

Boliden Summary Report

Resources and Reserves | 2023

Kristineberg Mine



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1 SUMMARY

This annual summary report concerns Boliden’s wholly owned Kristineberg mine (Sweden) and is a summary of underlying technical reports which have been prepared in accordance with the guidelines set out in the Pan-European Reserves and Resources Reporting Committee (PERC) “PERC Reporting Standard 2021”. The report is updated and issued annually to provide the public (stakeholders, shareholders, potential investors, and their advisers) with:

- An overview of the Kristineberg mine and Boliden Area Operations; and
- Mineral Resource and Mineral Reserve statements for the mine and an overview of methods used to estimate these.

A summary of Mineral Reserves and additional Mineral Resources is presented in Table 1.

The effective date of this report is 31 December 2023.

Table 1: Mineral Reserves and additional Mineral Resources from the Kristineberg Mine 31-12-2023 and comparison against previously reported tonnes and grades.

Classification	2023						2022					
	kt	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)	Pb (%)	kt	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)	Pb (%)
Mineral Reserves												
Proved	560	0.34	67	0.78	3.9	0.4	360	0.50	30	0.49	4.4	0.3
Probable	4 800	0.26	69	0.80	4.7	0.5	4 200	0.30	75	0.80	5.4	0.6
<i>Total</i>	5 400	<i>0.27</i>	<i>69</i>	<i>0.79</i>	<i>4.6</i>	<i>0.5</i>	<i>4 500</i>	<i>0.32</i>	<i>72</i>	<i>0.79</i>	<i>5.4</i>	<i>0.6</i>
Mineral Resources												
Measured	370	0.25	37	0.38	3.1	0.2	660	0.40	38	0.73	2.7	0.2
Indicated	6 300	0.43	66	0.63	2.8	0.4	6 700	0.40	58	0.64	3.1	0.4
<i>Total M&I</i>	6 700	<i>0.42</i>	<i>64</i>	<i>0.61</i>	<i>2.9</i>	<i>0.4</i>	<i>7 400</i>	<i>0.40</i>	<i>56</i>	<i>0.65</i>	<i>3.0</i>	<i>0.3</i>
Inferred	6 100	0.39	43	0.74	2.7	0.3	5 900	0.30	49	0.80	2.6	0.3

Notes on Mineral Resource and Mineral Reserve statement.

- *Mineral Resources are reported exclusive of Mineral Reserves.*
- *Mineral Resource and Mineral Reserves is a summary of Resource estimations and studies made over time and adjusted to December 31 2023 terms.*
- *Mineral Resource are reported with dilution.*
- *General reasonable prospects for economic evaluation were defined using Deswik.S0 software.*
- *Mineral Reserves are reported from the parts of the block model which fall within mining design volumes (Life of Mine Plan, LoMP).*
- *Applied cut-off for Mineral Resources and Mineral Reserves depends on selected mining method.*
- *Existing tailings capacity is sufficient to include material from the LoMP up to and including 2029. Studies are on-going to find suitable solutions for material from the remaining years of production and a reasonable capital provision has been made to support this.*
- *Tonnes and grades are rounded which may result in apparent summation differences between tonnes, grade and contained metal content.*

1.1 Competence

The contributors and Competent Persons responsible for the preparation of this report are presented in Table 2 below.

Table 2: Contributors and responsible competent persons for this report

Description	Contributors	Responsible CP
R&R Coordinator	Maria Tuomi / Erik Bjännndal	Johan Bradley
Geology	Erik Bjännndal / Helen Thomas / Pierre-Marie Machault	
Resource Estimation	Erik Bjännndal / Suzanna Falshaw	
Mineral Processing	Lisa Malm / Nils-Johan Bolin	
Mining & Reserve Estimation	Akos Csicssek / Markus Isaksson / Linda Bjurén	
Environmental, Social and Governance (ESG)	Viktoria Lindberg	Seth Mueller

2 GENERAL INTRODUCTION

2.1 Introduction

Boliden AB (“Boliden”) is a Swedish mining and smelting company focusing on production of copper, zinc, lead, gold, and silver. Boliden operates five mining areas and five smelters in Sweden, Norway, Finland, and Ireland. The company primarily processes zinc, copper, nickel, gold, lead, and silver and is engaged in exploration, mining, smelting, and metals recycling.

This annual report is issued to provide the public (stakeholders, potential investors, and their advisers) with an overview of Boliden’s Kristineberg mine, including the data and assumptions used to support the latest Mineral Resource and Mineral Reserve statements.

The annual report is a summary of internal technical reports, which provide a full evaluation of supporting information for the Mineral Reserves and additional Mineral Resources, having been prepared in accordance with the guidelines set out in the Pan-European Reserves and Resources Reporting Committee (PERC) “PERC Reporting Standard 2021”.

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

PERC is the organization 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.

2.3 Definitions

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

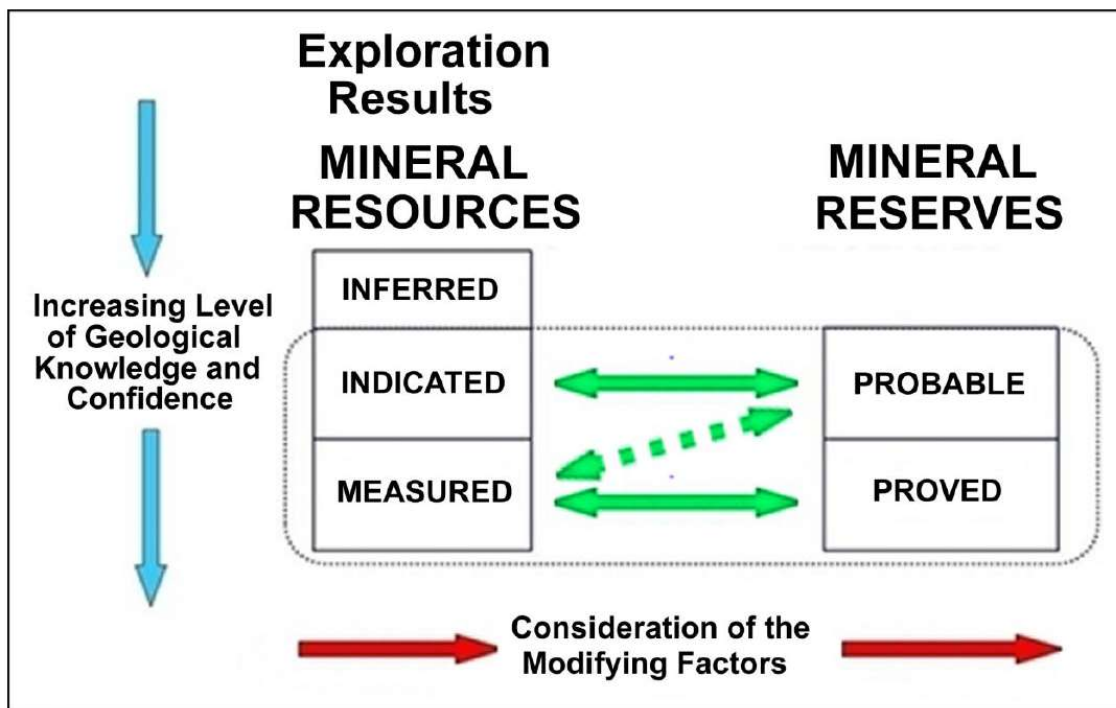


Figure 1. General relationship between Exploration Results, Mineral Resources and Mineral Reserves (PERC, 2021)

2.3.1 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.

2.3.2 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.

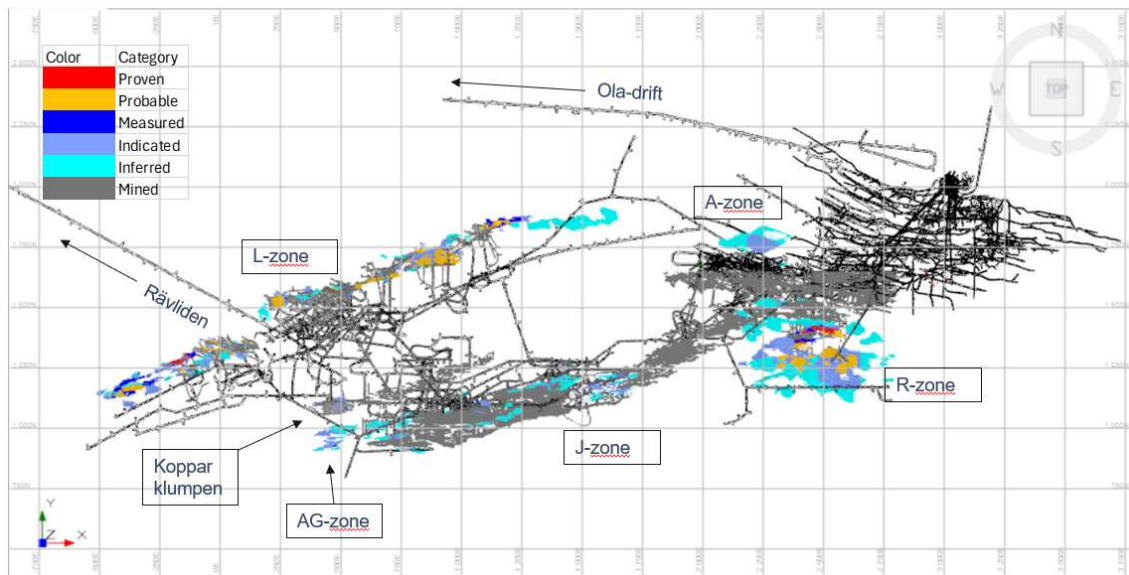
3 KRISTINEBERG

3.1 Project Outline

The Kristineberg mine is located 124 km west-northwest of Skellefteå in Västerbotten county, northern Sweden. Production commenced in 1940 and has continued uninterrupted to the present day, for a total of 33 Mt with an average grade of 1.2g/t Au, 38g/t Ag, 1% Cu and 3.8% Zn. Current production is predominantly from cut and fill underground methods between depths of 750m and 1350m, at a rate of 615 ktpa. Access to the mine is via a central shaft and ramp-drive system. The mine employs roughly 200 staff and an additional 50 contractors. Production during the reporting year was focused in mineralization zones L-Zone, Raimo, and Koppar Klumpen at various levels between 800m and 1350m.

Crushed ore from Kristineberg is currently trucked 92 km to the Boliden Area Operations Process Plant (BAOPP) for beneficiation by flotation, before further processing of concentrate to final product at the Rönnskär smelter (65 km). Subaqueous tailings deposition is at the Hötjärn facility west of BAOPP.

In the second quarter 2021, an investment decision was approved for construction of the Rävliiden project. This project envisages production from satellite deposits close to the Kristineberg mine, to be accessed via a 5km decline from the Kristineberg industrial area. The mineralization at Rävliiden is broadly of a similar character to Kristineberg although is amenable to long-hole stoping methods between depths of 300m to 1000m. Test mining has been carried out during 2023. Production ramp-up is due to commence in 2024 and extends the mine life at Kristineberg to 2033. The environmental permit for Rävliiden was approved in June 2022 (M 992-21), see also Section 3.6.1.2, 'Environmental Permits'.



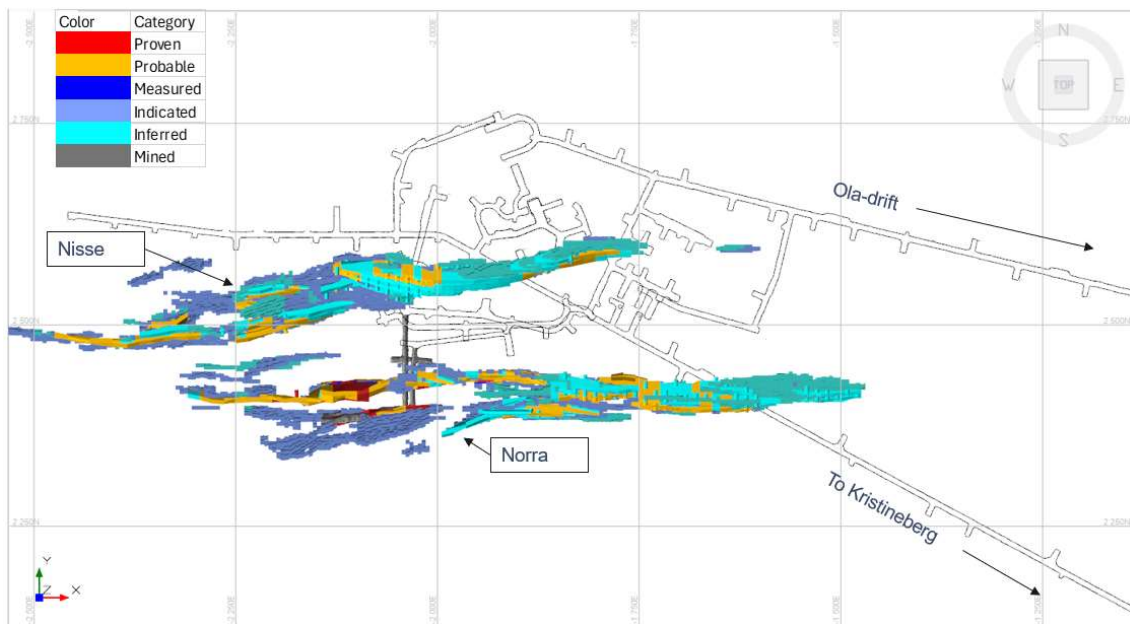


Figure 2: Plan view of the Kristineberg Mine (above) and Rävliiden satellite deposit (below) showing mine infrastructure, historical mined areas and location of Mineral Resources and Mineral Reserves. Images are at different scales, using local grid as reference.

3.2 Major changes

3.2.1 Technical studies

One major technical study has been completed for the Kristineberg mine during 2023. Details can be found in Table 3 below.

Table 3: Summary of major technical studies which have been completed at the Kristineberg Mine and Rävliiden during 2023

Study	Date Completed	Main Findings
LE MRE	June 2023	Added new resources from UGN infill drilling. New variograms for kriged estimations

3.3 Location

The Kristineberg mine is located 124 km west-northwest of Skellefteå in Västerbotten county, northern Sweden (Figure 3). The mine is centered on the following co-ordinates:

- WGS 84: N 65°3'53.7", E 18°33'48.0"
- SWEREF: N 7220415, E 667557



Figure 3: Kristineberg mine location overview (above) and with respect to local population centers & infrastructure (below). "Fastighetsbeteckningar" = property designation. Modified from <https://minkarta.lantmateriet.se/>

3.4 History

The Kristineberg mine is part of several volcanic exhalative massive sulphide (VHMS) deposits in the local area, sometimes referred to as the “Kristineberg Camp” of deposits, including Rävliiden, Rävliiden North (referred to in this report as “Rävliiden”), Rävliidenmyran, Hornträsksviken and Kimheden (Figure 4). These assets have been wholly owned by Boliden for their entire operating history. The status of these deposits is summarized below:

- Kristineberg: producing mine
- Rävliidenmyran: historic mine
- Rävliiden: historic mine
- Rävliiden North: satellite deposit currently under construction and forecast to commence production in 2024 (referred to in this report as “Rävliiden”)
- Hornträsk: historic mine
- Kimheden: historic mine

Figure 4 below illustrates the relative location of the Kristineberg Camp deposits.

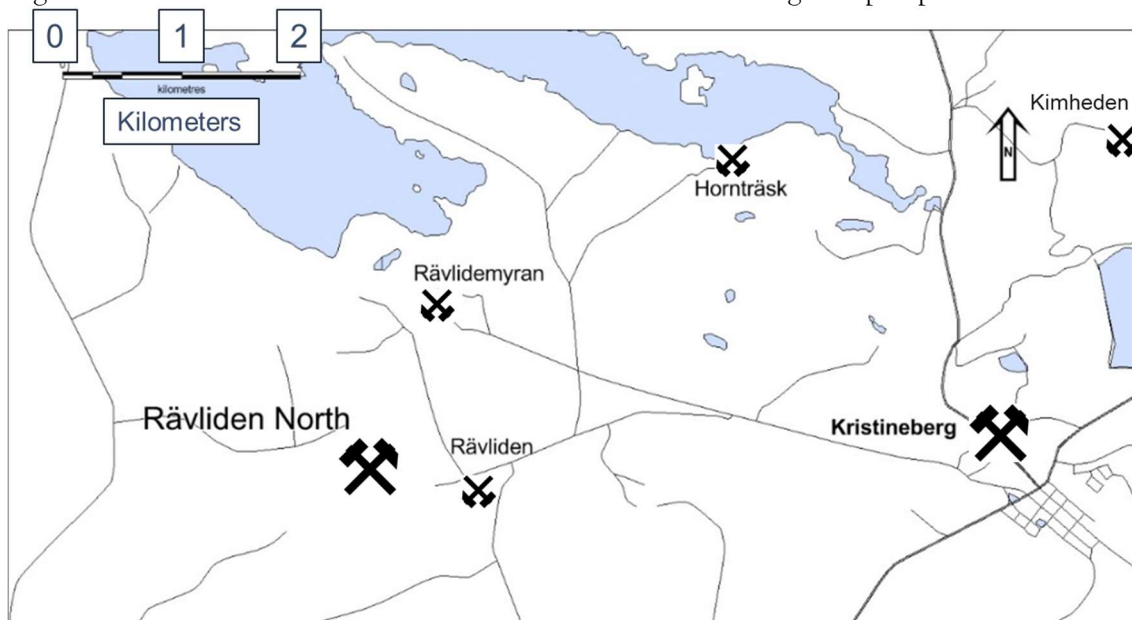


Figure 4: Location of Kristineberg Camp deposits, producing and past-producing mines.

Sub-cropping mineralization below glacial till was identified in 1918, following geophysical surveys and the discovery of sulphide-rich boulders. The Kristineberg mine operated initially as four small open pits prior to the development of underground infrastructure. Until 1991 there was a mill and concentrator on site. The tailings from the concentrator were deposited in five tailings facilities in the valley below the mine. All the tailings facilities, with the exception of Magazine 4, have been closed and reclaimed or are being reclaimed. Today Magazine 4 functions as a settling pond after water treatment with slaked lime.

The Rävliiden North deposit, which is currently under construction and due to commence production in 2024, is referred to in this report as “Rävliiden”, despite this deposit being spatially and geologically distinct from the historic Rävliiden mine (above). The historic Rävliiden mine is not discussed further in this report.

3.5 Ownership and Royalties

The Kristineberg Mine is wholly owned and operated by Boliden. Whilst Boliden also owns most of the land covered by the exploitation concessions, there are a number of private landowners in the area, given these concessions cover the majority of the village of Kristineberg in the east and land used for forestry in the west.

Production from the exploitation concessions at Kristineberg is subject to a standard royalty of 0.2% of the annual value of metal recovered after mineral processing. Calculation and other details of this royalty are governed by the Minerals Act. According to this law, the royalty payment is to be distributed at a rate of $\frac{3}{4}$ to the landowner and $\frac{1}{4}$ to the Swedish state. No additional royalties are applicable.

3.6 Environmental, Social and Governance (ESG)

3.6.1 Existing permits

Boliden Mineral AB is in possession of all required permits required to mine at the Kristineberg Mine, and the necessary land use designation from the Mining Inspectorate. Mining concessions and exploration permits are issued by the Mining Inspectorate of Sweden (Bergsstaten) which is part of the Geological Survey of Sweden (SGU). Summary details of these permits and concessions are presented below and can be found at <https://www.sgu.se/en/mining-inspectorate/>.

3.6.1.1 Exploration Permits & Exploitation Concessions

The Kristineberg mine is covered by 6 non-contiguous exploitation concessions which are immediately surrounded by 6 exploration permits. Summary details of these permits are presented in Table 4 below. All permits and concessions are wholly owned by Boliden, which grant the holder exclusive rights to explore and develop the mineral prospect above and below ground.

Table 4: Exploration Permit and Exploitation Concession Summary

Type	Exploitation Concession					
Name	Kristineberg K nr 1	Kristineberg K nr 2	Kristineberg K nr 3	Kristineberg K nr 4	Kristineberg K nr 5	Kristineberg K nr 6
Area (ha)	68.3	257.3	20.2	37.3	204.4	77.9
Valid from	1998-02-20	2000-01-01	2001-10-16	2001-10-01	2007-09-07	2018-10-16
Valid to	2033-02-20	2025-01-01	2026-10-16	2026-10-01	2032-09-07	2043-10-16
Municipality	Lycksele					
Type	Exploration Permit					
Name	Kristineberg nr 1022	Kristineberg nr 1023	Rävliiden nr 1006	Kristineberg nr 1012	Kristineberg nr 1013	Kristineberg nr 1014
License ID	2021:22	2021:28	2019:31	2010:157	2012:157	2013:17
Area (ha)	4307.1	1057.1	930.6	125.7	106.2	81.2
Valid from	2021-03-10	2021-04-21	2019-03-04	2010-10-26	2012-11-07	2013-01-24
Valid to	2024-03-10	2024-04-21	2023-03-04	2026-10-26	2023-11-07	2024-01-24
Municipality	Malå, Lycksele		Lycksele			

The overwhelming majority of the current LoMP is covered by the Exploitation Concessions detailed in Table 4. Notwithstanding this, part of the Raimo lens block model extends into the area covered by Kristineberg K nr 8 concession, which is currently in application. There are currently no known material issues with this application and it is reasonable to assume that the concession will be granted in due course.

3.6.1.2 Environmental Permits

The Kristineberg Mine has a valid environmental permit from the Swedish Environmental Court issued in 2014 with an amendment in 2018 and 2022, shown in Table 5. The Permit is valid for the life of mine under current operating conditions and production levels, any major changes in operations, increase in production or changes to discharge will require a new permit. The permit is in accordance with Swedish national environmental legislation and European Union mining regulations.

Table 5. Valid Environmental permits held by Boliden Mineral AB for the Kristineberg Mine

Owner	Permit	Date
Boliden Mineral AB	Umeå Tingsrätt M 1993-12 Deldom	2014-04-30
Boliden Mineral AB	Umeå Tingsrätt M 1993-12 Deldom	2018-02-09
Boliden Mineral AB	Umeå Tingsrätt M 1993-12 Deldom	2022-06-30
Boliden Mineral AB	Umeå Tingsrätt M 992-21 Deldom	2022-06-30

The Environmental permit for the Kristineberg Mine encompasses the following aspects:

- production rates for mineralized and waste rock,
- placement of waste rock, management of waste rock
- water management and water treatment,
- discharge water quality,
- noise and vibrations associated with blasting, transport and other operations,
- monitoring programs for dusting, noise, and water quality,
- dam safety and management,
- mine closure and rehabilitation,
- the economic security for mine closure and rehabilitation,
- chemicals and chemical management.

3.6.2 Necessary Permits

The capacity of the tailings management facility at BAOPP is sufficient to include material from the LoMP up to and including 2029. The final years of production are expected to exceed the existing tailings dam capacity. A feasibility study investigating tailings storage solutions for the remainder of the mine life is close to completion and is expected to provide support for an investment decision in Q1 2024. Whilst considerable uncertainty remains as to the viability of tailings storage beyond 2029, it is reasonable at this stage to assume that a solution can be implemented in a timely manner.

3.6.3 Environmental, Social and Governance considerations

3.6.3.1 ESG Commitments

Our business model set 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
- ISO 9001, 45001, 14001 and 50001 standards and Forest Stewardship Council (FSC® COC-000122)
- 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, training, 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.

3.6.3.2 Socio-economic impact

In the overview plan for Lycksele municipality from 2006 the Skellefteå district-Kristineberg area is named as an important area for the development of industry. The mining industry is described as very meaningful to the economy with the creation of direct and indirect jobs and the effects on other businesses.

The overview plan emphasizes measures that important industry in the area must be promoted as they are important for the municipalities development. The mining industry is described as being able to provide positive development in the region over the coming 30-40 years if mining occurs. A mining operation has large synergy effects within trade, maintenance and transport.

The expansion project at Rävliiden is in good agreement with the municipalities overview plan and is necessary for the continuation of the Kristineberg Mine. The mine is also a very important employer within Malå and Lycksele municipalities.

3.6.3.3 Communities and landowners

The mine is located on the property designated Kristineberg 1:215 and is wholly owned by Boliden. The Kristineberg Mine is located directly next to the Kristineberg community. The area, including the existing mine and associated infrastructure, are designated as an area of national interest for mining. Vormbäcken is the recipient of discharge water from Kristineberg Mine's operations and is a tributary to Vindel River, which is a nationally protected river and classed as a Nature 2000 area. The Malå, Gran and Svaipa Sami villages have reindeer migration routes of national interest through the area, as per EIA (MKB, 2021), attachment C. There are no other national interest areas or protected areas.

The Kristineberg Mine has been in operation since 1940. The mine operated as 4 smaller open pits prior to the development of underground infrastructure. Until 1991 there was a mill and concentrator on site. The tailings from the concentrator were deposited in five tailings facilities in the valley below the mine. All of the tailings facilities, with the exception of Magazine 4, have been closed and reclaimed or are being reclaimed. Today Magazine 4 functions as a settling pond after water treatment with slaked lime. A small quantity of waste rock is temporarily stored in the footprint of Magazine 2, this rock will be used as fill under the life of the mine.

Land usage in the area around the Kristineberg Mine is predominately forestry and reindeer herding and grazing. Hunting, fishing and other outdoor activities also take place here. Boliden maintains good working relationships with the Sámi people and forestry companies.

The nearest inhabited area is the Kristineberg community, with houses located approximately 200 m from the industrial area. There are approximately 195 residents in Kristineberg. There are also a few small villages and single homes located approximately 2 km from the industrial area.

For the Rävliiden project, a delimitation consultation was undertaken with the county environmental board (the regulator), and individuals who are assumed to be affected by the mine, as well as other national regulators, the municipality and the general public under April and May of 2020.

The general public was informed of the consultation via advertisement in the local newspapers and on the company's website. An additional consultation was held April 28th, 2020 via Skype. There has not been an in person consultation with the general public due to the continued restrictions associated with the spread of the Covid-19 virus. The advertisements were published the 2nd of May, 2020 in the newspaper Norran. All of the views received have been addressed in the work completed for the permit application and associated background information.

3.6.3.4 Indigenous People

The Kristineberg Mine is located within the Sami villages Måla and Grans total reindeer grazing area. Svaipa Sami village has reindeer migration routes that pass through the area. The current condition of Reindeer husbandry, the impact of the industry and the effects and consequences associated with the mining operation are described in a reindeer husbandry

analysis which was developed in consultation with the Sami villages as part of the EIA (MKB, 2021).

3.6.3.5 Historical legacy

There are a number of closed mines in the area, including the Rävliiden field, and Kimheden that were closed over 15 years ago (see also Section 3.4, 'History'). Only complementary closure and rehabilitation measures are ongoing.

3.7 Geology

3.7.1 Regional

The Kristineberg Camp is located on the western extent of the Skellefte district. The Skellefte district is a Paleoproterozoic (1.89 Ga) volcanic sedimentary area located in Västerbotten, northern Sweden. The area stretches roughly 100 km from the village of Kristineberg in the west to the village of Boliden in the east. The Skellefte district hosts more than 85 VHMS deposits, of which 26 have been, or are currently hosting mining operations.

The VHMS deposits of the area are mostly hosted in the upper parts of a volcanic sequence of intermediate to felsic juvenile volcanoclastic rocks, sub volcanic intrusions and lavas. These rocks together form the Skellefte group, which in turn is the lowest stratigraphic sequence in the Skellefte district. (Allen, Weihed, & Svenson, 1996).

The rocks of the Skellefte group in turn are overlain by the Vargfors group, a unit of shales, turbiditic clastic sedimentary rocks and conglomerates. There are local intercalations of volcanic rocks and rare occurrences of limestone.

The Skellefte District is bordered by syn-volcanic granitoids to the north and south. Peak metamorphism is interpreted to have occurred at ~1.84-1.82 Ga and reached upper green schist facies, and amphibolite isograds at the margins to the west and south. (Allen et al., 1996).

3.7.2 Local and property

Mineralization of the Kristineberg Camp are considered examples of VHMS.

Mineralized bodies are situated on separate stratigraphic horizons that relate to differing ages and mineralization events. The economically important Kristineberg Mine as well as the Kimheden are located on the "Kristineberg Horizon". The Rävliiden deposits are located on the "Rävliiden Horizon" together with the historic Rävliiden mine and Rävliidmyran mineralization (Lindberg, 1979). The Rävliiden horizon is hypothesized to be representative of a distinct stratigraphic and chemostratigraphic shift in the lithology where replacement deposits have been emplaced, whereas the Kristineberg Horizon is assumed to be representative of more primary mineralization emplacement following a more traditional VHMS formation model (Jansson & Fjellerad Persson, 2014).

Both Rävliiden and Kristineberg are located within "local" antiformal structures. Rävliiden consists of two major first order antiforms and an intervening synform, or major shear zone (Jansson & Fjellerad Persson, 2014). Kristineberg mineralization is located within multiple

layers of stacked “lenses” of intensely chlorite altered schists which have been accumulated by thrusting and associated crustal shortening in a NNE-SSW direction (Hermansson, 2012).

3.7.3 Mineralization

3.7.3.1 Kristineberg

Table 6 below presents a summary of mineralized lenses at Kristineberg, along with their deposit type, host rock, dominant metals of economic interest and current production status. See also Figure 5 below.

Table 6. Summary table of mineralization that are currently and have been present within the Kristineberg Mine

Mineralization	Type	Host Rock	Metals	Status
A-Zone	VHMS	Chlorite Schist	Cu-Zn-Au	Historic
B-Zone	VHMS	Chlorite Schist	Cu-Au	Historic
E-Zone	VHMS	Quartzites	Au-Cu	Historic
J-Zone	VHMS	Chlorite Schist	Zn-Cu-Au	Historic
K-Zone	VHMS	Chlorite Schist	Zn	Historic
M-Zone	VHMS	Chlorite Schist	Zn-Cu	Historic
L-Zone	VHMS	Chlorite Schist	Zn-Cu-Au	Producing
Koppar Klumpen	VHMS	Chlorite Schist	Zn-Cu	Producing
Raimo	VHMS	Chlorite Schist	Zn-Cu	Producing
Ag-Zone	Remobilized	Quartzites	Ag-Pb	Mineral Resource

Mineralization at Kristineberg is typically hosted in steeply-gently dipping chlorite schist lenses, with a gentle plunge towards the southwest. These can be broadly split into chlorite schist hosted and Ag-Pb “remobilized” mineralization. Chlorite schist hosted mineralization generally contains sulphide mineralization that is semi-massive to massive in nature with variable abundances of economically important minerals: chalcopyrite (CuFeS₂), sphalerite ((Zn, Fe)S) and galena (PbS), with minor silver and gold. The schists themselves contain variable amounts of muscovite, quartz, chlorite, phlogopite, biotite, cordierite, andalusite, pyrite and magnetite. The chlorite schists appear as lenses within colloquially named “quartzites” which are hypothesized to be highly altered rhyolitic to dacitic rocks (Barrett & MacLean, 2000). Chlorite, cordierite, sericite and andalusite as well as quartz, overprint the original rock textures making primary rock identification difficult.

The “remobilized” Ag-Pb type is hosted within silicified cordierite and chlorite quartzites. Five silver bearing minerals are present within the Ag-Zone; freibergite ((Ag,Cu,Fe)₁₂(Sb,As)₄S₁₃) being dominant with minor amounts of hessite (Ag₂Te) often present. High silver grades are often present in narrow zones associated with galena veins or fracture fillings.

3.7.3.2 Rävliiden

Rävliiden constitutes a sub-vertical to steeply south-dipping, 5m to 25m wide and 150 m high mineralised lens, or system of lenses, with a length extent of at least 900 m along plunge (Jansson & Fjellerad Persson, 2014). Mineralization types can be split broadly into two categories: massive to semi-massive sphalerite-dominated mineralization and breccia-type Cu>Zn mineralization.

Sphalerite-dominated mineralization is most commonly associated with tremolite skarns, talc schists, chlorite schists and dolomitic marble. The massive sphalerite mineralization locally carries porphyroblasts of pyrite. Furthermore, it has been observed to be accompanied by zones of massive pyrrhotite mineralization. Locally, the pyrite porphyroblasts are gathered in bands, giving the mineralization a crudely banded appearance.

Sulphide-bearing stringers, veins and breccias are present stratigraphically and structurally below the sphalerite mineralization. Large parts of these zones are dominated by pyrrhotite and pyrite, and only carry traces of sphalerite and chalcopyrite. A 10m to 30m wide part of this zone proximal to, and stratigraphically directly below, the main sulphide lens carries substantially elevated contents of chalcopyrite in association with minor idiomorphic arsenopyrite crystals and sphalerite. Grades are in the range of 2-3 % Cu over several meters, and network-style breccias are a common texture.

Lithologically, these zones are predominantly associated with strongly to intensely silicified footwall rhyolite (in which the sulphides are hosted by hydraulic breccias) and strongly to intensely chlorite-altered (dark green) footwall rhyolite. In schistose parts of the latter, the sulphides form a subtle (compared with the veins) but strong impregnation. In contrast, the more common quartz-sericite-altered footwall rhyolite appears to be less endowed in metals, even though it commonly carries minute crystals of pyrite.

Even though the deposits of Rävliiden and Rävliidmyran appear to be bound to a certain stratigraphic interval, no universal stratigraphic marker horizon for this given interval has been recognized. Consequently, it is to a large extent identified based on alteration patterns as primary textures are rarely preserved. (Jansson & Fjellerad Persson, 2014).

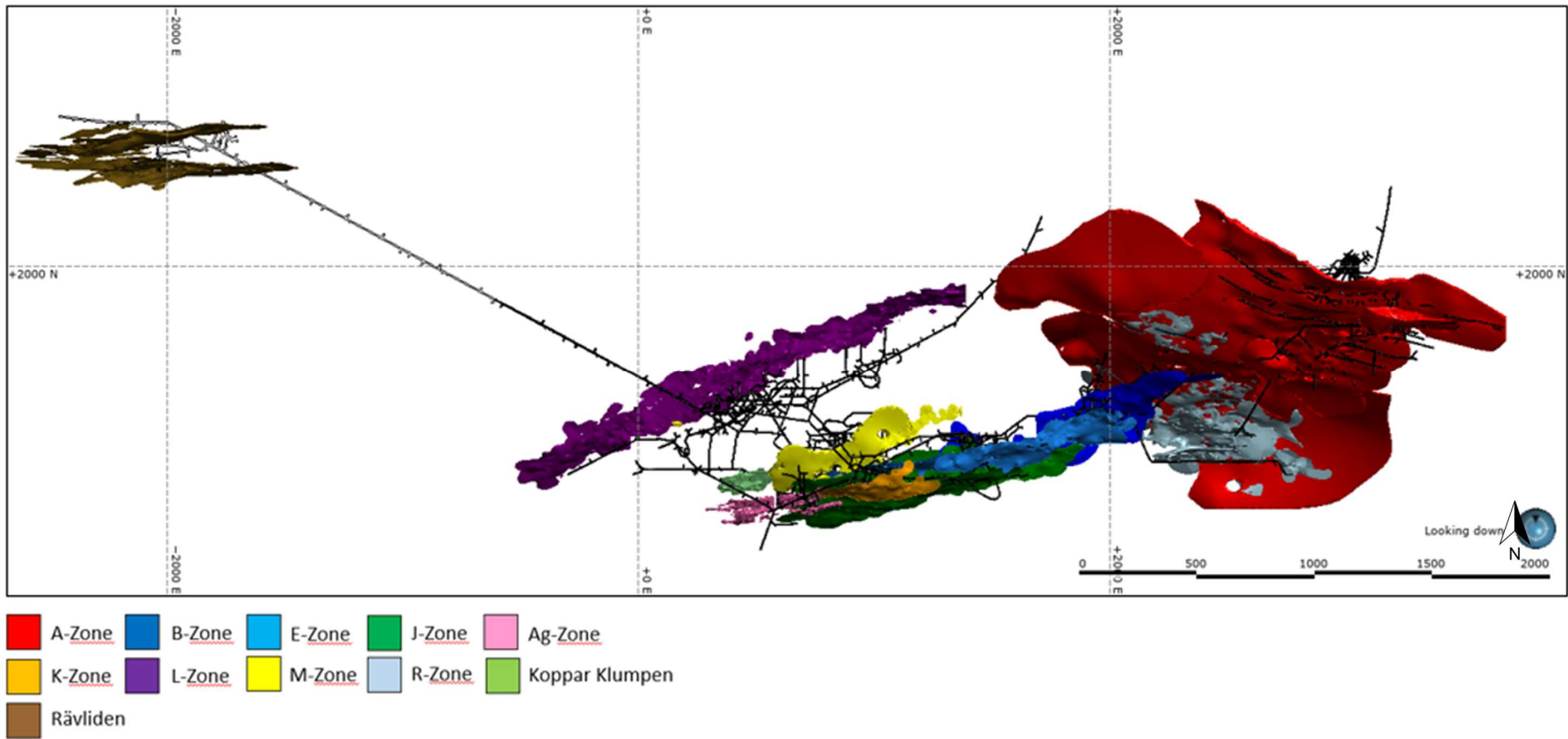


Figure 5. Plan view of the geological model and underground mine infrastructure at Kristineberg mine and Rävliiden. Co-ordinates in local grid.

3.8 Exploration procedures and data

3.8.1 Introduction

The present orebody has no surface expression and has been explored entirely by drilling, at first from the surface but predominantly by underground drilling as described below. There is no other sampling of in-situ rock.

3.8.2 Drilling techniques

Exploration & delineation drilling: Planned and executed by the Near Mine and Field exploration groups, the purpose of these programs is target identification, definition and delineation.

Infill drilling: Planned and executed by the mine geology and planning group. Underground infill drilling is carried out within the existing define mineralized zones to further define mineralized contacts ahead of production.

Drilling (both groups) is undertaken by Boliden owned and operated rigs, as well as contractors. Rigs used during the year include Atlas Copco model Diamec PHC 4, PHC 6 and PHC 8, adapted to drill a 39mm drill core from a wireline 56 system and NQ system. A DDE 6.5 rig is also in use drilling with the NQ-system. In addition, infill drilling also uses 2 Atlas Copco rigs of model Diamec PHC 4, adapted to drill 28 mm drill core from a wireline 46 system.

Core is retrieved using a typical wireline and overshot system on the core barrel. When the core is retrieved by the driller, the core is placed carefully into a core box and labelled according to depth. Each run is marked by a core block with its corresponding depth written onto the block. Core boxes are transported to the Kristineberg Mine core shed facilities for logging by a geologist.

3.8.3 Downhole surveying

Downhole surveying is carried out using a DeviGyro or gyroscopic deviation tool or a combined deviation and downhole electromagnetic sonde (BHEM). The BHEM tool utilizes a non-magnetic accelerometer and gyroscopic instrument for deviation measurements.

Once the measurements are completed, the data is sent to Boliden's Geodata department, which validates the data and inputs this into the database. The project responsible geologist verifies the survey measurements.

3.8.4 Sampling

Apart from drilling, there are no other samples routinely taken of in-situ rock. Selection of samples from drilling for assaying is as follows. Exploration holes are sampled as half-cores, where core is split length-ways by diamond saw and one half is sent for assaying. The other half is stored for reference. From the mines infill drilling, of those intersections that are sampled, the whole core is submitted as samples. Un-sampled core is stored for a short period of time, after which it is discarded.

3.8.5 Logging

Drill core is logged at the Kristineberg mine site or at the logging facility in Boliden. Logging data is captured in WellCAD™ software and data is uploaded to an acQuire™ database.

Samples are labeled and entered into the database during core logging. All core is photographed, and the photos made available online to Boliden staff.

3.8.6 Density

Densities are estimated using the regression formulae below:

$$\text{Density} = 2.7 + 0.0043 \cdot \text{Cu} + 0.004 \cdot \text{Zn} + 0.02 \cdot \text{Pb} + 0.027 \cdot \text{As} + 0.0375 \cdot \text{S}$$

Regular specific gravity measurements are undertaken by the assaying laboratory during the year and continue to demonstrate good correlation with estimated densities based on the regression formulae above.

3.8.7 Analysis and QAQC

All samples from the Kristineberg mine are sent to MS Analytical (MSA) in Stensele, Sweden for preparation using PRP910. The prepared samples (pulps) are then sent to MSA laboratory in Langley, Canada for analysis. The laboratory is accredited by the International Accreditation Service under ISO 17025:2017, and as of July 2nd 2021 is accredited for ICP-140. Analysis packages used are presented in Table 7. Over-range assay methods are not detailed in this report.

Table 7. Analysis packages used at Kristineberg.

	Prep	Cu	Zn	Pb	Ag	As	Au	S
MSA Analysis Package	PRP910	ICP140	ICP140	ICP140	ICP140	ICP140	FAS214	S-SPM210

Internal measures are taken within Boliden to ensure that tampering of core and other samples does not occur. In addition, internal procedures are in place to prevent contamination and spoiling of samples prior to packaging and shipping to preparation and analysis laboratories in order to preserve sample integrity.

All teams use the same QA/QC program which consists of a combination of in-house and international standards. All standards used are certified reference materials having been analyzed by round-robin at various external accredited laboratories. Blank samples are also used, as well as repeat duplicate samples completed internally by the laboratory. Pulp duplicates are also sent to umpire laboratories for external verification. The number of QAQC samples per batch depends on the number of samples in each batch, see Table 8 for the standard workflow. Actual insertion rates vary but in general correspond well to this standard workflow.

Table 8: The insertion ratio of QAQC samples per sample batch.

No. of Primary Samples	QA/QC Samples Used	Blank Frequency	Standard Frequency	Check Assay Frequency	Core Duplicate Frequency
< 15	1 blank + 1 standard	5%	5%	0%	0%
16 – 50	1 blank + 2 standard + 1 pulp duplicate	2%	2%	2%	0%
51 – 75	2 blanks + 2 standards + 1 pulp duplicate	2.5%	2.5%	1%	0%
76 – 100	3 blanks + 3 standards + 1 pulp duplicate	3%	3%	1%	0%
100 samples	3 blanks + 3 standards + 1 pulp duplicate + 1 core duplicate	3%	3%	1%	1%

Assay results are verified by the geologist against geology logs and core photos, and any suspect results are sent back to the laboratory for re-analysis. Assay results are also validated when they are uploaded into the database and accepted by the geologist.

3.9 Exploration activities and infill drilling

In Kristineberg, exploration drilling took place in the O-Zone, A-Lens and parts of the R-Zone. Infill drilling focused on delineation of ore lenses in R-Zone and L-East.

In Rävliiden, a major focus during 2023 has been to drill the Norra and Nisse lenses to Indicated resources (approximately 40 x 50 m drill spacing). Drifting of the Nisse West continued in 2023 to access new drill sites with a view to upgrading the upper parts of the Nisse lens. In addition, drifting at Norra both towards the new Ola-ramp and the test mining area was also carried out.

3.10 Mining methods, mineral processing and infrastructure

3.10.1 Mining methods

Cut and fill mining and drift and fill mining methods are the predominant production methods at Kristineberg. Generally, levels wider than 10m are mined with drift and fill mining. Both cut and fill and drift and fill are bottom-up mining methods, since the lowermost level is mined first, then backfilled either with hydraulic fill (HF) or with cemented hydraulic fill (CHF) depending on the fill requirements. In all cases, waste rock from development headings is transported to the mined-out level prior to HF/ CHF, to achieve better stability in the levels above and to avoid transporting waste rock to surface. In levels with widths between 6-10m, slashing is used to mine any remaining mineralized material on the walls of the mining room. In the uppermost slices, residual mining is also practiced to mine the sill pillars.

If the geological and rock mechanical conditions allow, then mineralised bodies are mined with the so-called “Rill” mining method. In Rill mining, a variation of long-hole stoping, the mined stope is continuously backfilled with un-cemented rock fill to stabilize the unsupported walls of the stope. The stope height is usually 10-12 m between the roof of the underdrift to the bottom of the drift above.

The planned mining methods for the Rävliiden mineralization are a combination of in-ore along strike development (13%), and longitudinal (55%) and transversal long-hole stoping (25%). Approximately 7% of the mineralization is designed as sill pillars.

Transversal long-hole stoping applies a primary and secondary stoping sequence. Stope heights for both methods is 25 m and stope length for primary transversal stopes is 10 meters and 15 meters for secondary transversal stopes. The stope length for longitudinal stopes is 15 meters. Stope width is dictated by ore thickness, with a minimum stope width of 4 meters applied for longitudinal stopes and a transition to transversal stopes when ore thickness exceeds 15 meters.

Sill pillars are designed with a height of 20 meters and are to be mined in 15 meters long sections. In areas where ore occurs in parallel lenses the distance between the sill pillar and parallel ore lens is at least 15 meters.

3.10.2 Mineral Processing

The process used for treating run of mine ore (ROM) from Kristineberg is well established. Ore is delivered by truck (50 tonne payload) weighed by weighbridge and either delivered directly into the plant or stockpiled separately from ore from the other Boliden Area Operations (BAO) mines.

Ore from the different mines is processed in campaigns. The feed tonnage to the processing plant is determined using a weighing system with a stationary belt scale. Feed tonnage and weights from the weigh-bridge are used to determine current tonnage on the stockpiles.

As shown in Figure 6 below, there are two stages of grinding. The primary mill is a fully autogenous mill and the secondary mill is a pebble mill fed with pebbles extracted from the primary mill. The ground ore is classified using screens and hydro-cyclones. Typical mill throughput varies between 80 to 140 tonnes per hour (tph), depending on ore type, but is usually around 140 tph for Kristineberg and between 90-120 tph for Rävliiden, given results of testwork to date. Ground ore is classified using screens and hydrocyclones.

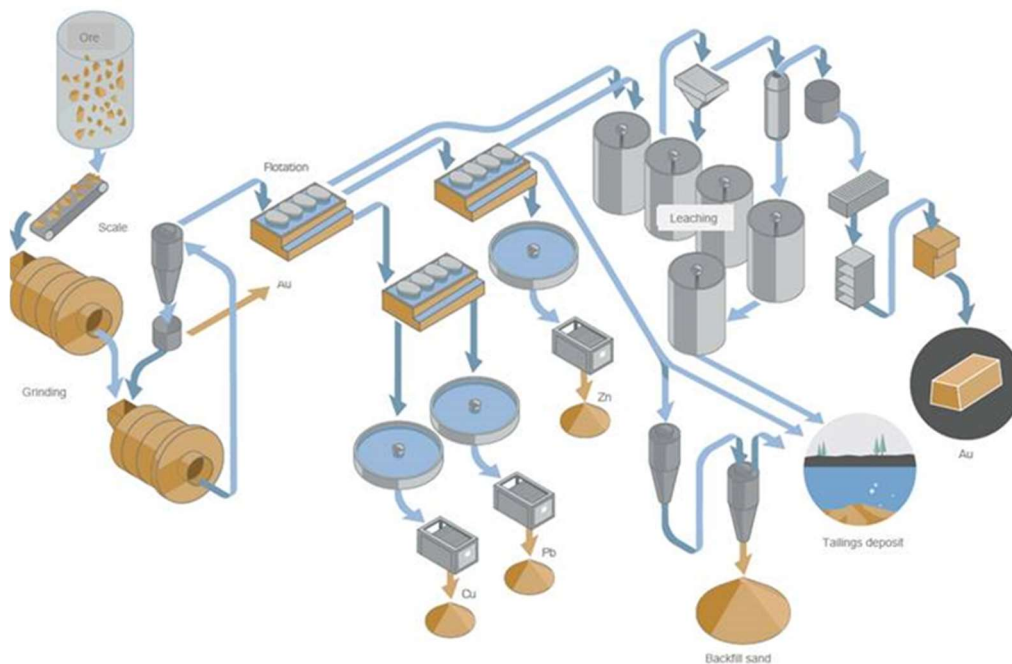


Figure 6: Simplified overview of the different stages of Kristineberg & Rävliiden ore processing at BAOPP

A gravimetric concentrate containing coarse grained gold bearing minerals is produced in the grinding circuit and a flash flotation cell is used to extract mainly copper minerals with high flotability. The gravimetric concentrate is packed in bags of about 800 kg and delivered to the Rönnskär smelter by truck.

Flotation is done in a three-stage process: copper-lead bulk flotation, copper-lead separation and zinc flotation producing three concentrate qualities, copper, lead and zinc. The mineral concentrates are dewatered using thickeners and vertical plate pressure filters.

Concentrates are transported by truck to the Rönnskär smelter and port of Skelleftehamn. Lead and zinc concentrates are transported onwards to Boliden smelters in Norway and Finland or to external buyers.

Metallurgical accounting is used to determine the head grade of the ore, where a sum of products is calculated using:

1. daily composite samples of the main process streams; and
2. assays and tonnage for delivered products together with feed tonnage.

Average metallurgical recovery factors are presented in Table 8 below.

Table 9: Average metallurgical recoveries for the reporting year.

Product	Kristineberg	Rävliden*
Au	67.0	66.0
Ag	72.9	63.3
Cu	86.4	92.2
Zn	92.0	88.6
Pb	27.4	

**A total of 41kt were treated from test mining at Rävliden during the year. No lead concentrates were produced and as such, Pb recoveries are not available.*

The metallurgical performance of new lenses is tested where required, so that processing assumptions can be adjusted in order to support conversion of Mineral Resources to Mineral Reserves. These testwork are done in collaboration with exploration and mine geology groups. Typical testwork may include grindability, flotation, cyanidation leaching and other investigations when they are applicable and according to Boliden standard lab methods.

3.10.3 Infrastructure

Access into the Kristineberg Mine is gained either through the main access ramp, or by personnel hoist to from surface to 490 m level. Rävliden is currently accessed from the Kristineberg Mine (750m below surface) by a 3 km long drift starting in the central part of the L-Zone mineralization, locally named the “Rävliden Drift”.

Construction of a decline between Rävliden -779 level and the Kristineberg surface industrial area is on-going (locally known as the “Ola Ort”). On completion, this ramp will be 5.5 km long and facilitate the transport of personnel, consumables, ore and development waste.

From active production areas, trucks transport mineralized material through underground transport drifts to the underground crusher, located at 620m level. Transportation of the material to the surface is via a skip hoist, which has a capacity of 160tph. Run of mine ore is stockpiled on surface at the material handling station and subsequently trucked 95km to the BAOPP. Both underground and surface material handling is outsourced to contractors.

Waste rock is used for backfilling and preferentially kept underground. When production sequencing is required, this waste rock is hoisted or trucked to surface for temporary stockpiling.

Other infrastructure includes a backfill mixing station at 130m level, and surface facilities including offices, and meeting rooms as well as core logging and sampling sheds.

At the time of writing, the Ola ramp has 2.1 km of drift remaining before the connection between surface and deposit is established. The surface portal to the drift was finalized during 2023. Drifting is on schedule for completion during 2024. Primary ventilation is fully operational as of the first half of 2023.

Once the material is at surface it is stockpiled at the surface material handling station, where it is then trucked 95km to the BAOPP. The route from Boliden to Kristineberg is via an all-weather road, which presents little difficulties for transporting the mined material. Both underground and surface material handling is outsourced to contractors. Media supplied directly to operational areas including electricity, ventilation, water control etc. are all handled by the mine operations.

3.11 Prices, terms and costs

3.11.1 Metal prices

Boliden's planning prices, which are an expression of the anticipated future average prices for approximately 10 years, are presented in Table 10 below, along with foreign exchange rate assumptions.

Table 10. Long-term metal prices and currency exchange rates

Metal prices		LTP 2025->
Gold	USD/tr.oz	1 400
Silver	USD/tr.oz	20.0
Copper	USc/lb	354
Zinc	USc/lb	127
Lead	USc/lb	91

Currency exchange rates	LTP 2024->
USD/SEK	9.00

3.11.2 Costs and Cut-off

Table 11 below presents a high-level summary of costs, which define the basis for cut-off assumptions at Kristineberg and Rävliiden. Costs will vary according to the production method applied to a particular stope.

Table 11: Kristineberg cut-off cost summary.

	Cut-off type	SEK/t
Rävliiden	Cut-off 1	760
Kristineberg	Cut-off 1	595-760*
Rävliiden & Kristineberg	Cut-off 4	400

**Subject to mining method.*

Cut-off 1: Breakeven cost, which can be used as a guide for mine planning, Mineral Reserve and Resource estimation (see also Section 3.12 ‘Mineral Resources’ below). In practice, conversion to reserves entails assessment through a simplified cashflow model, where modifying factors specific to the lens (for example infrastructure, development, mining method and distance to crusher etc.) are applied to calculate a local breakeven cost. Material with NSR above this breakeven cost is sent to the mill.

Cut-off 4: Marginal cost. When material with an average NSR below Cut-off 1 and above 400 SEK/t must be mined to access higher-grade material, the marginal cut-off is applied, and this material trucked as ore. Rock below 400 SEK/t would be mined as waste and may be used within the mine as backfill.

NSR (Net Smelter Return) is a revenue evaluation calculated for each intersection (or model block) based on metal prices, costs of processing and smelting, and metallurgical recoveries. The NSR is effectively the value in Swedish Kronor (SEK) from the contribution of each contained product or by-product metal attributed to ore arriving at the process plant. Being a combined product value, it is used as a grade to describe tonnages in terms of SEK/t. The long-term NSR Factors for each metal are given below for Kristineberg and Rävliiden respectively:

$$\text{Kristineberg NSR}_{23\text{LTP}25} = 153 * \text{Au} + 2.45 * \text{Ag} + 519 * \text{Cu} + 166 * \text{Zn} + 47.8 * \text{Pb}$$

$$\text{Rävliiden NSR}_{23\text{LTP}25} = 76 * \text{Au} + 3.16 * \text{Ag} + 511 * \text{Cu} + 158 * \text{Zn} + 39.1 * \text{Pb}$$

3.11.3 Cut-off grades

The operational costs and NSR factors provided above together define the cut-off grade, which is expressed as a combined NSR value / tonne. The relative contribution of individual metals to this cut-off grade will vary according to ore body, but in general Zn, Cu and Au typically account for between 80% to 90% of revenue for any single block.

3.12 Mineral Resources

Mineral Resources estimates for Kristineberg and Rävliiden are prepared by Boliden's Ore Reserves and Project Evaluation group (UDV). Boliden's Ore Reserves and Project Evaluation group estimation follows the workflow outlined in Figure 7.

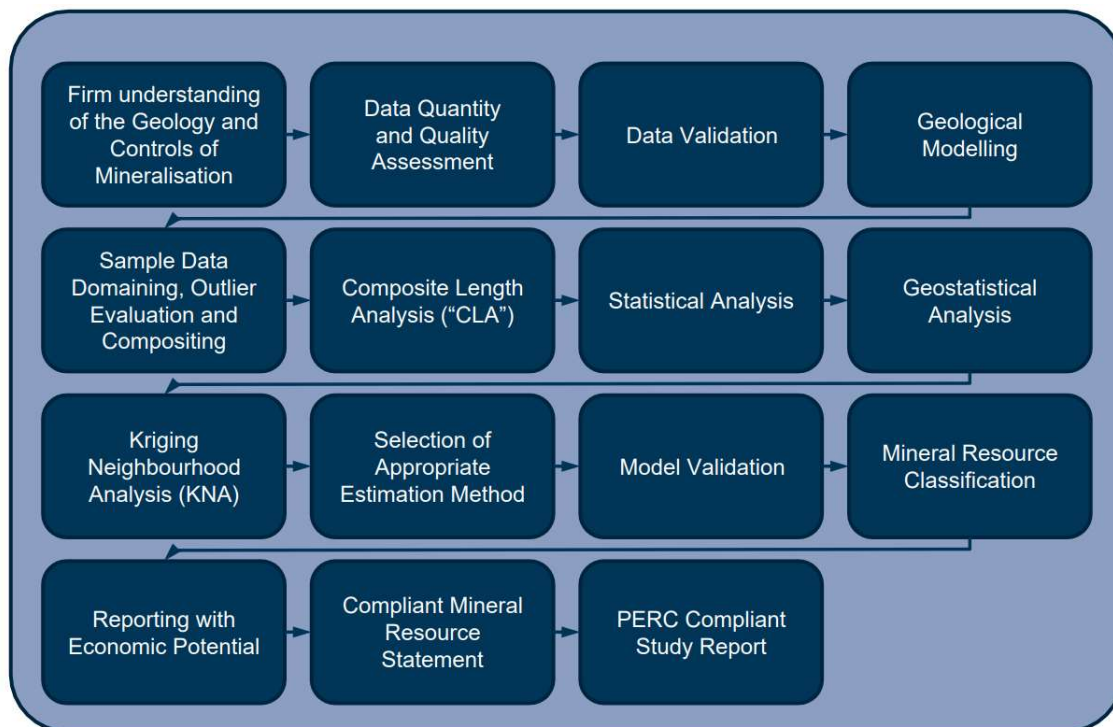


Figure 7: Ore Reserves and Project Evaluation group Mineral Resource estimation workflow.

Using the production model wireframes as a base mineral resource domaining is undertaken by UDV or Near-mine exploration group using Leapfrog, adding data provided by the Near-mine exploration group.

Exploratory data analysis is performed for the assay samples within the wireframed domains to determine that the data populations have been sufficiently delineated for a robust resource estimate. Outliers within the data that could cause an overestimation of the grades are identified using log-probability plots and histograms. Top-caps are applied to mitigate this issue, commonly only for Au and Ag.

The samples are then composited to 1m to 2.5m lengths (dominantly 2m), depending on the dominant sample lengths. The effect of using different composite lengths is also assessed through composite length analysis (CLA). The statistics of the composited samples are examined to check the effect of the compositing on the sample populations. The spatial continuity of the samples is assessed using geostatistical techniques including the variography in Snowden Supervisor and based on this assessment an estimation methodology is selected for the domain.

Estimation parameters used in interpolation of grade varies depending on the lens which is being estimated. Generally, estimates are carried out using Ordinary Kriging (OK) estimation

method. Inverse Distance Weighting (IDW) is still in use for historic mining areas and estimation into halos around the mineralization.

Leapfrog Edge is then used to draw a block model within the constructed wireframe. Blocks are set to the Smallest Mining Unit (SMU) in Kristineberg, which is typically 4m width, 5m length, and 6m height, in certain areas down to 2 m wide. In Rävliiden the block size is 10m long by 5m wide by 10 m height. To accurately represent the volume of the domains sub-blocking is done in both Kristineberg and Rävliiden.

Following the construction of the block model, Leapfrog Edge is then used to interpolate grades. Grades are interpolated for Au, Ag, Cu, Zn, Pb, S and As into the parent blocks. In all cases, variable orientation of the search ellipse is used to allow the interpolation to follow the geometry of the mineralization.

After interpolation, blocks are classified according to geological confidence into Mineral Resource categories. This is primarily achieved through the assignment of geological confidence, as well as confidence in the estimation. The classification is often related to drillhole spacing, with 100m x 100m is used as a guide for Inferred Mineral Resource and 40m x 40m for Indicated Mineral Resource. Measured Mineral Resources require 20m x 20m drilling and local mine mapping of the underlying slice to support the geological and grade continuity required for this level of confidence. Other factors such as local geological conditions and assay quality also play a role in classification, as well as the mineralization “Reasonable Prospects for Eventual Economic Extraction” (RPEEE).

These drill hole spacing guidelines are based upon Boliden’s history of mining massive sulphides in the Skellefte district.

Mineral Resources are reported following a stope optimization using an NSR of 600 SEK/tonne, corresponding to Cut-off 1 (Table 11). This represents costs for the cheapest mining method in use at Kristineberg, Avoca and/or upper on retreat, which together account for between 5 to 10% of annual production.

Simplified RPEEE parameters allow a volume to be defined which is realistic in terms of geometry and allows the mineralization to satisfy a minimum mining width in a manner that is not subjective. The optimization also considers surrounding block grades allowing dilution to be represented in the Mineral Resource. All cohesive classified blocks which fall inside the RPEEE stopes and above their respective cut-off are reported as a Mineral Resource.

Mineral Resource and Mineral Reserve statements for the period are presented in Table 1.

3.13 Mineral Reserves

Conversion of Mineral Resources to Reserves requires:

- development designs,
- determination of appropriate mining method,
- stope design,
- a high-level plan for ventilation and electricity, and
- a pre-feasibility level study demonstrating acceptable profitability.

Scheduling is carried out using both Deswik and GanttScheduler software.

Further adjustments are made where appropriate to account for waste rock dilution and ore losses, in addition to factors already included as part of the Mineral Resource estimates. For cut and fill, Avoca and uppers on retreat, a percentage waste rock dilution is applied using zero grades. For long-hole stoping in Rävliiden, a waste rock dilution skin of 0.5 m is applied to the stope, using grades from the block model, as presented in Table 12.

Table 12: Waste rock dilution and ore recovery factors by mining method

Mining method	Waste rock dilution	Ore losses	Grade of diluting waste
Cut and fill	15%	2%	Zero grade
Avoca / Uppers on retreat	20%	5%	Zero grade
Transversal long-hole stoping primary / secondary	15 %	22% / 0%	Grades from block model
Longitudinal long-hole stoping	15 %	0 %	Grades from block model

Figure 8 below provides a schematic illustration of the principles for reporting of Mineral Resource and Mineral Reserve at Kristineberg.

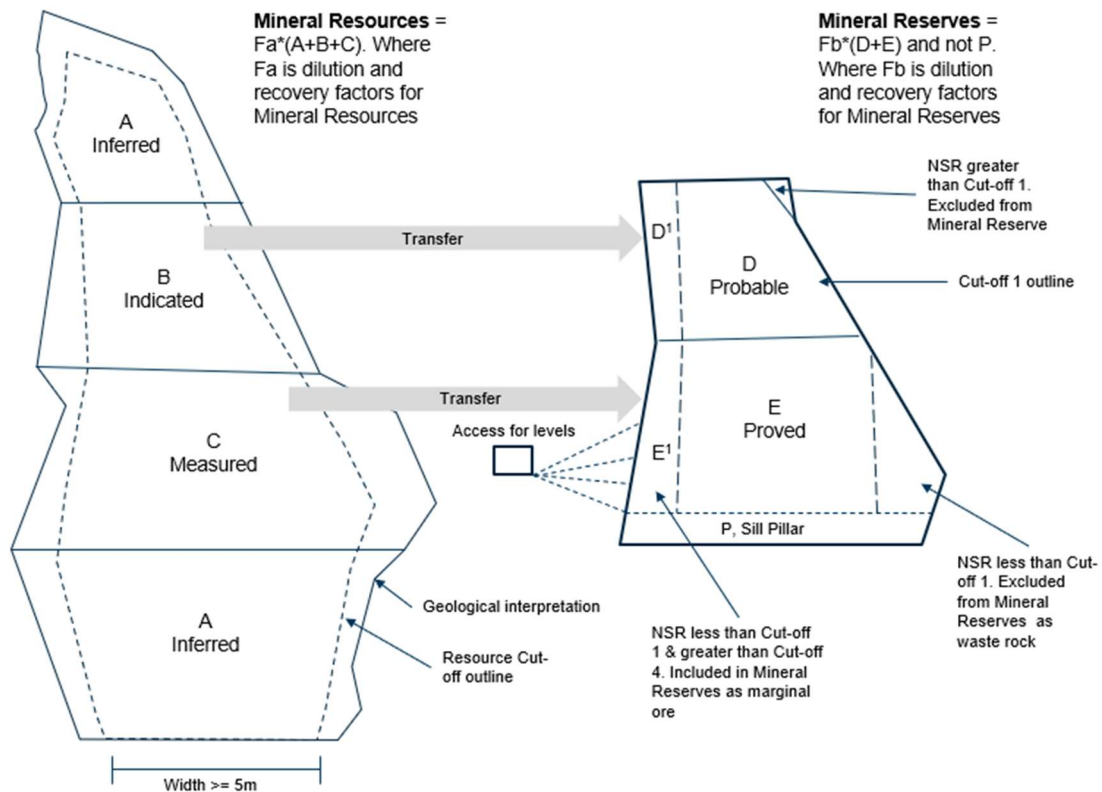


Figure 8: Schematic illustration of the principles for reporting of Mineral Resource and Mineral Reserve

The above sketch on the left side shows Mineral Resource volumes defined by an NSR of 600 SEK/t (the Mineral Resource cut-off). Mine planning transfers much of the Indicated

and Measured categories to Mineral Reserve volumes shown on the right. These are defined mainly by Cut-off 1, which is shown on the right as a dashed line. Mineral Reserves may also include marginal material (D¹ and E¹) which were previously classified as Mineral Resources, and which need to be mined to access higher grade material.

After LOMP planning, there may be small quantities of Mineral Resources with grade above Cut-off 1 that cannot be included in rooms to be mined. This is generally because to access these would require inclusion of low-grade material such that the average NSR value of the room would be less than Cut-off 1. Such material is illustrated in the sketch above as ‘NSR greater than Cut-off 1. Excluded from Mineral Reserve.’ This would not be transferred into Mineral Reserve and it would cease to be included in Mineral Resources.

Mineral Resource and Mineral Reserve statements for the period are presented in Table 1.

Table 13: Mineral Reserves and additional Mineral Resources from the Kristineberg Mine 31-12-2023 and comparison against previously reported tonnes and grades.

Classification	2023						2022					
	kt	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)	Pb (%)	kt	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)	Pb (%)
Mineral Reserves												
Proved	560	0.34	67	0.78	3.9	0.4	360	0.50	30	0.49	4.4	0.3
Probable	4 800	0.26	69	0.80	4.7	0.5	4 200	0.30	75	0.80	5.4	0.6
<i>Total</i>	5 400	<i>0.27</i>	<i>69</i>	<i>0.79</i>	<i>4.6</i>	<i>0.5</i>	<i>4 500</i>	<i>0.32</i>	<i>72</i>	<i>0.79</i>	<i>5.4</i>	<i>0.6</i>
Mineral Resources												
Measured	370	0.25	37	0.38	3.1	0.2	660	0.40	38	0.73	2.7	0.2
Indicated	6 300	0.43	66	0.63	2.8	0.4	6 700	0.40	58	0.64	3.1	0.4
<i>Total M&I</i>	6 700	<i>0.42</i>	<i>64</i>	<i>0.61</i>	<i>2.9</i>	<i>0.4</i>	<i>7 400</i>	<i>0.40</i>	<i>56</i>	<i>0.65</i>	<i>3.0</i>	<i>0.3</i>
Inferred	6 100	0.39	43	0.74	2.7	0.3	5 900	0.30	49	0.80	2.6	0.3

Notes on Mineral Resource and Mineral Reserve statement.

- *Mineral Resources are reported exclusive of Mineral Reserves.*
- *Mineral Resource and Mineral Reserves is a summary of Resource estimations and studies made over time and adjusted to December 31, 2023, terms.*
- *Mineral Resource are reported with dilution.*
- *General reasonable prospects for economic evaluation were defined using Deswik.SO software.*
- *Mineral Reserves are reported from the parts of the block model which fall within mining design volumes (Life of Mine Plan, LoMP).*
- *Applied cut-off for Mineral Resources and Mineral Reserves depends on selected mining method.*
- *Existing tailings capacity is sufficient to include material from the LoMP up to and including 2029. Studies are on-going to find suitable solutions for material from the remaining years of production and a reasonable capital provision has been made to support this.*
- *Tonnes and grades are rounded which may result in apparent summation differences between tonnes, grade and contained metal content.*

3.14 Comparison with previous year/estimation

Mineral Resources decreased by 400 kt from 13 202 kt to 12 801 kt, despite gain through exploration of 457 kt. Apart from a conversion to Mineral Reserves of 1 423 kt, the main decrease was due to 496 kt of Inferred material being written-off from L-zone due to inaccessibility. Due to higher NSR factors compared to the previous year, more material of lower grade fulfills the RPEEE criteria in Rävliiden, J-zone and R-zone, increasing the resources by 1 084 kt.

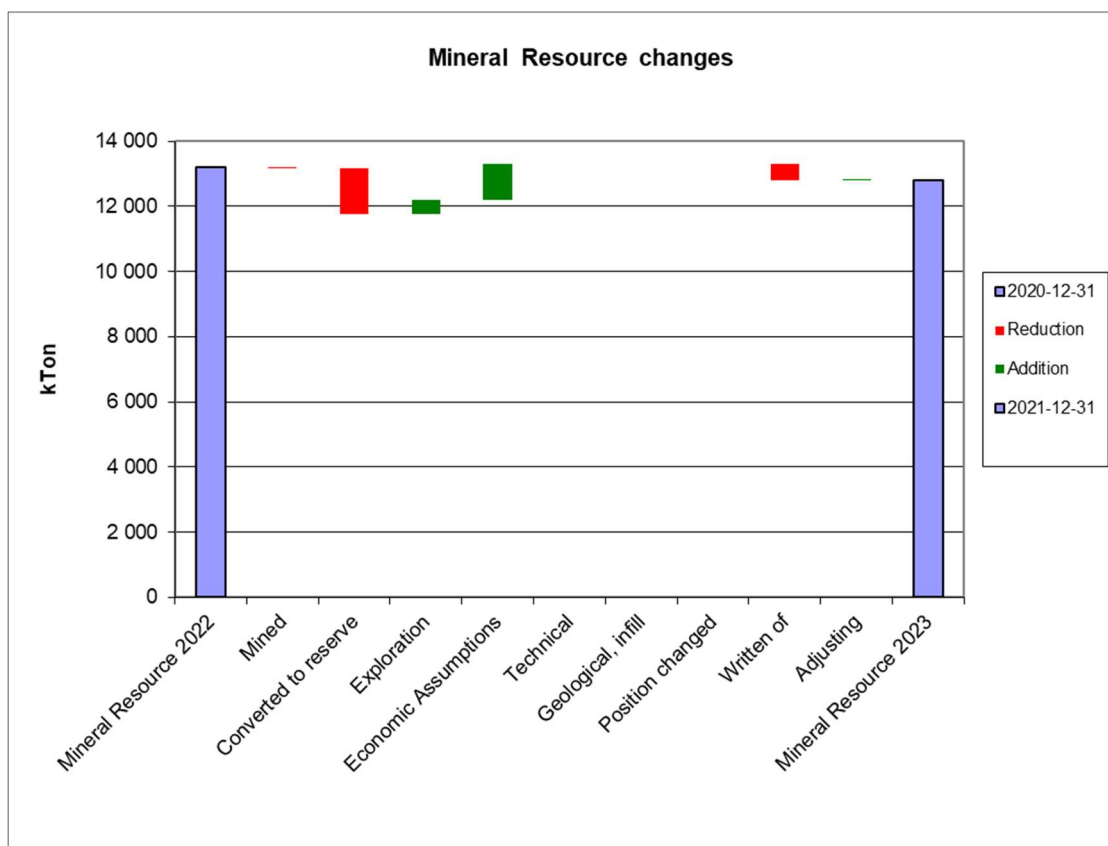


Figure 9: Changes to Mineral Resources

The Mineral Reserves increased by 888 kt despite depletion through mining of 528kt. Conversion of Indicated and Measured Resources have increased reserves in Rävliiden, R-zone and L-zone by 1 414 kt. The added reserves in the active production areas of L-zone and R-zone are comparable to what have been mined during the year.

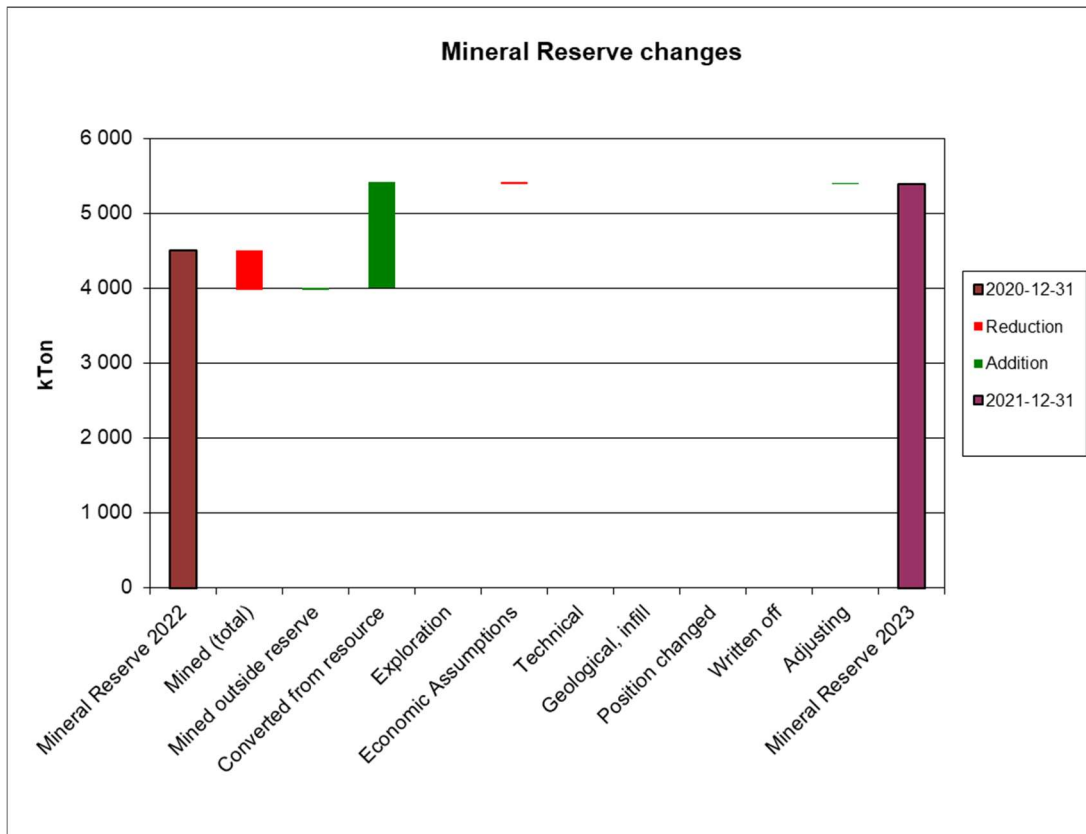


Figure 10: Changes to Mineral Reserve

3.15 Reconciliation

Reconciliation is completed for every month of production and aggregated for the year, as presented in Table 14: Kristineberg reconciliation data for the reporting period. Table 14 below. Gold lies outside tolerance (24%) and whilst this constitutes a relatively minor proportion of net revenue (~10%), this will be monitored during 2024.

Table 14: Kristineberg reconciliation data for the reporting period.

Category	Tonnes kt	Au g/t	Ag g/t	Cu %	Zn %	Pb %	S %
Mined	509	0.5	30	0.4	4.4	0.2	19.1
Change in stockpiles	-36	-	-	-	-	-	-
Milled*	573	0.6	30	0.5	4.1	0.2	20.2
Difference Mined vs Milled	28	0.1	0.6	0.1	-0.3	0.0	1.0
Difference Mined vs Milled (%)	5	24	2	12	-8	10	11

*Milled data includes definitive results between January to November, and preliminary results for December.

4 REFERENCES

4.1 Public references

Allen, R. L., Weihed, P., & Svenson, S. A. (1996). Setting of Zn-Cu-Au-Ag massive sulfide deposits in the evolution and facies architecture of a 1.9 Ga marine volcanic arc, Skellefte district, Sweden. *Economic Geology*, 91(6), 1022–1053.
<https://doi.org/10.2113/gsecongeo.91.6.1022>

Boliden Mineral AB. (2018). Mineral Resources and Mineral Reserves development, 2017. Retrieved January 16, 2018, from <https://www.boliden.com/media/press-releases/?pressReleaseId=1551527>

Eriksson, N., & Rönnblom-Pärson, E. (2012). Miljökonsekvensbeskrivning, Nytt tillstånd för Kristineberg. Boliden Mineral AB. Retrieved from DMS#957575

ESMA. (2012). Consultation On Amendments To ESMA's Recommendations Regarding Mineral Companies. Retrieved January 16, 2018, from <https://www.esma.europa.eu/press-news/consultations/consultation-amendments-esmas-recommendations-regarding-mineral-companies>

Lindberg, R. (1979). Zink–Kopparmineralisering Mörkliden – prospekteringsarbeten utförda 1969-1975. Sveriges Geologiska Undersökning. Retrieved from BRAP79021

Mercier-Langevin, P., McNicoll, V., Allen, R., Blight, J. and Dubé, B., (2012). The Boliden gold-rich volcanogenic massive sulfide deposit, Skellefte district, Sweden: new U–Pb age constraints and implications at deposit and district scale. *Mineralium Deposita*, 48(4), pp.485-504.

Skyttä, P., Hermansson, T., Andersson, J., Whitehouse, M., & Weihed, P. (2011). New zircon data supporting models of short-lived igneous activity at 1.89 Ga in the western Skellefte District, central Fennoscandian Shield. *Solid Earth*, 2(2), 205–217.
<https://doi.org/10.5194/se-2-205-2011>

Svemin. (2018). Mer transparens för rapportering av mineraltillgångar. Retrieved January 16, 2018, from <https://www.svemin.se/aktuellt/nyhet/mer-transparens-for-rapportering-av-mineraltillgangar>

The Pan-European Reserves and Reporting Committee (PERC). (2017). Pan-European Standard for Reporting of Exploration Results, Mineral Resources and Reserves.

4.2 Internal references

Agmalm, G. (2003). Densitetsbestämningar av olika malmtyper i Kristineberg. Boliden Mineral AB. Retrieved from GP2002-16

Baldwin, S. (2022). *Mineral Resource Estimate L-Zone West 2022*. Retrieved from DMS#1859869

-
- Baldwin, S. (2021).** *Mineral Resource estimate for the “Raimo” VHMS deposit.* Retrieved from DMS 1705481
- Baldwin, S. (2018).** *Mineral Resource estimate for the “Silver-zone” Ag deposit, AG1-8.* Retrieved from DMS 1182107
- Baldwin, S. (2021).** *Mineral Resource estimate for the “Silver-zone” Ag deposit, AG8-9.* Retrieved from DMS 1674644
- Baldwin, S. (2019).** *L-Zone West Mineral Resource estimate.* Retrieved from DMS 1516668
- Baldwin, S. (2020).** *Mineral Resource estimation for the “Koppar Klumpen” VHMS deposit.* Retrieved from DMS 1599354
- Baldwin, S. (2020).** *Mineral Resource estimation for the “Rävliden North” VHMS deposit.* Retrieved from DMS 1619620
- Barrett, T., & MacLean, W. H. (2000).** Chemostratigraphy, Petrography, & Alteration at the Kristineberg VMS Deposit, Northern Sweden. Ore Systems Consulting. Retrieved from GP2000-10
- Bjännadal, E. (2023).** *L-zone East Mineral Resource Estimate 2023.* Retrieved from DMS 1960633
- Csicsek, A & Tuomi, M (2023).** *Ändrad mineralreserv Kristineberg – Raimo 5-9.* Retrieved from DMS 1959192
- Csicsek, A & Tuomi, M (2023).** *Ändrad mineralreserv Kristineberg – LV 8-10.* Retrieved from DMS 1959191
- Falshaw, S (2022).** *J-B Zone MRE Report 2022.* Retrieved from DMS 1888871
- Hermansson, T. (2012).** Lithochemical characterisation and structural analyses of two cross-sections in the J- and L-zones, Kristineberg mine, western Skellefte district. Boliden Mineral AB. Retrieved from GP2012-30
- Jansson, N., & Fjellerad Persson, M. (2014).** Results from exploration drilling in the area between the abandoned Rävliiden and Rävliidmyran mines, Skellefte district, Sweden. Boliden Mineral AB. Retrieved from GP2013-17
- Kläre, J. (2021).** Technical Report, Rävliiden Feasibility Study. Retrieved from DMS 1791892.
- Larsson, R., & Agmalm, G. (1994).** Densitetsberäkningar från analyshalter. Boliden Mineral AB. Retrieved from Gruvgeo.rapport 384

Pabst, S. (2022). Rävliiden Mineral Resource Estimate 2022. Boliden Mineral AB. Retrieved from DMS#1886839

Pabst, S. (2020). A-Zone Mineral Resource Estimate 2020. Boliden Mineral AB. Retrieved from DMS#1622416

Miljökonsekvensbeskrivning (MKB) Ändringstillstånd Kristinebergsgruvan, 2021. Tyréns. Retrieved from DMS#1790433.