# Summary Report Boliden Zinkgruvan

## Mineral Resources and Mineral Reserves 2025

Authors
Anja Hagerud
Nigel Clark
Amanda Nascimento
Mimmi Gustafsson
Maria Löf
Lena Vikmång
Nils Merum

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# 1 Summary

In 2025 the total Mineral Reserve increased by 2,5 Mt to 15.4 Mt of which 13,8 Mt is Zn/Pb Mineral Reserve and 1.6 Mt is Cu Mineral Reserve. Mineral Resources have previously been reported inclusive of Mineral Reserves but are now reported exclusive of Mineral Reserves explaining the large decrease in Measured and Indicated Mineral Resources despite material being added. Inferred Mineral Resources have increased by 1,4 Mt to 16 Mt of which the majority is Zn/Pb Mineral Resource.

Table 1-1. Zinkgruvan Mineral Resources and Mineral Reserves 2025-12-31.

| Zink/Lead | 2025 | | | | 2024 | | | |
|---|---|---|---|---|---|---|---|---|
| Classification | kt | Zn % | Pb % | Ag g/t | kt | Zn % | Pb % | Ag g/t |
| **Mineral Reserves** | | | | | | | | |
| Proved | **3 900** | **7.4** | **2.8** | **63** | 3 900 | 7.4 | 3.0 | 65 |
| Probable | **9 900** | **7.9** | **3.5** | **75** | 7 400 | 7.9 | 3.7 | 83 |
| *Total* | ***13 800*** | *7.8* | *3.3* | *72* | *11 300* | *7.7* | *3.4* | *77* |
| **Mineral Resources** | | | | | | | | |
| Measured | **3 700** | **8.6** | **3.3** | **70** | 7 100 | 8.9 | 3.7 | 80 |
| Indicated | **3 000** | **6.7** | **2.4** | **53** | 10 300 | 8.4 | 3.8 | 83 |
| *Total M&I* | ***6 700*** | *7.8* | ***2.9*** | ***62*** | *17 300* | *8.6* | *3.7* | *82* |
| Inferred | **16 000** | **9.0** | **3.9** | **96** | 14 500 | 9.3 | 4.2 | 100 |

| Copper | 2025 | | | 2024 | | |
|---|---|---|---|---|---|---|
| Classification | kt | Ag g/t | Cu % | kt | Ag g/t | Cu % |
| **Mineral Reserves** | | | | | | |
| Proved | **1 400** | **32** | **2.06** | 1 400 | 33 | 2.04 |
| Probable | **240** | **34** | **1.95** | 220 | 35 | 1.95 |
| *Total* | ***1 600*** | *32* | *2.04* | *1 600* | *33* | *2.03* |
| **Mineral Resources** | | | | | | |
| Measured | **630** | **25** | **1.85** | 2 100 | 35 | 2.20 |
| Indicated | **80** | **30** | **1.56** | 470 | 38 | 2.10 |
| *Total M&I* | ***710*** | ***26*** | ***1.82*** | *2 600* | *35* | *2.20* |
| Inferred | **270** | **29** | **1.69** | 240 | 30 | 1.70 |

Notes on Mineral Resource and Mineral Reserve statement.

- Mineral Resources are reported exclusive of Mineral Reserves.
- Reported Mineral Resource and Mineral Reserves are a summary of economic mineral estimations and studies made over time adjusted to mining situation of December 31, 2025.
- Mineral Resource estimates are reported using Vulcan Stope Optimizer for Reasonable Prospect of Eventual Economic Extraction (RPEEE)
- Mineral Resources are reported inside optimized stopes above cut-off and include dilution from blocks below cut off that fall within the optimized stope shapes.
- Cut-off values used for Mineral Reserve and Mineral Resource are derived from an activity cost model and vary depending on area and mining method. Detailed information can be found in chapter 3.16

- The life of mine plan includes all estimated reserve and additional identified mineralization that is consistent and sequential with the identified reserve. The 2026 Life of Mine Plan (LOMP) includes an additional 24% of "not in Reserve" (NIR) tonnage currently in Inferred resource category that has a reasonable prospect of future upgrade to reserve category.
- Tonnes and grades are rounded which may result in apparent summation differences between tonnes, grade and contained metal content.

## 1.1 Competence

Multiple participants have been involved and contributed to this summary report. Roles and responsibilities are listed in Table 1-2.
Anja Hagerud works at Zinkgruvan as head of the Mine Technical Team. Anja Hagerud is a member of FAMMP and has more than 20 years of experience in the Mining and Exploration Industry.
Nigel Clark works at Zinkgruvan as a Mining Specialist. Nigel Clark is a member of AusIMM and has over 30 years of experience in the Mining Industry.

**Table 1-2. Contributors and responsible competent persons for this report**

| Description | Contributors | Responsible CP |
|---|---|---|
| R&R Coordinator | Anja Hagerud | |
| Lead Competent Person | | Anja Hagerud |
| Mineral Resources | Mimmi Gustafsson | Anja Hagerud |
| Mineral Reserves | Nigel Clark | Nigel Clark |
| Geology | Maria Löf | Anja Hagerud |
| Mineral processing | Nils Merum | Anja Hagerud |
| Environmental, social and governance (ESG) | Lena Vikmång | Anja Hagerud |

# 2 General introduction

This report is issued annually to inform the public (shareholders and potential investors) of the mineral assets at Zinkgruvan held by Boliden Mineral AB (Boliden). The report is a summary of internal / Competent Persons' Reports for Zinkgruvan. Boliden method of reporting Mineral Resources and Mineral Reserves intends to comply with the Pan-European Reserves and Resources Reporting Committee (PERC) "PERC Reporting Standard 2021".
The PERC Reporting Standard is an international reporting standard that has been adopted by the mining associations in Sweden (SveMin), Finland (FinnMin) and Norway (Norsk Bergindustri), to be used for exploration and mining companies within the Nordic countries.
Boliden is reporting Mineral Resources exclusive of Mineral Reserves.

## 2.1 Pan-European Standard for Reporting of Exploration Results, Mineral Resources and Mineral Reserves – The PERC Reporting Standard

PERC is the organisation responsible for setting standards for public reporting of Exploration Results, Mineral Resources and Mineral Reserves by companies listed on markets in Europe. PERC is a member of CRIRSCO, the Committee for Mineral Reserves International Reporting

Standards, and the PERC Reporting Standard is fully aligned with the CRIRSCO Reporting Template.
The PERC standard sets out minimum standards, recommendations and guidelines for Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves in Europe.

## 2.2 Definitions

Public Reports on Exploration Results, Mineral Resources and/or Mineral Reserves must only use terms set out in the PERC standard.

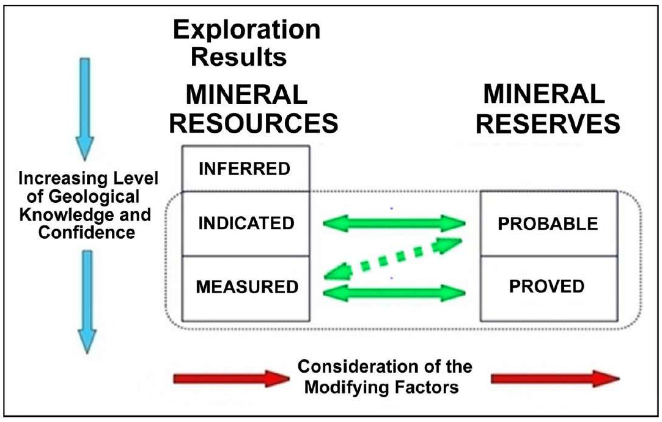


**Figure 2-1. General relationship between Exploration Results, Mineral Resources and Mineral Reserves (PERC 2021)**

### 2.2.1 Mineral Resource

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

### 2.2.2 Mineral Reserve

A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

# 3 Zinkgruvan

## 3.1 Project Outline

The Zinkgruvan Mine is an underground polymetallic mine located in the Bergslagen mining district of south-central Sweden and is operated by Zinkgruvan Mining AB (ZMAB), a wholly owned subsidiary of Boliden Minerals AB (Boliden). The deposit comprises a massive zinc-lead deposit that in the central part is underlain by a copper stockwork. The deposit is divided into the areas of Nygruvan, Burkland and Dalby/Western Fields. The Burland area includes the Burkland Zn/Pb-mineralisations and also hosts the copper stockwork, while the Western Fields includes the zones of Sävsjön, Cecilia and Borta Bakom. Dalby includes Mellanby, Oden, Fjorgyn, Njord and Rinda.

The Zinkgruvan Mine has a long production history with large scale production commencing in 1857. Mine access is via three shafts and a surface decline providing direct vehicle access from surface to the mine. Further internal declines extend beneath the shafts and provide access to the mining areas. The mine is highly mechanised, utilising the best available technologies to control operations, including semi-automated teleremote loading where appropriate. Trucks deliver ore from depth to a main crusher facility at the -800m level at the P2 shaft for hoisting. The stoping methods vary depending on the local conditions and are currently longitudinal sub-level open stoping and transverse longhole open stoping, in both overhand and underhand directions. All stopes are backfilled with either cemented paste tailings or waste rock.

The existing process plant has been treating zinc-lead ores since 1977 and uses conventional processing technologies of crushing, grinding, flotation and concentrate dewatering to produce separate lead and zinc concentrates via a zinc circuit. In 2010, a copper circuit was commissioned to produce copper concentrate using a separate grinding, flotation and dewatering circuit. Current annual production of zinc-lead ore is 1.2Mtpa, with additional copper ore production of 0.3Mtpa. The process plant also produces paste from the tailings for underground backfill. Surplus tailings are stored in the Enemossen Tailings Storage Facility (TSF) located 4km south of the mine.

The zinc, lead and copper concentrates are transported 100km by truck to the port of Otterbäcken on Lake Vänern where they are loaded on to sea going ships.

## 3.2 Major changes

In 2025 the total Mineral Reserve increased by 2,5 Mt to 15.4 Mt. Mineral Resources have previously been reported inclusive of Mineral Reserves but are now reported exclusive of Mineral Reserves explaining the large decrease in Measured and Indicated Mineral Resources despite material being added. Inferred Mineral Resources have increased by 1,4 Mt to 16 Mt.

### 3.2.1 Technical studies

In 2025 a study of ore characterization was conducted on the Dalby ore body, using the sequential flotation process, providing updated metallurgical insights aligned with the current process flow. The projects confirms the recovery equations used in the NSR formulas used to define the economic resource and reserve.

## 3.3 Location

The Zinkgruvan mine is located in south-central Sweden in Närke County at approximately 58°49’N latitude, 15°06’E longitude. The mine is situated 175km west-southwest of Stockholm and 210km northeast of Göteborg. While there is a small village called Zinkgruvan surrounding the mine, the nearest significant communities are Åmmeberg and Askersund, 10km and 15km NW respectively from the mine. These towns house the majority of the mine employees. Askersund is located at the north end of Lake Vättern, the second largest lake in Sweden. The location of the Zinkgruvan property is shown in Figure 3-1.


Figure 3-1. Property Location Map

## 3.4 History

### 3.4.1 Ownership and Development History

The Zinkgruvan deposit has been known since the 16th century, but it was not until 1857 that large scale production began under the ownership of the Vieille Montagne Company of Belgium.

Vieille Montagne, the world leader in the mining and processing of zinc ores at that time, agreed to purchase the properties, including mineral rights and extensive surface rights in farm and forest land and in 1857 a Royal Warrant was issued by the Swedish Crown authorizing this purchase by a foreign company and documenting the terms of operation of the mine.

The first shipment of ore from Zinkgruvan to Belgium was made in 1860. Vieille Montagne metallurgists, accustomed to treating oxidized ores in carbonate gangues, encountered severe technical problems in smelting the sulphide ores; however, the problem was eventually solved by the addition of a roaster on site in 1864. On site processing was carried out at Åmmeberg with its small port facility on Lake Vättern. From the port, shipments of ore and (later) concentrate were shipped out through the Swedish lake and canal system to the sea and on to Belgium. An annual ore production rate of around 300kt was maintained by Vieille Montagne at Zinkgruvan mine until the end of 1976.

From 1976, Vieille Montagne undertook a mine expansion program at Zinkgruvan. A new main shaft was sunk to gain access to additional deeper ore and the mining method was modified to allow for heavier, mechanized equipment. A new concentrator and tailings storage facility were built adjacent to the mine to replace the existing Åmmeberg facilities. Vieille Montagne brought the new facilities on line at the beginning of 1977 and the rate of production gradually began to increase towards the target of 600ktpa, which was achieved in 1982.

In 1990, Vieille Montagne was merged into the Union Miniere group of Belgium, with continued industrial activities in Åmmeberg and Zinkgruvan through a Swedish branch, Vieille-Montagne Sweden, which in 1991 was incorporated as a Swedish company, Union Miniere Sverige AB, and in 1994 changed its name to Åmmeberg Mining AB.

In 1995, a wholly-owned subsidiary of North Limited of Australia, North Mining Svenska AB, purchased Åmmeberg Mining AB and, in turn, the Zinkgruvan mine from the Belgian company Union Minière S.A. Following the acquisition, in addition to the continuation of mining, an aggressive exploration programmed was completed in the immediate and surrounding area. A major reinvestment in the mill on the Zinkgruvan mine site was completed in 1999.

In 2000, Rio Tinto became the owner of Zinkgruvan when it acquired North Limited. In 2001 Rio Tinto introduced paste backfill at the mine.

In June 2004, Lundin acquired North Mining Svenska AB and, in turn, Åmmeberg Mining AB and the Zinkgruvan mine from Rio Tinto. In December 2004, Silver Wheaton (Caymans) Ltd agreed to acquire 100% of the life of mine payable silver production from the Zinkgruvan mining concessions. The mine annually produces approximately 1.6Moz of payable silver contained in the lead and zinc concentrate.

In 2005, North Mining Svenska AB and Åmmeberg Mining AB merged to form Zinkgruvan Mining AB, thereafter the owner and operator of the Zinkgruvan mine. Effective November 30, 2006, Lundin Mining Corporation merged with EuroZinc, and continued as Lundin Mining Corporation.

In 2010, a surface decline was developed, and mining and processing of copper ores commenced.

Production of zinc-lead ore at the Zinkgruvan mine has been continuous since 1857. Production initially focused on the Nygruvan area of the mine before progressing to the Lindängen area of Knalla. More recently production has come from Burkland and the western parts of Knalla including Sävsjön, Mellanby and Cecilia. In 2010, Lundin commenced mining and processing of copper ores from the copper stockwork mineralization located in the structural hanging wall of Burkland.

In 2025, Boliden acquired Zinkgruvan Mining AB and Zinkgruvan is since then a wholly owned subsidiary of Boliden.

### 3.4.2 Production History

Production of zinc-lead ore at the Zinkgruvan Mine has been continuous since 1857. Production initially focused on the Nygruvan area of the mine before progressing to Lindängen area (now depleted by mining), Burkland and the Western Fields of Sävsjön, Mellanby, Cecilia and Borta Bakom. In 2010, LMC commenced mining and processing of copper ores from the copper stockwork mineralisation located in the structural hanging wall of Burkland. Approximately 54 million tonnes of ore have been mined at Zinkgruvan as of December 30th, 2025. A summary of the production at Zinkgruvan Mine from 1994 – 2025 is shown in table 3-1.

| | Zinc/Lead Ore Production | | | | Copper Ore Production | |
|---|---|---|---|---|---|---|
| Year | Ore Processed (Kt) | Head Grade Zn (%) | Head Grade Pb (%) | Head Grade Ag (g/t) | Ore Processed (Kt) | Head Grade Cu (%) |
| 1994 | 649 | 10.4 | 3.0 | 66 | - | - |
| 1995 | 645 | 11.1 | 3.1 | 71 | - | - |
| 1996 | 644 | 9.5 | 2.6 | 62 | - | - |
| 1997 | 705 | 10.4 | 3.7 | 83 | - | - |
| 1998 | 695 | 10.8 | 3.8 | 85 | - | - |
| 1999 | 752 | 9.5 | 3.6 | 78 | - | - |
| 2000 | 732 | 10.9 | 4.0 | 102 | - | - |
| 2001 | 805 | 8.4 | 3.6 | 84 | - | - |
| 2002 | 733 | 7.2 | 3.8 | 90 | - | - |
| 2003 | 759 | 9.3 | 4.8 | 103 | - | - |
| 2004 | 735 | 9.1 | 4.9 | 99 | - | - |
| 2005 | 797 | 9.4 | 5.1 | 95 | - | - |
| 2006 | 788 | 10.3 | 4.6 | 93 | - | - |
| 2007 | 860 | 8.3 | 4.4 | 85 | - | - |
| 2008 | 900 | 7.9 | 4.3 | 82 | - | - |
| 2009 | 991 | 7.5 | 4.1 | 82 | - | - |
| 2010 | 991 | 8.0 | 4.4 | 87 | 34 | 2.2 |
| 2011 | 1,029 | 8.2 | 4.0 | 82 | 103 | 1.8 |
| 2012 | 954 | 9.1 | 4.4 | 86 | 157 | 2.3 |
| 2013 | 910 | 8.5 | 4.2 | 92 | 214 | 1.7 |
| 2014 | 1,063 | 8.2 | 3.7 | 81 | 167 | 2.3 |
| 2015 | 1,126 | 8.3 | 3.8 | 79 | 137 | 1.7 |
| 2016 | 1,058 | 8.0 | 3.5 | 68 | 107 | 2.0 |
| 2017 | 1,188 | 7.3 | 2.9 | 71 | 76 | 1.5 |
| 2018 | 1,202 | 7.0 | 2.6 | 65 | 111 | 1.4 |
| 2019 | 1,120 | 7.6 | 3.1 | 76 | 178 | 1.8 |
| 2020 | 1,208 | 6.7 | 2.5 | 59 | 181 | 2.2 |
| 2021 | 1,181 | 7.4 | 2.4 | 58 | 179 | 1.8 |
| 2022 | 1,234 | 7.0 | 3.0 | 71 | 225 | 2.1 |
| 2023 | 1,179 | 7.3 | 2.9 | 66 | 198 | 2.5 |
| 2024 | 1,239 | 7.3 | 3.1 | 68 | 207 | 2.2 |
| 2025 | 1,287 | 6,6 | 2,9 | 64 | 245 | 2,0 |
| Total | | | | | | |

**Table 3-1. Zinkgruvan Production by Year from 1994**

## 3.5 Ownership and Royalties

ZMAB is wholly owned subsidiary of Boliden Mineral AB. The Dalby K nr1 concession was granted in 2019 and therefore a 0.2% royalty applies to the annual value of metal recovered after mineral processing of material from the concession. The other concessions were granted before 2005, therefore no royalty applies to material mined from these concessions.

## 3.6 Environmental, Social and Governance (ESG)

### 3.6.1 Licenses and Permits

ZMAB is the owner of all land where the mining operations are currently above ground. ZMAB holds Mining Concessions from the Mining Inspectorate covering Zingkruvan within 3 concessions; Dalby K nr 1, Klara and Zinkgruvan. The concessions are renewed automatically as long as mineral extraction is ongoing. See Figure 3-2 for the location of the concessions. The concessions cover the deposit and its immediate area. The surface land in the concessions areas belongs mainly to private individuals. The regulations of the exploitation concessions involve no particular restrictions on the mining operation. ZMAB also holds a Mining Concession 40 km west of Zinkgruvan, Marketorp, with no active mining.

ZMAB also holds eight exploration concessions which surround the Zinkgruvan property and comprise the Dalby Hytta nr 2 Exploration Concession, the Flaxen nr 3 Exploration Concession, the Hjortonmossen nr 1 Exploration Concession, the Orkaren nr 2 Exploration Concession, the Hövdingamon nr 2 Exploration Concession, Friggeberget nr 1 Exploration Concession, Höksjön nr 1 Exploration Concession and Marketorp nr 2 Exploration Concession. The extent of the license areas is shown in Figure 3-3.

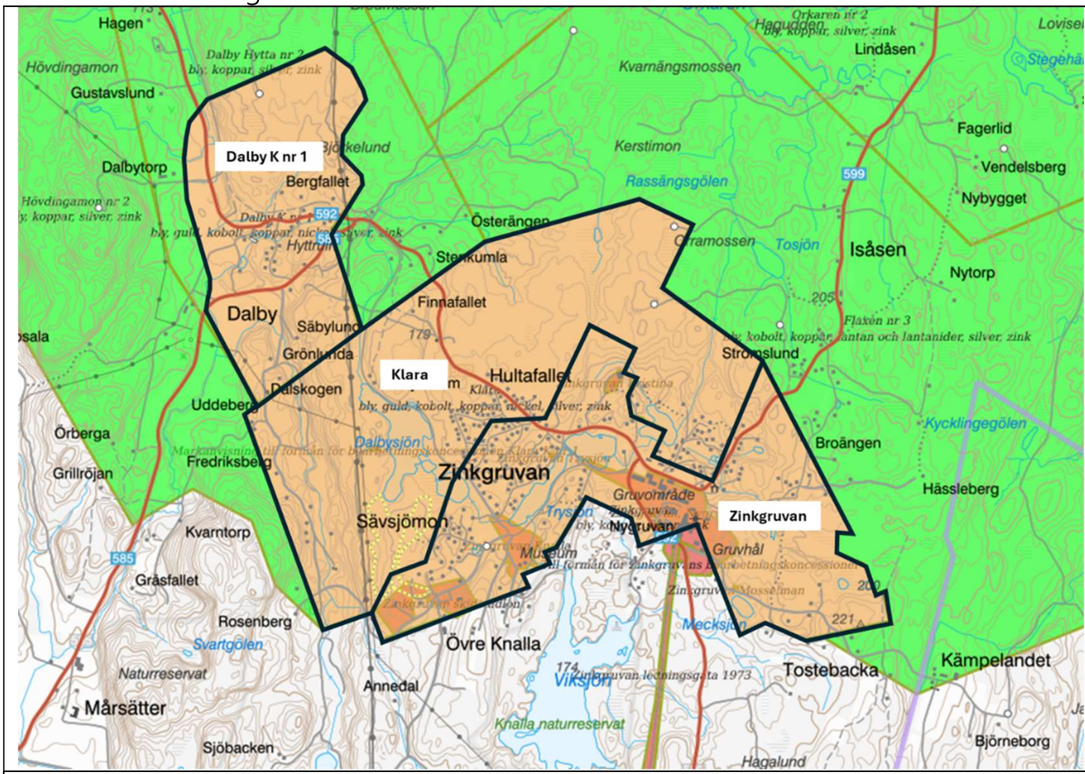


Figure 3-2. Concession Areas

**Table 3-2. Zinkgruvan Concession agreements**

| Name | No | Metals |
|---|---|---|
| Dalby k nr 1 | BS 22-533-2018 | Pb, Au, Co, Cu Ni, Ag, Zn<br>bly, guld, kobolt, koppar, nickel, silver, zink |
| Klara | BS 22-451-2002 | Pb, Au, Co, Cu Ni, Ag, Zn<br>bly, guld, kobolt, koppar, nickel, silver, zink |
| Zinkgruvan | BS 22-394-1998 | Pb, Cu Ag, Zn<br>bly, koppar, silver, zink |

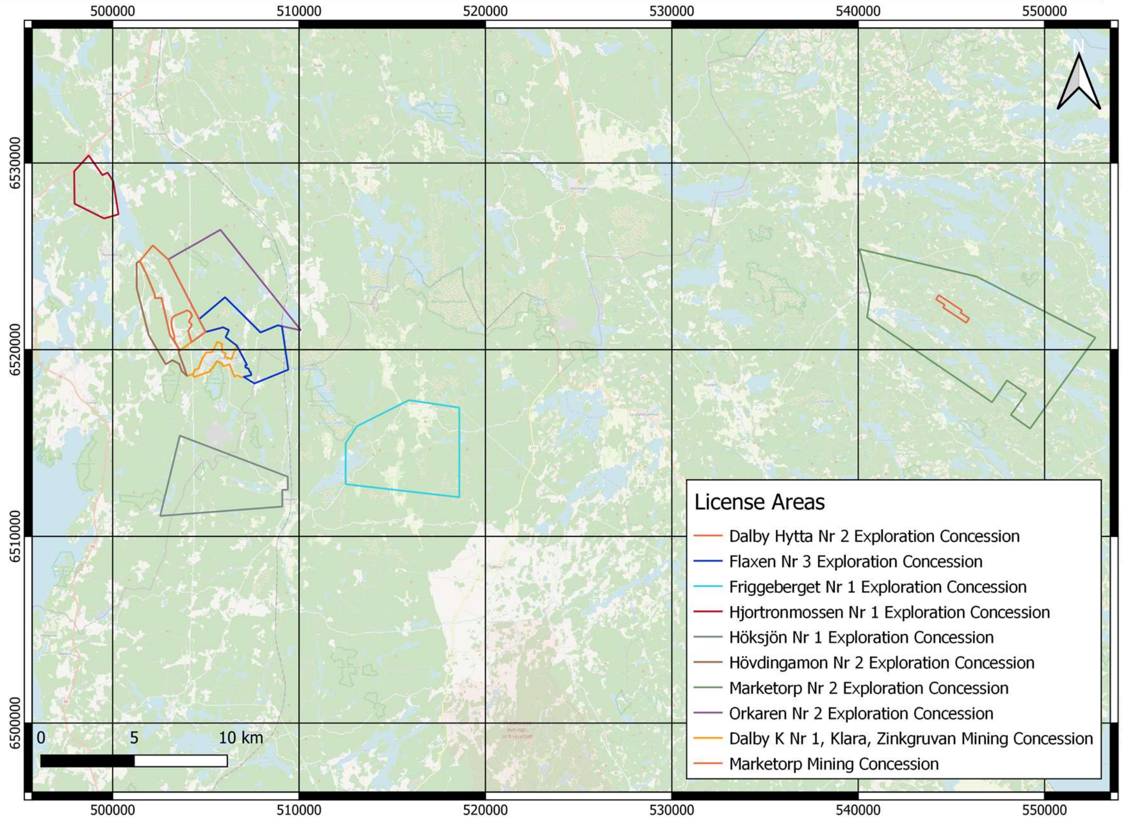

**Figure 3-3. Location of License Areas (SWEREF 99 TM Coordinate System)**

On October 18, 2022 the Vänersborg District Land and Environment Court granted Zinkgruvan a change in its Environmental License (case M 2774-21) to increase mining and processing

production capacity to 1.6Mtpa of ore, to start production and build a ventilation shaft at the Dalby deposit, and to increase storage capacity of the processing plant ore stockpile. The Court decision obliges the mine to fulfil obligations stipulated by the previous Environmental License approved in January, 2015 (case M 2927-12 and case 1421-11).
From the original permit from 2015 is a maximum of 9.2 Mm3 Tailings aloud to be deposited at Tailings facility. This implies that Zinkgruvan needs to have a new permit in place by 2030 in order to be able to continue raising the existing TMF and keep depositing tailings.
According to this permit, trial periods are in progress for wastewater discharges. According to the Land and Environmental Court decision dated September 9, 2020 (case M 2927-12) final discharge conditions must be reported before May 1, 2026. Other relevant active permitting at Zinkgruvan includes:

- August 31, 1990, Water Court case VA 52/1989: Zingruvan owns the right to extract and divert water for the mine and processing facility in accordance with the verdicts from December 8, 1976 and October 30, 1986 on case VA/521975 and the verdict of August 31, 1990 on case VA 52/1989;
- January 28, 2016: Transfer of water from Viksjön to Björnbäcken, Askersund and Motala Districts to counterbalance water extraction for the mine's operation;
- April 11, 2018: Land and Environment Court case M 390-18: extension of the operation period till February 20, 2028;
- June 11, 2020, Land and Environment Court approved safety improvement measures for Enemossen TSF.

### 3.6.2 Environmental, Social and Governance considerations

Our business model sets our ESG priorities, and take into consideration the risks and opportunities identified by business intelligence and risk mapping, as well as applicable requirements and expectations such as:

- Stakeholder expectations
- Current and potential legislative trends
- OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-affected and High-risk Areas
- GRI Standards (Global Reporting Initiative)
- UN Sustainable Development Goals (SDGs)
- UN Global Compact
- ICMM Mining principles

We regularly consult prioritized stakeholder groups on our sustainability performance from a broader perspective. These stakeholders are asked to comment on Boliden's performance to drive further improvement.
Boliden is a member of ICMM and the national mining associations in the countries where Boliden Mines operates. These commitments imply implementing relevant international and

national Environmental Management System (EMS) standards and guidelines, such as, e.g., the Global Industry Standard on Tailings Management on an international level and Mining RIDAS on a national level. In addition to this, Boliden Mines is certified according to a series of standards, such as:

- ISO 14001:2015 - Environmental management systems.
- ISO 45001:2018 - Occupational health and safety management systems.
- ISO 50001:2018 - Energy management systems.

Boliden has implemented an integrated management system (Boliden Management System, BMS) which sets a common base for all activities developed within the company.
Boliden strive to run a responsible business and expect it´s business partners to do the same. Good business ethics is essential for sustainable and successful business. Boliden has an ethics and compliance department to boost its compliance work. The department is responsible for the strategic development and coordination of Boliden's work regarding anti-money laundering, anti-corruption, competition law, sanctions, human rights, data protection, whistleblowing and Boliden's employees and management work together to create a compliance culture in which everyone knows what is expected of them - Boliden's codes of conduct. Regular risk assessments, trainings, audits and effective controls are important parts of Boliden's compliance efforts. The Group's whistleblower channel enables all employees and external stakeholders to report suspected and actual misconduct confidentially and anonymously. If misconduct is proven, disciplinary actions must be taken. Reprisals against anyone reporting misconduct in good faith will not be tolerated. Group management and the Board of Directors receive regular reports on risks, non-compliance and the status of initiatives in progress.
Boliden's Code of Conduct provides a framework for corporate responsibility based on the company's values and ethical principles. All employees and members of the Board are subject to the Code, which is based on international standards and relevant legislation. As a complement to the Code, there are internal policies that all employees are expected to comply with. Boliden strives for a sustainable value chain and therefore applies an overarching business ethics and risk management strategy when selecting business partners. The Business Partner Code of Conduct reflects the requirements placed on Boliden's own organization and sets the lowest standard of ethical conduct required of all parties in the value chain, whether Boliden is the buyer or seller. As with the internal Code of Conduct, this code is based on international standards such as the UN's Global Compact, the ILO's standard core conventions and guidance from the OECD. Compliance and sustainability risks are assessed when selecting business partners. If there is a risk of non-compliance by a business partner, a more detailed review is made. Depending on the outcome, an action plan may be developed and agreed upon, or the business relation may be terminated or rejected.
Boliden is a member of the United Nations Global Compact and works constantly to implement its ten principles, including preventing and limiting negative impact in the own operations and those of its external business partners. Boliden runs operations in countries where the risk of human rights violations is considered low. No operations are conducted anywhere in UNESCO's World Heritage List. Boliden supports the right of indigenous peoples to consultations

under Svemin's interpretation of Free, Prior and Informed Consent (FPIC). Other important aspects are fair working conditions and the position Boliden has adopted against any form of harassment, discrimination and other behavior that may be considered as victimization by colleagues or related parties. In addition to this, aspects such as child and forced labor as well as the freedom to form and join trade unions are taken into account when evaluating business partners.

Anti-corruption forms a central part of the ethics and compliance work, and Boliden has a zero tolerance policy regarding all types of bribery and corruption. Boliden has an anti-money laundering policy for identifying and managing risks in various parts of the business and to strengthen its anti-money laundering efforts.

## 3.7 Social and Community Management

### 3.7.1 Social Performance

Mining and metal processing has been the driving force in the local and regional economy and development in Bergsslagen for centuries if not millenniums. There has been a history of mining at Zinkgruvan dating back over 160 years. The Zinkgruvan mine is an important actor on the local and regional scale with about 480 direct employees and creating a large number of indirect jobs. In total, it has been assessed that the Zinkgruvan mine generates 2300 direct and indirect jobs. More than 85 % of the workforce lives withing the municipalities of Askersund, Motala and Hallsberg. The importance and engagement of Zinkgruvan is also reflected in the support to local organizations, cultural events and social projects.

Zinkgruvan village has around 290 inhabitants, other nearby towns include Åmmeberg and Askersund, located around 10km and 15km from the mine, respectively.

### 3.7.2 Stakeholder Engagement

Zinkgruvan holds regular information meetings with the local community and landowners. Relations with the local community and landowners are generally good. A new grievance portal has been set up in 2025 after the acquisition of Boliden on the Boliden website through which anyone can file any issues, complaints, or improvement suggestions.

Zinkgruvan owns much of the land in the town of Zinkgruvan due to a historical responsibility to manage past mining impacts, including land contamination.

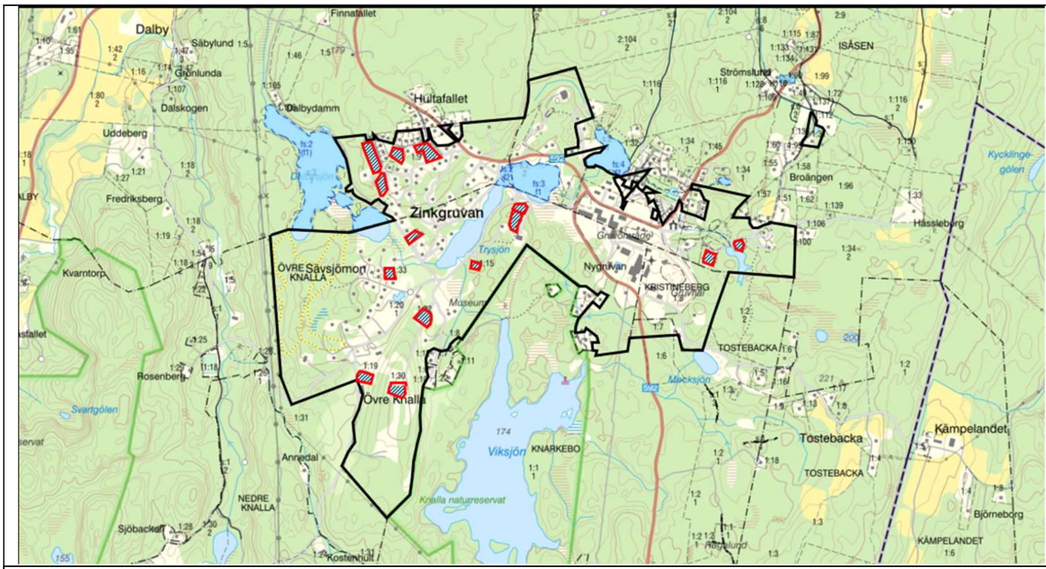


**Figure 3-2. Concession Areas**

Properties not owned by the mine is marked with Red, black outline is owned by Zinkgruvan

## 3.8 Geology

### 3.8.1 Regional and Local Geology

Zinkgruvan is located in the SW corner of the Paleoproterozoic Bergslagen region, famed for its numerous iron ore and base metal mines, notably the Falun deposit (200 km north of Zinkgruvan), which saw production from before the year 1000 until 1992.

The ore-bearing Bergslagen region is part of the southern volcanic belt of the Svecofennian Domain. The supracrustal rocks are dominated by felsic metavolcanic successions that can be up to 10 km thick. Limestones, calcsilicates and mineralized deposits are commonly spatially associated with metavolcanics. The district is comprised of a series of small proximal basins in a continental rift environment. The active extensional stage was characterized by felsic volcanism and intrusions followed by subsidence and sedimentation.

In the Bergslagen region stratabound and stratiform Zn-Pb-Ag deposits occur in folded and metamorphosed supracrustal inliers enclosed by plutonic rocks. The deposits range from small prospects to world class deposits such as the Garpenberg stratabound Zn-Pb-Ag-(Cu-Au) and Zinkgruvan stratiform Zn-Pb-Ag-(Cu) deposits, which are the two largest sulphide deposits in the region. These two deposit types have historically been referred to as 'Falun type' and 'Åmmeberg type' (Magnusson 1950). Both were regarded as epigenetic but related to different types of granitoid magmatism (e.g. Geijer 1917, Magnusson 1953).

Subsequent work has re-interpreted most sulphide deposits in Bergslagen as products of syn-genetic exhalative processes related to volcanism, prior to deformation and metamorphism, whereby the distinction and genetic link to granitoids became largely obsolete (e.g. Vivallo 1985, Hedström et al. 1989). A two-fold division was however re-instated by Allen et al. (1996), who based on regional facies, distinguished between 1) stratiform Zn-Pb-Ag-(Cu) deposits (SAS), such as Zinkgruvan and 2) stratabound marble- and skarn-hosted Zn-Pb-Ag-(Cu-Au) deposits (SVALS), such as Garpenberg and Sala (Fig. 2). This division was consistent with results by

Sundblad (1994), who demonstrated that the historic endmembers show contrasting Pb isotope trends.

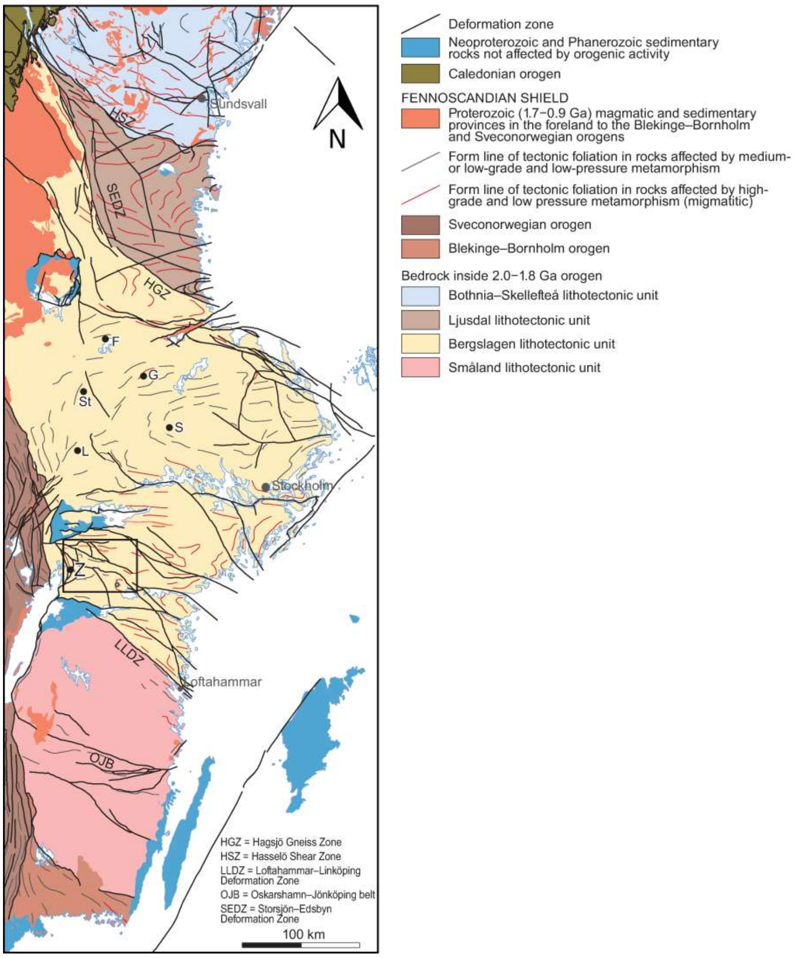


**Figure 3-3. Geological map of the southern part of the Fennoscandian shield in Sweden**

Figure 3-5 shows the tectonic framework of the BLU as well as the location of Zinkgruvan (Z). The historic base metal mines are also highlighted: Falun (F), Stollberg (St) and Sala (S) as well as the currently active base metal mines Lovisa (L) and Garpenberg (G). Stephens and Andersson (2015); Jansson et al. (2017).

Zinkgruvan is situated in the southern part of the Bergslagen lithotectonic unit (BLU) of the Fennoscandian shield (Fig. 2). In the BLU, mainly submarine volcanic and sedimentary rocks deposited at 1.91-1.89 Ga occur as polydeformed and metamorphosed inliers enclosed in voluminous plutonic rocks formed during igneous phases at 1.90-1.87, 1.87-1.84 and 1.81-1.78 Ga (Stephens and Andersson, 2015). Polyphase deformation, metamorphism and magmatism reflect various stages of the c. 1.9-1.8 Ga Svecokarelian orogeny (Stephens et al. 2009). The BLU is bounded to the south and north by WNW-ENE to NW-SE striking shear belts recording dextral transpressive deformation as well as high-grade metamorphism (Stephens and Andersson, 2015). Peak metamorphic conditions in the southern part, where Zinkgruvan is located, has been estimated at 750±50°C and 4-6 kbar based on metamorphic mineral assemblages (e.g.

sillimanite), geothermobarometry and migmatization (Andersson et al. 1992, Gunn 2002, Stephens et al., 2009).

The principal stratigraphic components in the BLU comprise 1) a lower metasedimentary succession comprising turbidites, quartzites, greywackes and arkoses, 2) an overlying thick succession dominated by juvenile, mainly rhyodacitic metavolcanic rocks and 3) an upper metasedimentary succession of turbiditic and locally graphitic pelitic rocks (Allen et al. 1996; Stephens et al. 2009). The volcanic succession comprises a lower section dominated by ignimbrites deposited during a stage of intense volcanism and an upper section dominated by finer-grained silty-sandy reworked volcanic rocks interbedded with former stromatolitic limestone units, deposited during a stage of waning volcanism (Allen et al. 1996). Sub-volcanic intrusions are found throughout the volcanic succession. The supracrustal sequence is inferred to have been deposited in a back-arc basin on continental crust (Allen et al. 1996).

The upper volcanic-sedimentary interval hosts most of the mineral deposits in the region, including Fe oxide deposits in marble and/or skarn, banded iron formations, stratiform Zn-Pb-Ag-(Cu) deposits (SAS) and stratabound marble- and skarn-hosted Zn-Pb-Ag-(Cu-Au) deposits (SVALS). Zinkgruvan similarly occurs near the transition from felsic metavolcanic rocks to (now migmatized) metapelitic and metaturbiditic rocks, termed the 'Mariedamm volcanic unit' and 'Vintergölen formation' respectively by Kumpulainen et al. (1996). The Vintergölen formation occupies the core of a c. E-W trending syncline, which hosts Zinkgruvan on its northern, overturned limb (Fig. 3-5).

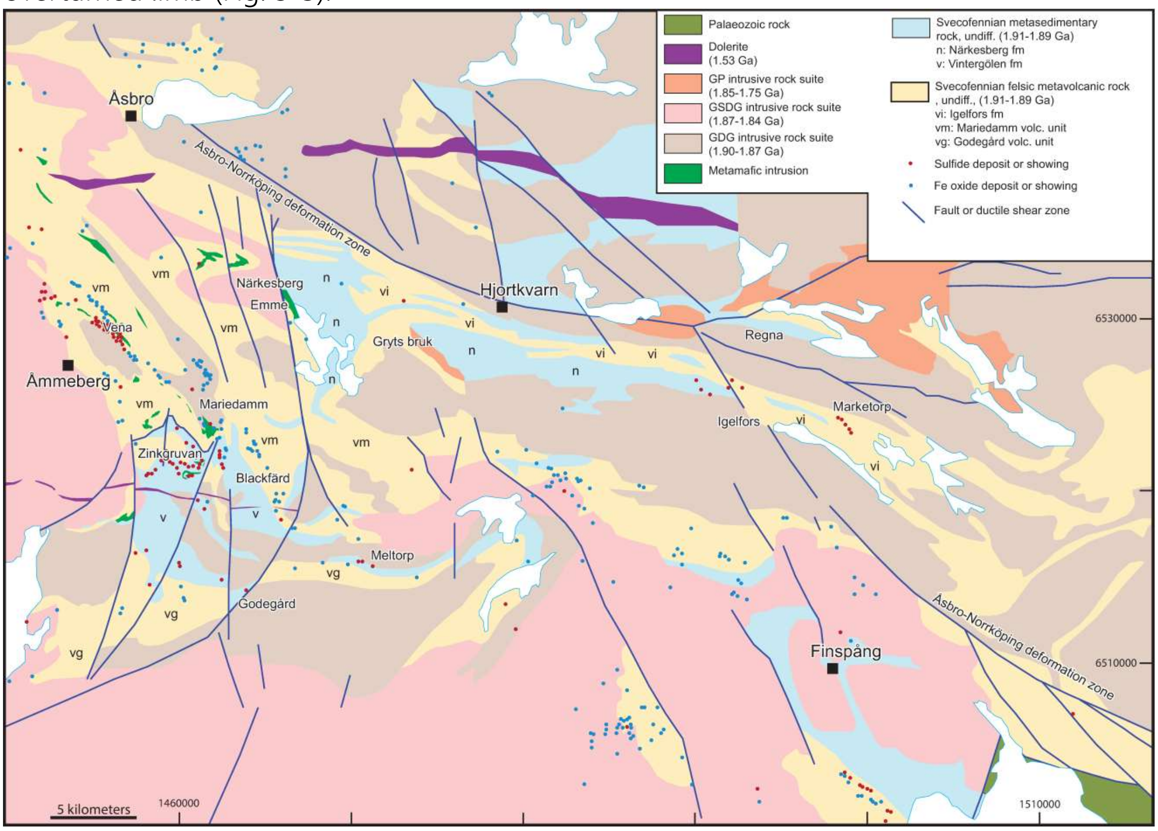


Figure 3-4. Geological map of southwestern Bergslagen,

Figure 3-6 shows the position of Zinkgruvan and different stratigraphic units discussed (Kumpulainen et al. 1996; Stephens and Andersson 2015 and Jansson et al. 2017). The division of plutonic rocks into GP (granite-pegmatite), GSDG (granite-syenitoid-dioritoid-gabbroid) and GDG (granitoid-dioritoid-gabbroid) is based on Stephens et al. (2009), age ranges in brackets apply to the entire Bergslagen area.
The mined sulphide ore occur as interbeds in a succession of grey, biotite-bearing quartzofeldspathic rocks ('metatuffite'), calc-silicate units and marble units, described in detail by Hedström et al. (1989) and in this contribution referred to as the 'Zinkgruvan formation'. The stratiform ore has laterally been traced for 5 km, to a depth of 1.5 km, across the folded and faulted structure in the area. The Zinkgruvan formation has been successfully correlated with a less endowed but similar rock sequence at Blackfärdsmossen 3 km to the east (Fig. 3-6), albeit the true lateral distance along strike of bedding is unknown due to structural complexity. Dolomitic marble units ranging from <1 m to >100 m are most abundant in the upper stratigraphic footwall (Fig. 3-7) and have been correlated with a prominent calcitic marble unit on the southern limb, termed the 'Höksjön limestone' by Kumpulainen et al. (1996).

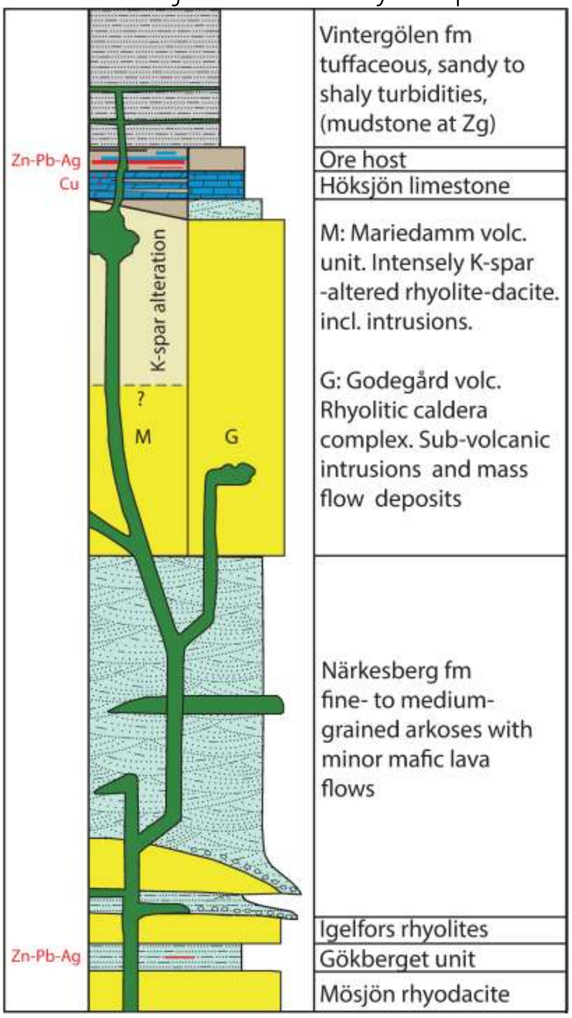


**Figure 3-5. Regional stratigraphic column showing stratigraphic setting of the Zinkgruvan deposit (Kumpulainen et al. 1996; Jansson et al. 2017).**

Figure 3-7 shows the Thicknesses of the units are approximate (total thickness is c. 10 km). The 'Zinkgruvan formation' refers to the succession between the Mariedamm volcanic unit and the Vintergölen formation.
These units are underlain by the stratigraphically equivalent Mariedamm and Godegård metavolcanic units on the northern and southern limbs respectively (Kumpulainen et al. 1996). The rhyolitic-dacitic Mariedamm metavolcanic unit has been subjected to intense pervasive potassic alteration to a 'microcline-quartz rock' in the stratigraphic footwall of Zinkgruvan, leading to that the original volcanic facies are poorly known (Hedström et al. 1989). The Godegård metavolcanic unit displays better textural preservation and was interpreted by Allen et al. (1996) as rhyolitic sub-volcanic intrusions and mass flow deposits, deposited in a caldera complex.
The Mariedamm metavolcanic unit is underlain by the Närkesberg formation; a c. 5 km thick succession dominated by metamorphosed continentally-derived arkoses (Fig. 3-6, 3-7). The upper 4 km displays planar stratification and cross-bedding, emphasized by heavy mineral accumulations of magnetite and ilmenite. A fluvial depositional environment was favored by Kumpulainen et al. (1996), although a possible tidal influence was discussed based on local presence of herringbone cross-bedding. The lower 1 km is generally finer-grained, yet more variable with subordinate metamorphosed conglomerate, sedimentary breccia, shale as well as interbeds of metavolcanic rocks like those of the Igelfors formation, which underlies the sedimentary rocks (Kumpulainen et al. 1996).
Regional deformation ended before regional metamorphism, as the late orogenic granites have not been affected by the regional deformation. The later granites of the Transscandinavian granite-porphyry belt have deformed the country rock during their intrusion, causing a local folding parallel to subparallel to their margins.
Brittle fracturing is marked by NNE-trending fault systems resulting in large-scale block movements between sections of the country rock. The Knalla fault, separating the Nygruvan and Knalla ore zones is likely an example of such a fault. Movements of several hundred meters are occasionally observed along such faults (Fig. 3-8). These fault systems postdate an east trending dolerite dike swarm, which has an age of about 1.53 billion years.

### 3.8.2 Mine Geology

Zinkgruvan is located on the northern overturned limb of a semi-regional E-W trending syncline. Few stratigraphic younging indicators exist in the area, yet younging is inferred to generally be southwards in the mine area (e.g. Hedström et al. 1989, Kumpulainen et al. 1996). The microcline-quartz rock, which is the oldest unit in the near-mine stratigraphy thus structurally overlie the deposit.

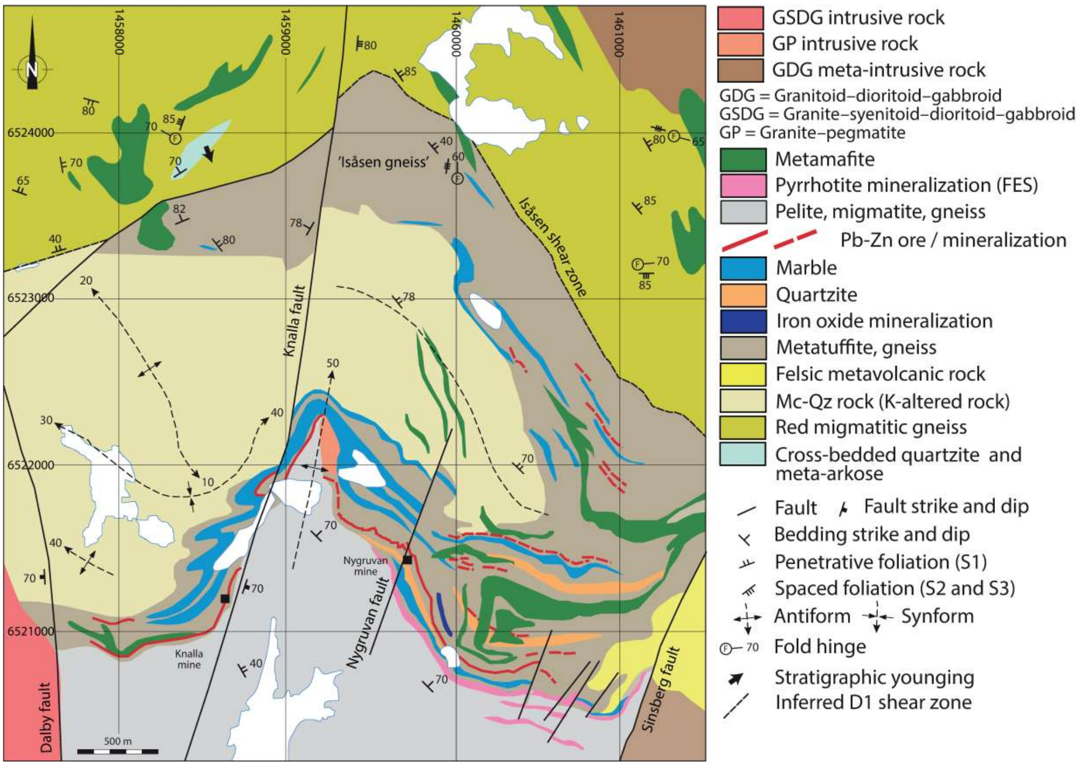


**Figure 3-6. Regional Geological map of the Zinkgruvan area (Jansson et al 2017 based on Henriques (1964), Hedström et al (1989), SGU map and recent mapping). The location of geological profiles shown further down are indicated.**

The Zinkgruvan area is characterized by a strong, tectonic foliation which is generally sub-parallel to bedding. The tectonic banding is particularly well-developed north of the microcline-quartz rock, where a package of highly strained rocks like those of the Zinkgruvan formation exist, termed the 'Isåsen gneiss'. These relationships suggest that microcline-quartz rock occupies the core of an anticline (Fig. 3-8). Whereas the maps of Hedström et al. (1989) and Kumpulainen et al. (1996) suggest the presence of a complementary syncline further north. More recent mapping suggests that the rocks north of the Isåsen gneiss are fundamentally different from those south of it, comprising an assemblage of intensely deformed red gneisses, amphibolites, granitoids, pegmatites and rare cross-bedded meta-arkose (Jansson et al. 2017). Preservation of primary textures in the Zinkgruvan rocks is generally poor due to medium-high grade metamorphism. Nevertheless, relatively well-preserved rocks have been found throughout the area, including in the zones of migmatization. The stratigraphy within the Zinkgruvan formation is remarkably laterally continuous (Hedström et al. 1989), yet variability exists in detail, including omitted and repeated strata. To a large extent, this reflects the tectonic overprint, including the effects of boudinage, shearing, faulting and folding. However, abrupt stratigraphic discontinuities in the spatial distribution of particular stratigraphic units that are not obviously attributable to any of these effects also exist (Jansson et al. 2017).
The complex history of post-ore modifications has led to that classification of the deposit has not been successfully achieved. General consensus exists on a syngenetic-exhalative origin, yet the deposit has been variably classified as a Broken Hill-type (BHT) deposit, volcanogenic

massive sulphide (VMS) deposit and sediment-hosted Zn (SEDEX) deposit. Later work (Jansson et al. 2017) has shown evidence that both the stratiform Zn-Pb-Ag and the dolomite-hosted Cu ore can be explained as products of oxidized, saline brines at a near neutral pH that formed stratabound, disseminated Cu ore by interaction with organic matter below the seafloor, and regionally extensive Zn-Pb-Ag ore from an overlying, reduced brine pool into which the fluids exhaled (Fig. 3-9). A distinct discontinuity in the mineralized system coincides with a marked stratigraphic break, wherein key stratigraphic components of the host sequence disappear abruptly. This feature is interpreted as a syn-sedimentary fault which functioned as a feeder to mineralizing fluids based on the metal zonation in the stratiform ore and the spatial distribution of mineralization in dolomitic marble. The inference of the composition of the ore-forming fluid and a dominant redox trap rather than a pH and/or temperature trap is inconsistent with typical VMS and BHT models. Except for the metamorphic overprint, Zinkgruvan has similarities to both McArthur-type SEDEX deposits and sediment-hosted Cu deposits and could as such comprise one the oldest known manifestations of these ore-forming systems, following oxygenation of the Earth's atmosphere (Jansson et al. 2017).

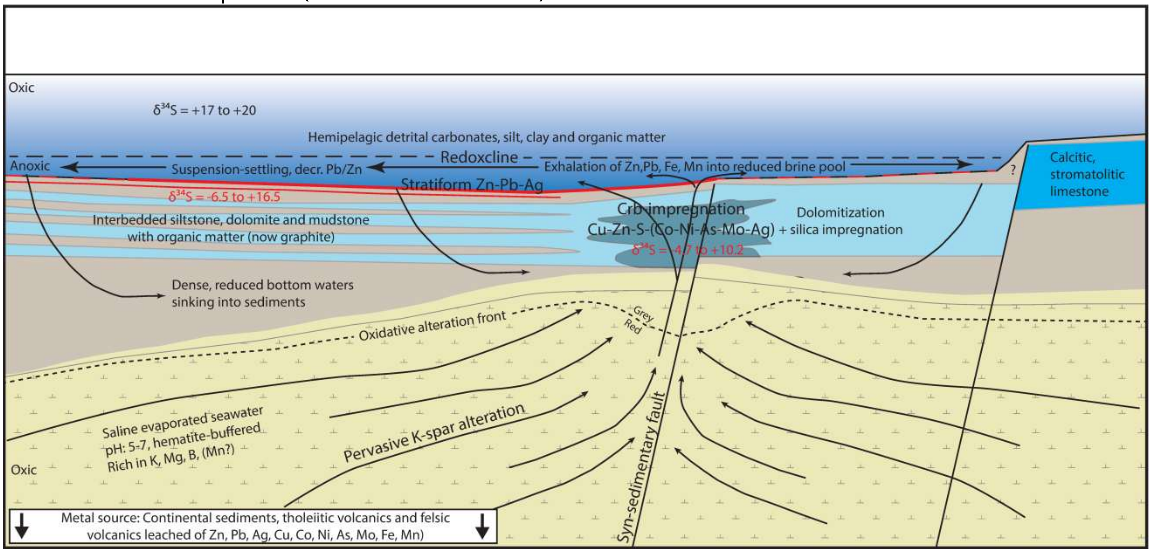


**Figure 3-7. Schematic diagram illustrating a genetic model for Zinkgruvan**,

Figure 3-9 outlines metalliferous, oxidized brines at a near-neutral pH vented in a reduced sub-basin forming a laterally extensive brine pool. Copper mineralization formed proximal to a syn-volcanic fault in the position of the current Burkland discontinuity during interaction with organic matter in the former limestone. Stratiform Zn-Ag-Ag was deposited as hydrothermal fallout from the overlying brine pool (Jansson et al. 2017) near-neutral pH vented in a reduced sub-basin forming a laterally extensive brine pool. Copper mineralization formed proximal to a syn-volcanic fault in the position of the current Burkland discontinuity during interaction with organic matter in the former limestone. Stratiform Zn-Ag-Ag was deposited as hydrothermal fallout from the overlying brine pool (Jansson et al. 2017)

#### 3.8.2.1 Stratigraphy

The oldest part of the near-mine stratigraphy at Zinkgruvan comprise the microcline-quartz altered felsic metavolcanic rocks, where the anomalously high microcline content has been attributed to intense potassic alteration prior to metamorphism (Henriquez 1964, Hedström et al. 1989). The microcline-quartz rock ranges from massive to banded and generally display little textural evidence of the precursor. The unit covers a surface area of approximately 7 $km^2$ north of Zinkgruvan (Fig. 3-8). Pervasive hematite-staining has given rise to a distinct pinkish-reddish color c. 400 meter stratigraphically below the ore, whereas the unit is grey to white with a bleached appearance more proximal to the ore horizon (Hedström et al. 1989). The upper, grey-white part of the quartz-microcline contain relics of original feldspar and quartz phenocrysts in addition to a fine but crude lamination, reminiscent of igneous flow banding, which is seen to wrap around the phenocrysts. Microcline is the predominant mineral, followed by subordinate quartz, biotite (locally chloritized), titanite, apatite and zircon. In situ breccia textures reminiscent of hyaloclastite has been observed locally in the grey-white variety. Hedström (1989) described local cross-cutting, discordant contacts. These features along with possible in-situ hyaloclastite and flow banding are most consistent with that the precursor of the microcline-quartz rock comprised coherent volcanic rocks, including syn-volcanic intrusions (Jansson et al. 2017).
The stratigraphically overlying Zinkgruvan formation consists of interbedded marble and associated reaction skarns, metabasic rocks (sills and ragged, dark-green brown metabasalt with calcite-filled spots), subordinate migmatized biotite-bearing metapelites (locally graphitic), grey metasiltstone and metasandstone, varying in proportions in different parts of the deposit. Stratiform mineralization occurs close to the top of the formation. At Nygruvan, the succession underlying the stratiform Zn-Pb-Ag ore is c. 500-meter-thick and contains several distinct marble interbeds (Fig. 3-10). The succession is considerably thinner west of the Knalla fault, where stratiform Zn-Pb-Ag mineralization locally directly overlies a single, c. 50 m thick marble horizon and a considerably condensed, c. 75 m thick sequence of rocks like those at Nygruvan (Fig. 3-11). The stratigraphic relationships of the stratiform ore also display some variations; west of the Knalla fault, the stratiform ore essentially forms one distinct stratigraphic unit whereas at eastern Nygruvan, there exists a 'Main ore' and a stratigraphically underlying 'Parallel ore', which are separated by a migmatized succession of fine-grained siliciclastic rocks (Fig. 3-10).
Despite these variations, the near-ore stratigraphic succession follows a similar pattern, where the first occurrence of sphalerite laminae in the biotite-rich metapelites and calc-silicate beds occurs stratigraphically above the uppermost thick dolomitic marble unit. This marble and the ones beneath it at Nygruvan range from pure to containing abundant dark patches, streaks and impregnation black serpentine and magnetite in addition to pale green diopside and schlieren of dark-green phlogopite. Serpentine is observed to be a retrograde product after metamorphic olivine porphyroblasts and diopside, which are locally preserved as relics in the center of the serpentine spots. The outlines of the former olivine crystals are perfectly intact, despite a penetrative ductile fabric in the marble, suggesting retrograde alteration post-dated penetrative ductile strain.

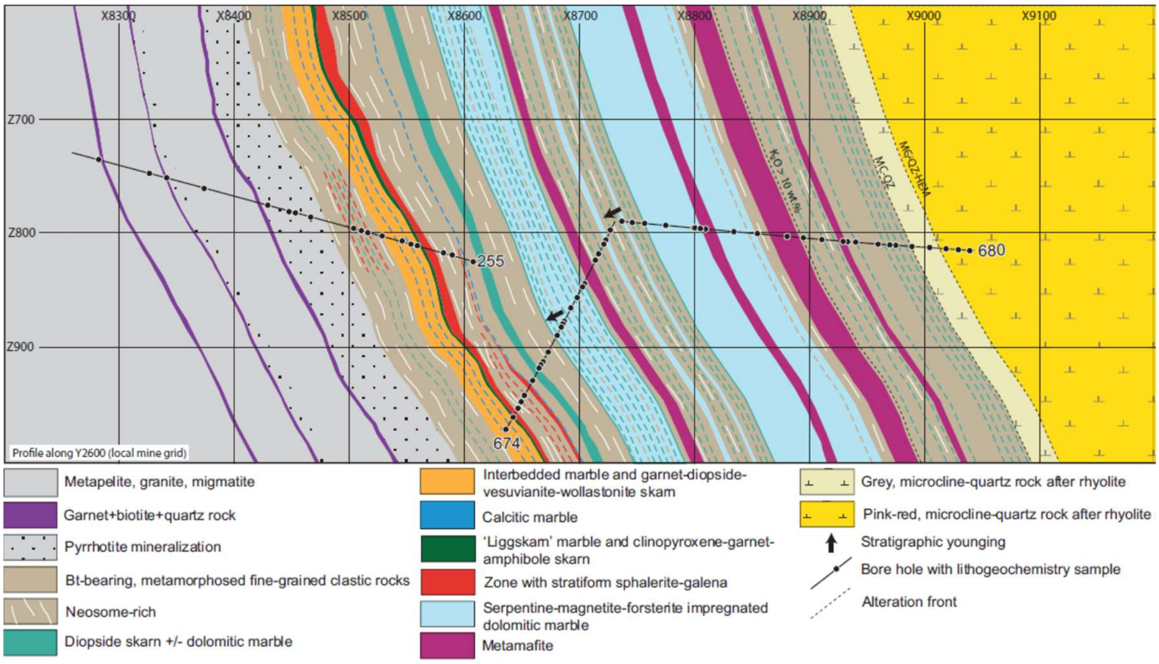


**Figure 3-8. Vertical profile through the Nygruvan mine, Jansson et al (2017).**

At Nygruvan, the direct footwall succession to the stratiform ore comprises a gneissose, migmatized succession of biotite-rich siltstone with local sections displaying relict planar stratification. The succession contains a weak sphalerite impregnation, abundant tiny garnet crystals and minor graphite. Local c. 10 cm thick interbeds of medium green clinopyroxene skarn and a cherty quartz-rich skarn occur and are commonly associated with thin sphalerite laminae. In eastern Nygruvan, this part of the succession hosts the 'parallel ore'.
The stratiform ore is stratigraphically directly overlain by a c. 1-2 m thick unit of marble and clinopyroxene-garnet skarn unit which is commonly sphalerite-galena-pyrrhotite impregnated and contains schlieren of phlogopite and chlorite, known as 'Liggskarn'. At Nygruvan the 'Liggskarn' is overlain by a c. 25 m thick succession, comprised of calc-silicates with a distinct banded appearance. This succession is comprised of varying proportions of diopside, garnet, wollastonite, calcite, biotite and vesuvianite, and is in local mine terminology referred to as 'KSL'. The marble/skarn-rich facies are interbedded with garnet-porphyroblastic biotite-rich metasiltstone. These facies also occur west of the Knalla fault, yet more subordinately and locally omitted (Fig. 3-11). The garnet-porphyroblastic and skarn-banded facies decrease stratigraphically upwards, and a transition into migmatized metasiltstone and metapelite is observed. This part of the succession locally contains a distinct marble-skarn interbed termed 'Verkstadskalken', which commonly is mineralogically like the 'Liggskarn' unit (Fig. 3-11).

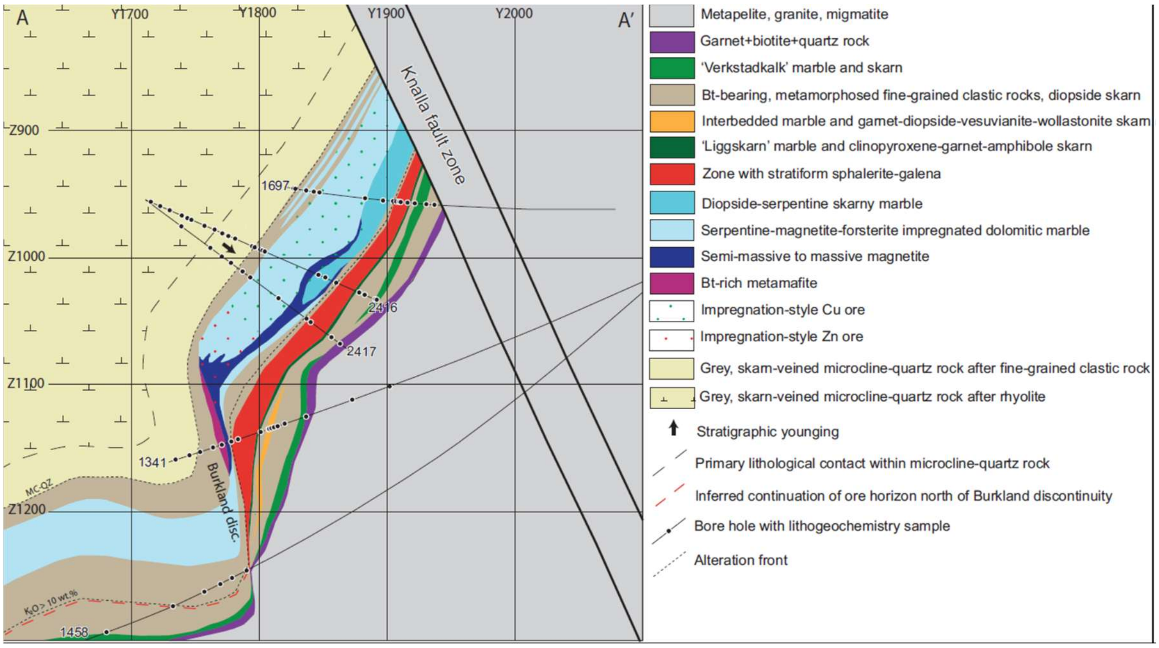


**Figure 3-9. Vertical profile through the Burkland area, Jansson et al (2017).**

The Zinkgruvan formation is concordantly overlain by strongly migmatized metapelitic rocks which commonly carry cm-sized feldsparporphyroblasts and sillimanite needles. The transition is commonly marked by a pyrrhotite-impregnated, graphitic metapelitic rock (FES) which locally carries minor pyrite and rare arsenopyrite, cobaltite and sphalerite. The FES is overlain by a strongly garnet-porphyroblastic rock (GBK), which forms a prominent marker horizon across the entire Zinkgruvan area. The 'GBK' commonly has banding defined by abundant pink garnet porphyroblasts in quartz- and biotite-rich matrix with minor anorthite and accessory graphite, pyrrhotite, chalcopyrite, zircon and monazite.

### 3.8.2.2 Mineralization

Two major types of mineralization occur at Zinkgruvan, the stratiform Zn-Pb-Ag mineralization and the marble-hosted mineralization.

### 3.8.2.3 Stratiform Zn-Pb-Ag mineralization

Sphalerite and galena are the dominant sulphide minerals generally occurring in interbedded laminea. The stratiform mineralization normally ranges between 5 to 25 m in thickness. In the eastern part of Nygruvan there are two parallel horizons separated a gneissic metatuffite (quartz, microcline, biotite-phlogopite, and minor muscovite, chlorite and epidotic). Chalcopyrite is present in small amounts (<0.2% Cu). Pyrrhotite, pyrite and arsenopyrite are present although the amount of pyrrhotite and pyrite is typically low (<1% each). In the Knalla mine, the structure is more complex and structural thickening is common. There are often two to four parallel ore horizons separated by narrow widths of metatuffite. The Knalla area consists of several individual Zn-Pb orebodies for which Mineral Resources have been estimated. Exploration is ongoing to further define and expand them along what is a continuous although highly contorted horizon.

In both the Nygruvan and Knalla areas there is an increase in Zn-Pb grades towards the stratigraphic hanging wall of the massive sulphide horizon. Contacts of the mineralization with the host stratigraphy are generally very sharp, more so on the stratigraphic hanging wall than footwall.

Hedström et al. (1989) outlined a pronounced metal zonation away from the Cu mineralization. Whereas a steady increase in Zn/Pb ratio was observed in Nygruvan from NW to SE, interpreted as a gradation from proximal to distal, the zonation pattern was more complex west of the Knalla fault. Subsequent exploration has demonstrated with respect to metal ratios, the Burkland, Sävsjön and Mellanby Zn-Pb-Ag ore bodies are the most proximal whereas the Zn-Pb-Ag ore bodies of Cecilia, Borta Bakom and the old Knalla mine are more distal and the Nygruvan Zn-Pb-Ag ore body display a transition from proximal to distal from NW to SE (Fig. 3-12). Axelsson and Rodushkin (2001) documented a concurrent decrease in the Co content of sphalerite from proximal to distal. In addition to sphalerite, galena, pyrrhotite and very minor pyrite, accessory porphyroblasts of loellingite, overgrown and partly replaced by arsenopyrite, has been found in the stratiform ore at Burkland but has not been detected in samples from Nygruvan (Jansson et al 2017).

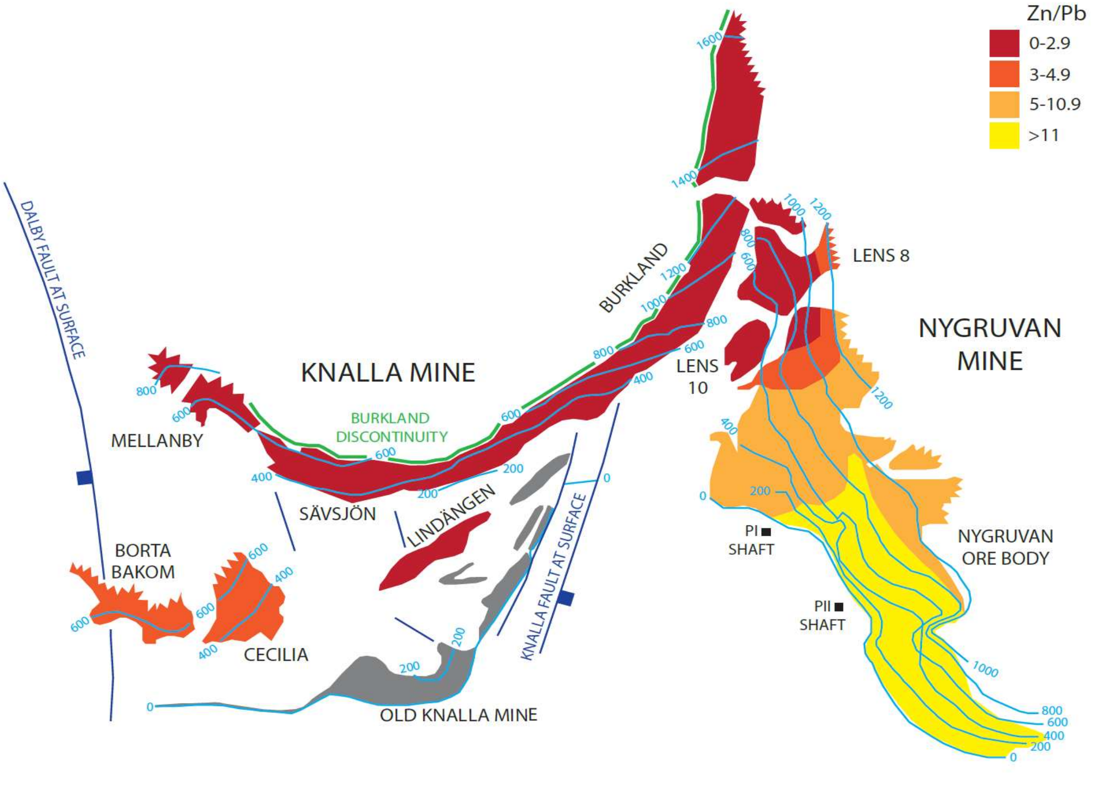


**Figure 3-10. Horizontal projection of the Zinkgruvan mineralization**

Figure 3-12 shows the mineralization color coded according to Zn vs. Pb ratio. No systematic assay data exists from parts of the old Knalla mine (gray) whereby these have been omitted. The Burkland discontinuity forms a northern boundary to the currently economic ore system at Zinkgruvan.

Textures indicative of remobilization including e.g. tectonic ball ores, sulphide accumulations in pressure shadows and sulphides in thin discordant veinlets are common at Zinkgruvan. Valleriite occurs along late fractures that are locally slicken sided. Remobilization is most commonly observed in the Pb-rich western part of Nygruvan and in the Burkland area. Assay data from the Zinkgruvan database reveals substantial heterogeneities in Zn and Pb contents over small distances within the stratiform Zn ore. Some heterogeneity locally persists to block model scale, although they essentially cancel out to yield the metal zonation seen in Fig. 3-12 when several blocks or entire ore bodies are averaged. It is likely that the heterogeneities at smaller scale reflect the effects of remobilization, whereby caution is necessary when e.g. interpreting patterns of metal zonation from individual drill cores or profiles. The fact that 1) Zn mineralization is confined to a specific stratigraphic unit and 2) a deposit scale metal zonation has been retained within this unit (Fig. 3-12) suggest remobilization was largely internal in the sense of Marshall and Gillian (1993).

#### 3.8.2.4 Marble-hosted Cu mineralization

The mineralization in the marble includes the currently mined Burkland Cu mineralization which ranges 5 to 40 m in thickness. The Cu mineralization is highly polymetallic with the dominating Cu minerals chalcopyrite and cubanite being accompanied by subordinate sphalerite, magnetite, pyrrhotite, Co pentlandite, breithauptite, nickeline, cobaltite, safflorite, bornite and rare molybdenite and galena. Native bismuth has locally been observed (e.g. Bjärnborg 2009), although the bismuth content averages only 68 ppm based on bulk analyses by Zinkgruvan mining. The mineralization occurs as impregnations and schlieren in grey dolomitic marble with magnetite and serpentine pseudomorphs after olivine porphyroblasts, diopside, Fluor phlogopite and minor spinel.

The transitions from ore grade to barren marble are commonly highly gradational, and marble throughout the Zinkgruvan area commonly display elevated Zn, Cu and Co contents relative to regional calcitic and dolomitic marble (Jansson et al. 2017)

In the Burkland area subordinate zones of carbonate-replacement type sphalerite mineralization occurs in the marble, ranging from a weak impregnation to semi-massive or even massive. Relative to the stratiform Zn mineralization, this mineralization type is distinct in being poor in other sulphides than sphalerite.

## 3.9 Drilling procedures and drill hole data

### 3.9.1 Drilling techniques

Diamond core drilling is used at Zinkgruvan and includes surface and underground drilling methods. Underground drilling is a continuous activity and focuses on delineating and upgrading existing Mineral Resources as well as the exploration of peripheral zones. Surface drilling campaigns have been important over the years in stepping out beyond the limits of underground development to explore extensions to mineralisation (e.g Dalby). Drill sections are orientated along profiles which vary based on the location of mineralisation within the overall synclinal structure of the Zinkgruvan deposit. The profiles are generally orientated perpendicular to the general strike of the individual zone.

### 3.9.2 Drilling History

From 1857 to 1990, Vieille Montagne operated the Zinkgruvan mine before merging into Union Miniere group of Belgium, who continued operating until late 1995. The oldest drill hole contained in the current drill hole database is DDH 3 and was drilled by Vieille Montagne in 1937. Since this time a total of approximately 1,108 underground drill holes for 178,485m and a total of approximately 61 surface drill holes for 31,227m were completed by Vieille Montagne and Union Miniere. Underground drilling focussed on Nygruvan, the upper levels of Burkland, Lindängen and Sävsjön. Surface drilling focussed on Cecilia and down dip extensions to Cecilia.

From late 1995 until August 2000, North Limited undertook an aggressive underground exploration drilling programe and completed a total of approximately 482 underground drill holes for 117,659m. In addition, a total of 8 surface drill holes for 6,347m were also completed. Underground drilling focused on Burkland, the lower levels of Nygruvan, the lower levels of Cecilia and Borta Bakom. Underground exploration drilling also attempted to explore for mineralisation between Sävsjön and Cecilia. Surface exploration drilling attempted to identify down-dip mineralisation in what is now the Dalby zone.

In 2000, Rio Tinto became the owner of Zinkgruvan when it acquired North Limited. During this time, a total of approximately 413 underground drill holes for 38,130m were completed and a total of 29 surface drill holes for 9,496m were completed. Underground drilling focused on the upper levels of Burkland and the deepest levels of Nygruvan. Surface drilling focused on the Borta Bakom zone to identify up-dip mineralisation in this area.

Since 2004, a total of 4,974 drillholes for approximately 1,031,000 meters has been drilled in Zinkgruvan.

From January 2020 until 31 December 2025, 1,863 infill diamond drillholes for 333,333 meters has been drilled, also 451 exploration drillholes for 222,637 meters were drilled during the same period.

### 3.9.3 Diamond Core Drilling

Diamond core drilling is used by ZMAB for the following purposes:

- Underground Stope Definition Drilling – carried out ahead of production to further delineate the boundaries of the mineralised zone and aid stope design positioning. Drill spacing can be less than 10m.
- Underground Infill Drilling - is a continuous activity and is carried out within existing mineralised zones to upgrade resource classification and further define footwall/hangingwall contacts ahead of production. Drill spacing is typically 25 to 50m.
- Exploration Drilling - by underground and surface drilling to identify extensions of mineralisation and new mineralised zones. Drill spacing is typically 50 to 100m or greater. Underground exploration drilling is assisted by construction of development drives to provide drill access. Exploration drifts constructed by ZMAB included a 1,600m exploration drift on the -1,130 level from Burkland to Dalby, a 250m exploration drift through the hangingwall at Mellanby on the -650m level, a 500m exploration drift through the hangingwall at Burkland on the -950m level and a 200m exploration drift through the hangingwall at Nygruvan on the -1,100m level.

Underground drilling is undertaken by Drillcon contactors using Sandvik and Epiroc rigs. The rigs are platform mounted and can be relocated by front end loader. Surface drilling is undertaken at Zinkgruvan by Drillcon and Priority Drilling contractors using rigs from Epiroc and DBC. The surface drill rigs are capabale of drilling depths of up to 3,000m. The surface drilling targeting extensions of known mineralisations has been completed in areas difficult to access from underground infrastructure.

### 3.9.4 Core Diameter

Underground stope definition drilling typically produces 39mm diameter core. Underground infill drilling typically produces 39mm diameter core, however 48mm diameter core can be produced if additional geotechnical information is needed. Surface drilling typically produces 48mm diameter core. Historically, drill core sizes of 28-36mm for underground drilling and 28-39mm for surface drilling were also used.

### 3.9.5 Core Recovery

Host lithologies and sulphide mineralisation at Zinkgruvan are generally very competent and drill core recovery is consistently around 100% and is therefore not systematically recorded during drill logging. Inspection of drill core by the authors confirmed that there are no material issues resulting from the drill core recovery.

### 3.9.6 Surveying

Surveying of drill hole collar locations, surface and underground, is done by the mine survey team using Leica system equipment. The instruments used are MS60 and TS16.
Drill holes over 100m in length are surveyed by the mine survey team or drilling contractor. Prior to August 2019, a Reflex Maxibor or Reflex Gyro instrument was used with readings taken every 3m. Since this time a 2 Twin Gyro instrument from Inertial Sensing has been used.

### 3.9.7 Drilling Extents

Drilling has defined several mineralised zones in three main areas. Nygruvan, Burkland and Dalby/Western fields with a combined total strike length of over 5,000m and to depths of up to 1,800m from surface.

### 3.9.8 Core logging

The core is geologically logged for lithology, structural unit, colour, grain size, texture, mineralisation and type (massive, banded and disseminated), habit, likely anticipated zinc grade (trace (<2%), weak (2-10%), good (10-25%) and very good (>25%)) and any additional comments also entered. Core recovery is noted if areas of poor core recovery are encountered. Geotechnical measurements including Q and RMR are taken. The logging is undertaken directly into an AcQuire database. Photographs are used for validation of drill core logs. Since 2007 all drill core has been systematically photographed. A summary of the lithology codes used for logging along with the stratigraphic sequence at Zinkgruvan is shown in Table 3-3.

| Formation | Code | Sub-Formation | Code | Lithology | Member | Code | Lithology |
|---|---|---|---|---|---|---|---|
| Viksjon Formation (Metasediments) | V | Biotite leptite unit | Vb | Biotite leptite, migmatite | | | |
| | | a | Va | Garnet biotite quartzite Pyrrhotite-leptite | Garnet biotite quartzite unit | Vab | Garnet biotite quartzite |
| | | | | | Pyrrhotite leptit unit | Vaa | Pyrrhotite leptit |
| Zinkgruvan Formation (Mine Package) | Z | Upper leptite | Ze | Leptite, marble, calc silicate and skarn | d | Zed | Layered leptite |
| | | | | | Workshop marble | ZeV | Marble, skarn and intercalated leptite |
| | | | | | Quartzite unit | Zec | Quartzite |
| | | | | | b | Zeb | Layered leptite |
| | | | | | Marble-skarn layered leptite unit | Zea | Marble-skarn layered leptite with intercalated marble and leptite |
| | | | | | Footwall skarn | ZeL | Diopside skarn, marble PbS-ZnS-FeS impregnation |
| | | Zinc ore unit | Zd | Zinc ore zone | Main ore | ZdH | Zinc ore (primary) |
| | | | | | a | Zda | Leptite between the main ore and the parallel ore zone |
| | | | | | Parallel ore | ZdP | Zinc ore released to leptite with zinc impregnation |
| | | Middle leptite | Zc | Leptite intercalated with marble and skarn | b | Zcb | Leptite, gneissic-veiny |
| | | | | | a | Zca | Leptite intercalated with marble skarn |
| | | Carbonate rock unit | Zb | Marble, dolostone | Marble unit | Zbc | Carbonate rock in some places with strong magnetite impregnation |
| | | | | | b | Zbb | Carbonate rock, often phlogopite speckled with intercalated leptite |
| | | | | | Dolostone unit | Zba | Dolostone in some places with chalcopyrite |
| | | Lower leptite | Za | Intercalated leptite, marble and skarn | | | |
| Isåsen Formation (Quartz-Microcline) | L | Upper quartz feldspar leptite unit | lb | Grey, quartz feldspar leptite | | | |
| | | Lower quartz feldspar leptite unit | la | Red, quartz feldspar leptite | | | |

Table 3-3: Summary of Stratigraphic Sequence and Lithology Codes

### 3.9.9 Sampling

The geologist marks the "from-to" for assay samples on the core box, the interval is directly entered into AcQuire (GIM Suite) database. The sample length is chosen based on sulphide content and varies up to a maximum length of 2.0 m. All samples are given a unique sample number when entered into the database and is checked by the geologist responsible for samples. The request for analysis follows the sample from the core shed until the sample has undergone all stages of sample preparation.

A technician uses a diamond saw to split the core and then places the split portion in a bag marked with the geologist supplied sample number. The drill core samples are transported in manually labelled plastic bags to the sample preparation facility. From February 2020 all sample

preparation done after splitting is done in Krakow by Bureau Veritas, prior to that sample preparation was undertaken at Zinkgruvan.
Before samples are submitted, duplicates and blanks are inserted and samples for external check assay are selected.
Shipments are made when a level of at least 250 samples is reached or when results are requested from important samples.
The sample numbers are printed on tags that are attached to the sample bag and then sent to Bureau Veritas prep-lab in Krakow.
All pulp is sent back to Zinkgruvan and stored.
The drill cores are stored in a warehouse on site. Whole core samples are taken of stope definition drill core. Half core samples are taken of drill core from exploration and infill drilling.

### 3.9.10 Assaying

#### 3.9.10.1 Historical Analytical Method

During 1979-2002 all geological samples were analyzed by Atomic Absorption Spectroscopy at Zinkgruvan.
All geological samples were assayed for Zn, Pb, Ag, Cu, Fe, Co and Ni in two separate digestions:
1) 250 mg was collected from the pulp by a spoon and was boiled in 10 ml HNO3, HF was added and boiled off. Sublimate was re-dissolved in HCl. After cooling, the sample was diluted by H2O to 250 ml. Analysis for Zn, Pb, Ag, Cu and Fe by Atomic Absorption (AAS) was finally completed.
2) 500 mg was collected from the pulp by a spoon and was boiled in 15 ml Aqua Regia with 6 ml HF and 5 ml HClO4. Boiling reduced solution and residue was dissolved in H2O. Analysis for Co and Ni was carried out by AAS.
Analytical results were collected manually and entered by hand, first on the original request for analysis, and then entered manually into Excel spreadsheets (one per drill hole/analytical request) with the same format as the request for analysis.
Data was entry checked by the laboratory personnel before release to the project geologists.
The project geologist checked correspondence between the assay results and the geological logging before the data was approved for incorporation in the drill hole database.
The AAS instrument routine detection limits are presented in table 3-4.

| Element | Routine limits of detection |
|---|---|
| Zn | 0,05% |
| Pb | 0,05% |
| Ag | 5 g/t |
| Cu | 5 ppm |
| Fe | 0,02% |
| Co | 5 ppm |
| Ni | 5 ppm |

**Table 3-4. Detection Limits for ZMAB Laboratory analysis.**

#### 3.9.10.2 Bureau Veritas Analytical Method

Since September 2002, all geological samples have been assayed by ACME Analytical Laboratories now named Bureau Veritas, Vancouver.
Routine assaying is by ICP-ES, program AQ374, using a 1g pulp sample diluted in hot Aqua Regia.
Methods by lab are listed in table 3-5.

#### 3.9.10.3 ALS Analytical Method

Quality control analysis of duplicates is done by ICP-AES, program OG46, a program that uses Agua Regia dilution of the sample which is then run by ICP-AES. The analysis is run for Ag, Co, Cu, Fe, Ni, Pb and Zn.
Methods by lab are listed in table 3-5.

| | Laboratory | Method | Over-range method |
|---|---|---|---|
| Crushing | Bureau Veritas-Krakow | PRP70-250 | |
| Pulverize | Bureau Veritas-Krakow | PUL85 | |
| Assay- 24 Elements | Bureau Veritas- Canada | AQ374 | AQ371 Pb >10%<br>GC816 Zn >50%<br>GC817 Pb >50%<br>FA530 Ag >700ppm |
| Specific Gravity | Bureau Veritas- Canada | SPG04 | |
| Assay Zn, Pb, Cu, Ag, Fe | ALS-Canada | OG-46 | VOL50 Zn >30%<br>VOL70 Pb >20%<br>GRA21 Ag >1500ppm |

**Table 3-5. Summary of analytical methods**

### 3.9.11 Quality Assurance and Quality Control

All work is conducted using documented procedures available to all personnel and all data is verified and validated before being used for modelling and/or Resource estimation.
Since 2002, Zinkgruvan has had a systematic QA/QC program in place.
Duplicate, blanks and purchased CRMs are inserted at irregular intervals by the service team at Zinkgruvan and then transported with the core samples to Bureau Veritas prep-lab in Krakow for sample preparation and then shipped to Vancouver for assays. Check samples are selected for external assay (ALS Chemex) at irregular intervals. In additional to the Zinkgruvan quality control samples, Bureau Veritas inserts additional blanks, pulp duplicates and commercial standards.
All quality control samples are inserted or selected at irregular intervals. Duplicate frequency varies between every 23-25 sample, blanks between every 20-25 sample; purchased Certified Reference Materials (CRM) every 19-24 sample and external check samples are selected for every 23-27 sample.
Before any data set is accepted for incorporation into the drillhole database, a standardized format, quality report, documenting all internal and external information with respect to QC is compiled. The batch quality report also includes checks against control charts with pre-set

warning and action limits. One geologist is responsible for entering data to the database. Any QC failures are investigated, and actions taken are documented.
Since 2020 all quality control is done within Acquire (GIM Suite).

### 3.9.12 Density

Prior to the end of 2019, a water displacement method was used by ZMAB to measure density. Core fragments larger than 5cm in length were collected and dried before being weighed in air and then submerged in water and weighed again whilst submerged. At the end of 2018, to cope with the increased number of samples resulting from increased drilling, density measurements were outsourced to BV and were undertaken using a gas pycnometer method.
The Zinkgruvan database contains a total of 5,843 measurements by the water displacement method and 85,588 measurements by the gas pycnometer method.

The gas pycnometer method measures solid grain density and does not account for porosity. As such, density measurements by this method are generally higher than by water displacement. To correct for porosity, a study was undertaken in 2021 in which a total of 215 samples were selected for density measurements using both methods. The results are shown in Table 3-6.

**Table 3-6: Density Measurements by Water Displacement and Gas Pycnometer Methods**

| Lithology Code | Number of Samples | Total Length of Samples (m) | Average Density by Water Displacement (g/cm$^3$) | Average Density by Gas Pycnometer (g/cm$^3$) | Porosity (%) | Average Correction Factor Applied to Gas Pycnometer Density Values |
|---|---|---|---|---|---|---|
| GRA | 11 | 15.0 | 2.68 | 2.76 | 2.8 | 0.028 |
| POR | 1 | 0.4 | 2.88 | 2.93 | 1.7 | 0.017 |
| KST | 18 | 22.6 | 2.95 | 3.03 | 2.7 | 0.027 |
| KVA | 6 | 9.6 | 2.87 | 2.98 | 3.8 | 0.038 |
| FLE | 3 | 3.8 | 2.79 | 2.84 | 1.8 | 0.018 |
| LEP | 76 | 93.5 | 2.84 | 2.91 | 2.4 | 0.024 |
| LKV | 13 | 16.0 | 2.75 | 2.83 | 2.7 | 0.027 |
| MAR | 29 | 45.4 | 2.92 | 3.00 | 2.7 | 0.027 |
| MBA | 3 | 4.4 | 2.94 | 3.00 | 2.1 | 0.021 |
| DSK | 4 | 4.6 | 2.90 | 2.96 | 2.0 | 0.020 |
| SKA | 14 | 16.6 | 2.90 | 2.97 | 2.3 | 0.023 |
| SLB | 28 | 32.0 | 3.03 | 3.11 | 2.8 | 0.028 |
| ZN | 9 | 5.4 | 3.30 | 3.40 | 2.9 | 0.029 |
| Total | 215 | 269.1 | 2.90 | 2.97 | 2.6 | 0.026 |

Based on the host rock mineralogy, the modelled deposits were grouped into four groups; leptite dominated, skarn-marble dominated, iron skarn dominated and copper mineralisation. The corrected gas pycnometer density measurements were then compared against combined assay values for Fe(%) + Zn(%) + Pb(%) for samples within leptite-, skarn/marble- and iron skarn dominated mineralisations (fig.3.7). In addition to the Fe-, Zn-, and Pb grades, Cu was added into the grade-density comparison for the copper mineralisation (fig. 3.13).

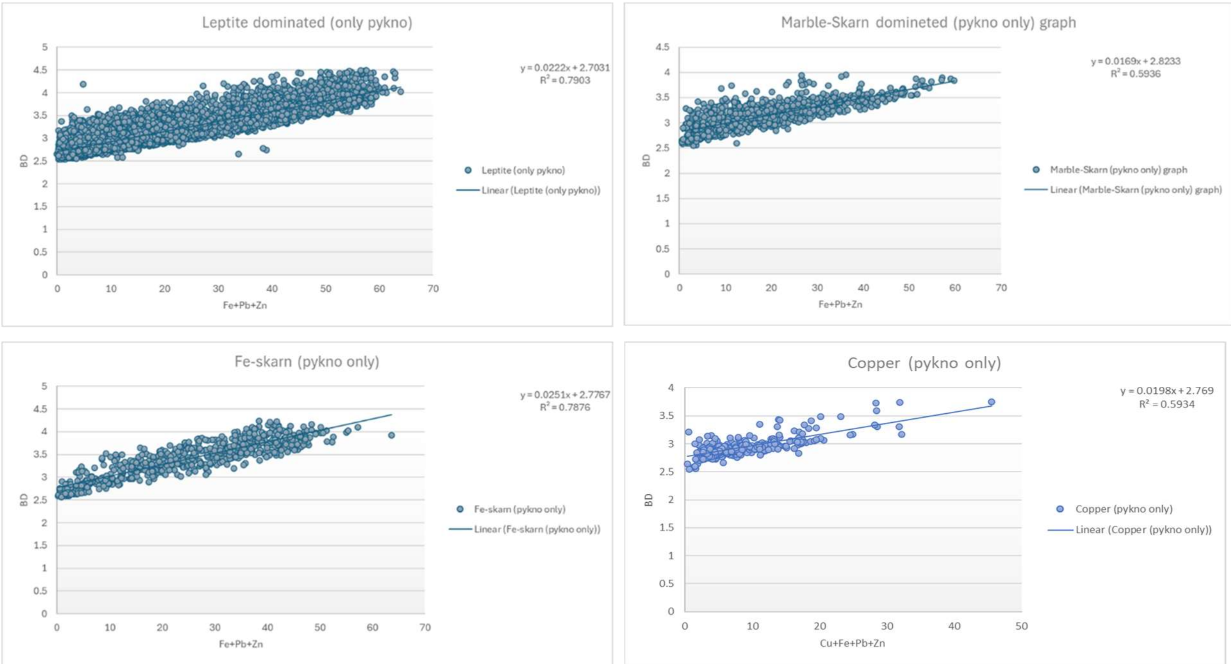


**Figure 3-11. Horizontal Comparison between grades and porosity corrected pycnometer data.**

A strong correlation is observed between density and the combined assay values of Fe, Zn, Cu and Pb. Regression formulas have been produced for the leptite-, marble-skarn-, fe-skarn dominated and copper mineralisation (table 3-7). The "All lithology" regression formula has been applied to blocks outside of the domained mineralisation.

| Linear Regression formula based on Fe%+Pb%+Zn%(+Cu%) | |
|---|---|
| Lithology | Formula |
| Leptite dominated | Density = (0.0222 * (Fe% +Zn% + Pb%)) + 2.703 |
| Marble-Skarn dominated | Density = (0.0169 * (Fe% +Zn% + Pb%)) + 2.823 |
| Iron skarn | Density = (0.0251 * (Fe% +Zn% + Pb%)) + 2.777 |
| Copper mineralisation | Density = (0.0198 * (Fe% +Zn% + Pb%+ Cu%)) + 2.769 |
| All lithology | Density = (0.0222 * (Fe% +Zn% + Pb%) + 2.713 |

**Table 3-7: Density Linear regression formulas**

## 3.10 Exploration activities and infill drilling.

A total of 531 drillholes were finalized during 2025 totaling approximately 139,000 meters.

### 3.10.1 Near mine exploration

A total of 67 drillholes (30,300 meters) were drilled from the underground infrastructure, targeting mineral inventory to increase geological knowledge and enable conversion to Inferred resources. Two focus areas for the underground drilling in 2025 were Balder and Nygruvan. A total of 40 drillholes (35,500 meters) were drilled from several surface positions. Most of the surface drilling targeted near mine targets to increase geological knowledge and enable conversion to Inferred resources. Surface drilling has mainly focused on the extension of Burkland at depth and Copper target above current Copper resources. Target areas can be seen in Figure 3.14

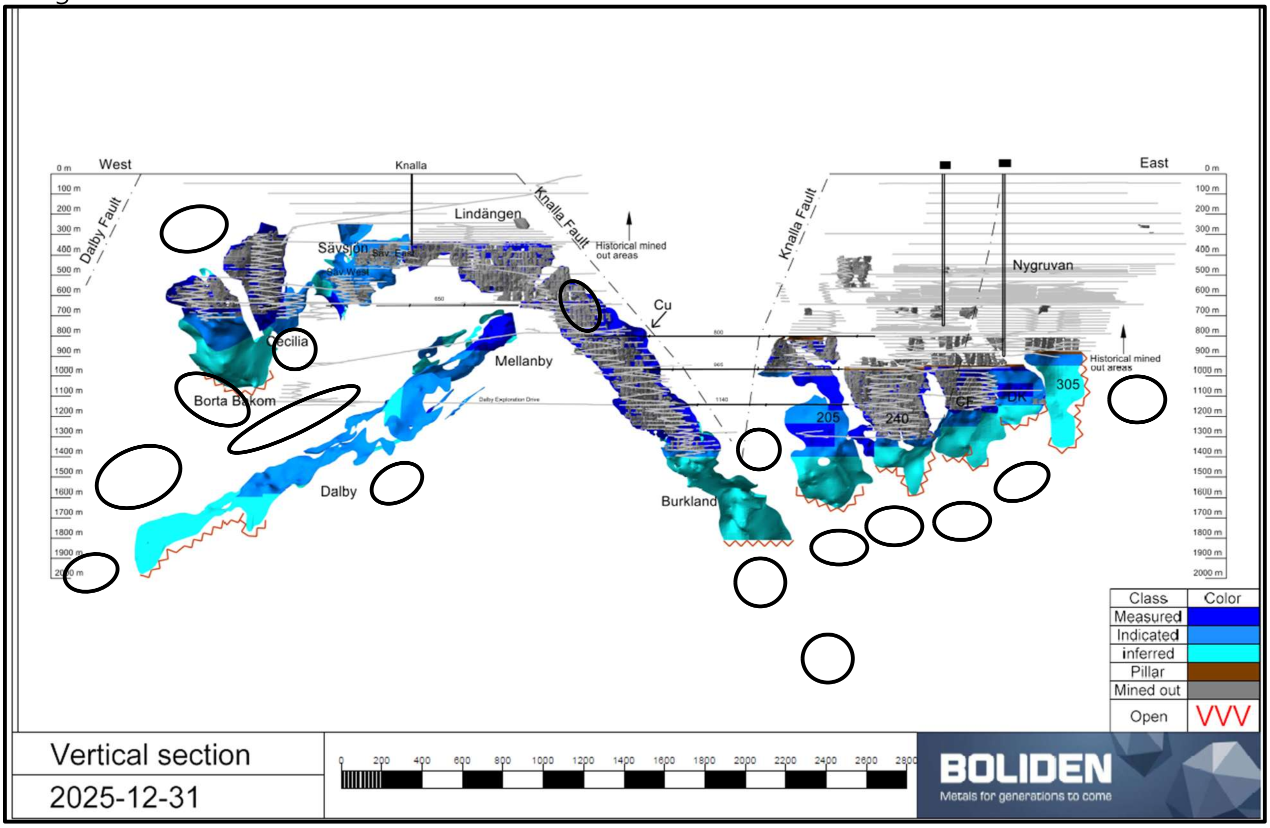


**Figure 3-12. Near mine exploration targets in 2025.**

### 3.10.2 Infill drilling

424 drillholes for approximately 73 500 meters of infill drilling have been done during 2025 with focus on upgrading the Mineral Resource and reducing risk in estimates and plans. Diamond drilling has been ongoing across the whole mine throughout the year. Target areas can be seen in Figure 3.15

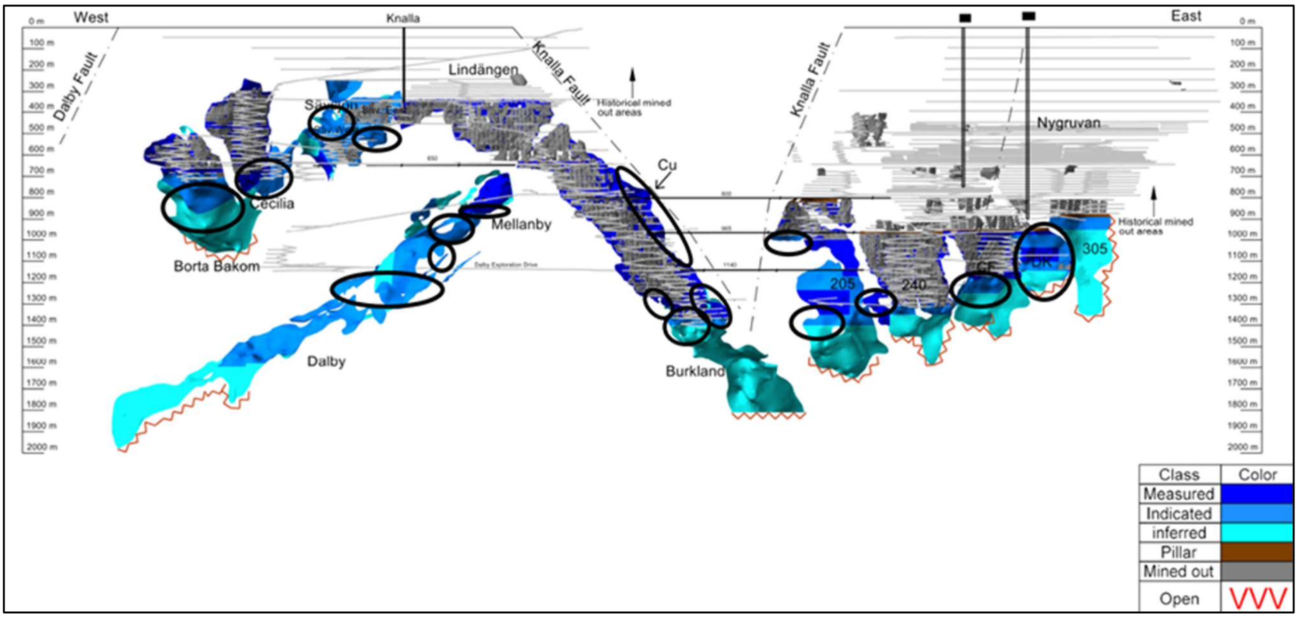

Figure 3.13. Infill drilling target areas 2025

## 3.11 Mining methods, mineral processing and infrastructure

### 3.11.1 Mining methods

The Zinkgruvan Mine was developed in 1857 as an underground mine with the orebody at that time outcropping at surface. It is currently known to extend to the -2,100m level and is open at depth in multiple orebodies. Mine access is via two shafts and a surface decline providing direct vehicle access from surface to the mine. Further internal declines extend beneath the shafts and provide access to the mining areas.

The mine is highly mechanised, utilising the best available technologies to control operations, including semi-automated teleremote loading where appropriate. Trucks deliver ore from all areas by ramp and ore pass to a main crusher facility at the -800m level at the P2 shaft for hoisting.

Current annual target production of zinc-lead ore is 1.2Mtpa, with additional copper ore production of 0.3Mtpa. Actual planned production is optimized for NPV and constrained by Haul capacity, Activity rates and mining method cycle requirements

The Zinkgruvan mine is subdivided into four production areas: Nygruvan, Burkland, Västra Fältet and Dalby, (Figure 3-16). Multiple ramp systems, infrastructure and horizontal development service the areas. Equipment and materials are transported into the mine via a ramp from the surface, while personnel use mainly shaft access in the P2 at shift change and P1 personnel and services shaft at all times

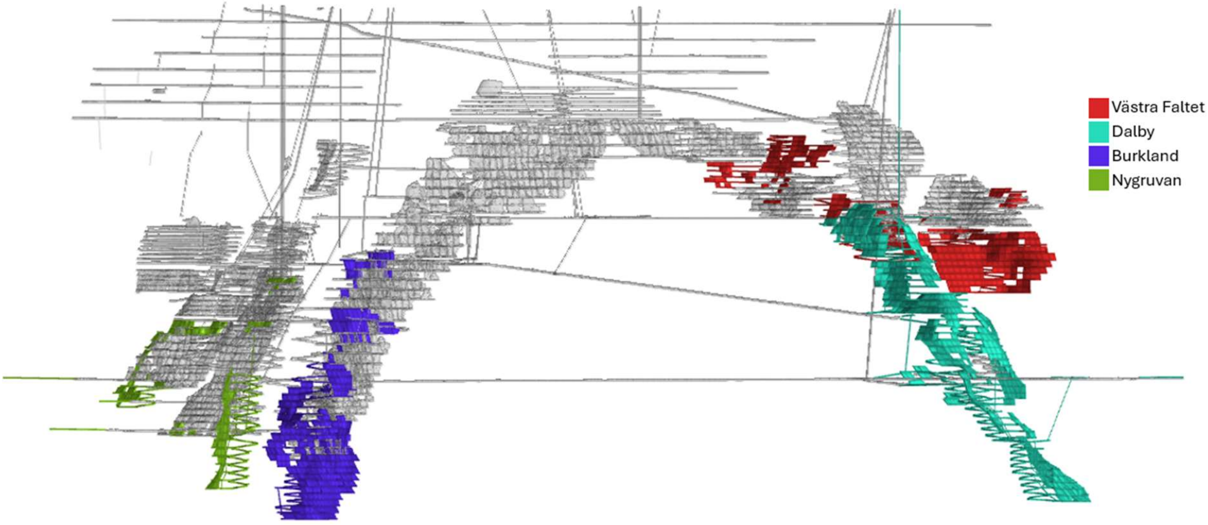


**Figure 3.14. Zinkgruvan Mining – Reserve Areas and Orebodies**

| AREA | OREBODY | OREBODY NAME | LEVEL |
|---|---|---|---|
| BU | CU | Koppar | 965, 1125, 1300 |
| | BU | Burkland | 1125, 1300, 1500, 1700 |
| DB | FJ | Fjorgyn | 1100, 1300 |
| | OD | Oden | 1100, 1300, 1500, 1700 |
| | NJ | Njord | |
| | RI | Rinda | |
| | MB | Mellanby | 650, 960 |
| NY | DK | DK | 920, 1300, 1500 |
| | NY | Nygruvan | |
| | 205 | 205 | |
| | 305 | 305 | |
| | CF | CF | |
| VF | SV | Sävsjön | 650, 860 |
| | BB | Borta Bakon | |
| | CE | Cecilia | |

**Table 3-8: Reserve Area, Orebody and Level names**

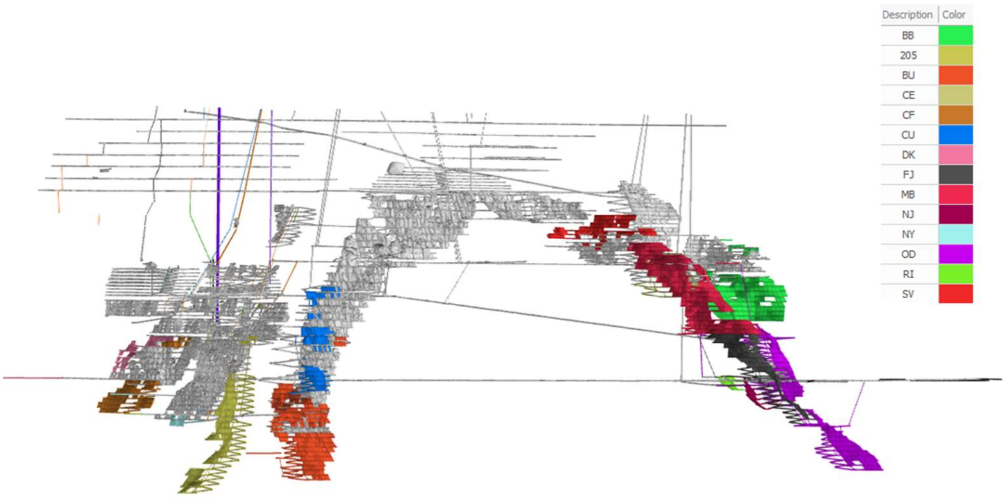


Figure 3.15. Zinkgruvan Mining – Orebodies

The stoping methods employed vary depending on the local geological and geotechnical conditions and are currently longitudinal sub-level open stoping and transverse longhole open stoping, in both overhand and underhand directions. All stopes are backfilled with either cemented paste tailings, waste rock or a combination depending on method requirements or availability.

In the Cecilia zone (Västra Fältet Area) where the orebody is narrow, a modified Avoca Mining method is utilized where rock fill is placed in the stope void. Before blasting the following a small tonnage of waste fill is drawn to reduce blasting constraint. Following blasting the stope rock is removed with constant monitoring to reduce unplanned dilution.

The lower levels of Nygruvan and Burkland are mined by a top-down mining sequence rather than the previous bottom-up sequence of extraction (Table 3-8). The underhand stopes are fully paste filled with a high cement content. The mining sequence is from the center to the extent requiring a full length footwall drive.

| Mining Method | Mining Sequence | Area/Orebody | Width (m) |
|---|---|---|---|
| Transversal | Overhand and Underhand | Burkland,Dalby | 20 |
| Longitudinal | Overhand and Underhand | Burkland, Nygruvan, Västra Faltet, Dalby | 15-20 |
| Modified Avoca | Overhand | Cecilia (VF) | 20 |

Table 3-8: Mining Method and Width

The Zinkgruvan underground mine has two main operating shafts. Shafts P1 (732m deep, 3m diameter, rectangular furniture) and P2 (904m deep, 5.5m diameter, circular furniture) are both situated in the Nygruvan area, Shaft P1 is used for ancillary hoisting of personnel throughout the working shift and P2 is used for ore and waste rock hoisting, materials and for the bulk of personnel transport at the beginning and end of the work shift. A third shaft in the old mine can be used for emergency evacuation if required.

Ore excavated in the Burkland and Nygruvan area above the 800mL is fed through ore pass systems, where it is transported by truck to the central dual crusher system at the P2 shaft. Burkland and Nygruvan ore mined from levels below -800m is loaded directly into trucks for ramp haulage to the crusher.

Ore extracted from the Västra Fältet stopes is hauled by truck to an orepass system at the 650m level. It is them drawn from this system at the 800mL level where it is hauled to the central P2 crusher system.

The Dalby area will be serviced by a new main haulage decline currently under construction and due for completion in Q4 2026. This system will haul from all Dalby orebodies directly to the current 800L crusher system at the P2 shaft.

The dual crusher system incorporates hydraulic rock breakers, sizing bars, jaw crusher and rock hewn storage bins. The bins feed a conveyor which leads to a conventional shaft loading flask for batch filling of the skip. The P2 shaft hoisting capacity is nominally 2Mtpa comof rock, sufficient for ore and waste planned production.

### 3.11.2 Mineral Processing

The existing plant has been treating zinc-lead ores since 1977 and uses conventional processing technologies of crushing, grinding, flotation and concentrate dewatering to produce separate lead and zinc concentrates. In 2010, a copper circuit was commissioned to produce copper concentrate using a separate grinding, flotation and dewatering circuit.

The plant also produces paste from the tailings for underground backfill.

The zinc-lead and copper ore processing plants are operated efficiently to produce readily saleable concentrates with good levels of recovery of the metals to their respective concentrates. There is little variation in run-of-mine (ROM) ore over time and recoveries and concentrate grades are generally stable and predictable.

The Zinkgruvan process plant is effectively managed with a high degree of operational efficiency and metallurgical performance. There have been significant improvements in ore processing with the omission of the crushing and screening circuits and the treatment of both copper and zinc-lead ore, after removal of the oversize, by fully autogenous grinding. There is now an emphasis on moving ROM ore around the stockpile area using mobile equipment rather than complex material handling systems which may be a less cost-effective option, but the benefits of improved operational efficiency will outweigh this.

In 2025, 1,532 kt of ore were processed at Zinkgruvan, of which 1,287 kt were zinc-lead ore and 245 kt were copper ore. The average ore grades were 6.6% Zn and 2.9% Pb for the Pb-Zn ore and 2.% Cu for the copper ore. In 2025, a total of 151 kt of zinc concentrate, 43 kt of lead concentrate and 16 kt of copper concentrate were produced.

In 2023, ZMAB switched the Pb-Zn flotation circuit from a bulk/separation flowsheet to a more conventional sequential flowsheet. The development work undertaken has been undertaken by experienced laboratories and testing has also been undertaken by the ZMAB metallurgical staff in the plant laboratory. Plant trials have also been undertaken for "Proof of Concept". The circuit now 2 years in operation performs very well and the main objective of higher zinc recoveries has been achieved. Zinc recovery increased from 88.5% in 2022 to 90.9% in 2024. The other flotation results are in line with previous bulk flotation performance.

During 2025 testwork has been completed on Dalby ore body to confirm previous testwork done by external lab. The Goal to confirm predicted flotation results with sequential flotation on Dalby ore body. The projects confirmed the recovery equations used.

#### 3.11.2.1 Stockpile and Crushing Circuit

In 2009, Metso Minerals (Metso) installed a crushing plant with the objective of increasing the throughput of the AG mill. The circuit was later adapted in 2010 so that copper ore could be crushed on a campaign basis and stockpiled separately from the zinc-lead ore. The crushing circuit has since been decommissioned and in 2014 the practice of feeding all the ROM to the AG mills was initiated, without the need for pre-screening and crushing.
A simplified flowsheet for the ROM handling and grinding circuits is shown in Figure 3.

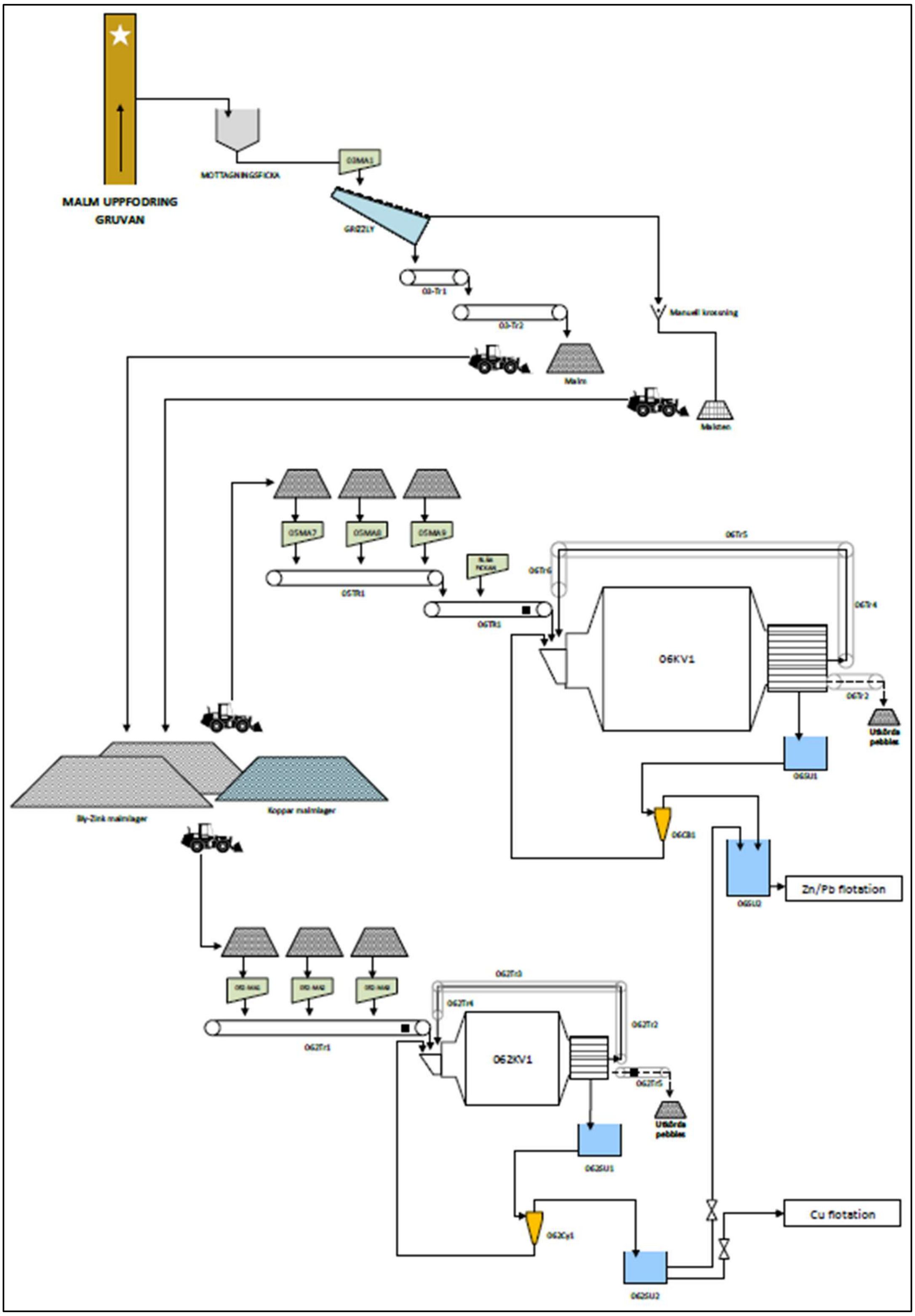


Figure 3-18. Grinding Flowsheet

Three material types are brought to the surface in campaigns via the mine hoist. These include zinc-lead ore, copper ore and waste rock. Once hoisted, the following products are obtained:

- Copper ore, unsorted;
- Copper ore grinding rocks;
- Zinc ore, unsorted;
- Zinc ore grinding rocks; and
- Waste, -250mm.

The ore (crushed underground to minus 250mm) is hoisted from the P2 shaft and discharged over a vibrating grizzly where the oversize rocks (+250mm) are scalped and reduced in size using a rock breaker. The undersize of the grizzly is then transported via front end loader to the ore stockpile.

#### 3.11.2.2 Autogenous Grinding

The majority of the zinc-lead ore is ground in a single Morgårdshammar AG mill to 80% passing 120µm. The mill is 6.5m in diameter, 8.0m long and powered by two variable speed 1,600kW motors.

The mill product is classified by a bank of Warman Cavex 250CVX10 cyclones with the underflows returning to the mill and the overflows passing to the sequential zinc-lead flotation circuit. The critical size material is screened from the mill discharge and conveyed back to the mill feed chute. The capacity of the mill is approximately 123tph.

The second AG mill is used to process both copper ore and zinc-lead ore outside of copper campaigns.  The mill shell is from a Metso/SALA AG mill reconditioned with Outotec bearings and trunnion. The mill is 5.1m in diameter, 7.0m long and is powered by two variable speed 900kW motors.

The mill product is classified by a bank of Warman Cavex 250CVX10 cyclones with the underflows returning to the mill and the cyclone overflows (P80 of 120µm) passing to the sequential zinc-lead flotation circuit or copper circuit depending on the campaign. The critical size material is screened from the mill discharge and conveyed back to the mill feed chute.

#### 3.11.2.3 Flotation

The copper and zinc-lead ores are treated using conventional flotation technology in separate flotation circuits.

#### 3.11.2.4 Zinc-Lead Ore Flotation

The grinding circuit cyclone overflow is conditioned with carbon dioxide, recently replacing sulphuric acid to reduce the pH to 9.5 and (SIPX) which is used as the collector for all the minerals floated in Zinkgruvan. The pulp is pumped to either four 40m3 Metso cells if copper is being processed otherwise the 12 15m3 metso cells are used as the lead rougher . A glycol-based frother NasFroth 240, is stage-added at specific locations throughout all of the flotation stages. The concentrate from the lead rougher is sent to the lead re-grinding cyclones. The undersize from the cyclone is sent to a 2.4m diameter by 3.6m long Morgårdshammar mill, powered by a 330kW variable-speed motor, to 80% passing 30µm.

The lead rougher concentrate is then cleaned in 4-stages consisting first of six 15m3 in a first stage followed by 3-stages each consisting of two 15m3. In the lead cleaner circuit sodium bisulphite is added as the main zinc depressant.
The tailings from the lead rougher and lead cleaner containing zinc are then either sent to four 40m3 or the eight 40m3 if copper is not being processed. Sodium hydroxide is then added bringing the pH up to between 10-10.5 , copper sulphate is also added to activate the sphalerite mineral. A zinc concentrate is then floated and sent to the zinc re-grinding cyclones. Underflow from the cyclones are sent to a 3.5m in diameter, 3.8m long Morgårdshammar regrind mill, powered by a 330kW variable-speed motor yielding a product of 50µm.
The zinc rougher concentrate is then sent to 3-stage cleaner circuit. Each stages consisting of four 15m3 metso cells, the first stage also has a cleaner scavenger consisting of four additional 15m3 metso cells.
Tailings from the zinc cleaner and zinc rougher are combined before either being sent to the sand thickener and the paste plant or to the tailings pond.

#### 3.11.2.5 Concentrate Dewatering

The lead concentrate passes to a 7m diameter Sala thickener and the zinc concentrate is dewatered in a 15m diameter Metso thickener refurbished in 2023.
The concentrates are filtered using Svedala VPA horizontal plate pressure filters, with one fitted with 40-1.5m2 plates for the zinc concentrate and two of 32-1m2 plates used for the lead and copper concentrates. The filtered concentrates are discharged onto dedicated conveyors, transferring the products onto stockpiles kept within an enclosed shed. From there, a front-end loader is used to load the concentrates into trucks, for delivery to the port site.

#### 3.11.2.6 Paste Fill

The processing plant staff are responsible for operating a paste backfill plant which consists of a 10.5m diameter Baker Hughes thickener, a Dorr Oliver disc filter fitted with 11 discs of 3.25m diameter and mixer tanks.
Cement is typically added at a rate of 2-4% for secondary stopes, 8% for primary stopes and up to 9% for underhand stopes. The paste is pumped underground at 78% solids. Paste production in 2021 was 206,030 $m^3$.

#### 3.11.2.7 Copper Flotation

The copper circuit was commissioned in June 2010. From 2010 to 2016, a primary ball mill was used to mill finely crushed ore. In 2017, the second, "1350", AG mill was commissioned and took over copper milling duty. The circuit has a design capacity of 300ktpa and the use of the AG mill effectively doubles the grinding capacity.
The 1350 Mill is used to process copper ore during copper campaigns and is fed with the scalped ROM ore. The mill product is classified by a bank of Warman Cavex 250CVX10 cyclones, with the underflows returning to the mill and the cyclone overflows, featuring a P80 of 120 µm, passing to either the copper rougher or the sequential zinc-lead flotation circuit.
All of the copper flotation stages comprise 15m3 Metso flotation cells. Rougher flotation takes place in four 15m3 Metso flotation cells, followed by four scavenging cells. The rougher concentrates (first four cells) are cleaned three times to produce a final copper concentrate

assaying >26% Cu, with approximately 90% copper recovery. The first cleaner tailings and scavenger concentrate are re-ground in a 1.8m diameter by 3.6m long ball mill fitted with a 132kW motor. The mill is operated in an open circuit with a 15-inch diameter Krebs gMax cyclone, to provide a targeted product P80 of 30 µm.
The copper concentrate is dewatered using a 10m diameter Sala thickener. The thickened concentrate is filtered using a Metso VPA pressure filter with vertical plates.
When the copper circuit is not being used for copper the 12 total 15 m3 metso cells are used as the lead rougher.

#### 3.11.2.8 Process Plant Consumables

The major process plant consumables, totaled for the two plants, are shown in table 3-9.

**Table 3.9: Plant Consumables 2022**

| Item | Units | Consumption |
|---|---|---|
| Sodium bisulphite | kg/t | 0.57 |
| Flopam floc. | kg/t | 0 |
| SIPX | kg/t | 0.07 |
| Magnafloc 1011 | kg/t | 0.004 |
| NaOH 50% Bulk | kg/t | 0.5 |
| CuSO4 | kg/t | 0.22 |
| Nasfroth 240 | kg/t | 0.12 |
| Liquid Carbon Dioxide | kg/t | 0.15 |
| Balls – 40mm | kg/t | 0.01 |
| Balls – 25mm | kg/t | 0.08 |
| Electrical power | kWh/t | 40 |

The plant consumables are typical for the treatment of moderately soft copper and zinc-lead ores.

#### 3.11.2.9 Processing Plant Sampling

The flotation plant is monitored using an Outotec Courier 6x on-stream analyser (OSA). Process control analyses are undertaken for the critical process streams within the flotation circuits and are updated every 15 minutes to give feedback to the operators on the plant performance. Daily (24hr) composite samples are collected by the Courier system and samples of the filtered concentrates are also taken for metallurgical accounting purposes. A total of 12 zinc-lead and 4 copper samples are taken each day when copper is running. PSD analysis is also done on the feed material each day.
The composite samples are delivered to the laboratory for filtering, drying, sample preparation and analysis by the assay-laboratory XRF apparatus.
Daily metallurgical balances are performed every day and monthly balance are also carried out, the latter using accumulated cumulative metal amounts reported from the daily balances. The concentrate stockpile tonnages are estimated by qualified personnel and reconciled with

tonnages from the balance, truck transport and shipping tonnes. A monthly composite sample is also used to compare with the accumulated numbers. This sample is sent to an external lab with an accredited method in order to check for bias.

#### 3.11.2.10 Assay Laboratory

The Zinkgruvan Mine analytical laboratory only undertakes analysis of samples generated from the processing plant. In 2015, a Panalytical Axios-Max pressed pellet X-ray fluorescence (XRF) spectrometer was commissioned and calibrated to analyse the samples for the daily production balance.

The laboratory receives 10 process samples each day (14 during copper campaigns). Pulp samples are filtered, dried and representatively split to produce sub-samples (40g) for chemical analysis. The flotation products are pulverised together with binder prior to undertaking chemical analysis. After grinding a hydraulic press used to prepare a pressed pellet suitable for XRF analysis.

A representative proportion of the daily samples are sub-sampled to form a monthly composite. The monthly composite samples are analysed using a longer method on the lab XRF before being sent to ALS laboratories in Piteå which uses an accredited method and ICP-MS analysis. A comparison of XRF and ALS values is undertaken as a form of QA/QC. The Zinkgruvan Mine analytical laboratory is not accredited.

### 3.11.3 Infrastructure

Infrastructure associated with the Zinkgruvan Mine includes the following:

- Underground mine
- 2 x hoisting shafts
- Mine portal and decline
- Mineral processing plant
- Enemossen Tailings Storage Facility
- Klarningsmagasin Water Storage Facility
- Water treatment plant
- Truckstop
- Site offices
- Ventilation shafts

Other infrastructure associated with the operation includes a harbour facility at the port of Otterbäcken, on the eastern shore of Lake Vänern which is leased and used for the shipment of concentrates. The location of the infrastructure associated with the Zinkgruvan Mine is shown in Figure 3.19.

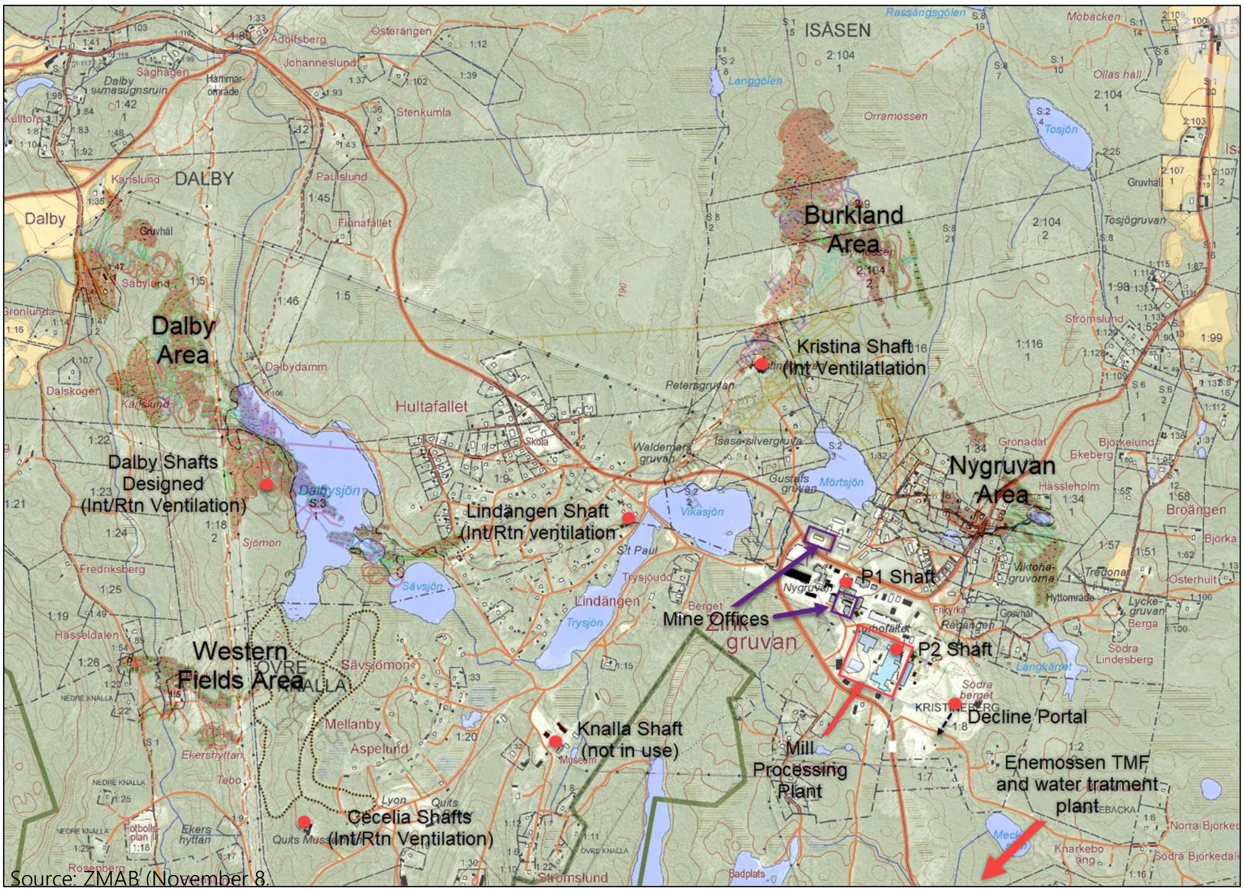


**Figure 3.16: Zinkgruvan Mine Infrastructure**

## 3.12 Power

Electricity is obtained from the National Grid with the majority of electricity generation of the area produced by hydro-electric schemes. The Zinkgruvan mine is fed from a substation located at Dalby, which is controlled by the Utility provider Sweco. The feed consists of two x 10KVA and two 20KVA power line / power cables.

## 3.13 Water

A water management system maximises recycling of water and transfer between the mining and mineral processing operations and TSF. Where necessary, the site draws water from Lake Trysjon and Lake Åmmelångenn. Water removed from the underground workings, together with all site drainage water, is sent to the TSF along with the tailings/mineral process plant water. Approximately 60% of the water sent to the TSF is returned to the mineral processing and paste backfill plants.

## 3.14 Tailings Storage Facility (TSF)

The Zinkgruvan mine comprises an underground mine with shaft and ramp access, feeding twoprocessing plants. The zinc/lead plant has a nominal capacity of 1.2 million tonnes per annum (Mtpa) and the copper plant a capacity of 0.3 Mtpa. A new SAG mill installation has recently been completed to simplify the primary comminution at the mine and enable an increase in total throughput to 1.35 Mtpa (1350 Project). A further project to modify the flotation circuits to increasethe throughput to 1.5 Mtpa is also now complete. From the approximately 1.5 Mtpa of tailings produced, approximately 40% is expected to be used to produce cemented paste backfill to support the mining operations. The current forecast tailings throughput to the TSF complex is approximately 920 ktpa. The surface disposal tailings are pumped approximately 4 km to the nearby Enemossen East TSF from which water is reclaimed via an inactive TSF (Enemossen), water treatment plant and clarification pond (klarningsmagasin) before being pumped back to the plant for reuse in the mill processes. Permitting for Enemossen East and a new operating licence for the entire Zinkgruvan operation was received in February 2015, initial construction was undertaken in 2017 with annual raises ongoing up to a maximum elevation +195.5 m. Construction in 2024 achieved an elevation of 193 m by the end of the year. As of May 2025, the majority of the Enemossen East was constructed to 195,5m, Tailings from the mine are stored in the Enemossen East TSF, located 4km south of the mine site. The location of the Enemossen TSFs is shown in Figure 3.17.

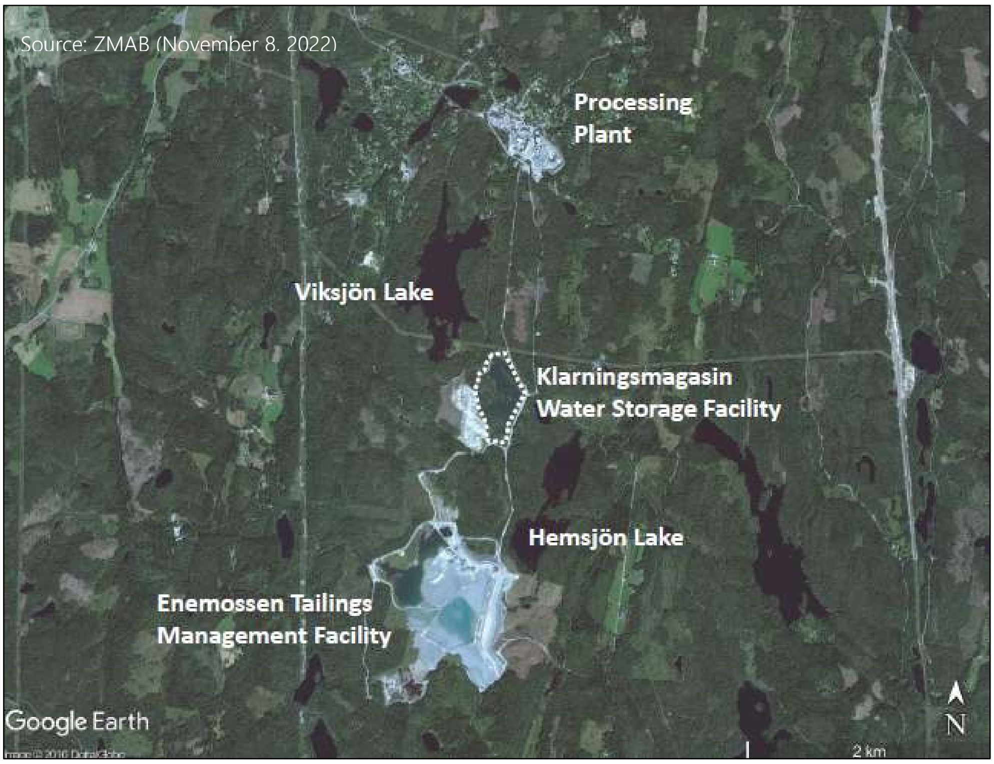


**Figure 3.17: Location of Enemossen TSF**

**Table 3-10. Summary of Dam Structures**

| Facility | Dam | Max Height (m) | Length (m) | Description |
|---|---|---|---|---|
| Enemossen | X-Y | 35 (original height)<br>10 (current height) | 900 | Hybrid combination of zoned earth, filters and rock fil using centreline and upstream raises |
| | E-F | 25 | 500 | Hybrid combination of zoned earth and filters using Centreline and Upstream |
| | F-F1 | 7 | 250 | Moraine core dam |
| | U-V | 3 | 110 | Moraine core dam |
| | S-T | 11 | 105 | Moraine core dam |
| | Knallavallen | ~ 10 | ~ 120 | Compacted tailings core |
| | F-X Dam | 3 | 100 | Compacted tailings core |
| Enemossen East | North | 15 | 300 | Filters and rock fill with centreline and downstream raises |
| | East | 30 | 800 | Filters and rock fill with centreline and downstream raises |
| Clarification Pond | L-M | 8 | 60 & 270 | Moraine core with rock fill buttress |
| | G-H | 5 | 500 | Moraine core with rock fill buttress |
| | N-O | 4 | 40 | Moraine core |

### 3.14.1 Enemossen TSF

The Enemossen TSF is in a state of active closure. The tailings beaches on the Enemossen TSF are partially covered in a moraine cover to mitigate dust issues and in addition peat and unused moraine excavated from the footprint of Enemossen North is now being placed across areas of tailings beach. The Enemossen TSF is accessed from the north by the main pipeline route from the process plant. This route passes to the east of the Klarningsmagasin Water Storage Facility (WSF) and close to Hemsjön lake. The Enemossen TSF covers an area of approximately 240,000m$^2$ and is confined by two main embankments referred to as the X-Y Dam and the E-F Dam, which were constructed on natural ground in the headwaters of three streams. The dams were designed as water-retaining structures and impounded the valleys draining to the south into the Bjornbäcken River (X-Y Dam) and to the east directly into Lake Hemsjön (E-F Dam). Five saddle dams have been constructed to confine tailings deposition along the northern and western perimeters of the facility. The two main dams were raised over the lifetime of the TSF, both as centreline and downstream raises and, from 2013, with upstream raises utilizing re-compacted tailings material. The original capacity of the Enemossen TSF was 12Mm$^3$ which equates to approximately 16.8Mt of tailings. The projected life of the facility was planned until 2017. And was taken out of commission in December 2017.

Return water is pumped from the Enemossen East decant pond via two submersible pumps on to Enemossen TSF approximately 300 m from the X-Y Dam. Water migrates across the surface of the facility to the decant pond. This process aids in the reduction of heavy metals by means of sedimentation increased by the addition of sodium hydroxide at the Enemossen East decant pond. The Munken tower has been decommissioned, and water is pumped via two pipelines, to the water treatment process plant (WTP) which is now consistently online.

### 3.14.2 Enemossen East TSF

The Enemossen East TSF was designed and constructed under the supervision of Knight Piésold Ltd. The first stage of the TSF was constructed with a minimum crest elevation of 175m and consists of two zoned embankments which are situated along the eastern side of the Enemossen TSF. The facility utilises natural hillsides along the southern, eastern and northern ends as well as the Enemossen TSF XY dam to create a confined storage area for tailings solids and supernatant water. The dam height is currently 195,5 and the total capacity of Enemossen East to its permitted height of 195.5m is 5.0 $Mm^3$ and will provide tailing storage until 2026

The TSF embankments have been constructed as zoned structures consisting of the following:

- A low permeability zone on the upstream;
- A two-metre-wide fine filter located directly upstream of the crest centreline;
- A two-metre-wide transition filter zone, located directly downstream of the crest centreline and;
- A rock buttress (Zone S) located downstream of the transition zone.
- Since 2020 there is a change of design to a downstream construction on the Enemossen East.

The Enemossen East TSF had two reclaim towers located in topographical low points within the basin adjacent to the downstream toe of the existing Enemossen X-Y embankment. The towers were founded on bedrock and built to a minimum elevation higher than that of the operating elevation in the facility during Stage 1 (175m). The towers were taken out of commission in 2019 and replaced with a supernatant pond to reclaim and pump back into the Enemossen area, that acts as a first clearing area before the spillway leading to the Clearing Lake.

Three seepage collection trenches and pump stations are located at the downstream toe of the Enemossen East Dam and one seepage collection pond and pump station is located at the downstream toe of the E-F Dam.

Beach level surveys are carried out by drone on a monthly basis. Data from the survey conducted steers the deposition och tailings to reach a good beech profile. The rate of rise can be seen on the stage storage curve in Figure

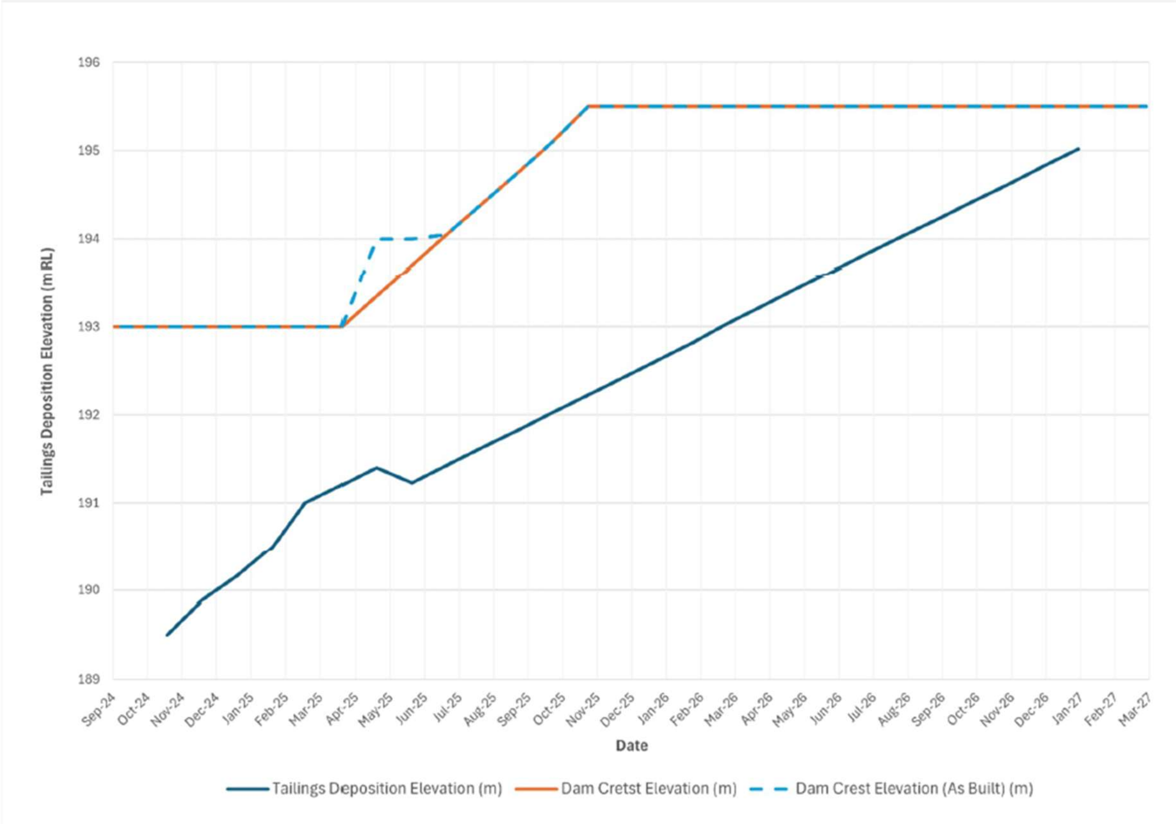


**Figure 3.18 Rate of rise of Enemossen East**

### 3.14.3 Expansion of the TSF (Including Enemossen North TSF)

Enemossen North is to be built in two stages. First a Starter Wall will be constructed, up to +190,5mrL the next stage will lift the embankment to permitted fullheight +195,5mrL
The below Table 3-11 summarises the main TSF characteristics of Enemossen North

| Characteristic | Units | Enemossen TSF | Enemossen North | |
|---|---|---|---|---|
| | | | Starter Wall | Full Height |
| Embankment Crest Elevation | mRL | 200.5 | 190.5 | 195.5 |
| Crest Width | m | 15.0 | 9.0 | 9.0 |
| Upstream Slope | H:V | 3 | 2 | 2 |
| Downstream Slope | H:V | 3 | 2 | 2 |
| Minimum Embankment Bottom Elevation | mRL | 189.0 | 175.5 | 175.5 |
| Maximum Embankment Height | m | 11.5 | 15.0 | 20.0 |
| Maximum Tailings Elevation | mRL | 194 | 188 | 193 |
| Spillway Invert Elevation | mRL | 198.8 | 189.5 | 194.5 |
| Total Minimum Freeboard (*freeboard between spillway invert and dam crest*) | m | 1.7 | 1.0 | 1.0 |

**Table 3-11. Main TSF Characteristics**

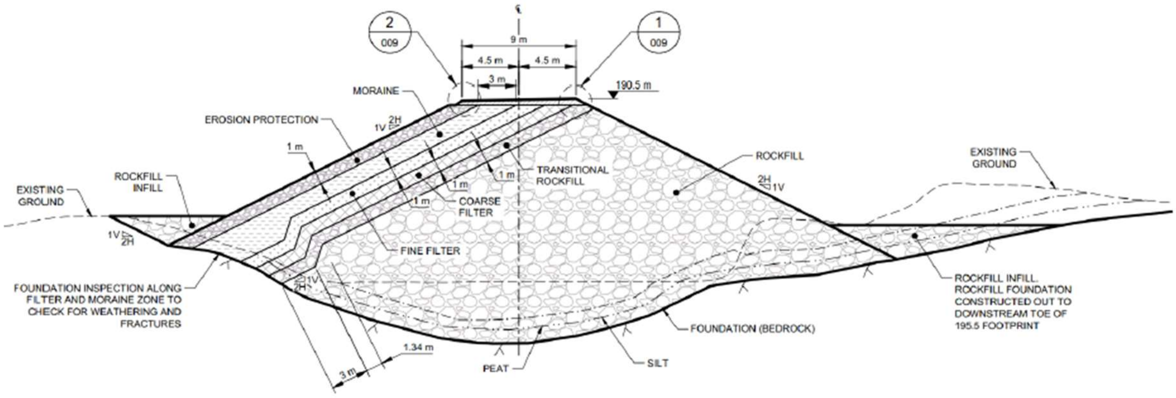


**Figure 3.19:Typical design of Enemossen North embankments**

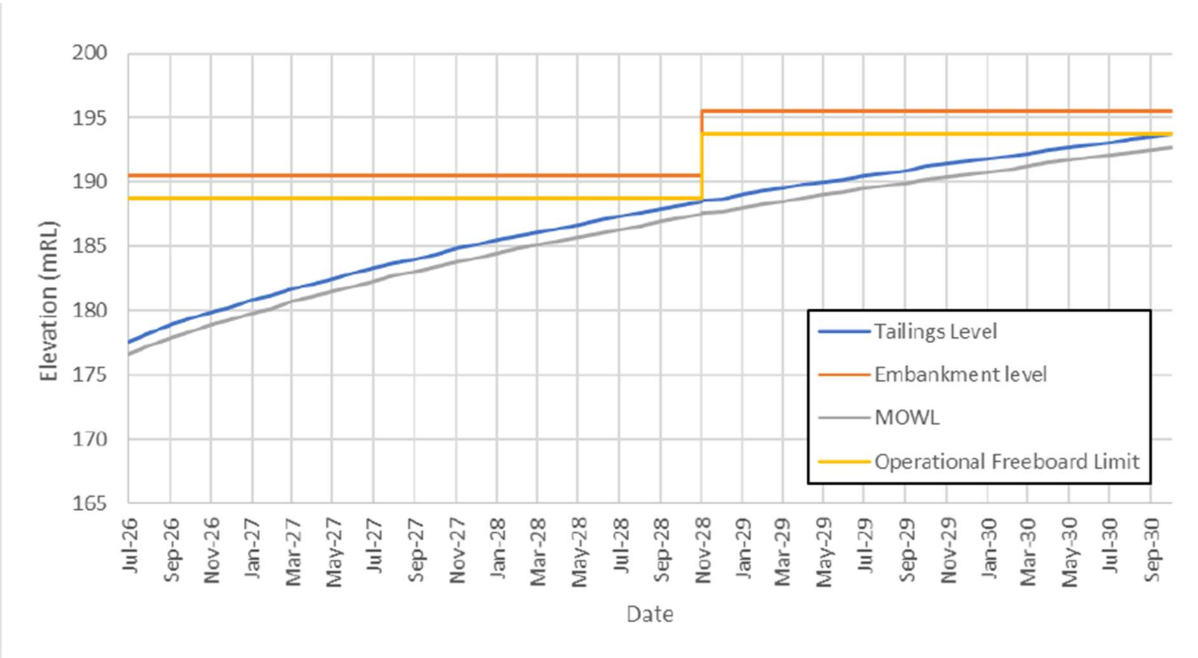


**Figure 3.20 Enemossen North stage storage curve to +195,5mRL**

The total capacity for the starter facility (190,5m9 is estimated at 2,14 Mm3 of tailings and for the facility up to Stage Raise one (195,5 m) is 3,68Mm3, the model estimates that this will provide storage capacity up until 2030 with annual throughput of 920 000tpa.

### 3.14.4 PFS study of future dam

Golder Associates was commissioned to complete a Pre-Feasibility Study (PFS) for long term tailings disposal at Zinkgruvan. The PFS was split into two phases. Phase 1 evaluated the different options at a concept level. The options evaluated included raising of the Enemossen and Enemossen East TSFs, as well as construction of the Enemossen North TSF was identified as the preferred option with all facilities being raised using the downstream method of construction.

The general sequence of construction and deposition, following completion of Enemossen East TSF to elevation +195.5 m, is as follows:

- Construction of Enemossen North TSF to 195.5m;
- Raising of Enemossen East and North TSFs to 200.5m;
- Raising of the combined TSF (Enemossen, Enemossen East and Enemossen North) in approximately 2.5m lifts to 208m.

Construction of the Enemossen North facility has started in 2024 and will be taken into commission in 2026

The location of the Enemossen North facility and the tie-in with the existing TMF is shown in Figure 3-24 .

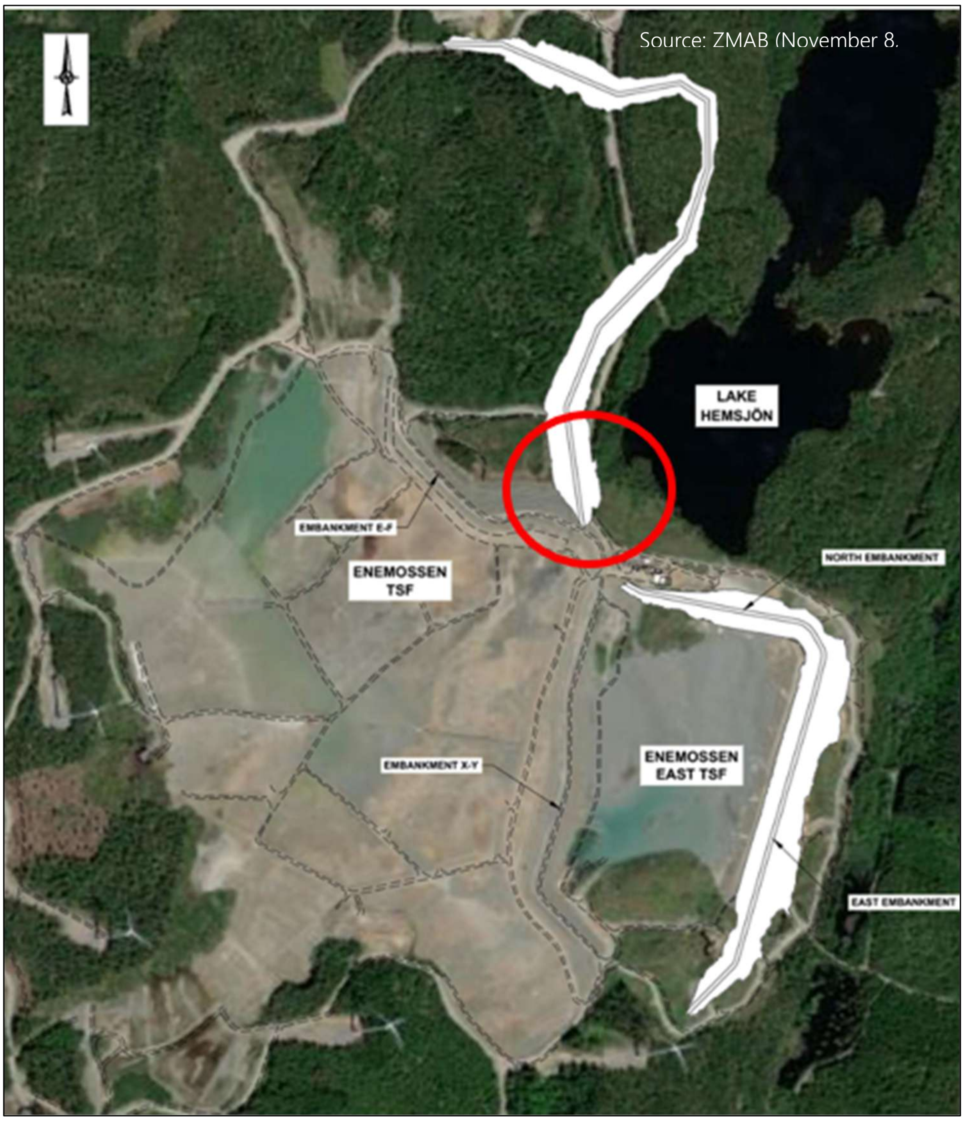


**Figure 3.21 Enemossen North tie-in with Enemossen East**

Following deposition in Enemossen East to Stage 5 (195.5m), tailings will be deposited in the new Enemossen North TSF up to 193.5m (dam crest at 195.5m). The embankments within the combined Enemossen TSF will all be raised to 200.5m, allowing the deposition to rotate between Enemossen, Enemossen East and Enemossen North TSFs. While deposition is occurring in one location, the embankment dam is to be constructed in the other TSF location to be able to receive tailings once capacity is reached.

The current deposition and construction schedule is based on dam construction in 2.5m high lifts. The deposition schedule is summarised in table 3-12.

Table 3-12. Tailings Deposition Schedule

| Stage | Area | Start Date | Dam Crest Elevation (m) | Duration (Years) | Deposited Tailings Volume ($Mm^3$) |
|---|---|---|---|---|---|
| 1 | North | October 1 , 2026 | 190.0 | 2.3 | 1.23 |
| 2 | North | May 24, 2029 | 190.5 | 2.4 | 1.24 |
| 3 | North | October 20, 2031 | 200.5 | 2.9 | 1.48 |
| 4 | East | September 4, 2034 | 200.5 | 2.5 | 1.32 |
| 5 | Main | March 31, 2037 | 203.0 | 1.9 | 0.95 |
| 6 | East | February 3, 2039 | 203.0 | 1.4 | 0.75 |
| 7 | North | July 22, 2040 | 203.0 | 1.6 | 0.80 |
| 8 | Main | February 8, 2042 | 205.5 | 2.8 | 1.48 |
| 9 | East | December 26, 2044 | 205.5 | 1.3 | 0.66 |
| 10 | North | April 11, 2046 | 205.5 | 2.3 | 1.23 |
| 11 | Main | August 31, 2048 | 208.0 | 3.2 | 1.59 |
| 12 | East | October 1, 2051 | 208.0 | 1.7 | 0.90 |
| 13 | North | July 2, 2053 | 208.0 | 2.3 | 1.22 |

The tailings deposition as tailings elevation and volume deposited is shown in figure 3-25.

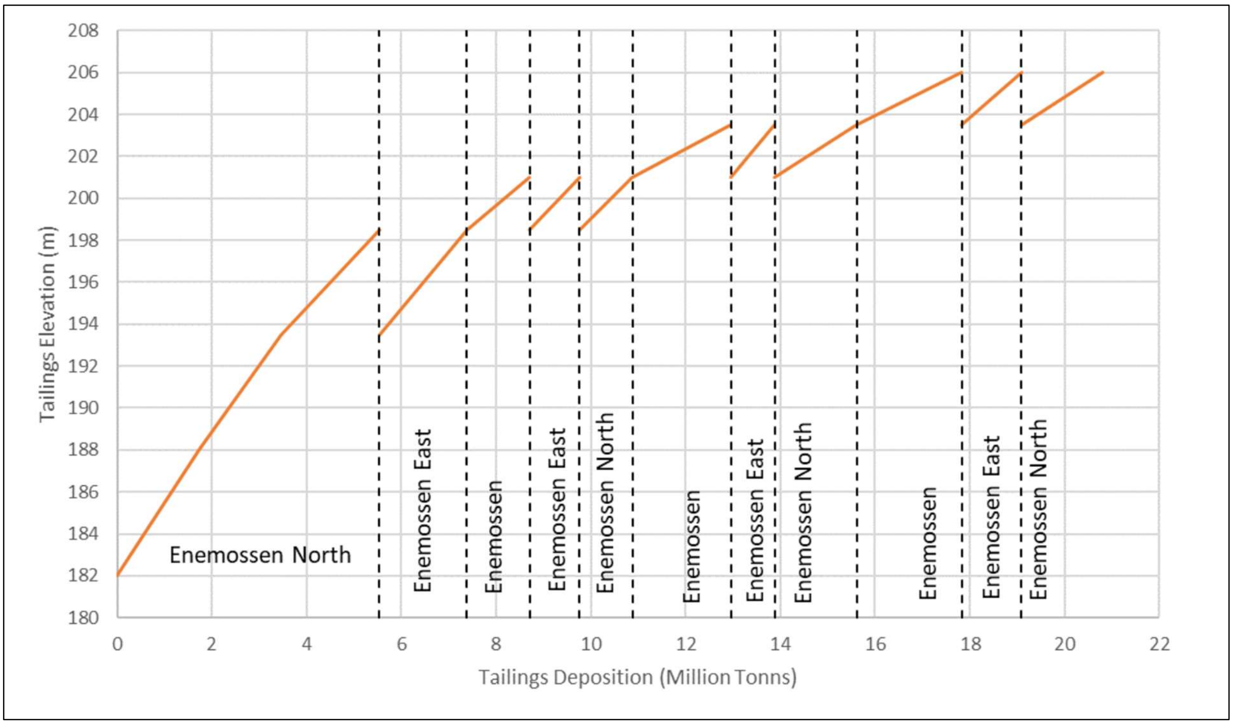


**Figure 3-22 Tailings Elevation and Volume Deposited**

The tailings deposition as height of tailings and time is shown in 3-26

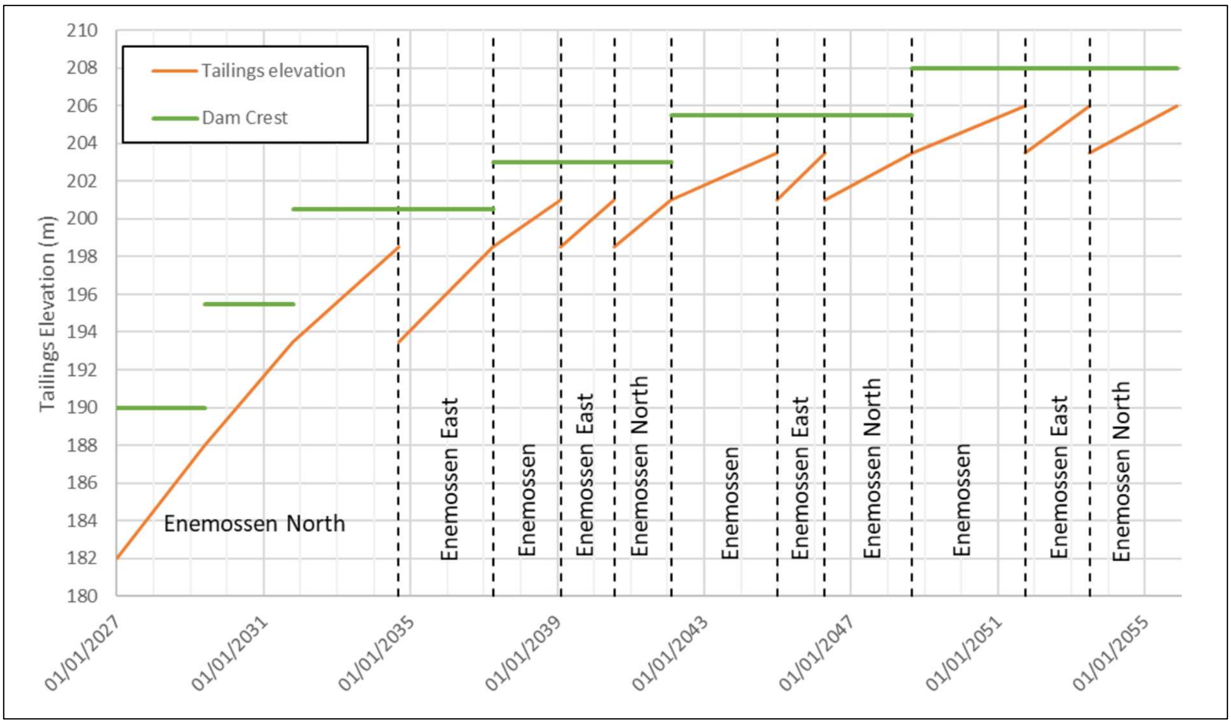


**Figure 3.23 Tailings Height and Time**

The Enemossen North TSF will provide the greatest initial capacity (approximately 4Mm$^3$ deposited over about 8 years). Thereafter, the deposition volume and duration between TSF locations will be relatively similar.
Construction of the Enemossen North facility started in 2024 and will be taken into commission in 2026, see figure 3-27.

**Figure 3.24 Enemossen North project November 2025**

### 3.14.5 Instrumentation

The dams forming Enemossen, Enemossen East, and Clarification Pond are instrumented with fully automated piezometers as well as the more recent addition of (both manual and automated) inclinometers in the X-Y Dam and E-F Dam. Instrumentation data is reviewed for trends against the instrumentation trigger levels and summarised by the EoR team on a monthly basis and any issues are raised in the summary memo. Instruments are monitored/surveyed weekly with data collated in an excel based database by the owner's operations team. Where significant changes are observed by the operational team during the weekly data collection these are raised with the EoR for urgent assessment and action in accordance with the TARP.

## 3.15 Infrastructure for Transportation of Concentrates

Concentrate storage capacity at the mine is around 4,000wmt for zinc concentrates, 2,000wmt for lead concentrates and 1,500wmt for copper concentrates. The concentrates are weighed as the trucks leave the warehouse at the mill on their way to the port of Otterbäcken. The concentrates are trucked five days per week with three turnarounds per truck per day (12 hours

shifts/24 hours per day). At Otterbäcken the concentrates are stored in a warehouse owned by the port operator, Vänerhamn AB, and leased by ZMAB.
The storage capacity at Otterbäcken is around 30,000wmt, divided into four storage bins with the respective capacity of 10,000wmt for zinc concentrates, 8,000wmt for lead concentrates, 8,000wmt for copper concentrates and 4,000wmt used for storage of a small quantity of mixed concentrates coming from the cleaning of the port and warehouse after loading. This material is sporadically trucked back to the mine for reprocessing.
Stevedoring is performed by Vänerhamn AB under contract. Loading is performed by two front end loaders filling an open top container inside the warehouse and then transporting the container from the warehouse to the quay where a mobile crane is used for loading the vessel. The load rate is approximately 500wmt/h.
Up to June 2014, the side of the warehouse facing the lake was open. In June 2014, a joint project between ZMAB and Vänerhamn AB was completed and since then the warehouse is fully enclosed. At the same time, sampling and moisture determination facilities were put in place to serve all outgoing cargoes of concentrate in compliance with moisture and transportable moisture limit (TML) control procedures.
The warehouse is exclusively used by ZMAB. Vänerhamn AB also owns the terminal at the port and has given the right to use the same to ZMAB. The terminal is fully International Ship and Port Facility Security Code (ISPS) compliant.
The concentrates are shipped from Otterbäcken by bulk vessels. Since Otterbäcken is located on Lake Vänern and the vessels must pass locks and a canal to reach the ocean, there are only a few ship owners having suitable (shallow and narrow) vessels. ZMAB employs Thun, a Swedish shipowner, with whom they have a long-term contract of affreightment.
Official weighing and sampling are normally done at the discharge port under the supervision of an internationally recognized company.

## 3.16 Economic Factors for Resource and Reserve

### 3.16.1 Summary

The cut-off policy to estimate Resources and Reserves is derived from a positive margin between the insitu mineralisation net smelter return (NSR) and the mining activity cost model. Activity costs are calculated for each orebody and vary according to mining method and haulage costs. For Reserves a full cost break even cut-off is used and for Resources a marginal break even cut-off is used that does not including sustaining capital.

### 3.16.2 Cut-off Policy

Mineral Resources and Mineral Reserves are the basis for the company's long-term planning and will be mined for many years to come. Long-term planning prices, which are an expression of the anticipated future average prices for metals and currencies, are therefore primarily utilized in the estimations. The planning prices are used to calculate the NSR (Net Smelter Return), expressed in SEK/t, in the block models.
Metal prices, exchange rate and global smelter terms are provided to Zinkgruvan for use in the reserve and Life of Mine Plan (LOM). The terms used in the 2025 reserve are detailed in Table 3-12

**Table 3-4. Metal Price used in Calculation of NSR**

| Metal Prices | Unit | 2025 Value | Change from 2024 |
|---|---|---|---|
| Copper | $/lb | 3,85 | 0 |
| Zinc | $/lb | 1,2 | 0,05 |
| Lead | $/lb | 0,9 | 0 |
| Silver* | $/tOz | 4,83 | 3 |

| Exchange rate | | | |
|---|---|---|---|
| SEK/US $ | | 10 | 0,5 |

| Smelter terms | | | |
|---|---|---|---|
| Copper | | | |
| TC | $/dmt | 90 | 0 |
| RC | $/lb | 0,09 | |
| Zinc | | | |
| TC | $/dmt | 300 | 70 |
| Lead | | | |
| TC | $/dmt | 170 | 0 |

Note* silver price is based on the priced recovered from the Silver Wheaton streaming contract as an average of the 1st 5 years of the LOM.

### 3.16.3 Net Smelter Return valuation calculation (NSR)

The NSR is calculated on a metal recovered and metal payable basis taking into account zinc, lead, copper and silver content, metallurgical recoveries based on actual mineral process plant performance, metal commodity prices and realization costs related to shipment of concentrates to the appropriate smelter and associated commercial smelter terms and conditions.

Three concentrates for zinc, lead and copper are produced. Each concentrate lines have their recovery and concentrate grade formulas derived from production performance and regressions analysis.

**Table 3-5. Recovery Formulas 2025**

| Conventrate | Recovery Formula |
|---|---|
| Copper | Cu Recovery=82,99+10,1*Cu-10,8*Pb-38,01*Zn-3,06*Cu^2+40,7*Pb^2+15,92*Cu*Zn |
| Zinc | ZnRec=90,35-1,869*Zn+0,467*Pb-0,713*Pb^2+0,552*Zn*Pb+3,634*Zn/Fe+0,25 |
| Lead | PbRec=77,163-1,974*Zn+5,84*Pb-0,878*Pb^2+0,448*Zn*Pb+1,75 |

The formulas are included into a excel spreadsheet that also includes a macro to calculate the same calculation as the spreadsheet. This macro is then used to generate a script for applying to Vulcan and Deswik block models for use for resource definition, reserve definition and mine design.

### 3.16.4 Activity Cost Model

A "full cost breakeven" calculation is used to determine the cut-off value for the various areas, and this value is used for both short-term and long-term planning.

Full-cost breakeven = Operating Costs (fixed and variable ) + Sustaining Capital Costs

An activity based cost model is generated using 1 year current costs and forward looking costs based on the previous LOM financial model. The activity costs are estimated for;

- Mine General costs directly supporting production (G&A)
- Production mining costs for Stoping that varies by mining method
- Development cost per meter for allocation by mining method
- Haulage cost based on distance from the orebody to the P2 shaft facility
- Back fill costs for either Paste or Waste fill

These activity costs are then used to generate the variable mining cost for each are based on the mining method and location in the mine

Fixed operations costs (Opex) are included for the Plant and for G&A sourced from the LOM financial model.

Sustaining capital cost is derived for the Capex costs included in the financial model that are not expansionary this includes sustaining capex for the mine, Plant and G&A.

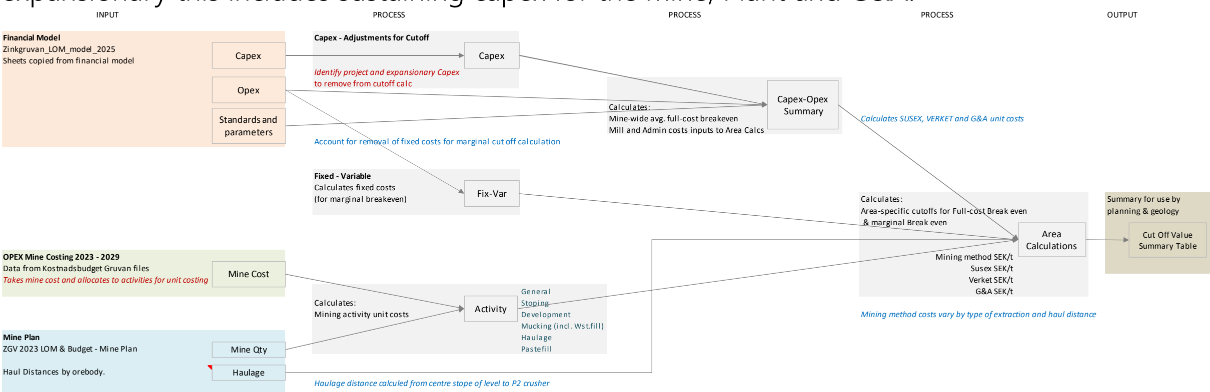


**Figure 3.25 Activity cost calculation flow map**

A cut off value is then calculated for each mining area, usually using a discrete mining method. The cut-off values used in the Mineral Reserve estimates are summarized in Table 3-14

A Marginal cut off value is also calculated for use in the resource that excludes fixed costs.

| Area | Orebody | Level | Full Cost BE (SEK/t) | Marginal BE (SEK/t) |
|---|---|---|---|---|
| Burkland | Burkland | 1125 | 1 050 | 800 |
| | | 1300 | 1 250 | 1 000 |
| | | 1500 | 1 150 | 900 |
| | Koppar | 965 | 1 100 | 850 |
| | | 1125 | 1 100 | 850 |
| | | 1300 | 1 100 | 850 |
| Nygruvan | CF | 1100 | 1 100 | 850 |
| | DK | 1100 | 1 100 | 850 |
| | Nygruvan | 1300 | 1 300 | 1 050 |
| | | 1500 | 1 300 | 1 050 |
| | 205 | 920 | 1 050 | 800 |
| | | 1130 | 1 250 | 1 000 |
| | | 1300 | 1 050 | 800 |
| Västra Fältet | Borta Bakom | 650 | 1 050 | 800 |
| | | 860 | 1 350 | 1 100 |
| | Cecilia | 650 | 1 050 | 800 |
| | | 920 | 1 000 | 750 |
| | Sävsjön öst | 650 | 1 050 | 800 |
| | Sävsjön väst | 650 | 1 050 | 800 |
| Dalby | Oden | 1100 | 1 050 | 800 |
| | | 1300 | 1 300 | 1 050 |
| | | 1500 | 1 300 | 1 050 |
| | Fjorgyn | 960 | 1 050 | 800 |
| | | 1100 | 1 100 | 850 |
| | | 1300 | 1 300 | 1 050 |
| | Mellanby | 650 | 1 050 | 800 |
| | | 960 | 1 050 | 800 |
| | Njord | 1300 | 1 050 | 850 |
| | Rinda | | 1 100 | 850 |

**Table 3-6. Cut-off value by orebody summary**

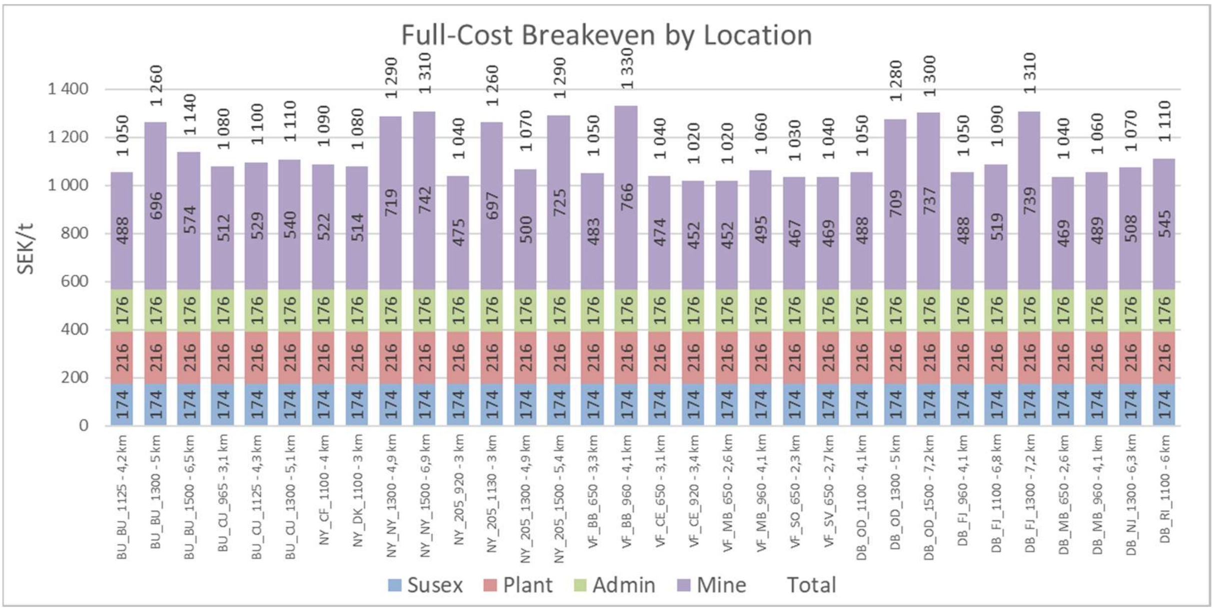


**Table 3-7. Cut-off value by orebody**

## 3.16.5 Reserve conversion parameters

The portion of the resource that is converted to reserve by the application of conversion factors including;

- Full cost breakeven costs
- Design constraints required by mining methods (i.e. sublevel intervals and minimum mining width
- Production stoping performance estimation for dilution and ore loss

These are applied during the design process and the conversion of the design into the mining scheduler.

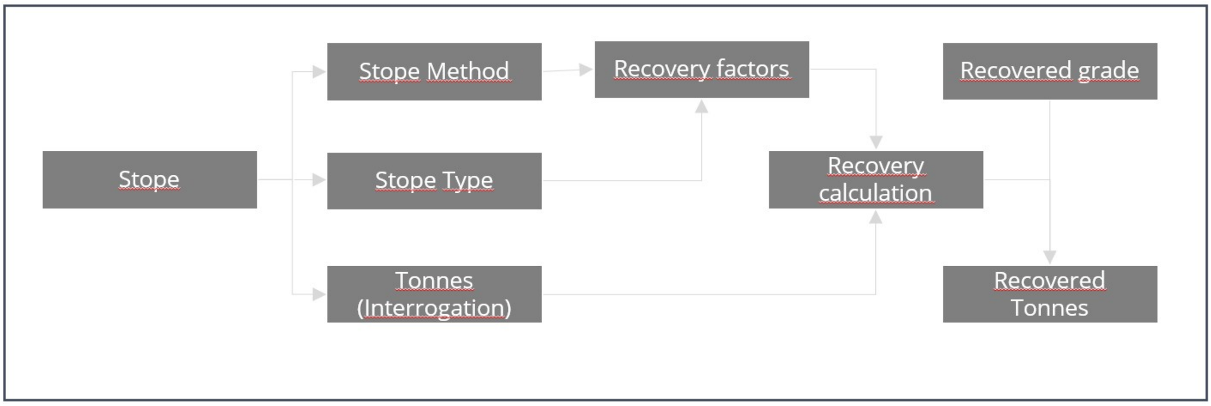


**Figure 3.26 Reserve modifying factors flow chart**

The production stoping performance parameters are derived from the drill and blast reconciliation database that has been populated since November 2019 using the Deswik software reconciliation software. Modifying factors have been calculated for over 428 stopes representing 4.7Mt of production. The parameters are subdivided into mining method and for stope sizes >< 10 000t. These factors are applied to the stopped design after Stope optimizer design in Deswik CAD on transfer of the stope to Deswik SHED. The table of factors is shown in Table 3-16 that includes historical conversion parameters.

| **Dilution** | Stope size | Stope Type<br>Overhand Longitudinal | Overhand Transverse | Underhand Longitudinal | Underhand Transverse |
|---|---|---|---|---|---|
| 2022 | < 10000t | 20% | 15% | 16% | 7% |
| 2019 to 2023 actual | < 10000t | 19% | 13% | 13% | 3% |
| 2023 LOM | < 10000t | 19% | 13% | 13% | 5% |
| 2024 LOM | < 10000t | 22% | 13% | 15% | 15% |
| 2025 LOM | < 10000t | **20%** | **13%** | **15%** | **15%** |
| | | -2% | 0% | 0% | 0% |
| 2022 | > 10000t | 15% | 15% | 16% | 6% |
| 2019 to 2023 actual | > 10000t | 11% | 11% | 18% | 15% |
| 2023 LOM | > 10000t | 11% | 15% | 18% | 10% |
| 2024 LOM | > 10000t | 18% | 13% | 10% | 14% |
| 2025 LOM | > 10000t | **8%** | **12%** | **11%** | **12%** |
| | | -9% | -1% | 1% | -2% |

| **Ore Loss** | Stope size | Stope Type<br>Overhand Longitudinal | Overhand Transverse | Underhand Longitudinal | Underhand Transverse |
|---|---|---|---|---|---|
| 2022 | < 10000t | 15% | 15% | 15% | 15% |
| 2019 to 2023 actual | < 10000t | 12% | 12% | 19% | 22% |
| 2023 LOM | < 10000t | 12% | 12% | 19% | 15% |
| 2024 LOM | < 10000t | 11% | 12% | 20% | 17% |
| 2025 LOM | < 10000t | **12%** | **11%** | **19%** | **17%** |
| | | 1% | -1% | -1% | 0% |
| 2022 | > 10000t | 10% | 15% | 15% | 10% |
| 2019 to 2023 actual | > 10000t | 15% | 12% | 12% | 6% |
| 2023 | > 10000t | 15% | 12% | 12% | 6% |
| 2024 | > 10000t | 14% | 11% | 13% | 7% |
| 2025 | > 10000t | **9%** | **12%** | **14%** | **8%** |
| | | -6% | 1% | 1% | 1% |

**Table 3-8. Reserve conversion parameters – Dilution and Ore loss by stope type**

## 3.17 Mineral Resources

During the long history of Zinkgruvan the method used to estimate Resources has changed with time. This is partly due to general technical developments but also to the use of different mining methods. At present the primary method used is block modelling with interpolation either by Ordinary Kriging (OK) or Inverse Distance (ID).
Previous Microstation was used as an estimation procedure tool. But since 2018 the estimation procedure is done using Maptek software and Vulcan Geostat Module. For creating variograms Snowden Supervisor software is used.
The mineral resource estimates are based on diamond drillholes produced by Zinkgruvan Exploration team as well as infill drilling from Zinkgruvan Mine Geology team.

### 3.17.1 Compositing

The drill holes are composited with 2m composites along the drill hole and with residuals at the end. Only drill holes that are completed with assay are chosen into the estimation.

### 3.17.2 Block Modelling and Interpolation

Block modelling with interpolation by ordinary kriging or inverse distance is the main estimation method. Each domain has its own estimation file with specific parameters.
The block models comprise parent blocks which can be sub-divided twice to better match the geometry of the wireframe, resulting in a maximum of up to 8 sub-blocks per parent block in total.

### 3.17.3 Validation

Geostatistical validations are done by using Vulcan Geostat Module and the Vulcan Data Analyser. Comparing statistics between composites and blocks and swath plots. Visual validations are done in Vulcan by displaying blocks and composites.

### 3.17.4 Classification

To qualify as Inferred Resource drill spacing is generally 100m vertical by 100m horizontal with no mineralization exposed by development.
Indicated Resource drill spacing is in general 50m by 50m with some mineralization exposed by development.
Measured Resources have drill spacing of 25m by 25m and are often well exposed by development.
For classification critera, drillhole spacing and geologic knowledge are primarily used. In times of uncertainty geostatistics may be used as support.

Method used to categorise the Mineral Resource:

| Category | Measured | Indicated | Inferred |
|---|---|---|---|
| Drill Spacing | 25 m by 25 m | 50 m by 50 m | 100 m by 100 m |

### 3.17.5 Depletion

Files for depletion are handed over by the survey team. Actual scans and survey of drifts and stopes up to 31st of October are used and forecast solids for November and December which are handed over from short term planning engineers.

### 3.17.6 Stope Optimizer

To apply to Reasonable Prospects for Eventual Economic Extraction, RPEEE standards, Zinkgruvan has since 2021 applied Map Tek Vulcan Stope Optimizer module. Constraints used on the block models are minimum mining width of 3.5 meters and NSR marginal break-even value.

Table 3-17 lists all the estimations compiled for Zinkgruvan R&R.

| Area | Domain | Block size | Est. Method | Classification | Last update |
|---|---|---|---|---|---|
| Nygruvan | Ny205 | 5X10X10 | OK | Measured, Indicated, Inferred | 2025 |
| | Ny240 | 5X10X10 | OK | Measured, Indicated, Inferred | 2025 |
| | NyCF | 5X10X10 | OK | Measured, Indicated, Inferred | 2025 |
| | NyDK | 5X10X10 | OK | Measured, Indicated, Inferred | 2025 |
| | Ny305 | 5X10X10 | OK | Indicated, Inferred | 2025 |
| Burkland | Bu960 | 10X5X5 | OK | Measured | 2025 |
| | Bu1125 | 10X5X5 | OK | Measured | 2025 |
| | Bu1300 | 10X5X5 | OK | Measured, Inferred | 2025 |
| | Bu1500 | 10X5X5 | OK | Measured, Indicated, Inferred | 2025 |
| | Bu1500Fe | 10X5X5 | ID | Inferred | 2025 |
| | Bu1500Marble | 10X5X5 | ID | Inferred | 2025 |
| | Bubreccia | 10X5X5 | ID | Inferred | 2025 |
| | Copper | 10X5X5 | OK | Measured, Indicated, Inferred | 2025 |
| | Lindängen | 10X5X5 | ID | Indicated | 2018 |
| Dalby/WeasternFields | Zd | 5X5X5 | OK | Measured, Indicated, Inferred | 2025 |
| | Zd2 | 5X5X5 | OK | Measured, Indicated, Inferred | 2025 |
| | Bortabakom/Cecilia | 5X5X5 | OK | Measured, Indicated, Inferred | 2025 |
| | Wilhelm | 5X5X5 | OK | Indicated, Inferred | 2025 |
| | Viktor | 5X5X5 | OK | Inferred | 2025 |
| | CeciliaZc | 5X5X5 | OK | Measured | 2025 |
| | CeciliaPb | 5X5X5 | ID | Indicated | 2025 |
| | Brokk | 5X5X5 | ID | Inferred | 2025 |
| | Froste | 5X5X5 | ID | Inferred | 2025 |
| | Tyr | 5X5X5 | ID | Inferred | 2025 |
| | Vidar | 5X5X5 | OK | Indicated, Inferred | 2025 |

**Table 3-9. Estimations compiled for Zinkgruvan R&R**

### 3.17.7 Resource Areas

The Zn-Pb Resources are hosted by the Burkland, Nygruvan, Western Field and Dalby deposit. Apart from Lindängen, a portion of which lies within the crown pillar, none of these deposits are fully defined.
The Copper Resource lies on the structural hanging wall of the Burkland deposit.
All areas are shown in Figure 3-30.

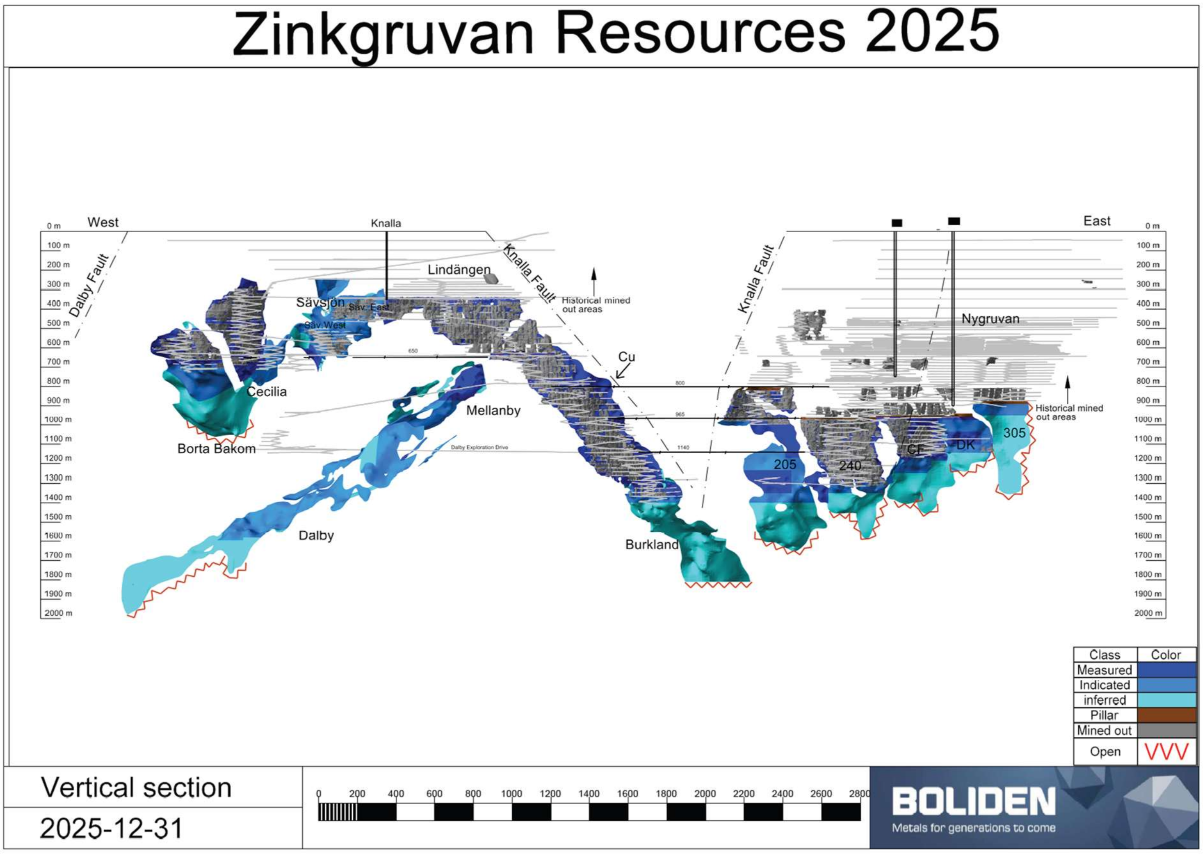


**Figure 3.27 Vertical section showing the Resources 2025 as of 2025-12-31**

## 3.18 Mineral Reserves

When converting Mineral Resources to Mineral Reserves, a number of parameters have to be considered, the most important ones being economic feasibility and rock mechanics. The rock mechanic conditions determine the amount and size of pillars and sill pillars as well as the length and width of mined stopes. Weak or unstable rock volumes might be discarded completely from the mineral reserves. The volume and geometry of the mineralization will likely determine which mining method to apply. The choice of mining method should also optimize the NPV (Net Present Value) of the ore volume.
Boliden Zinkgruvan utilizes the mine planning tool Deswik Stope Optimizer (SO) for designing of stopes. SO automates the design process and allows several stope properties including general shape and orientation, cut-off grade, dilution and pillar size (Table 3-18).

| Stope Optimizer Criteria | min | max |
|---|---|---|
| Stope Length (m) | 15 | 25 |
| Stope Height (m) | 20 | 40* |
| Stope Width (m) | 15 | 20 |
| Dilution hangwall | 50% | |
| Waste material | 100% | |

*only in some copper levels

**Table 3-10. Reserve Stope Optimiser criteria**

The cut-off grade used is based on the cost distribution presented in chapter 3.16. Variable costs will define what material can be included in a stope, and a full stope needs to cover operational costs without sustaining investments. Additionally, the average NSR for each time period needs to be higher than the full breakeven costs. Moreover, the cut-off is adjusted for each orebody, level and mining method.

Regarding the classification Proved Mineral Reserves, the reported position must comply with the conditions for a Measured Resource. Table 3-19 shows the Mineral Reserves for Boliden Zinkgruvan as per 2025-12-31.

| **Zink/Lead** | **2025** | | | | 2024 | | | |
|---|---|---|---|---|---|---|---|---|
| **Classification** | **kt** | **Zn %** | **Pb %** | **Ag g/t** | kt | Zn % | Pb % | Ag g/t |
| **Mineral Reserves** | | | | | | | | |
| Proved | **3 900** | **7.4** | **2.8** | **63** | 3 900 | 7.4 | 3.0 | 65 |
| Probable | **9 900** | **7.9** | **3.5** | **75** | 7 400 | 7.9 | 3.7 | 83 |
| *Total* | ***13 800*** | *7.8* | *3.3* | *72* | *11 300* | *7.7* | *3.4* | *77* |
| **Mineral Resources** | | | | | | | | |
| Measured | **3 700** | **8.6** | **3.3** | **70** | 7 100 | 8.9 | 3.7 | 80 |
| Indicated | **3 000** | **6.7** | **2.4** | **53** | 10 300 | 8.4 | 3.8 | 83 |
| *Total M&I* | ***6 700*** | *7.8* | ***2.9*** | ***62*** | *17 300* | *8.6* | *3.7* | *82* |
| Inferred | **16 000** | **9.0** | **3.9** | **96** | 14 500 | 9.3 | 4.2 | 100 |

| **Copper** | **2025** | | | 2024 | | |
|---|---|---|---|---|---|---|
| **Classification** | **kt** | **Ag g/t** | **Cu %** | kt | Ag g/t | Cu % |
| **Mineral Reserves** | | | | | | |
| Proved | **1 400** | **32** | **2.06** | 1 400 | 33 | 2.04 |
| Probable | **240** | **34** | **1.95** | 220 | 35 | 1.95 |
| *Total* | ***1 600*** | *32* | *2.04* | *1 600* | *33* | *2.03* |
| **Mineral Resources** | | | | | | |
| Measured | **630** | **25** | **1.85** | 2 100 | 35 | 2.20 |
| Indicated | **80** | **30** | **1.56** | 470 | 38 | 2.10 |
| *Total M&I* | *710* | *26* | ***1.82*** | *2 600* | *35* | *2.20* |
| Inferred | **270** | **29** | **1.69** | 240 | 30 | 1.70 |

**Table 3-11. Zinkgruvan 2025 Mineral Resources and Mineral Reserves**

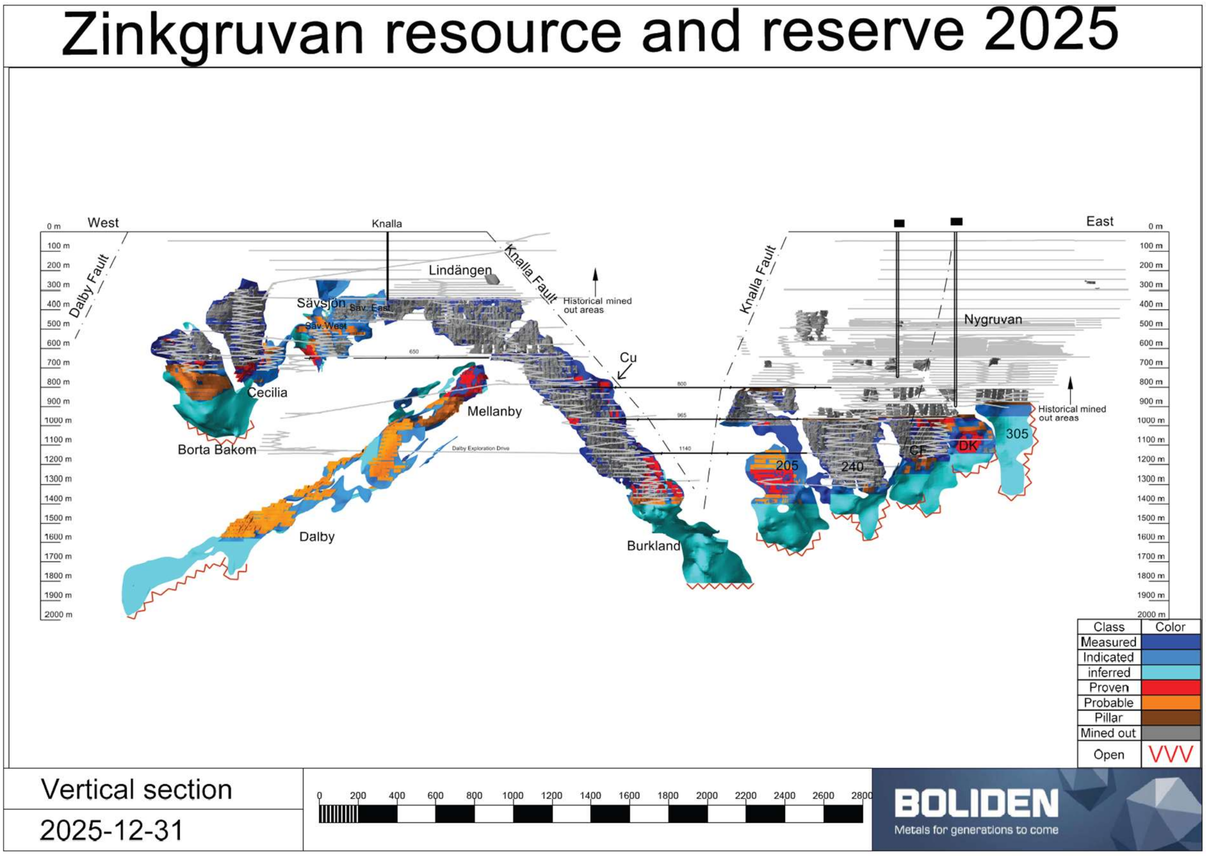


**Figure 3-28 Vertical section showing the Resources and reserves 2025 as of 2025-12-31**

## 3.19 Comparison with previous year/estimation

The historical resource and reserves for Zinkgruvan were prepared under the 43-101 reporting requirements and resources were declared inclusive of reserves. To conform to the Boliden standards of reporting this document is prepared under the PERC standard and resources are reported exclusive of reserves.

### 3.19.1 Reserve changes

The principal reserve changes in 2025 have been resource category conversion and an increase in the copper price. Layout design standards are unchanged and reserve conversion parameters for dilution and ore loss have been updated from the 2025 Drill and blast database analysis.

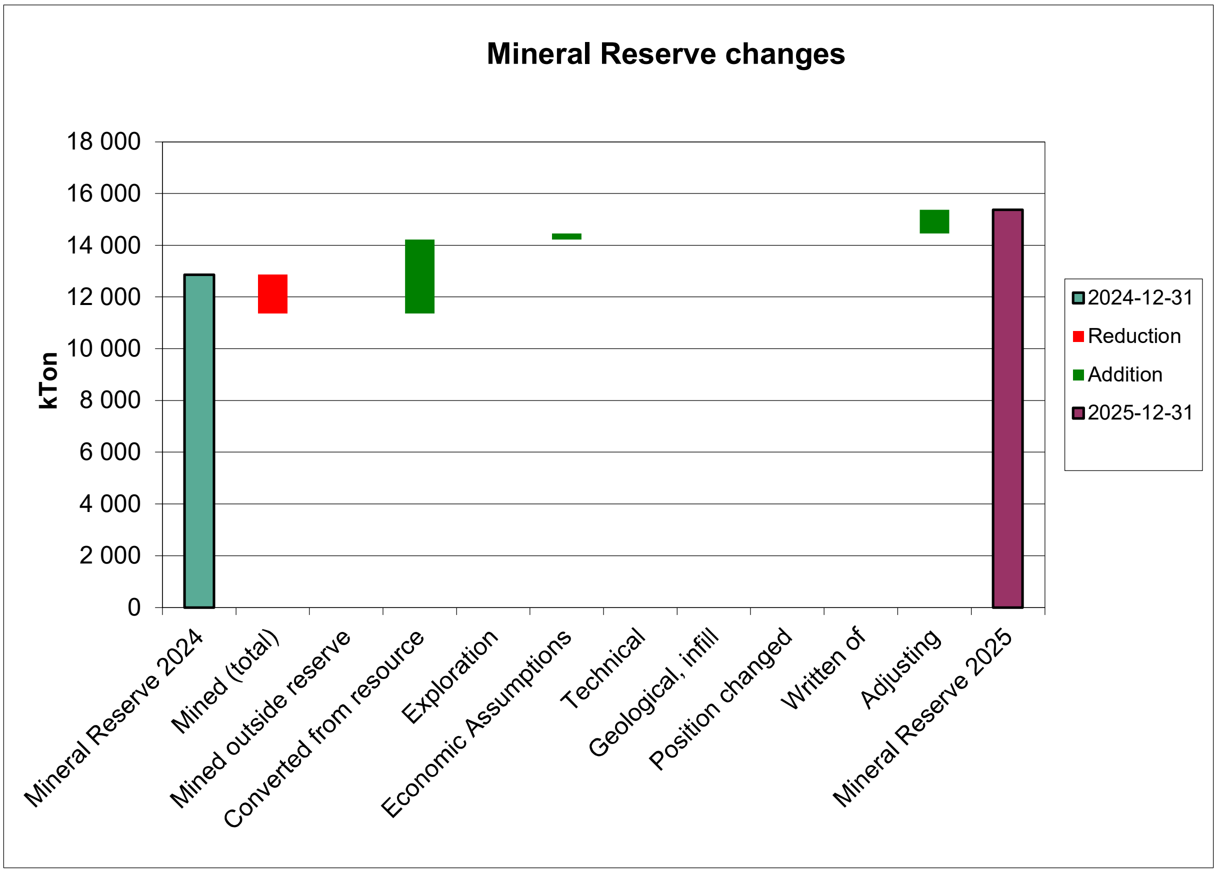


**Figure 3.29. Changes to mineral reserve**

### 3.19.2 Resource changes

Reduction during 2025 is because of mining and the higher number in Converted to Reserve is due to the new method of reporting. Previously Zinkgruvan reported Resources including Reserves. This year the Resources are reported excluding Reserves. Material have been added both from infill and exploration. Also, due to updates in NSR calculations and cut-offs, material has been added.

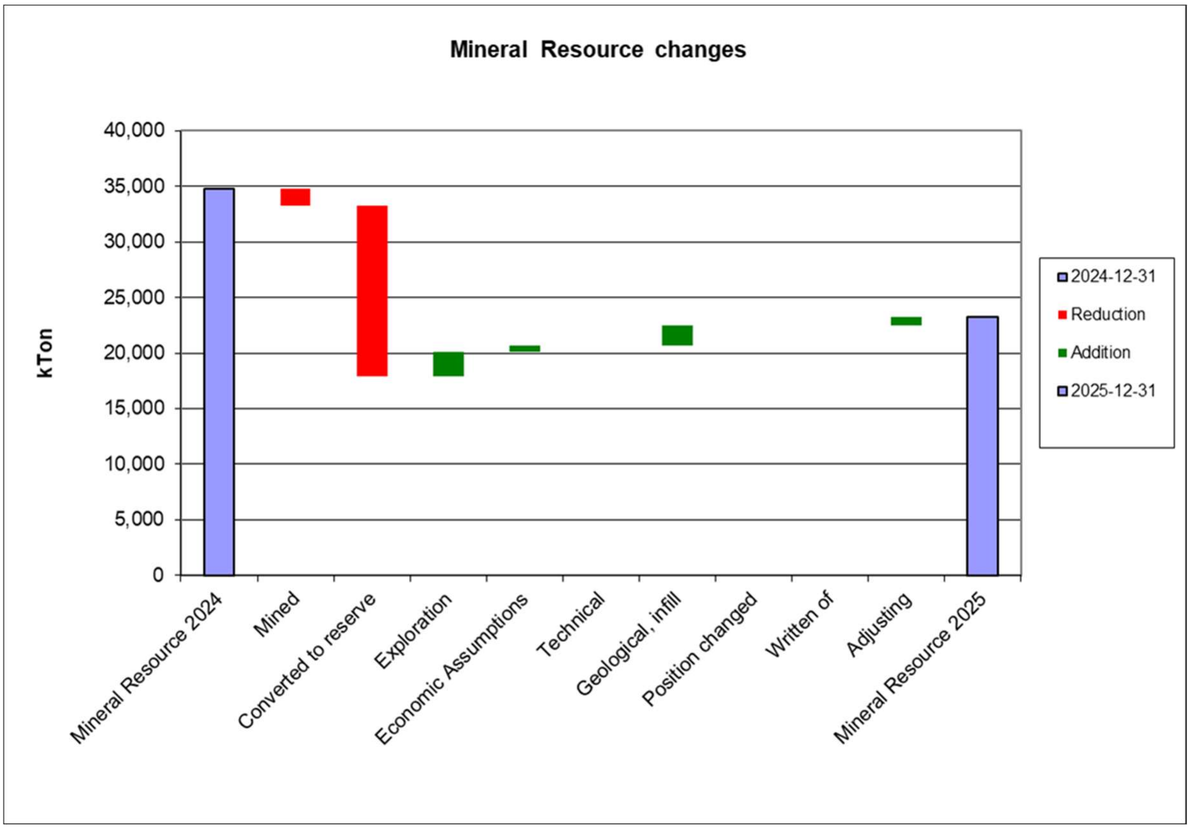


Figure 3-30. Changes to mineral resource

## 3.20 Reconciliation

In order to confirm the geological interpretation, modelling, grade interpolation etc., actual mining volumes and block model grades are checked against the measured results from the processing plant. Monthly estimates can vary significantly depending on the mine's logistics of stocks in the mine and on surface. The turnover of the stocks can also vary.

The grades of the mined-out ore are calculated from the block model using the tonnage reported as loaded from the stopes and ore development. Above ground, there is an ore storage facility which at the beginning of 2025 contained 37 Kton of ore. During the year the tonnage fluctuated between 0 Kton and 70 Kton. At the end of the year the storage contained 28 Kton of ore. Tables 3-20 to 3-22 and figures 3-34 to 3-36 shows results for 2025. The official grades are those of the processing plant.

Resource – The CMS volume for the mined-out stopes is evaluated looking at the Resource model to get combined planned and unplanned oreloss and dilution compared to the Resource model.

STBM – The CMS volume for the mined-out stopes is evaluated looking at the STBM to get combined planned and unplanned oreloss and dilution compared to the latest STBM.

Unplanned – The CMS volume for the mined-out stopes is evaluated looking at the Drill and Blast design to get unplanned oreloss and dilution compared to the Drill and blast design.

Reconciliation Chart Jan2025-Dec2025

Zinc

| | CMS-Resource Model LTBM | | | CMS-STBM STBM | | | Hoisted Tonnes and grade Broken | | | Monthly budget 2025 Budget | | | Forecast 3 months Forecast | | | Plant Mill | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal |
| January | 99,817 | 7.52 | 7,506 | 95,240 | 8.64 | 8,232 | 99,293 | 8.27 | 8,211 | 97,951 | 9.14 | 8,953 | 97,951 | 9.14 | 8,953 | 111,611 | 8.06 | 8,996 |
| February | 77,489 | 6.40 | 4,963 | 78,142 | 6.76 | 5,283 | 98,624 | 6.79 | 6,697 | 116,986 | 7.11 | 8,318 | 116,986 | 7.11 | 8,318 | 87,732 | 6.22 | 5,457 |
| March | 119,657 | 7.05 | 8,440 | 121,828 | 7.91 | 9,634 | 130,636 | 6.90 | 9,018 | 84,832 | 7.77 | 6,591 | 84,832 | 7.77 | 6,591 | 137,255 | 6.42 | 8,812 |
| April | 112,237 | 6.30 | 7,074 | 113,228 | 6.67 | 7,549 | 120,982 | 6.18 | 7,476 | 126,702 | 8.19 | 10,377 | 131,367 | 6.63 | 8,710 | 92,081 | 7.64 | 7,035 |
| May | 97,151 | 5.57 | 5,415 | 94,696 | 7.27 | 6,882 | 112,300 | 6.22 | 6,990 | 114,706 | 8.81 | 10,106 | 112,248 | 7.94 | 8,912 | 139,453 | 5.84 | 8,144 |
| June | 126,803 | 6.53 | 8,278 | 99,844 | 8.79 | 8,776 | 99,735 | 7.47 | 7,455 | 132,629 | 7.39 | 9,801 | 101,248 | 7.35 | 7,442 | 114,491 | 7.64 | 8,747 |
| July | 106,113 | 8.76 | 9,296 | 107,269 | 9.70 | 10,407 | 106,405 | 8.48 | 9,028 | 82,021 | 8.55 | 7,013 | 106,839 | 7.11 | 7,596 | 96,949 | 8.32 | 8,066 |
| August | 101,905 | 6.64 | 6,770 | 102,793 | 7.20 | 7,406 | 110,852 | 7.11 | 7,882 | 67,200 | 6.65 | 4,469 | 83,401 | 6.63 | 5,529 | 127,363 | 6.70 | 8,533 |
| September | 83,461 | 5.58 | 4,653 | 84,786 | 6.79 | 5,758 | 79,310 | 7.26 | 5,760 | 81,112 | 7.39 | 5,994 | 85,453 | 7.59 | 6,486 | 87,424 | 6.02 | 5,263 |
| October | 85,965 | 6.25 | 5,373 | 86,852 | 6.33 | 5,500 | 103,810 | 6.19 | 6,431 | 103,908 | 6.86 | 7,128 | 95,021 | 7.07 | 6,718 | 83,187 | 5.61 | 4,667 |
| November | 91,301 | 5.75 | 5,250 | 92,945 | 6.76 | 6,287 | 110,064 | 5.65 | 6,217 | 56,187 | 6.20 | 3,484 | 87,788 | 5.96 | 5,232 | 116,921 | 5.68 | 6,641 |
| December | 92,314 | 4.83 | 4,457 | 93,836 | 7.05 | 6,615 | 85,148 | 5.70 | 4,852 | 112,627 | 7.59 | 8,548 | 92,251 | 8.26 | 7,620 | 92,368 | 5.44 | 5,025 |
| **Totals** | **1,194,212** | **6.49** | **6,641** | **1,171,459** | **7.54** | **7,513** | **1,257,159** | **6.84** | **7,273** | **1,176,861** | **7.71** | **8,025** | **1,195,385** | **7.37** | **7,474** | **1,286,835** | **6.64** | **7,332** |
| | Compare with Resource | | | 98% | 116% | 113% | 105% | 105% | 110% | 99% | 119% | 121% | 100% | 114% | 113% | 108% | 102% | 110% |
| | | | | Compare with STBM | | | 107% | 91% | 97% | 100% | 102% | 107% | 102% | 98% | 99% | 110% | 88% | 98% |
| | | | | | | | Compare with Broken | | | 94% | 113% | 110% | 95% | 108% | 103% | 102% | 97% | 101% |
| | | | | | | | | | | Compare with Forecast | | | 102% | 96% | 93% | 109% | 86% | 91% |
| | | | | | | | | | | | | | Compare with Plant | | | 108% | 90% | 98% |

Table 3-12. Zinkgruvan 2025 Reconciliation chart-Zinc.

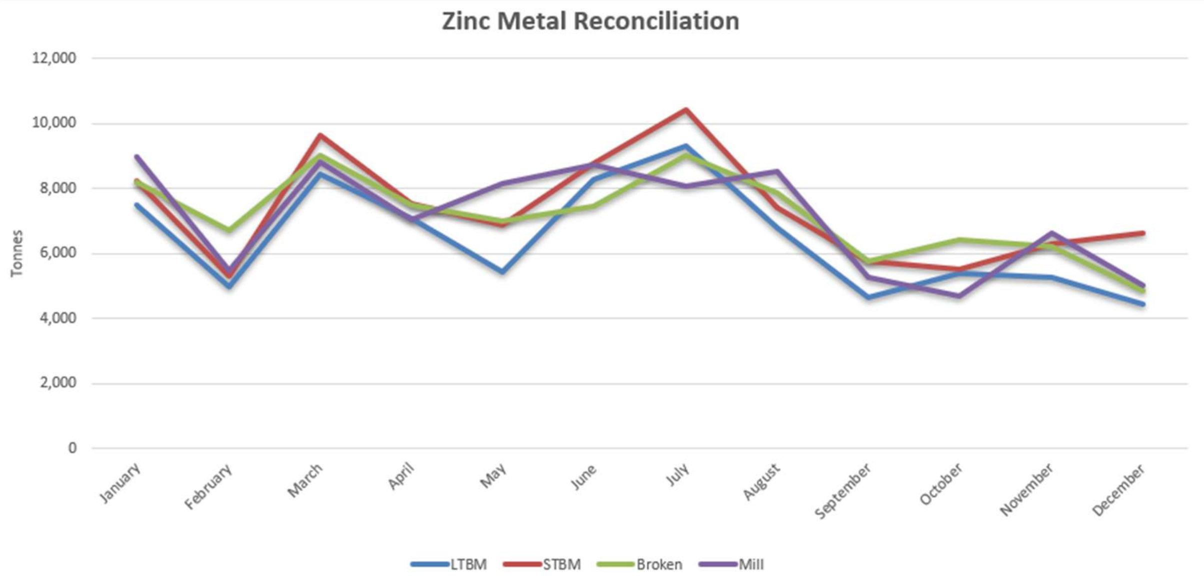


Figure 3-31. Zinc metal Reconciliation

| Reconciliation Chart Jan2025-Dec2025<br>Lead | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CMS-Resource Model<br>LTBM | | | CMS-STBM<br>STBM | | | Hoisted Tonnes and grade<br>Broken | | | Monthly budget 2025<br>Budget | | | Forecast 3 months<br>Forecast | | | Plant<br>Mill | | |
| | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal |
| January | 99,817 | 2.17 | 2,164 | 95,240 | 2.33 | 2,220 | 99,293 | 2.03 | 2,018 | 97,951 | 3.44 | 3,370 | 97,951 | 3.44 | 3,370 | 111,611 | 2.81 | 3,136 |
| February | 77,489 | 2.70 | 2,093 | 78,142 | 2.67 | 2,089 | 98,624 | 2.54 | 2,507 | 116,986 | 2.99 | 3,498 | 116,986 | 2.99 | 3,498 | 87,732 | 2.56 | 2,246 |
| March | 119,657 | 3.16 | 3,776 | 121,828 | 3.49 | 4,252 | 130,636 | 2.80 | 3,656 | 84,832 | 2.46 | 2,087 | 84,832 | 2.46 | 2,087 | 137,255 | 2.84 | 3,898 |
| April | 112,237 | 2.54 | 2,845 | 113,228 | 2.67 | 3,024 | 120,982 | 2.10 | 2,535 | 126,702 | 4.20 | 5,321 | 131,367 | 2.61 | 3,429 | 92,081 | 2.92 | 2,689 |
| May | 97,151 | 2.03 | 1,973 | 94,696 | 2.68 | 2,536 | 112,300 | 1.97 | 2,207 | 114,706 | 4.21 | 4,829 | 112,248 | 3.50 | 3,929 | 139,453 | 2.24 | 3,124 |
| June | 126,803 | 3.21 | 4,071 | 99,844 | 4.53 | 4,520 | 99,735 | 3.48 | 3,466 | 132,629 | 3.31 | 4,390 | 101,248 | 3.31 | 3,351 | 114,491 | 4.40 | 5,038 |
| July | 106,113 | 5.61 | 5,949 | 107,269 | 5.31 | 5,699 | 106,405 | 4.53 | 4,824 | 82,021 | 2.81 | 2,305 | 106,839 | 2.81 | 3,002 | 96,949 | 3.32 | 3,219 |
| August | 101,905 | 3.39 | 3,450 | 102,793 | 3.46 | 3,556 | 110,852 | 3.11 | 3,442 | 67,200 | 3.20 | 2,150 | 83,401 | 3.20 | 2,669 | 127,363 | 3.50 | 4,458 |
| September | 83,461 | 2.18 | 1,821 | 84,786 | 2.47 | 2,092 | 79,310 | 2.32 | 1,842 | 81,112 | 3.47 | 2,815 | 85,453 | 3.47 | 2,965 | 87,424 | 1.94 | 1,696 |
| October | 85,965 | 2.92 | 2,511 | 86,852 | 3.19 | 2,773 | 103,810 | 2.83 | 2,933 | 103,908 | 2.77 | 2,878 | 95,021 | 2.77 | 2,632 | 83,187 | 2.81 | 2,338 |
| November | 91,301 | 2.10 | 1,920 | 92,945 | 2.71 | 2,521 | 110,064 | 2.09 | 2,305 | 56,187 | 2.47 | 1,388 | 87,788 | 2.47 | 2,168 | 116,921 | 2.85 | 3,332 |
| December | 92,314 | 1.76 | 1,623 | 93,836 | 2.39 | 2,242 | 85,148 | 2.57 | 2,189 | 112,627 | 3.31 | 3,728 | 92,251 | 3.31 | 3,054 | 92,368 | 2.48 | 2,291 |
| **Totals** | **1,194,212** | **2.86** | **2,958** | **1,171,459** | **3.20** | **3,215** | **1,257,159** | **2.70** | **2,872** | **1,176,861** | **3.29** | **3,471** | **1,195,385** | **3.02** | **3,067** | **1,286,835** | **2.91** | **3,237** |
| | Compare with Resource | | | 98% | 112% | 109% | 105% | 94% | 97% | 99% | 115% | 117% | 100% | 106% | 104% | 108% | 102% | 109% |
| | | | | Compare with STBM | | | 107% | 84% | 89% | 100% | 103% | 108% | 102% | 94% | 95% | 110% | 91% | 101% |
| | | | | | | | Compare with Broken | | | 94% | 122% | 121% | 95% | 112% | 107% | 102% | 108% | 113% |
| | | | | | | | | | | Compare with Forecast | | | 102% | 92% | 88% | 109% | 88% | 93% |
| | | | | | | | | | | | | | Compare with Plant | | | 108% | 96% | 106% |

**Table 3-13. Zinkgruvan 2025 Reconciliation chart-Lead.**

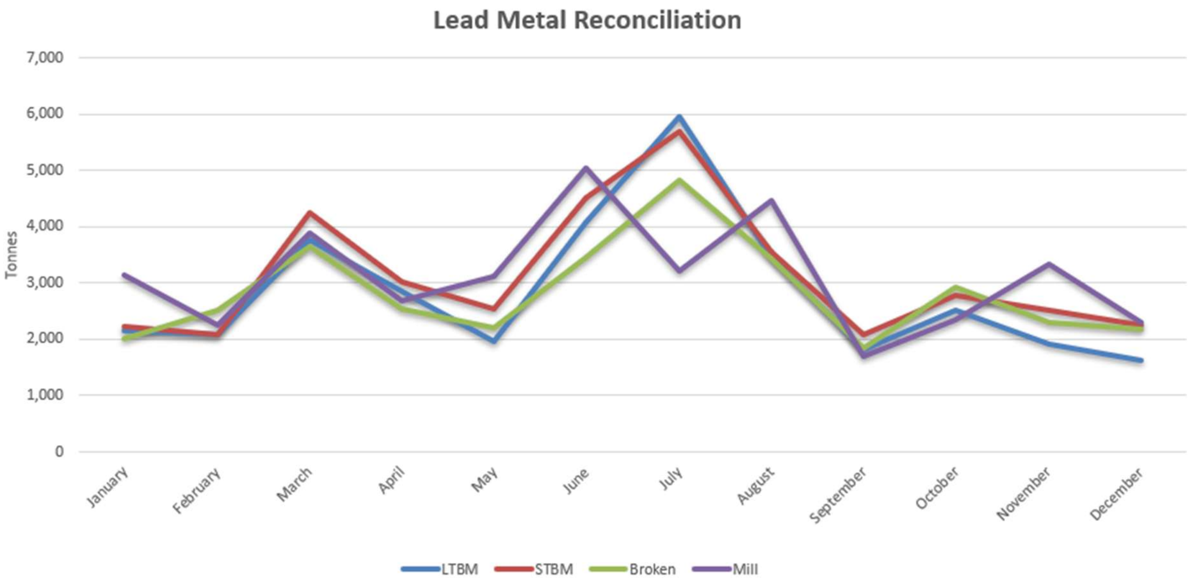


**Figure 3-32. Lead metal Reconciliation**

**Reconciliation Chart Jan2025-Dec2025**

**Copper**

| | CMS-Resource Model LTBM | | | CMS-STBM STBM | | | Hoisted Tonnes and grade Broken | | | Monthly budget 2025 Budget | | | Forecast 3 months Forecast | | | Plant Mill | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal | Tonnes | Grade | Metal |
| January | 30,491 | 2.11 | 642 | 30,705 | 2.21 | 680 | 33,362 | 2.00 | 669 | 20,707 | 1.87 | 387 | 20,707 | 1.87 | 387 | 16,728 | 1.99 | 333 |
| February | 23,655 | 2.01 | 475 | 26,621 | 2.21 | 588 | 25,592 | 1.95 | 499 | 13,474 | 2.74 | 369 | 13,474 | 2.74 | 369 | 33,871 | 2.19 | 742 |
| March | 2,026 | 1.49 | 30 | 1,978 | 1.63 | 32 | 0 | | 0 | 33,029 | 2.74 | 905 | 33,029 | 2.74 | 905 | 0 | 0.00 | 0 |
| April | 2,371 | 0.66 | 16 | 2,340 | 1.19 | 28 | 3,179 | 1.60 | 51 | 7,043 | 1.08 | 76 | 1,739 | 1.12 | 19 | 0 | 0.00 | 0 |
| May | 7,203 | 2.19 | 158 | 6,635 | 2.24 | 148 | 8,396 | 2.30 | 193 | 3,875 | 2.93 | 114 | 2,032 | 1.86 | 38 | 0 | 0.00 | 0 |
| June | 28,494 | 2.17 | 618 | 25,887 | 2.14 | 553 | 27,658 | 2.00 | 553 | 2,059 | 1.75 | 36 | 17,652 | 1.56 | 275 | 21,007 | 2.20 | 462 |
| July | 31,284 | 2.25 | 705 | 30,365 | 2.25 | 684 | 30,679 | 2.00 | 614 | 24,570 | 1.71 | 420 | 21,837 | 1.64 | 358 | 56,086 | 2.04 | 1,144 |
| August | 15,452 | 2.08 | 321 | 15,035 | 2.15 | 323 | 16,845 | 2.00 | 337 | 43,770 | 1.94 | 849 | 7,681 | 1.87 | 144 | 8,906 | 2.15 | 191 |
| September | 30,422 | 1.47 | 448 | 29,641 | 1.41 | 419 | 32,807 | 1.99 | 653 | 22,307 | 2.03 | 453 | 38,027 | 1.80 | 684 | 45,297 | 1.80 | 815 |
| October | 14,643 | 2.12 | 310 | 14,260 | 2.20 | 313 | 16,693 | 1.97 | 329 | 31,049 | 2.57 | 798 | 23,278 | 1.96 | 456 | 24,304 | 1.65 | 401 |
| November | 2,690 | 0.93 | 25 | 2,622 | 0.88 | 23 | 4,490 | 2.00 | 90 | 46,708 | 2.52 | 1,177 | 16,434 | 1.69 | 278 | 0 | 0.00 | 0 |
| December | 71,035 | 2.14 | 1,518 | 69,044 | 2.18 | 1,503 | 47,160 | 2.02 | 954 | 19,610 | 2.54 | 498 | 36,334 | 2.24 | 814 | 38,740 | 2.35 | 910 |
| **Totals** | **259,767** | **2.03** | **780** | **255,132** | **2.07** | **777** | **246,861** | **2.00** | **603** | **268,201** | **2.27** | **712** | **232,224** | **2.04** | **549** | **244,939** | **2.04** | **768** |
| | Compare with Resource | | | 98% | 102% | 100% | 95% | 99% | 77% | 103% | 112% | 91% | 89% | 100% | 70% | 94% | 101% | 98% |
| | | | | Compare with STBM | | | 97% | 96% | 78% | 105% | 109% | 92% | 91% | 98% | 71% | 96% | 98% | 99% |
| | | | | | | | Compare with Broken | | | 109% | 113% | 118% | 94% | 102% | 91% | 99% | 102% | 127% |
| | | | | | | | | | | Compare with Forecast | | | 87% | 90% | 77% | 91% | 90% | 108% |
| | | | | | | | | | | | | | Compare with Plant | | | 105% | 100% | 140% |

Table 3-14. Zinkgruvan 2025 Reconciliation chart-Copper.

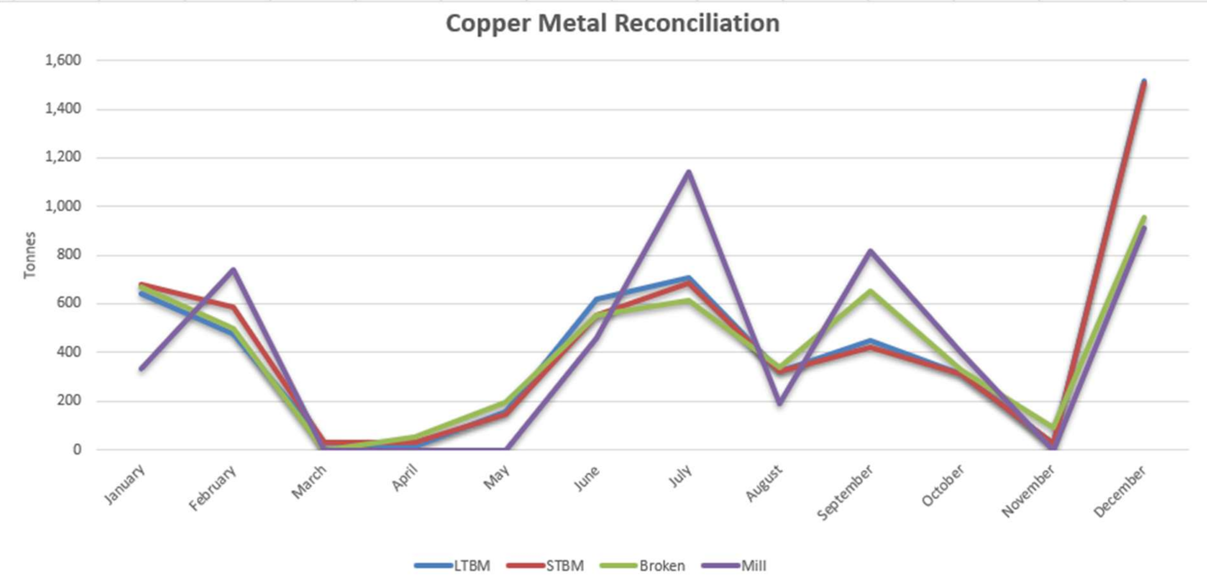


Figure 3-36. Copper metal Reconciliation

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# 5 Appendix 1

## 5.1 History summary

| | |
|---|---|
| 1857 | The Belgian company Vieille Montagne starts the mining operation in Zinkgruvan. |
| 1995 | Zinkgruvan Mining AB is formed and sold to the Australian company North Ltd. |

| | |
|---|---|
| 2000 | North Ltd is incorporated into Rio Tinto. |
| 2004 | Zinkgruvan Mining is acquired by Canadian-based company Lundin Mining. |
| 2010 | A ramp is built from the surface down to the 350-meter level, and copper mining begins. |
| 2020 | Zinkgruvan is the first mine in Sweden to install its own 4G net above and below ground. |
| 2024 | The mine reaches a depth of 1400m. |
| 2025 | Zinkgruvan Mining is acquired by Boliden Mineral AB |