPs are developed to a level of detail that reflects the stage of each mine's life cycle, and they are updated at least every three years or when required due to operational changes.

In 2018, we initiated the update of our Lundin Mining Mine Closure Planning Standard as part of our RMMS implementation process and this document will be finalized in 2019. The document requires use of a risk-based approach to closure planning, and the definition of site-specific closure objectives and completion criteria for each operation. Our closure plans are required to address legal obligations and corporate commitments, financial provisions, community interests, the environment and employees' expectations once the mine is closed. Lundin Mining has implemented financial provisions for mine closure in accordance with legal requirements and the respective Company policies. The closure-related financial provisioning and accrual details are provided in Lundin Mining's latest [Annual Information Form](#).



The updated Procedure for Mine Closure Planning involves the definition of post-closure land uses, employee and public safety, chemical and geotechnical stability, post-closure monitoring and aftercare, post-closure land ownership and tenure, temporary closure and unplanned premature closure. Stakeholder participation is integral to our closure planning process. Progressive restoration forms a key part of our closure planning process, being integrated into the operational mining plan, where feasible.

Lundin Mining actively managed the former Storliden Mine in northern Sweden which was closed in 2008. During 2018, in response to a communication from the local county board (VCAB), Zinkgruvan initiated additional groundwater monitoring around the sealed decline. Monitoring data are being analyzed to determine, what if any, additional action may be required to support site relinquishment.

At Lundin Mining, our closure activities are aligned with our commitment to achieve post-closure biodiversity values, wherever possible, that strive to be comparable to pre-operations in our habitat restoration programs.

In addition to the mine sites undergoing active closure, Zinkgruvan monitors the nearby Åmmeberg historical operating site, where Vieille Montagne processed Zinkgruvan ore from the 1850s until the late 1970s. The area was reclaimed by Vieille Montagne (the former operator at Åmmeberg) during the 1980s and currently has various uses, including a golf course and a marina facility. In June 2018, Zinkgruvan submitted to the local county board (ÖCAB) a site-specific risk assessment addressing potential residual human health and ecological risks associated with the reclaimed industrial properties. ÖCAB has responded with additional questions and Zinkgruvan is in communication with ÖCAB

Social Aspects of Mine Closure Planning

Mine closure plans that incorporate both physical rehabilitation and socio-economic considerations are an integral part of the project life cycle. Mines should be designed so that future public health and safety are not compromised, after-use of the site is beneficial to affected communities, and adverse socio-economic impacts are minimized while socio-economic benefits are maximized.

Revegetation Program



During the 1990s, the Santos Underground Mine implemented a mine drainage plan that included planting of 10 hectares of eucalyptus trees to support mine water management. As a result of severe weather conditions, including flooding events in 2015 and 2017, the trees were damaged. In response, Candelaria engaged with local experts at Tierra Amarilla to remove the damaged eucalyptus, support soil recovery and replant with native species, including Pimientos Chañar (a type of willow), Hawthorn and Carob. In 2018, four hectares of trees were planted to advance the completion of a 10-hectare tree replanting program by 2020.



At Eagle Mine, which is currently forecast to close circa 2024, social programs have been developed with closure in mind. In preparation for closure, mine representatives provide annual updates to local government to explain tax structure changes and provide budget recommendations related to closure. In 2018, Lundin Mining held mine closure workshops to review the current mine closure programs and mine closure costs at each operating site, ensuring plans are aligned with the Company's Procedure for Mine Closure Planning.

APPENDIX A

KEY PERFORMANCE DATA

Metal Production Statistics (contained metal)*
Copper (tonnes)

	2018	2017	2016
Candelaria (100%)	134,578	183,858	166,592
Eagle	17,974	21,302	23,417
Neves-Corvo	45,692	33,624	46,557
Zinkgruvan	1,386	997	1,906
Total	199,630	239,761	238,472

Nickel (tonnes)

	2018	2017	2016
Eagle	17,573	22,081	24,114
Total	17,573	22,081	24,114

Zinc (tonnes)

	2018	2017	2016
Neves-Corvo	75,435	71,356	69,527
Zinkgruvan	76,606	77,963	78,523
Total	152,041	149,319	148,050

Gold (000 ounces)

	2018	2017	2016
Candelaria (100%)	78	104	97
Eagle	5	5	6
Total	83	109	103

Lead (tonnes)

	2018	2017	2016
Neves-Corvo	6,571	5,164	4,126
Zinkgruvan	24,613	28,324	31,661
Total	31,184	33,488	35,787

Silver (000 ounces)

	2018	2017	2016
Candelaria (100%)	1,206	1,821	1,665
Eagle	158	200	223
Neves-Corvo	1,791	1,292	1,242
Zinkgruvan	2,155	2,361	2,159
Total	5,310	5,674	5,289

* Metal Production Statistics (contained metal) updated from previous reports to reflect 100% Candelaria contained metal.



STAFFING SUMMARY

Candelaria

	MALE	FEMALE	TOTAL
Number of Employees	1,310	141	1,451
Permanent Employees	1,305	140	1,445
Temporary Employees	5	1	6
Full-Time Employees	1,310	141	1,451
Part-Time Employees	0	0	0
Other Workers*	3,605	314	3,919
Non-National / Expatriates	2	1	3
Employee Turnover (%)			18
Non-Managerial Workforce (%) – covered by collective bargaining agreements			84

Eagle

	MALE	FEMALE	TOTAL
Number of Employees	161	35	196
Permanent Employees	161	35	196
Temporary Employees	0	0	0
Full-Time Employees	161	35	196
Part-Time Employees	0	0	0
Other Workers*	246	23	269
Non-National / Expatriates	4	0	4
Employee Turnover (%)			14
Non-Managerial Workforce (%) – covered by collective bargaining agreements			0

Neves-Corvo

	MALE	FEMALE	TOTAL
Number of Employees	1,068	141	1,209
Permanent Employees	838	100	938
Temporary Employees	230	41	271
Full-Time Employees	1,068	141	1,209
Part-Time Employees	0	0	0
Other Workers*	1,204	92	1,296
Non-National / Expatriates	17	5	22
Employee Turnover (%)			7
Non-Managerial Workforce (%) – covered by collective bargaining agreements			100

Zinkgruvan

	MALE	FEMALE	TOTAL
Number of Employees	330	71	401
Permanent Employees	329	70	399
Temporary Employees	1	1	2
Full-Time Employees	330	69	399
Part-Time Employees	0	2	2
Other Workers*			65
Non-National / Expatriates	1	1	2
Employee Turnover (%)			13
Non-Managerial Workforce (%) – covered by collective bargaining agreements			100

APPENDIX A

STAFFING SUMMARY

Exploration	EMPLOYEES			Corporate	EMPLOYEES		
	MALE	FEMALE	TOTAL		MALE	FEMALE	TOTAL
Number of Employees	12	5	17	Number of Employees	42	32	74
Permanent Employees	12	5	17	Permanent Employees	42	32	74
Temporary Employees	0	0	0	Temporary Employees	0	0	0
Full-Time Employees	12	5	17	Full-Time Employees	42	32	72
Part-Time Employees	0	0	0	Part-Time Employees	0	0	0
Other Workers*			11	Other Workers*			4
Non-National / Expatriates	0	0	0	Non-National / Expatriates			
Employee Turnover (%)			14	Employee Turnover (%)			10
Non-Managerial Workforce (%) – covered by collective bargaining agreements			0	Non-Managerial Workforce (%) – covered by collective bargaining agreements			0

*Workers who are not employees (including those whose work, or workplace, is controlled by the organization).

Data was compiled from the annual head count at each operation and head office in Lundin Mining Corporation. Data for employee turnover and Non-Managerial Workforce covered by collective bargaining agreements are only reported as totals.

HEALTH AND SAFETY STATISTICS 2018

	EMPLOYEES		CONTRACTORS*	
	MALE	FEMALE	MALE	FEMALE
Candelaria				
Total Recordable Injuries	2	0	8	0
Injury Rate (TRIF)	0.03	0.00	0.13	0.00
Occupational Diseases	7	0	NR	NR
Occupational Disease Rate	0.11	0.00	NR	NR
Lost Workdays	145	0	274	0
Lost Day Rate (SR)	2.34	0.00	4.42	0.00
Work-Related Fatalities	0	0	0	0
Eagle				
Total Recordable Injuries	2	0	12	2
Injury Rate (TRIF)	0.38	0.00	2.30	0.38
Occupational Diseases	0	0	NR	NR
Occupational Disease Rate	0.00	0.00	NR	NR
Lost Workdays	0	0	45	0
Lost Day Rate (SR)	0.00	0.00	8.64	0.00
Work-Related Fatalities	0	0	0	0

HEALTH AND SAFETY STATISTICS 2018

	EMPLOYEES		CONTRACTORS*	
	MALE	FEMALE	MALE	FEMALE
Neves-Corvo				
Total Recordable Injuries	10	0	14	1
Injury Rate (TRIF)	0.45	0.00	0.62	0.04
Occupational Diseases	2	0	NR	NR
Occupational Disease Rate	0.09	0.00	NR	NR
Lost Workdays	288	0	277	22
Lost Day Rate (SR)	12.86	0.00	12.36	0.98
Work-Related Fatalities	0	0	0	0
Zinkgruvan				
Total Recordable Injuries	5	1	2	3
Injury Rate (TRIF)	1.16	0.23	0.46	0.69
Occupational Diseases	7	0	NR	NR
Occupational Disease Rate	1.62	0.00	NR	NR
Lost Workdays	8	5	1	24
Lost Day Rate (SR)	1.85	1.16	0.23	5.55
Work-Related Fatalities	0	0	0	0
Exploration				
Total Recordable Injuries	2	0	0	0
Injury Rate (TRIF)	6.74	0.00	0.00	0.00
Occupational Diseases	0	0	NR	NR
Occupational Disease Rate	0.00	0.00	NR	NR
Lost Workdays	0	0	0	0
Lost Day Rate (SR)	0.00	0.00	0.00	0.00
Work-Related Fatalities	0	0	0	0

There were zero Total Recordable Injuries, Occupational Diseases, Lost Workdays or Work-related Fatalities reported / recorded at the Corporate office in 2018.

*Workers who are not employees (including those whose work, or workplace, is controlled by the organization).

Total lost workdays updated to 1,094 for 2018 due to data reconciliation post reporting (1,089 reported in above table).

Explanation of how data are compiled

- **Types of Injuries:** For the purpose of this report, the 'Injury Rate' is based on total recordable injuries (Medical Treatment Cases + Restricted Duty Cases + Lost Time Cases). First aid injuries are not included.
- **Lost Day Rate / Severity Rate (SR):** Based on *workdays* lost after the initial day of incident. SR is calculated as '(lost workdays x 200,000) / hours worked'.
- **Rate calculations:** For comparability, all rates are calculated based on the 2017 total hours worked (employee + contractor) at the respective location.
- **NR:** None reported or incomplete data.
- **Note:** Data for Absentee Rate is not collected because it is not a material issue for Lundin Mining.

APPENDIX B

Basis for Energy and Greenhouse Gas Reporting

BASIS FOR LUNDIN MINING ENERGY REPORTING 2018

- Data sources include Lundin Mining's internal purchase records and fuel-consumption records reported to Lundin Mining by contractors.
- Factors to convert quantities of fuel consumed to energy units sourced in-country from product data sheets and national publications.
- Electricity-consumption data obtained from suppliers and from on-site meters.

BASIS FOR LUNDIN MINING GHG REPORTING 2018

- Approach to calculation of GHG emissions aligned with the GHG Protocol methodologies and the CDP (formerly Carbon Disclosure Project).
- Consolidation approach based on operational control.
- Latest Global Warming Potentials given in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report used, as recommended by the GHG Protocol and CDP.
- Calculations include carbon dioxide, methane and nitrous oxide, reported as carbon dioxide equivalents (CO₂e).
- 2015 defined as the base year for GHG emissions reporting, primarily because data were externally assured in that year and both location-based and market-based Scope 2 data were reported.
- In 2016, base year Scope 1 and Scope 2 emissions were recalculated to account for the divestment of our operation in Spain in 2016, to account for the first full year of production at our Eagle Mine, and to improve on the accuracy of activity data used to determine 2015 Scope 2 GHG emissions at Candelaria in Chile.
- Scope 1 emissions accounting based on fuel, blasting agents, and fugitive emissions from refrigeration and air-conditioning equipment at our operations.
- Where available, fuel emission factors obtained in-country, from national publications; otherwise default fuel emission factors from 2006 IPCC Guidelines for National Greenhouse Gas Inventories used.
- Fugitive emissions calculated in alignment with the GHG Protocol's Screening Method (WS3 Emission Factor-Based Approach to Estimate HFC and PFC Emissions from Refrigeration / AC, 2015).
- Scope 2 emissions accounting based on electricity consumption on-site and in corporate offices.
- "Location-based" and "Market-based" Scope 2 emissions calculated in accordance with GHG Protocol Scope 2 Guidance, published in 2015.
- Emission factors for location-based emissions calculations were regional or national data obtained in-country, where available, and otherwise were sourced from the International Energy Agency (Emissions Factors 2018).
- Emission factors for market-based calculations were sourced from a contractual arrangement between our Swedish operation and its electricity supplier; European Residual Mix (AIB, 2017) for Portugal; and, since residual mix data are not currently available for Chile and the US, regional grid average data were applied.
- Scope 3 emissions determined based upon fuel-consumption data supplied by contractors.



INDEPENDENT ASSURANCE STATEMENT

INTRODUCTION AND OBJECTIVES OF WORK

Bureau Veritas North America, Inc. (Bureau Veritas) was engaged by Lundin Mining Corporation (LMC) to conduct an independent third party assurance of select sustainability information presented in its 2018 Sustainability Report (the Report) for the calendar year ending in December 2018. This Assurance Statement applies to the related information included within the scope of work described below. The intended users of the assurance statement are LMC's management and stakeholders of LMC. The overall objective of the assurance process was to provide assurance on the accuracy, reliability and objectivity of LMC's Report for the specific key performance indicators (KPIs) covered by the scope of work (below).

The information that was assured and its presentation in the Report are the sole responsibility of the management of LMC. Bureau Veritas was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance on the selected KPIs.

ASSURANCE STANDARDS APPLIED

The assurance engagement was performed in accordance with AccountAbility's AA1000AS-2008 standard and was conducted to meet the AA1000AS Type II *moderate* level of assurance requirements for most metrics.

However, greenhouse gas emissions were verified to a *reasonable* level in accordance with ISO 14064-3: Greenhouse gases -- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions

SCOPE OF WORK

LMC requested Bureau Veritas to include independent assurance of the following KPIs for the calendar year 2018 reporting period:

- Safety – total recordable injury frequency rate (TRIF) and lost time injury frequency rate (LTIF);
- Total amount of water withdrawn from all sources;
- Total amount of water discharged;
- Energy consumption within LMC's operations including electricity, liquid fuels and gaseous fuels;
- Greenhouse gas emissions – Scope 1, Scope 2 (location and market based);

- Stakeholder Grievances filed during the year;
- Stakeholder engagement as it relates to AccountAbility's AA1000AS (2008)¹ principles of inclusivity, materiality and responsiveness.

A table listing the reported and assured data is attached to this statement.

Excluded from the scope of our work is any assurance of information relating to:

- Performance indicators and text in the report not indicated above; and
- Activities outside the defined assurance period of calendar year 2018.

METHODOLOGY

Bureau Veritas undertook the following activities:

1. Interviews with relevant personnel of LMC (including managers and staff members at the corporate and site level) and LMC's consultant;
2. Interviews with selected external stakeholders of LMC;
3. Review of internal and external documentary evidence produced by LMC;
4. Audit of select KPI data presented in the Report including a detailed review of samples of data;
5. Site visit to the Candelaria Mining Complex (Candelaria Mine) located near Copiapo, Chile.
6. Visit to LMC office in Toronto, Canada, where sustainability data from each site is collected, aggregated, analyzed and reviewed for quality and accuracy;
7. Review of LMC data and information systems for collection, aggregation, analysis and internal verification and review; and,
8. Review of the Report as it relates to the assured KPIs.

The work was planned and carried out to provide a moderate level of assurance and we believe it provides a sound basis for our conclusions.

¹ Published by AccountAbility: The Institute of Social and Ethical Accountability

INDEPENDENT ASSURANCE STATEMENT



FINDINGS AND CONCLUSIONS

On the basis of our methodology and the activities described above, it is our opinion that:

- The information and data related to the KPIs identified in the scope of work that are included in the Report are accurate, reliable and free from significant error, material mistakes or misstatements.
- The Report provides a fair representation of LMC's activities as it relates to our scope of work over the reporting period.
- LMC has established appropriate systems for the collection, aggregation and analysis of relevant information, and has implemented underlying internal assurance practices that provide a reasonable degree of confidence that such information is complete and accurate.
- The Report adequately reflects the organization's alignment to, and implementation of the AA1000AS (2008) principles of Inclusivity, Materiality and Responsiveness in its operations (further detail is provided below).
- LMC has processes in place for consulting and engaging with its key stakeholders in a structured and systematic manner.
- LMC has processes in place for recording and managing grievances through to their resolution.

ADHERENCE TO THE PRINCIPLES OF AA1000AS

As required by the AA1000AS (2008) standard, outlined below are our observations relating to LMC's adherence to the principles of inclusivity, materiality and responsiveness.

Inclusivity

LMC's Responsible Mining Policy and Stakeholder Engagement Standard outlines the company's commitments regarding communities, stakeholders and external engagement. LMC's Stakeholder Engagement Standard and supporting Stakeholder Engagement Corporate Procedure (Stakeholder Engagement Guidance document) provides the minimum requirements for sites to identify and engage with groups and individuals who may be impacted by company activities. Bureau Veritas observed implementation of external stakeholder engagement during our discussions with external stakeholders and LMC

employees during our visit to the Candelaria Mine. LMC's approach to stakeholder engagement, examples of primary stakeholder groups and the key interests and concerns of each stakeholder group are described in the Stakeholder Engagement section of the Report. Our observations indicate that LMC takes Stakeholder concerns into consideration and has adequately addressed the inclusivity principle in its operations and the 2018 Report.

Materiality

LMC commissioned a materiality assessment during 2017 that included identifying issues of importance for internal and external stakeholders. LMC conducted an internal review of material aspects identified in the 2017 materiality assessment to determine issues of importance to the company. LMC also identified additional issues that, while not deemed to be material to the business, were identified as issues of interest to some of their stakeholders. These additional issues were Governance, Human Rights, Biodiversity and Product Stewardship. The Report included a discussion of these identified issues and is organized to align with the issues determined to be material to LMC's business and stakeholders. Based on our site visit to the Candelaria Mine, interviews with external stakeholders and LMC employees and review of the Report, LMC has adequately addressed the materiality principle in its operations and the 2018 Report.

Responsiveness

LMC has developed requirements and systems to respond to stakeholder issues such as grievances and complaints in their Stakeholder Engagement Standard and associated Stakeholder Engagement Procedure (Guidance). The Guidance document requires sites to have a Stakeholder Communication and Engagement Plan and a Grievance Mechanism in place to identify, track and respond to concerns raised by stakeholders both formally and informally. Bureau Veritas observed the implementation of Stakeholder Engagement Guidance and the Grievance Mechanism through our discussions with external stakeholders and LMC employees during our visit to the Candelaria Mine, and through review of internal reports. Responses to stakeholder concerns were found to be timely and complete based on observations made at the Candelaria Mine and reviews of internal reports. Based on our review, we conclude that LMC has adequately addressed the responsiveness principle in its operations and the 2018 Report.



KEY OBSERVATIONS AND RECOMMENDATIONS

- LMC's commitment to Stakeholder Engagement was evident during our February 2019 visit to the Candelaria Mine, as well as during our previous visits in 2017 and 2018 to Eagle Mine and Zinkgruvan Mine, respectively. It was observed that Candelaria Mine utilizes a custom made software tool for managing social / stakeholder engagement. Consider sharing this tool with other LMC mines for their site specific modification and use.
- Candelaria Mine was found to have a written procedure for reporting GRI data. Consider requesting that all sites develop written procedures for how various data (energy, water, safety, etc.) that is entered into the GRI template is collected, recorded and reported. Having written procedures will standardize reporting at the site level, will help ensure continued consistent data management and reporting in the future and will be helpful in the event of employee absence or turnover.
- Based on our visits to three LMC mines over the last three years, most key performance data are tracked and reported on a regular basis to local mine management during the reporting year. However, the mine sites appear to report select KPIs to corporate on a yearly basis. More frequent and consistent reporting of KPIs to corporate should be considered to allow identification of trends and implementation of opportunities for improvement throughout the year.

STATEMENT OF INDEPENDENCE, IMPARTIALITY AND COMPETENCE

Bureau Veritas is an independent professional services company that specializes in Quality, Health, Safety, Social and Environmental management with over 185 years history in providing independent assurance services.

No member of the assurance team has a business relationship with LMC, its Directors or Managers beyond that of verification and assurance of sustainability data and reporting. We have conducted this verification independently and we believe there to have been no conflict of interest. Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

The assurance team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over 20 years combined experience in this field and an excellent understanding of Bureau Veritas standard methodology for the Assurance of Sustainability Data and Reports.

Attestation:

David Reilly, Lead Verifier
Principal Consultant
Sustainability and Climate Change Services
Bureau Veritas North America, Inc.

Trevor Donaghu, Technical Reviewer
Program Manager
Sustainability and Climate Change Services
Bureau Veritas North America, Inc.



Bureau Veritas North America, Inc.
Santa Ana, California, USA
April 30, 2019



INDEPENDENT ASSURANCE STATEMENT



LUNDIN MINING CORPORATION DATA AND INFORMATION SUBJECT TO ASSURANCE

TYPE	UNIT	RESULTS FOR 2018
Fuels and Energy		
Purchased Fuels (Scope 1)	Gigajoules	4,505,723
Purchased Electricity (Scope 2)	Gigajoules	4,547,174
Total Energy Consumption (Scope 1 and 2)	Gigajoules	9,052,897
Emissions		
Direct CO ₂ e Emissions (Scope 1)	Metric Tons CO ₂ Eq	366,653
Indirect (purchased electricity) CO ₂ e Emissions (Scope 2) (Location-based)	Metric Tons CO ₂ Eq	473,276
Indirect (purchased electricity) CO ₂ e Emissions (Scope 2) (Market-based)	Metric Tons CO ₂ Eq	500,999
Total Scope 1 and Scope 2 CO ₂ e Emissions (Location-based)	Metric Tons CO ₂ Eq	839,929
Water		
Total Water Withdrawal	Cubic Meters	31,846,420
Total Water Discharged	Cubic Meters	13,750,367
Safety		
Total Recordable Injury Frequency Rate (TRIF)	TRIF is calculated as (total number of recordable injuries (including fatalities, lost time injury, restricted work and medical treatment injury) x 200,000 hours)/ total hours worked	0.67
Lost Time Injury Frequency Rate (LTIF)	LTIF is calculated as (total lost time injuries x 200,000 hours)/ total hours worked	0.35
Stakeholder Engagement and Grievance Mechanism		
Stakeholder Engagement	NA	LMC was found to be effectively engaging with Stakeholders and considering stakeholder input in adherence to the AA1000APS principles of inclusivity, materiality and responsiveness.
Grievance Mechanism	NA	LMC has a functioning grievance mechanism in place and in use.
Grievances Filed	Number of grievances filed during 2018 company wide	61

GRI CONTENT INDEX

In Accordance with the 'Core' Option

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
ORGANIZATIONAL PROFILE				
GRI 102: General Disclosures 2016	102-1		Name of the organization	7
	102-2		Activities, brands, products and services	7, 8, 11
	102-3		Location of headquarters	6, 7, Back Cover
	102-4		Location of operations	5, 6-11
	102-5		Ownership and legal form	AIF: pages 16-20
	102-6		Markets served	11
	102-7		Scale of the organization	8-9, 45, 119-120
	102-8		Information on employees and other workers	8-9, 45, 119-120
	102-9		Supply chain	11
	102-10		Significant changes to the organization and its supply chain	11
	102-11		Precautionary Principle or approach	12, 27-28, 75-77
	102-12		External initiatives	29
	102-13		Membership of associations	12
STRATEGY				
GRI 102: General Disclosures 2016	102-14		Statement from senior decision-maker	2-3
		102-15	Key impacts, risks and opportunities	2-3, 16-23
ETHICS AND INTEGRITY				
GRI 102: General Disclosures 2016	102-16		Values, principles, standards and norms of behavior	7, 14, 25-26, website
		102-17	Mechanisms for advice and concerns about ethics	25-26, 52, 123

In accordance with the 'Core' option, no omissions

✓ Represents data and information subject to external assurance

GRI CONTENT INDEX

In Accordance with the 'Core' Option

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
GOVERNANCE				
GRI 103: Management Approach 2016		103-1, 103-2, 103-3	Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	25
GRI 102: General Disclosures 2016	102-18		Governance structure	5, 25
		102-22	Composition of the highest governance body and its committees	25
		102-24	Nominating and selecting the highest governance body	Information Circular: page 3
		102-25	Conflicts of interest	25, Code of Conduct
		102-26	Role of highest governance body in setting purpose, values, and strategy	13, Information Circular: page 20
		102-31	Review of economic, environmental and social topics	13, 27-28
		102-32	Highest governance body's role in sustainability reporting	5, 6, 13, 25
		102-33	Process for communicating critical concerns to the highest governance body	Information Circular: page 17
		102-35	Remuneration policies	Information Circular: pages 43, 44
	102-36	Process for determining remuneration	Information Circular: page 43-49	
STAKEHOLDER ENGAGEMENT				
GRI 103: Management Approach 2016		103-1, 103-2, 103-3	Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	53-56, 60
GRI 102: General Disclosures 2016	102-40 ✓		List of stakeholder groups	53-56
		102-41	Collective bargaining agreements	49
		102-42 ✓	Identifying and selecting stakeholders	52
		102-43 ✓	Approach to stakeholder engagement	5, 6, 53-56
	102-44		Key topics and concerns raised	45, 52, 53-56

In accordance with the 'Core' option, no omissions

✓ Represents data and information subject to external assurance

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
REPORTING PRACTICES				
GRI 102: General Disclosures 2016	102-45		Entities included in the consolidated financial statements	5-6, Financial Statements: pages 6-7
		102-46	Defining report content and topic Boundaries	6
		102-47	List of material topics	6
		102-48	Restatements of information	42, 43 (footnotes 1 & 2)
		102-49	Changes in reporting	6
		102-50	Reporting period	5
		102-51	Date of most recent report	5
		102-52	Reporting cycle	5
		102-53	Contact point for questions regarding the report	Back Cover
		102-54	Claims of reporting in accordance with the GRI Standards	5, 6, 127-135
		102-55	GRI content index	127
		102-56	External assurance	123
	ECONOMIC TOPICS			
Economic Performance				
GRI 103: Management Approach 2016		103-1, 103-2, 103-3	Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	41
GRI 201: Economic Performance 2016	201-1		Direct economic value generated and distributed	42, 43, 63, 67
		201-2 (partial)	Financial implications and other risks and opportunities due to climate change	95, 99
Indirect Economic Impacts				
GRI 103: Management Approach 2016		103-1, 103-2, 103-3	Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	64
GRI 203: Indirect Economic Impacts 2016		203-1	Infrastructure investments and services supported	42-43
		203-2 (partial)	Significant indirect economic impacts	60, 64-66

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In Accordance with the 'Core' Option

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
ECONOMIC TOPICS				
Local Economic Impacts				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	64
GRI 204: Procurement Practices 2016	204-1		Proportion of spending on local suppliers	42-43, 48
GRI 202: Market Presence 2016		202-2	Proportion of senior management hired from the local community	42, 48
Anti-Corruption				
GRI 205: Anti-corruption 2016		205-1	Operations assessed for risks related to corruption	26, Code of Conduct
		205-2	Communication and training about anti-corruption policies and procedures	26, Code of Conduct
		205-3	Confirmed incidents of corruption and actions taken	26
ENVIRONMENTAL TOPICS				
Energy				
GRI 302: Energy 2016		302-1 ✓	Energy consumption within the organization	100-103
		302-2	Energy consumption outside of the organization	104
		302-3	Energy intensity	103
		302-4	Reduction of energy consumption	105-109
Water				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	75
GRI 303: Water 2016		303-1 ✓	Water withdrawal by source	80
		303-2 (partial)	Water sources significantly affected by withdrawal of water	81
		303-3	Water recycled and reused	78

In accordance with the 'Core' option, no omissions

✓ Represents data and information subject to external assurance

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
ENVIRONMENTAL TOPICS				
Biodiversity				
GRI 304: Biodiversity 2016		304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	112
		304-2 (partial)	Significant impacts of activities, products and services on biodiversity	113
		304-3 (partial)	Habitats protected or restored	111
		304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	113
Mining and Metals Sector Disclosures 2013		MM1	Amount of land (owned or leased and managed for production activities or extractive use) distributed or rehabilitated	116
		MM2	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria and the number (percentage) of those sites with plans in place	111
Emissions				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	95
GRI 305: Emissions 2016		305-1 ✓	Direct (Scope 1) GHG emissions	105-106
		305-2 ✓	Energy indirect (Scope 2) GHG emissions	105-106
		305-3	Other indirect (Scope 3) GHG emissions	108
		305-4	GHG emissions intensity	106-108
		305-5	Reduction of GHG emissions	108-109
		305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x) and other significant air emissions	110

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In Accordance with the 'Core' Option

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
ENVIRONMENTAL TOPICS				
Effluents and Waste				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	82, 86
GRI 306: Effluents and Waste 2016	306-1 ✓		Water Discharges by quality and destination	82
		306-2	Waste by type and disposal method	94
		306-3	Significant spills	77
		306-4 (partial)	Transport of hazardous waste	94
		306-5	Water bodies affected by water Discharges and/or runoff	114
Environmental Compliance				
GRI 307: Environmental Compliance 2016		307-1	Non-compliance with environmental laws and regulations	76-77
Tailings and Waste Rock Management				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	86
Mining and Metals Sector Disclosures 2013	MM3		Total amounts of overburden, rock, tailings and sludges and their associated risks	86-88
Reclamation and Closure				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	116
Mining and Metals Sector Disclosures 2013	MM10		Number and percentage of operations with closure plans	116

In accordance with the 'Core' option, no omissions

✓ Represents data and information subject to external assurance

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
SOCIAL TOPICS				
Employment				
GRI 401: Employment 2016		401-1	New employee hires and employee turnover	119-120
Occupational Health and Safety				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	31
GRI 403: Occupational Health and Safety 2016		403-1	Workers representation in formal joint management – worker health and safety committees	31, 54
		403-2 ✓	Types of injury and rates of injury, occupational diseases, lost days and absenteeism and number of work-related fatalities	32, 120-121
		403-3 (partial)	Workers with high incidence or high risk of diseases related to their occupation	31, 36
Training and Education				
GRI 404: Training and Education 2016		404-1	Average hours of training per year per employee	49, 83,740 hours / 3,351 employee = 25 hours
		404-3	Percentage of employees receiving regular performance and career development reviews	47
Diversity and Equal Opportunity				
GRI 405: Diversity and Equal Opportunity 2016		405-1	Diversity of governance bodies and employees	2-3, 16, 25, 46
		405-2	Ratio of basic salary and remuneration of women to men	47
Non-Discrimination				
GRI 406: Non-discrimination 2016		406-1	Incidents of discrimination and corrective actions taken	29

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In Accordance with the 'Core' Option

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
SOCIAL TOPICS				
Freedom of Association and Collective Bargaining				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	49
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1		Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	29, 49
Mining and Metals Sector Disclosures 2013		MM4	Number of strikes and lock-outs exceeding one week's duration	49
Child Labour				
GRI 408: Child Labour 2016		408-1	Operations and suppliers at significant risk for incidents of child labour	29
Forced or Compulsory Labour				
GRI 409: Forced or Compulsory Labour 2016		409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	29
Rights of Indigenous Peoples				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	58
GRI 411: Rights of Indigenous Peoples 2016	411-1		Incidents of violations involving rights of Indigenous Peoples	59

GRI Standard	Core Disclosures	Additional Disclosures	Description	Page number (s) and / or URL(s)
SOCIAL TOPICS				
Mining and Metals Sector Disclosures 2013		MM5	Total number of operations taking place in or adjacent to Indigenous Peoples' territories and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities	58
		MM6	Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples	59
		MM7	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples and the outcomes	58
Local Communities				
GRI 103: Management Approach 2016	103-1, 103-2, 103-3		Explanation of the material topic and its Boundary, the management approach and its components, evaluation of the management approach	51
GRI 413: Local Communities 2016		413-1	Operations with local community engagement, impact assessments and development programs	51-53, 61
		413-2	Operations with significant actual and potential negative impacts on local communities	51, 52, 53, 60-61
Socio Economic Compliance				
GRI 419: Socioeconomic Compliance 2016		419-1	Non-compliance with laws and regulations in the social and economic area	36, 71, 77, 110
MATERIALS AND PRODUCT STEWARDSHIP				
GRI 417: Marketing and Labeling 2016		417-1	Requirements for product and service information and labelling	71
GRI 417: Marketing and Labeling 2016		417-2	Incidents of non-compliance concerning products and services, and marketing communication	73
GRI 418: Customer Privacy 2016		418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	73
GRI 419: Socioeconomic Compliance 2016		419-1 (partial)	Non-compliance with laws and regulations in the social and economic area	73, 77, 110

In accordance with the 'Core' option, no omissions

✓ Represents data and information subject to external assurance

UN GLOBAL COMPACT

COMMUNICATION ON PROGRESS

Lundin Mining joined the UNGC in 2016 and has documented its support of the 10 Principles on human rights, labour standards, environment and anti-corruption, and the 17 SDGs, through an annual Communication on Progress (COP). Lundin Mining's COP presents annual progress and actions on both the UNGC Principles as well as the SDGs, achieved through Company-wide activities, documented in detail throughout this 2018 Sustainability Report.



PRINCIPLES	PROGRESS	SDGS ACHIEVED
Expectations	Human Rights	
1. Businesses should support and respect the protection of internationally proclaimed human rights	Lundin Mining currently integrates human rights into its business practices and processes such as the Code of Conduct , Ethical Values , and Anti-Corruption ("Code of Conduct") , Responsible Mining Policy and Framework . In addition, the Company initiated a Human Rights Risk Assessment program in 2018 that will be completed in 2019 and reported on in future reports.	5, 8, 16, 12
2. Business should make sure that they are not complicit in human right abuses	<p>The Company fosters a work environment free from discrimination against gender, age, race, national origin, marital status, sexual orientation, religious beliefs, disability, or any other personal characteristics protected by international human rights law.</p> <p>In addition to the UNGC, Lundin Mining demonstrates its commitment to support human rights through consideration of the following international principles / standards: Organization for Economic Co-operation and Development (OECD), Guidelines for Multinational Enterprises (MNEs), United Nations Guiding Principles on Business and Human Rights, and the Voluntary Principles on Security and Human Rights (VPs).</p> <p>Supplementary details on progress on these areas can be found in these sections of the <i>2018 Sustainability Report</i>:</p> <ul style="list-style-type: none"> • Governance – Human Rights • Human Resources • Social Performance – Our Approach • Feature Stories (throughout this report) 	

PRINCIPLES	PROGRESS	SDGS ACHIEVED
Expectations	Labour	
3. Business should uphold the freedom of association and the effective recognition of the right to collective bargaining	Lundin Mining is committed to achieving a safe, productive and healthy work environment across all operations. The Company supports freedom of association and collective bargaining, does not tolerate any form of harassment and fosters a work environment free from discrimination. We support the elimination of all forms of forced and compulsory labour, and child labour. Based on our internal assessment, none of our operations are at risk for incidents of child labour, or forced, or compulsory labour.	3, 5, 8, 10
4. The elimination of all forms of forced and compulsory labour	Lundin Mining initiated a Human Rights Risk Assessment program in 2018, which will be completed in 2019 and presented in future reporting.	
5. The effective abolition of child labour	<p>Lundin Mining's position on labour is guided by the following policies, principles, standards and / or commitments:</p> <ul style="list-style-type: none"> • Human Resources / Compensation Committee of the Board • Code of Conduct • Diversity Policy • Equal Pay* • Human Resources Policy* • Freedom of Association* • Proof of Age Requirements* • Strategic Social Investment Standard* • Five-year Social Performance Strategic Plans* <p>(* details for these topics can be found on pages 7 & 8 of the 2017 Communication on Progress Report</p>	
6. The elimination of discrimination in respect of employment and occupation	<p>Lundin Mining provides oversight and governance for these Principles through the activities of the Human Resources / Compensation Committee of the Board. As well, the Company is a member of the UNGC to advance the 10 Principles and 17 SDGs and considers the International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability as best practice.</p> <p>More details on progress on these areas can be found in this report: Our Performance against 2018 Targets – Social.</p>	

UN GLOBAL COMPACT

PRINCIPLES	PROGRESS	SDGS ACHIEVED
Expectations	Environment	
7. Business should support a precautionary approach to environmental challenges	Lundin Mining supports the precautionary approach and continues advancement of numerous programs and partnerships to improve and optimize environmental and sustainability performance.	7, 9, 12, 13
8. Undertake initiatives to promote greater environmental responsibility	Our material environmental areas of focus include: water and effluents, mine closure planning, mineral wastes, climate change adaptation and GHG emissions.	
9. Encourage the development and diffusion of environmentally friendly technologies	<p>Our practices are guided by the following:</p> <ul style="list-style-type: none"> • HSEC Committee of the Board • RMMS and supporting HSEC technical standards • Responsible Mining Policy • Participation in local, national, and international associations (this report: Our Operations – Memberships and Associations) <p>In addition to the UNGC, Lundin Mining’s environmental practices voluntarily align with the IFC’s Performance Standards on Social and Environmental Sustainability, the OECD Guidelines for MNEs. Lundin Mining is a member of the Mining Association of Canada (MAC) and considers the MAC Towards Sustainable Mining Framework as a best practice to enhance Company-wide environmental standards and practices.</p> <p>In 2018, Lundin Mining advanced the inclusion of innovation and technology through the creation of a corporate-level resource, Director Operational Technology. Details on progress in these areas, and partnerships to advance them, can be found in these sections of the <i>2018 Sustainability Report</i>:</p> <ul style="list-style-type: none"> • Our Performance Against 2018 Targets – Environment • Environmental Management • Feature Stories (throughout this report) 	



PRINCIPLES	PROGRESS	SDGS ACHIEVED
Expectations	Anti-Corruption	
10. Business should work against corruption in all its forms, including extortion and bribery	<p>Lundin Mining has a zero-tolerance policy for bribery and corruption by employees, officers, directors, consultants, and contractors of the Company. The Company is committed to meeting or exceeding legal requirements wherever we operate.</p> <p>The Lundin Mining Board has approved an updated Code of Conduct for further clarity of alignment with the recent amendment of the <i>Corruption of Foreign Public Officials Act (Canada)</i>, removing the facilitation payments exception under the Act. Lundin Mining’s position on anti-corruption is guided by the following:</p> <ul style="list-style-type: none"> • Audit Committee of the Board • Code of Conduct • Gifts and Entertainment • Conflicts of Interest • Political Contributions and Activities <p>Lundin Mining monitors and evaluates anti-corruption best practices and performance through internal audits and the Company’s ClearView Connects reporting system. Details on progress on these areas can be found in the following sections:</p> <ul style="list-style-type: none"> • Governance • Social Performance 	10, 12, 16



CAUTIONARY STATEMENT ON FORWARD-LOOKING INFORMATION

Certain of the statements made and information contained herein or incorporated by reference is “forward-looking information” within the meaning of applicable Canadian securities laws. All statements other than statements of historical facts included in this Sustainability Report, including but not limited to statements regarding the prospects of the industry and Lundin Mining Corporation’s (“**Lundin Mining**” or the “**Company**”) prospects, plans, future financial and operating performance and business strategy, constitute forward-looking information. Forward-looking information is based on current expectations, estimates, forecasts and projections as well as beliefs and assumptions made by the Company’s management. Such forward-looking information includes, but is not limited to, statements about the Company’s plans, prospects, position, future results, and business strategies; the timing and amount of future production; costs of production; project and permitting timelines; the Company’s outlook and guidance on estimated metal production and production profile; costs, and exploration and capital expenditures; timing and possible outcome of pending litigation; technical information, including the results of any Preliminary Economic Assessment, Feasibility Study, or Mineral Resource and Mineral Reserve estimations (as such terms are defined in the definitions adopted by the Canadian Institute of Mining, Metallurgy and Petroleum Council on May 10, 2014 (the “**CIM Standards**”)), life of mine estimates, and mine and mine closure plans; the parameters and assumptions underlying the Mineral Resource and Mineral Reserve estimates and financial analysis; anticipated market prices of metals, currency exchange rates, and interest rates; the Company’s anticipated capital and operating costs for its material mineral properties; the development and implementation of the Company’s Responsible Mining Management System; the Company’s ability to comply with contractual and permitting or other regulatory requirements; the receipt and maintenance of all necessary permitting and approvals; the Company’s intentions with respect to exploration and development activities at its projects; expectations regarding the results of operations and production at the Company’s mines; the intentions of the Company regarding the acquisition of the Chapada mine (the “**Chapada Acquisition**”) and the terms, timing, completion and any anticipated benefits thereof; and the Company’s integration of acquisitions (including the Chapada Acquisition) and any anticipated benefits thereof. Words such as “aim”, “anticipate”, “assumption”, “believe”, “budget”, “commitment”, “continue”, “contingent”, “endeavour”, “estimate”, “expansionary”, “expect”, “exploration”, “feasibility”, “flexibility”, “forecast”, “focus”, “forecast”, “foresee”, “forward”, “future”, “growth”, “guidance”,

“initiative”, “intend”, “likely”, “model”, “objective”, “on track”, “opportunity”, “option”, “outlook”, “PEA”, “phase”, “plan”, “positioning”, “potential”, “predict”, “preliminary”, “priority”, “profile”, “project”, “probable”, “proposed”, “prospect”, “ramp-up”, “risk”, “schedule”, “seek”, “strategy”, “study”, “target”, “uncertainty” or “view”, or any variations of or similar terminology or statements that certain actions, events or results “could”, “may”, “might”, “should”, “would”, or “will” be taken, occur, or be achieved, or the negatives or variations of any of the foregoing terms or expressions, are intended to identify such forward-looking information.

Forward-looking information is based on various factors and assumptions including, without limitation, the expectations and beliefs of management, including that the Company can access financing, appropriate equipment and sufficient labour; assumed and future price of copper, nickel, zinc and other metals; anticipated costs; ability to achieve goals; and that the political environment in which the Company operates will continue to support the development and operation of mining projects. Certain important factors that could cause actual results, performance or achievements to differ materially from those in the forward-looking statements include, among others, metal price volatility; discrepancies between actual and estimated production; Mineral Reserve and Mineral Resource estimates, and metallurgical recoveries; mining operational and development risks; litigation risks; regulatory restrictions (including environmental regulatory restrictions and liability); changes in national and local government legislation, taxation, controls or regulations and/or change in the administration of laws, policies and practices, expropriation or nationalization of property and political or economic developments in jurisdictions in which the Company carries on business, or may carry on business in the future; delays, suspensions or technical challenges associated with capital projects; higher prices for fuel, steel, power, labour and other consumables; currency fluctuations; the speculative nature of mineral exploration; the global economic climate; dilution; share price volatility; competition; loss of key employees; additional funding requirements; and defective title to mineral claims or property. Although the Company believes that the expectations reflected in the forward-looking information contained herein are reasonable, these statements, by their nature, involve risks and uncertainties and are not guarantees of future performance. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated, forecast or intended.

Forward-looking information and statements are subject to a variety of known and unknown risks and uncertainties, and ultimately, actual events or results may differ materially from those reflected in the forward-looking information. Risks and uncertainties that may impact the Company’s performance include, without limitation, risks inherent in and/or associated with operating in foreign countries; uncertain political and economic environments; community activism, shareholder activism and risks related to negative publicity with respect to the Company or the mining industry in general; changes in laws, regulations or policies including but not limited to those related to permitting and approvals, environmental management, labour, trade relations, and transportation; delays or the inability to obtain necessary governmental approvals and / or permits; regulatory investigations, enforcement, sanctions and/or related or other litigation; risks associated with business arrangements and partners over which the Company does not have full control; risks associated with acquisitions and related integration efforts (including with respect to the Chapada Acquisition); the risk that the Chapada Acquisition will not be completed on the terms set out in the definitive purchase agreement, or at all; competitive responses to the announcement of the Chapada Acquisition; competition; development or mining results not being consistent with the Company’s expectations; estimates of future production and operations; operating, cash and all-in sustaining cost estimates; allocation of resources and capital; litigation; uninsurable risks; volatility and fluctuations in metal and commodity prices; the estimation of asset carrying values; funding requirements and availability of financing; indebtedness; foreign currency fluctuations; interest rate volatility; changes in the Company’s share price, and equity markets, in general; changing taxation regimes; counterparty and credit risks; health and safety risks; risks related to the environmental impact of the Company’s operations and products and management thereof; unavailable or inaccessible infrastructure and risks related to ageing infrastructure; risks inherent in mining including but not limited to risks to the environment, industrial accidents, catastrophic equipment failures, unusual or unexpected geological formations or unstable ground conditions; actual ore mined varying from estimates of grade, tonnage, dilution and metallurgical and other characteristics; ore processing efficiency; risks relating to attracting and retaining of highly skilled employees; ability to retain key personnel; the potential for and effects of labour disputes or other unanticipated difficulties with or shortages of labour or interruptions in production; the price and availability of energy and key operating supplies

or services; the inherent uncertainty of exploration and development, and the potential for unexpected costs and expenses including, without limitation, for mine closure and reclamation at current and historical operations; risks associated with the estimation of Mineral Resources and Mineral Reserves and the geology, grade and continuity of mineral deposits including but not limited to models relating thereto; actual ore mined and / or metal recoveries varying from Mineral Resource and Mineral Reserve estimates; mine plans, and life of mine estimates; the possibility that future exploration, development or mining results will not be consistent with expectations; natural phenomena such as earthquakes, flooding, and unusually severe weather; potential for the allegation of fraud and corruption involving the Company, its customers, suppliers or employees, or the allegation of improper or discriminatory employment practices, or human rights violations; security at the Company’s operations; breach or compromise of key information technology systems; materially increased or unanticipated reclamation obligations; risks related to mine closure activities; risks related to closed and historical sites; title risk and the potential of undetected encumbrances; risks associated with the structural stability of waste rock dumps or tailings storage facilities; and other risks and uncertainties, including but not limited to those described in the “Risk and Uncertainties” section of the Annual Information Form for the year ended December 31, 2018 and the “Managing Risks” section of the Company’s management’s discussion and analysis for the year ended December 31, 2018, which are available on SEDAR at www.sedar.com under the Company’s profile. Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions which may have been used. Should one or more of these risks and uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described in forward-looking information. Accordingly, there can be no assurance that forward-looking information will prove to be accurate, and so readers are advised not to place undue reliance on forward-looking information. The forward-looking information contained herein speaks only as of the date of this Sustainability Report. The Company disclaims any intention or obligation to update or revise forward-looking information or to explain any material difference between such and subsequent actual events, except as required by applicable law.

lundin mining

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SUSTAINABILITY REPORT FEEDBACK

We welcome feedback from stakeholders regarding our 2018 Sustainability Report. For further information or comments, please contact:

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