

## Public Disclosure Regarding the Enemossen Facility



2025-08-01

Approved by:  
Peter Bergman  
Dam Safety Accountable Boliden -Zinkgruvan

---

## Contents

---

1.	Description of the tailings facility .....	1
2.	Consequence classification .....	5
3.	Risk assessment.....	7
4.	Impact assessment.....	10
5.	Description of the design of the tailings facility.....	12
6.	Annual Performance Review.....	15
7.	Environmental and social monitoring programme .....	16
8.	Emergency Preparedness and Response Plan (EPRP) .....	18
9.	Independent review .....	19
10.	Reclamation securities and other financial safeguards.....	21
11.	Implementation of the Global Industry Standard on Tailings Management.....	22

---

## INTRODUCTION

Boliden has committed to apply the Global Industry Standard on Tailings Management (GISTM), adopted by the International Council for Mining and Metals (ICMM) in 2020, setting a precedent for the safe management of tailings facilities, towards the goal of zero harm (the “Standard” or “GISTM”).

The Standard contains 77 specific requirements that need to be fulfilled to be in conformance with the Standard. The Standard also requires that adhering members annually issue a status report on their implementation of and conformance with the requirements to support public accountability. In accordance herewith, Boliden as the operator of its tailings facilities is to publish and regularly update information on its commitment to safe tailings facility management, implementation of its tailings governance framework, its organization-wide policies, standards and approaches to the design, construction, monitoring and closure of its tailings facilities

A separate document available via Boliden web, named Public Disclosure Regarding Boliden’s Tailings Management Framework, provides a general description concerning Boliden’s tailings and dam safety management for all sites, in which much of the information within requirement 15.1 is met.

Boliden acquired Zinkgruvan from Lundin Mining on April 16. Integration into Boliden’s systems and practices has been ongoing since then. As a result, there may be some temporary gaps as full alignment with Boliden’s way of working is established.

This document provides additional information specifically related to Enemossen TSF and Enemossen East TSF and the associated Clarification Pond to fully provide the required information. Within this document the three stated facilities will be referred to communally as Enemossen Facility unless individually specified.

Enemossen North TSF is currently under construction and will be included within this report upon completion of the works.

In addition, Chapter 11 of this document presents the status of implementation of GISTM for Enemossen TSF and Enemossen East TSF.

---

## 1. Description of the tailings facility

The Zinkgruvan Mine is located in the town of Zinkgruvan, northeast of lake Vättern and approximately 18 km southeast of the town of Askersund, in Örebro County, Sweden.

Since April 2025, Boliden has owned the Zinkgruvan mine where zinc, lead and copper are mined. Prior to this, the mine was owned and operated by Lundin Mining AB. The mine employs about 450 people working underground. Production is currently taking place at a depth of 350 m to 1300 m and an average of 3,700 tonnes of ore are mined per day, which is then ground in large mills. After that, a flotation process is carried out where the lead, zinc and copper minerals are released from the rest of the rock for the production of three different concentrates for delivery to customers.

The associated Enemossen Facility is located approximately 3.5 km south of the town of Zinkgruvan, see Figure 1. The coordinates (latitude, longitude) at the center of the TSF are 58°46'42"N 15°05'52"E.

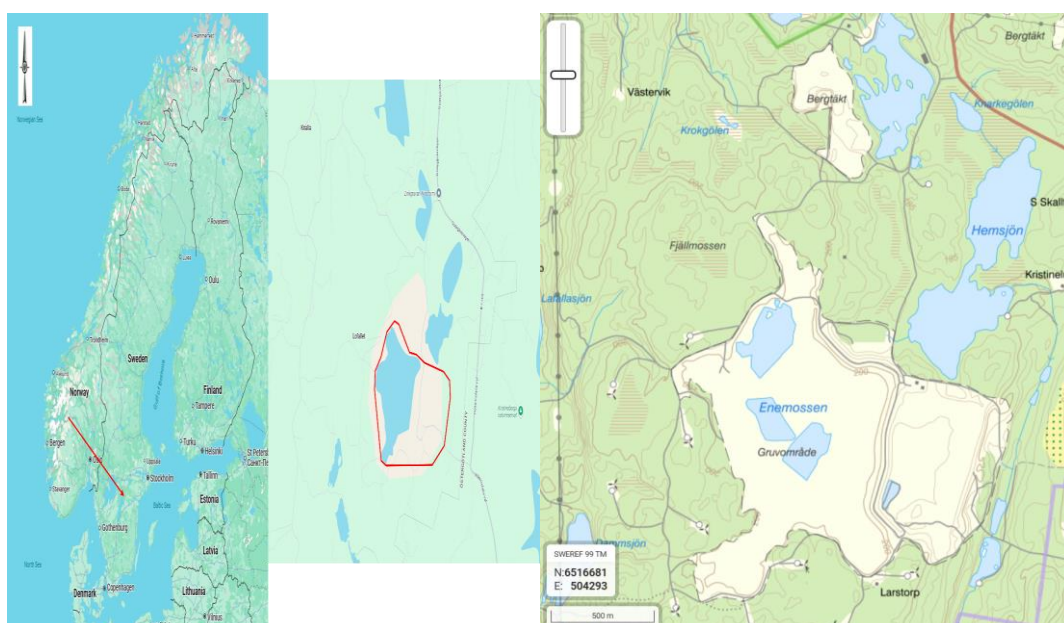


Figure 1 Geographic location of Zinkgruvan TSF in red

The Enemossen consists of the Enemossen TSF, Enemossen East TSF and associated Clarification Pond, see Figure 2 and Figure 3 for aerial photos, and Table 1 for a description of the main structures. For more information regarding the dams, see Chapter 5.



Figure 2 Aerial photo of the Enemossen and Enemossen East Tailings Facilities





Figure 3 Aerial photo of the Clarification Pond

Table 1 Description of main structures of the Enemossen and Enemossen East tailings facilities

Object	Description
Enemossen TSF	The Enemossen TSF was designed by Sweco AB. The Enemossen starter embankments were constructed in 1976 as water retaining structures, and the TSF began operation shortly afterwards in 1977. The facility was subsequently raised by a series of centreline and upstream constructions to a maximum elevation of 200 mRL. In 2003, the main embankment dams E-F and X-Y were buttressed.
Enemossen East TSF	The Enemossen East starter embankments were constructed in 2016. The TSF began operation in 2017. Stages 1 and 2 of the development were designed as a starter wall with a centerline raise by Knight Piésold. In 2019, WSP-Golder was appointed to design stage raises 3 to 5 using a downstream approach to a maximum elevation of 195.5 mRL. The TSF is approximately 530 m long by approximately 370 m wide and is formed by natural hillsides to the far northern corner and the southern flank. Two main embankments form the impoundment on the East and North sides, the embankments join in the northeastern corner. The Enemossen East TSF abuts the X-Y Embankment forming the eastern side of the Enemossen TSF.

Clarification Pond	<p>The Clarification Pond and associated works were designed by Sweco AB and were constructed in 1974. The current status of the Clarification Pond and associated works have been assessed against the Swedish dam safety guidelines for the mining industry, GruvRIDAS.</p> <p>The facility which is approximately 730 m long by approximately 390 m wide, is equipped with embankments on the northern and eastern sides, plus a relatively short and low wall to the south which forms an access road to the quarry situated on the western side of the facility. The road forms the southern boundary of the facility (also referred to as the N-O "wall") and the site slopes gently from the southwestern side in a north-northeasterly direction, with the L-M embankment forming the northern boundary and the G-H embankment forming the eastern boundary of the dam</p>
--------------------	--

## 2. Consequence classification

### Enemossen TSF

The most recent review of the Enemossen TSF dam consequence class to the Swedish regulations (Miljöbalken) and was conducted by Sweco in 2016 (Sweco Energuide AB, 2016). This was reviewed in the context of the dam classification guidelines provided by the Canadian Dam Association (CDA, 2014) by Lundin Mining in 2019.

The Enemossen TSF has therefore been designed to satisfy both local legislative requirements as set out by Miljöbalken and Swedish Dam Safety Class, and the international best practices established in the CDA guidelines.

The dam breach analysis (DBA) completed as part of the dam classification study by Sweco AB in 2016 for the Enemossen TSF (Sweco Energuide AB, 2016) covered E-F dam, X-Y dam and S-T dam. The environmental impact of the 100 year and Class 1 floods were assessed (SveMin, 2012).

### Enemossen East

As part of the scope of works for Enemossen East, two failure scenarios were modelled as part of the DBA. It was agreed that failure of the East Dam on its own was not credible given the outcomes of the FMEA. Notably, the East and North Dams are rock filled dams founded on a rock foundation. Instead, a cascade failure of the X-Y Dam leading to overtopping failure of the East Dam was the only credible failure mode.

### Clarification Pond

The latest review for safe operation of the Clarification Pond was carried out by Sweco in 2016 (Sweco Energuide AB, 2016) based on the consequence classifications established using the dam consequence classification after and has more recently been reviewed against the Swedish dam safety class system after (RIDAS, 2020).

### Summary

The consequences in the event of a tailings facility failure in Enemossen and Enemossen East are estimated from breach analyses. The consequence classifications refer to conditions within the current permit.

The consequence classification for the Enemossen and Enemossen East tailings facility, as well as the Clarification Pond, have been defined both according to GruvRIDAS Gruvindustrins riktlinjer för dammsäkerhet (Swedish Mining Industry's Guidelines for Dam Safety) and according to CDA, see Table 2.

The classification for all three facilities was approved by the national regulatory authority for dam safety (County Administrative Board). The classification for Enemossen and Enemossen East is currently being reviewed, taking into account cascade failure, and an updated consequence classification will be submitted for approval to the authorities.

**Table 2 Overview of consequence classes for all dams of the Enemossen and Enemossen East tailings facilities**

Facility	Dam	Consequence class according to:	
		GruvRIDAS	Canadian Dam Association (CDA)
Enemossen	E-F	1B	High



	X-Y	1B	High
	S-T	3U*	Not Assessed
	ST-1	Not Assessed	Significant
	ST-2	Not Assessed	Significant
	U-V	Not Assessed	Significant
	F-F1	Not Assessed	High
	F-X	Not Assessed	Significant
	Knallavallen	Not Assessed	Significant
Enemossen East	North Wall	1B	High
	East Wall	1B	High
Clarification Pond	L-M	1B	High
	G-H	2C	Significant
	N-O	3U*	Not Assessed

\* U is undefined in accordance with the Swedish dam safety class

## 3. Risk assessment

WSP has assessed risks in a manner consistent with the risk management instruction established by Lundin. Future risk assessments undertaken will be completed to the Boliden framework. Assessment of risks related to the operation and closure of tailings facilities has been undertaken by a team of multidisciplinary specialists. The risks have been evaluated regarding potential consequences related to a range of aspects, including but not limited to health and safety, environment, infrastructure, social aspects and local communities.

Within Boliden's risk framework, risks are categorized into four levels, based on likelihood of occurrence and consequence of a critical hazard. Based on risk level, risks are managed according to Table 3.

The risk assessment conducted by WSP has previously referred to the Lundin Mining risk framework. An assessment will be undertaken to understand the similarities between the Lundin and Boliden Risk frameworks, with the Boliden risk framework utilised in future risk assessments.

**Table 3 Required actions for different risks (Lundin Framework)**

Risk	Action
High	Require the development and implementation of a risk treatment action plan as well as a business continuity plan, where feasible.
Significant	Require the development and implementation of a risk treatment action plan.
Moderate	Monitored for changes to risk profile and to ensure any shift towards higher risk severity is identified. No additional action required beyond existing risk management practices, controls and procedures.
Low	Accepted as inherent to day-to-day operations; no additional action required beyond existing risk management practices, controls and procedures.

The risk assessment is a live document which is updated annually and was last updated in April 2025. After mitigations have been applied to the Enemossen Facility, previously identified risks in the high and significant categories are managed or mitigated through a series of actions, including dam remediation work as well as improvement on the operation, monitoring and surveillance systems and practices.

Therefore, in the 2025 risk assessment, after risk controls were applied, only moderate and low risks were identified, and all current medium risks considered acceptable as they are meeting the ALARP principle ("As Low As Reasonably Practical").

In Table 4, the identified medium and high risks are listed, along with the associated management and/or monitoring measures. The identified events which can potentially lead to flow failure events, are used as input for the dam breach analysis (see Chapter 4), as well as for the Trigger Action Response Plan and the Emergency Preparedness Response Plan (see Chapter 8).

Table 4: Medium and High class risks and associated mitigation plans

Dams	Failure mode	Identified risks	Current mitigation used to manage and monitor identified risks
Enemossen East – East Wall, Enemossen East – North Wall, L-M, G-H	Overtopping	Overtopping due to: <ul style="list-style-type: none"> <li>• Flood exceeding decant system capacity and/or storm capacity of pond</li> <li>• Failure of decant system (blockage, pumps failure)</li> <li>• Slope failure of internal dam wall</li> </ul>	<ul style="list-style-type: none"> <li>• Pond level monitoring</li> <li>• Design of decant system</li> <li>• Development of water balance and stress test storage capacity of system</li> <li>• Visual inspection</li> <li>• Regular maintenance</li> <li>• Standby equipment</li> <li>• Installation of debris net</li> </ul>
E-F, X-Y, Enemossen East – East Wall, L-M, G-H	Instability	Instability due to: <ul style="list-style-type: none"> <li>• Material parameters or ground models worse than expected (deformation, movements, settlement)</li> <li>• Static Liquefaction (pore pressure increase)</li> <li>• Dynamic Liquefaction (earthquake)</li> <li>• Weak zones / layers in tailings (deformation, movements, settlement)</li> <li>• High pore pressures in downstream dam fill</li> </ul>	<ul style="list-style-type: none"> <li>• Reassess stability and implement stabilizing measures as required.</li> <li>• Deformation monitoring (survey beacons, inclinometers, visual surveillance, lidar surveys, pore pressure monitoring)</li> <li>• Surveillance of rockfill weathering and fines migration</li> <li>• Additional site investigations and characterization study underway</li> <li>• Review of models and parameters including intrusive investigations to interrogate stability analyses</li> <li>• Beach length management and monitoring</li> <li>• Site-specific seismic investigation</li> <li>• CPT Investigation</li> <li>• Buttreassing</li> <li>• Phreatic surface monitoring</li> </ul>
E-F, X-Y, F-F1, Enemossen East – East Wall, L-M, G-H	Internal Erosion	Seepage and/ or erosion due to: <ul style="list-style-type: none"> <li>• Backwards erosion (piping) – sinkholes, increased seepage, material in seepage water, sand boils</li> <li>• Concentrated leak erosion along historic spillway conduit (sinkholes, increased seepage, material in seepage water)</li> <li>• Suffusion (sinkholes, increased seepage, material in seepage water)</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring (pore pressure, seepage, phreatic level, temperature, visual inspections, survey monuments)</li> <li>• Beach length management and monitoring</li> <li>• Lower hydraulic gradient</li> <li>• Buttreass including filters</li> <li>• Assess pipe integrity</li> <li>• Carry out micro seismic surveys</li> <li>• Clearing of vegetation</li> </ul>

# BOLIDEN

		<ul style="list-style-type: none"> <li>• Internal erosion in foundation (sinkholes, increased seepage, material in seepage water, sand boils)</li> <li>• Vegetation in Dam Slope</li> </ul>	
Enemossen East – East Wall, L-M	Damage / Incident without dam failure	Uncontrolled seepage impacting downstream receptors	Design of water management system, seepage monitoring and water sampling.
L-M, G-H	Foundation Failure	<ul style="list-style-type: none"> <li>• Weak layers in foundation</li> <li>• Material parameters worse than expected</li> </ul>	<ul style="list-style-type: none"> <li>• Deformation monitoring</li> <li>• Stability analysis</li> <li>• Geotechnical investigations</li> <li>• Buttreassing</li> </ul>

## 4. Impact assessment

The impact assessment has been evaluated according to the Global Industry Standard on Tailings Management (GISTM).

The impact assessments presented in this document refer to conditions within the current permit.

The impact assessment according to the Global Industry Standard on Tailings Management (GISTM) is based on breach analyses from 2025, see Table 5.



Table 5 Summary of the Enemossen impact assessment to the GISTM

Consequence Criteria	Classification	Impact assessment
Potential Population at risk (PAR)	High (Between 10 and 100)	Impact varies from dam to dam but for every dam the population at risk is between 10 and 100
Potential Loss of Life (LOL)	High (Between 1 and 10)	Estimated to be likely (between 1 and 10 people) commensurate with the numbers in PAR and derived from the damage parameters values.
Environment	Low	The impact is expected to be minimal, short term and not breach on any significant habitat.
Health, Social and Cultural	Significant	The potential loss of life is greater than 1 and therefore there is a low likelihood of health effects. Residential buildings are also impacted but there is a low likelihood of regional heritage, recreation, community, or cultural assets.
Infrastructure and Economics	Significant	For all scenarios, the impacted area includes EE TSF which serves as active tailings storage for the mine. Mining activities would have to be suspended resulting in economic losses. Nevertheless, costs are not expected to be greater than \$10 million.

## 5. Description of the design of the tailings facility

See Table 6 for a description of the design of the main dams. For a description of the overall tailings facility and the location of the dams is presented in Chapter 1.

**Table 6 Description of the design for the dams in the Enemossen and Enemossen East tailings facilities**

Facility	Dam	Description
Enemossen TSF	E-F	<p>External dam in the main tailings facility. The E-F Dam starter wall was constructed in 1976 to an elevation of 180.5 m and was subsequently raised numerous times until the final stage raise to 200.5 m. The dam has a modified centerline raised section to an elevation of circa. 192.5 m (varies along the length) with subsequent raises upstream to the final elevation. The upstream raises from 192.5 m to 200.5 m are founded on site won recompacted coarse tailings which have been assessed to be dilatant.</p> <p>The dam is a zoned earth fill dam. Up to an elevation of 192.5 m, the dam was constructed as a water retaining dam with a wide core or clay moraine and a coarse sand filter with a downstream shoulder of mine waste rock. The coarse sand filter was described as an “as-dug” material, with no clear quality control specification requirements. Above 192.5 m, the upstream section was constructed with a more permeable filter system consisting of a fine sand filter followed by coarse gravel filter and a downstream shoulder of waste rock.</p> <p>The dam is typically founded on shallow deposits of moraine or fractured bedrock, although around Ch. 0+150, a zone of peat and silt has been identified below the downstream shoulder.</p>
	X-Y	<p>The X-Y Dam starter wall was constructed in 1976 to an elevation of 180 mRL and was subsequently raised numerous times until the final stage raise to 200.5 mRL.</p> <p>The dam is a zoned earth fill dam. Up to an elevation of 192.5 mRL, the dam was constructed as a water retaining dam with a wide core or clay moraine and a coarse sand filter with a downstream shoulder of mine waste rock. The coarse sand filter was described as an “as-dug” material, with no clear quality control specification requirements. Above 192.5 mRL, the upstream section was constructed with a more permeable filter system consisting of a fine sand filter followed by coarse gravel filter and a downstream shoulder of waste rock.</p> <p>The X-Y Dam is now significantly buttressed downstream by the tailings deposited in the Enemossen East TSF.</p> <p>The dam is typically founded on shallow deposits of moraine or fractured bedrock.</p>

	S-T	<p>Two saddle dams ST1 and ST2 are located in the southwest corner of the TSF. The maximum heights of S-T1 and S-T2 are approximately 5.6 m and 2.9m respectively. The dam is zoned earth fill dam with a clay moraine core followed by a fine filter (sand) and coarse filter (gravel) and a downstream shoulder of mine waste rock fill and some downstream clean rock erosion protection due to the potential ponding of run-off in the area to the toe.</p> <p>The upstream shoulder of the dam is formed from compacted tailings. The dams are founded on fractured bedrock.</p>
	U-V	<p>U-V Dam is a saddle dam located in the west of the facility and is approximately 2 m high. The dam is zoned earth fill dam to an elevation of 200.5 mRL with a clay moraine core followed by a fine filter (sand) and coarse filter (gravel) and 13 m wide downstream shoulder of mine waste rock fill. An additional 1 m thick layer of rock fill protection has been constructed over the main core and filter zones.</p> <p>The upstream shoulder of the dam is also quite wide at 7.5 m being formed from compacted tailings. The dam is founded on fractured bedrock.</p>
	F-F1	<p>F-F1 Dam is a northern extension of E-F Dam. The dam is approximately 7 m high and 145 m long. The dam is a clay moraine core dam with filter zones on both upstream and downstream sides with compacted tailings upstream shoulder with erosion protection layer and a downstream rock fill shoulder. The gravity decant pipe outfall passes through the F-F1 Dam.</p>
	F-X	<p>The F-X Dam is small dam retaining tailings in an area north of the current decant pool. The dam is approximately 3 m high and 100 m long. The dam has a core of compacted tailings sands with an upstream moraine shoulder with thin erosion protection layer assumed to be from waste rock. The downstream shoulder is also formed from mine waste. The dam appears to be founded on silty sandy clay moraine overlying bedrock.</p>
	Knallavallen	<p>The Knallavallen dam is a tailings sand dam retaining tailings above the current decant pool. The dam is approximately 10 m high and 120 m long. The downstream slope is located over tailings and is buttressed with waste rock fill.</p>
Enemossen East TSF	North Wall	<p>External dam in the northern extent of Enemossen East. The dam is designed as a permeable rockfill dam. The dam is 140 m long and the maximum dam height is about 15.2 m.</p> <p>Stages 1 and 2 of the development were designed as a starter wall with a centerline raise by Knight Piésold. In 2019, WSP-Golder was appointed to design stage raises 3 to 5 using a downstream approach to a maximum elevation of 195.5 mRL.</p>
	East Wall	<p>External dam along the eastern extent of Enemossen East. The dam is designed as a permeable rockfill dam. The dam is 500 m long and the maximum dam height is about 30 m high.</p>

		Stages 1 and 2 of the development were designed as a starter wall with a centerline raise by Knight Piésold. In 2019, WSP-Golder was appointed to design stage raises 3 to 5 using a downstream approach to a maximum elevation of 195.5 mRL.
Clarification Pond	G-H	External Dam, originally constructed in 1974 from a well compacted moraine core with looser placed moraine filter either side of the core followed by rock fill on the shoulders.  An increase in width of the embankment to the upstream side was carried out in the early 1980's to provide routing for tailings discharge pipelines. Additional buttressing to the downstream toe was required to satisfy minimum factors of safety. The works were carried out in 2023/24. A seepage collection system and sump were installed around Ch. 0+020 where inspection reports had identified seepage being observed. A more significant buttress was constructed at section Ch. 0+475 in 2025.
	L-M	External Dam, originally constructed in 1974 from a well compacted moraine core with looser placed moraine filter either side of the core followed by rock fill on the shoulders.
	N-O	External Dam, originally constructed in 1974 from a well compacted moraine core with looser placed moraine filter either side of the core followed by rock fill on the shoulders.  The dam forms a short saddle of approximately 50 m long and a maximum of 4 m high at the central point.

The key principles for the closure of the Enemossen Facility, as outlined by Lundin, are presented below:

Safety - Ensuring public health and safety.

Physical stability - Achieve physically stable land use after closure.

Chemical stability - Achieving chemically stable land use after closure.

Socio-economic handover - Stakeholder involvement in the development of remediation objectives and community participation in the planning and implementation of socio-economic impacts of closure.

Ecological stability - Achieve biologically stable land use after closure with a self-sufficient ecosystem with chosen land use.

Risk management - Ensure that appropriate water, soil and air quality criteria are met after closure and that maintenance is carried out according to practices during and after closure.

Cost-effectiveness - Provide sufficient budgets and resources to achieve a sustainable remediation plan.

Long-term management - Eliminate or minimize, as far as practicable, active remediation solutions to facilitate land handover.

## 6. Annual Performance Review

The following activities relating to dam safety and tailings management were undertaken during 2023-2024:

- The new decant pool on Enemossen East became fully operational in June 2024 with the previous pool becoming fully flooded with tailings, this in turn providing a greater level of buttressing to the XY Dam.
- The Munken gravity decant tower on Enemossen TSF was decommissioned and replaced by a barge pump and pipeline system. Additional power supply is required to satisfy the draw for both the duty and standby pumping systems.
- The Water Treatment Plant (WTP) was commissioned between October and December 2024.
- Additional buttressing of the EF Dam was completed and included additional monitoring instruments in the foundation of the dam's shoulder.
- Significant progress was made on the automation of the instrumentation installed on the facilities.
- Enemossen East was raised to +192.5 m in accordance with plan. In addition, some elements were raised by a further 0.5 m as per item 3 of key issues arising.
- Construction of Enemossen North project continued in line with plan.
- Tailings pipeline was fitted with emergency cut-off sensors to prevent excessive tailings loss in the event of a pipe burst.
- Felled trees partially removed from the downstream slope of Viksjon dam.
- Spillway of Trysjon dam was cleared of debris and growth on the upstream side.
- Ammeberg survey drawing records were finalised.



## 7. Environmental and social monitoring programme

The environmental performance of the tailings facility is monitored according to an established environmental control program.

Surface water monitoring is conducted at 3 locations. These are as follows:

- The clarification pond outlet is randomly sampled once a month at beginning of month.
- The Mine Water Control is randomly sampled 2 times per year.
- Sampling of leaking water from the tailings pond during overflow is conducted. These measurements are continuously recorded in the ABB system and the facility is visually checked daily by staff on site at the tailings pond. As part of the environmental controls, all leakage water from tailings ponds must be repumped to the tailings ponds. Random samples are taken and analyzed in the event of service disruption or overflow.

Water flows and levels at lakes and water courses are monitored at 10 measuring points and recorded once per week, these are:

- Measuring Point 1 (flow) - Åmmelången to Trysjön pumped water amount.
- Measuring point 2 (flow) - From Trysjön to the concentrator pumped amount of water.
- Measurement point 3 (flow) - Tapping of water downstream of Trysjön.
- Measurement point 4 (flow) - Water flow from Klarningssjön to Ekershyttbäcken.
- Measuring point 5 (flow) - From Klarningssjön to the concentrator pumped water volume.

Water level reading:

- Measuring Point 6 (level) - Åmmelången
- Measuring Point 7 (level) - Viksjön
- Measuring Point 8 (level) - Trysjön (Vikasjön)
- Measuring Point 9 (level) - Sandmagasinet
- Measuring Point 10 (level) - Klarningssjön

The pumped water volume (flow) from Viksjön to Björnbäcken and total flow in Björnbäcken is also measured continuously in the ABB system.

Sampling and ground water level control is undertaken in a selection of wells. Groundwater inspection is conducted every 5 years in which the wells to be inspected are chosen. The groundwater levels measured manually and the quality is checked by sampling and analysis.

Dust emissions are measured at 5 facilities yearly at the discharge of ventilators and crushing plant extractors. Determination of dust deposition is carried out once per month at the Enemossen Tailings Pond. Dust deposition from the operations must not exceed 150 g/100 m<sup>2</sup> at the Enemossen tailings pond and at the industrial area as an annual average. The annual average value shall apply as the limit value and is calculated as the average value of each year's twelve-month averages for measurement points around the tailings pond and the industrial area.

Noise levels are measured once per year, carried out as near field measurements in 6 locations. The noise from the activity shall be limited so that it does not give rise to a higher equivalent sound level in the

nearby residential area than 55 dB(A) during the day (07-18), 50 dB(A) in the evening (18-22) and 44 dB(A) at night (22-07).

At night, if the instantaneous value exceeds 62 dB(A), the company shall take measurements as soon as possible to ensure that exceedances are not repeated and report the incident to the County Administrative Board. However, the instantaneous noise level must never exceed 65 dB(A). The company has a noise plan that must be updated at least every 3 years or as needed. Conditions according to judgment 2022-11-10, case no. M 13409-21

Explosive induced vibrations affecting the surrounding population are measured as part of the environmental controls. Continuous measurements of oscillation speed have been taken from 5 measuring points since April 17, 2015. For blasting-induced vibrations, the vertical oscillation velocity measured in the plinth of the specified dwellings according to Swedish Standard SS 406 48 66:2011, must not exceed 4 mm/s on more than 10 blasting occasions per year, and never exceed 7 mm/s, all measured in accordance with Swedish Standard SS 460 48 66:2011. Conditions according to judgment 2022-11-10, case no. M 13409-21.

## 8. Emergency Preparedness and Response Plan (EPRP)

The Emergency Preparedness and Response Plan (EPRP) is triggered by a failure or a near failure. The triggers of the EPRP are defined in the Trigger Action Response Plan (TARP), see Chapter 3.

When the EPRP is triggered by a dam safety related incident, in the event of a situation, the Dam Safety Accountable (DSA) and the Engineer of Record (EoR) and the Responsible Tailings Facility Engineer (RTFE) are immediately contacted. These individuals are responsible for assessing the situation and determining the appropriate actions and measures to be taken.. They are also the ones who are in contact with the Fire and Rescue Service in cases where it becomes involved.

The County Administrative Board is primarily informed via telephone calls to the responsible administrator or TIB (Officer on standby) who is on standby around the clock.

The structure of the dam safety emergency group is similar to the dam safety organization in normal operation. Each role in the group has one responsible individual and at least one substitute. For each role, a checklist is available.

In case of an emergency, the EPRP provides routines for cooperation with local emergency authorities "Räddningstjänsten in Örebro municipality".

Preparedness exercises are held once a year, where different alarm levels are alternated. The emergency services are informed of the content of the contingency plan and participate in relevant exercises.

The EPRP is reviewed and revised yearly. The EPRP was reviewed and updated in 2023. An updated EPRP will be produced, aligned with the Boliden standards.

## 9. Independent review

An Independent Tailings Review Board (ITRB) has been established for Enemossen, Enemossen East and the associated clarification pond, with online meetings and a site inspection scheduled annually.

The fifth meeting of the Zinkgruvan Tailings Storage Facilities Independent Tailings Review Board was held on site from October 7<sup>th</sup> to 9<sup>th</sup>, 2024. The site visit was completed by the ITRB and representatives from Lundin Mining Corporation (Lundin) at the Zinkgruvan Mine.

As outlined in the October 2024 report (ITRB, 2024), the ITRB reviewed the past recommendations and provided the following status update.

Recommendation 2022-8: Update Freeboard Requirements in Enemossen East TSF using the 14-day regulatory rainfall per the Swedenergy and SveMin (2015), including wind/wave effects.

- Priority Level: 3
- Status: Completed

Recommendation 2022-10: Update the flood routing and freeboard requirements for the Clarification Pond.

- Priority Level: 3
- Status: Completed

Recommendation 2022-11: Revise seepage collection/storm water containment requirements at the WMPs. Select an appropriate storm event severity and duration, based on the site climatological records. Add routine inspections and maintenance to improve operability during storm events.

- Priority Level: 3
- Status: In Progress

Recommendation 2022-12: Develop a water balance model with clearly established goals to support long-term water management strategy.

- Priority Level: 3
- Status: In Progress

Recommendation 2022-13: Update the TSF breach analyses using detailed topography, mine infrastructure (e.g. vent or legacy shafts) and state-of-practice procedures.

- Priority Level: 3
- Status: Completed

Recommendation 2022-15: Conduct and report on the geotechnical and geochemical characterization of rockfill from internal and external sources for construction.

- Priority Level: 4
- Status: In Progress

Recommendation 2023-1: Validate the Estimate of the Snowmelt Input to the Design Floods.

- Priority Level: 3
- Status: In Progress

Recommendation 2023-2: Review Current Resources and Succession Planning of Tailings and Water Team.

- Priority Level: 3
- Status: In Progress

Recommendation 2024-1: EF Dam Post-Peak Stability.

- Priority Level: 3
- Status: Completed

There is one, Priority Level 4, recommendation from the 2024 site visit:

Recommendation 2024-2: Revisit the risk assessment for the LM Dam at the Clarification Pond.

Priority Level: 4

Status: New



## 10. Reclamation securities and other financial safeguards

Boliden makes provisions in its accounts for future reclamation costs. Boliden's current provisions for reclamation works can be found in its Annual and Sustainability Report. In addition, insurance is used to cover sudden and unexpected tailings related incidents.

Mining operations, including tailings management, are subject to court/authority approved environmental permits, including the posting of mandatory reclamation securities, usually in the form of bank guarantees. These securities are intended to make sure that there are sufficient financial resources available to cover estimated costs of planned closure, early closure, reclamation, and post-closure of the tailings facility and its appurtenant structures, even in a situation where the operator is unable to cover these costs.

## 11. Implementation of the Global Industry Standard on Tailings Management

At Zinkgruvan a first self-assessment of the conformance to GISTM, based on the guidance in the ICMM Conformance Protocols, has been conducted by the site personnel with involvement from the management team and staff support function. The result of the self-assessment (May 2025) indicated a few minor items that required actions during Q2 2025. These were addressed and Zinkgruvan is assessed in conformance with GISTM, as of August 2025.

To validate the results of the self-assessment, Boliden Zinkgruvan will undergo an external review of GISTM conformance status through an external independent auditor, with review of tailings management system and site visit planned during Q2 2026 and a conformance status report issued in Q3 2026.