Responsible Mining and Management at the Neves-Corvo Mine

ICSG Meetings in Lisbon
October 2\textsuperscript{nd}, 2018
Our Mission

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

Safety

Respect

Integrity

Excellence
Lundin Mining Corporation

1. Lundin Mining holds an 80% interest in Candelaria.
Neves-Corvo Mine

Team Work

Qualified and dedicated professionals

Inclusion

Community Relations based on trust

Biodiversity preservation

Health and Safety
The Neves Corvo Mine is a mining concession owned 100% by SOMINCOR-Sociedade Mineira de Neves-Corvo S.A.,

1988 – Joint venture between the Portuguese State and Rio Tinto; initiated production in late 1988 at a initial capital cost of $US 320 million

1989 – Initiated copper production

1990 – Commenced tin production (10 years production)

2004 – Acquired by Eurozinc Corporation (Canada)

2006 – Initiated zinc production, doubled production capacity in 2013)

2006 – Lundin Mining acquires Neves Corvo after a merger Eurozinc Corp.

2017 – Approved the Zinc Expansion Project (ZEP)
Neves-Corvo Mine

Lundin Mining owner and operator since 2006. Local company is called Somincor.

Neves-Corvo is one of Europe’s largest base metal mines and will be growing in production starting in 2020.
Neves Corvo Mine Aerial View

Neves Corvo is an underground mine with a ramp access/decline for manpower and materials entering the mine.

The Santa Barbara shaft is equipped to hoist up to 4.5 Mtpa of ore and waste and expanding to 5.4 Mtpa by end of 2019.

The processing operations consist of two (2) process plant facilities:

- Copper process plant processing 2.5 Mtpa of copper ore
- Zinc process plant currently processing 1.1 Mtpa and expanding to 2.5 Mtpa by end of 2019
Important Contributor to Exports and Taxes

One of Portugal’s top exporters and an important exporter in the Alentejo region

Portuguese suppliers account for more than 85% of purchases - commitment to buy local

Over last 11 years Somincor has paid 273M€ in corporate tax and 98M€ in royalties

~465M€ of total taxes and royalties generated since 2009

Significant increase in export sales (>50%) and increase in taxes and royalties expected with ZEP
Meaningful Employer in Region and Country

Currently employment ~2,100 people
  – 1,200 direct employees
  – 900 contractors

Peak workforce during construction of ZEP to exceed 2,300 people (project plus operations)

>90% of workforce is local or live in the Alentejo region

Zinc Expansion Project (ZEP) is creating significant employment opportunities in the region and country.
Safety and Safe Mining is a Core Value

Ten Year Safety Performance
- TRIF for 200,000 hours worked

Safety Performance and the Well-Being of our Employees and Contractors is a Core Value

- Continuous improvement in safety performance over a 10 year period.

- We are focused on further reducing our injury rates. This is through our “Zero Harm” philosophy and through our “Visible Felt Leadership” program we reinforce safe working behaviours and conditions.

- We are committed to the goal that all our employees and contractors go home each and every day safe and healthy.
Health and Safety

First Aid Training in Local Communities

Mine Rescue Training
Ore production decreased every year over the last 4 years;
2018B represents a 15% increase compared to 2017A (ore production);
Ramp-up of 37% from 2018B to 2020B;
Ramp-up of 58% from 2017A to 2020B.
Life-of-Mine Metal Production

Cu metal:
- Decrease trend due to lower head grade (2022+) and lower tonnage milled (2025+)

Zn metal:
- Same trend as milled tonnage (head grade relatively constant)

Pb metal:
- Quick ramp-up with the start-up of expansion of the Zinc ore treatment capacity.
Environmental Management

Bio-monitoring in the surrounding environment

Preservation of Cultural Patrimony

Esta informação está disponível em:
http://www.biodiversidade-somincor.pt
Environmental Management – Study of Bivalves in Oeiras River System
Environmental Management – Extraordinary Efforts
Mais de uma centena de mulheres trabalham nas Minas de Neves Corvo

https://www.rtp.pt/noticias/pais/mais-de-uma-centena-de-mulheres-trabalham-nas-minas-de-neves-corvo_v1062733
Neves-Corvo  Best Practices in Water Management

Best Practices Implemented

- Recyling process water (Mine and Process Plants)
- Reducing our consumption of Santa Clara fresh water supply
- Discharge only treated water to the Ribeira de Oeiras, only when there is sufficient river flow.
- Using treated process water rather than fresh water for dust control on roads
- Using forced evaporation techniques to control the water balance and minimize need for effluent discharge
- Using filter wash water from the water treatment system for the fire water protection system
- Reusing treated sewage water for process requirements.
Significant Fresh Water Consumption Decrease Since 2013

- An efficient use of fresh water, complying with legal obligations and application of the “Responsible Mining Management Policy” at Lundin Mining Corporation;
- Protecting a precious local water source at the Santa Clara Reservoir by reduction of consumption.
- Minimizing discharge of effluent to the environment (Ribeira de Oeiras).
- A model for sustaining water use in the mining industry.

As mining rates increased from 1.6 Mtpa in 1998 to 3.5 Mtpa in 2013, fresh water consumption also increased in 2013 to 400 m³/hr, a doubling since the beginning of operations in 1998.

However through our Responsible Mining Management initiatives, fresh water consumption in 2017 is now 80% less than the peak consumption in 2013.
Corporate Social Responsibility

Open House

Supplier Forum

Supporting Local Education
Corporate Social Responsibility

Courses for Young Entrepreneurs and Local Small Enterprises

Cultural Preservation

ENAT – Energias Naturais

Sponsoring cost of Restoration of 14th century paintings in the Capela-Mor in Graça de Padrões
Community Relations – 2018

- Meetings with eleven (11) communities this year to present Somincor and inform the public of our activities.

- An opportunity to talk about what we do, what we stand for, our future, and how we benefit local communities.

- It is an excellent forum to meet with community citizens, to understand their concerns in a constructive dialogue to further strengthen community relations.
Local Government – Somincor is constantly in contact and collaborates actively with the five (5) municipalities of Castro Verde, Almodôvar, Mertola, Aljustrel and Ourique. In May we recently held community meetings in each of the municipalities to inform the public of our activities, and provide a forum for hearing concerns from the citizens of the local communities. Our CSR investment efforts are 100% focused on these five municipalities.

Regional Government - Somincor this year hosted three (3) elected parliamentary deputies from the Alentejo Region. This was a first visit by elected officials and we look forward to future visits.

National Government - Somincor is in constant communication and contact with the key relevant ministries and departments of the Portuguese Government. The Portuguese government has been very supportive of Somincor’s efforts over the last 30 years and a tremendous supporter of our decision to invest 260 million €uros, one of the largest private investments on-going in Portugal at this time.

European Union - Somincor is an active member of Euromines and supports Euromines initiatives to promote responsible mining in Portugal and throughout the European Union.
Zinc Expansion Project (ZEP) - Significant Employment Impact

- An investment in our future and further expanding the zinc resource.
- 260 M€ initial capital investment
- Scheduled to be completed in H2 2019 and begin commissioning and ramp-up to full capacity.
- At full capacity zinc production will more than double from +72,000 t to more than 150,000 t Zn metal in concentrate
- This will extend mine-life to at least 2030 and possibly longer as more ore reserves are added during the next decade.
- Mine expansion in the Lombador orebody deepening the mining horizon to more than 1,000 m depth.
- Increasing ore mining rate to +5.0 Mtpa from current 3.6 Mtpa
- New conveyor and crushing system being installed
- Installing new grinding circuit, flotation and concentrate dewatering systems in the zinc process plant.
- Will increase zinc ore processing capacity from 1.1 Mtpa to +2.5 Mtpa
- Expansion of the Cerro do Lobo tailings storage facility.
- Will continue to use the thickened paste technology for tailings deposition.
- Expansion of the u/g backfill system where 50% of tailings is permanently stored as part of the mining method.
Mine Operations and Underground ZEP (Lombador orebody)
Exploration – Investment in our Future

Somincor in 2018 entered into a new 5 year contract with the Portuguese State for a 143 km² exploration concession.

The new exploration concession area can be seen as within a yellow solid line with green dashed lines surrounding the existing mining concessions (outlined in blue).

All the new exploration targets will be drilled to explore geophysical targets that are identified with either or a combination of seismic, gravity, and electromagnetic (EM).
Responsible mining and management is a commitment by Lundin Mining and Somincor to ensuring we maintain our social license, meet our regulatory requirements, and our corporate commitment as a responsible mine operator in Portugal and wherever we work.

One pillar of Corporate Social Responsibility is our commitment to planning and preparing the surrounding communities for a future after Neves Corvo is mined out and closed.

However our on-going investment in ZEP, and our continued and expanding exploration efforts is our most important investment in the local communities, region and Portugal. Why? This is our commitment to maintaining Neves Corvo as a sustainable mining operation to at least 2030 and hopefully well beyond this.

We believe some of these examples demonstrate our commitment to Responsible Mining and Management and provide a positive example of how a modern base metal mine operates in the European Union today.