RNS Number : 5322I
Beowulf Mining PLC
14 May 2025

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Beowulf Mining Plc

("Beowulf" or the "Company")

Kallak Iron Ore Project Summary

Beowulf (AIM: BEM; Spotlight: BEO) and its wholly owned Swedish subsidiary Jokkmokk Iron Mines AB ("Jokkmokk Iron") are pleased to provide a summary on the status of the Kallak Iron Ore Project ("Kallak" or "the Project"). A video describing the technical developments of the project to date is also available at https://beowulfmining.com/kallak-technical-summary-presentation-april-2025/.

Background

Over the last eighteen months, Jokkmokk Iron's focus has been on derisking the Project from multiple perspectives. Key areas of focus include local stakeholder engagement, with more energy dedicated to dialogue with landowners, local residents, Sámi communities, and the municipality. Another top priority has been advancing environmental work to position the Company for the submission of a high-quality, well-supported environmental permit application. Technical studies required to complete the Pre-Feasibility Study ("PFS") and critical to derisking the Project from social, environmental, operational and financial perspectives, have included metallurgical testing, transportation, and waste management.

Introduction to Kallak

Kallak is located within a vast natural landscape which is utilised by Sámi communities, residents, and tourists for a range of activities including reindeer grazing and migration, hunting and fishing, and recreation. It also lies in the heart of Swedish hydropower production, being a neighbour to one of the most hydropower-regulated rivers in the world. Kallak hosts one of the largest untapped iron ore deposits in Europe, with the potential to supply regional and global green steel production with market-leading high-grade, low-impurity magnetite concentrate. Given its physical properties, location, and the availability of existing and emerging technologies, Kallak has the potential to achieve a record low climate footprint and provide the product highly desired to decarbonise the steel industry.

Over the last year and a half, a new project delivery team has been assembled to develop the Kallak project. Ed Bowie, appointed as CEO of Beowulf Mining in 2023, holds over 20 years of experience in the natural resources sector and has worked in technical, corporate, advisory and fund management roles across a broad range of commodities and jurisdictions. Ed has worked diligently to restructure the business and to map out the tools necessary to manage major risks for the efficient and effective development of the Kallak project.

A year ago, Dmytro Siergieiev, project director at Jokkmokk Iron, joined the team. Dmytro's solid environmental background, people skills, local perspectives and critical experience within the Swedish permitting process for mine sites have contributed to the transformation of the development of the Kallak project.

Direct local context has been secured by Morgan Snell, Jokkmokk Iron's local public affairs manager. Morgan grew up on the outskirts of the project area, has been with the company for over 11 years, and continues to maintain intimate ties to the community to ensure the Company maintains transparent and open communications with all local stakeholders.

The project management team is supported by a range of experts focused on specific disciplines, with strong track records in community relations, reindeer herding, transportation and logistics, metallurgy, tailings storage facility design,

biodiversity, hydrology and water management, and Environmental Impact Assessments ("EIAs"). To date, Beowulf has developed a cohesive delivery team of well-known and highly-respected international and Swedish consulting companies and individuals, working collaboratively to ensure the optimal development of the Kallak project.

Community relations

Acknowledging that Kallak is unique and viewing the project through the lens of the local community and stakeholders has given the Company additional motivation to modify designs, adjust boundaries, challenge preconceptions and ultimately seek the optimal solution to each issue faced. Dmytro and Morgan engage in direct contact with local landowners, residents, communities and business representatives, and aim to be flexible in order to meet the specific stakeholder needs.

Morgan Snell, local public affairs manager, commented; "We purchase fika (Swedish cake) from a local café and meet people around a cup of coffee or walk with them in the forest on their property to discuss major concerns and answer all possible questions. It seems that this not only gives us valuable input, but also provides a point of contact for local communities on their terms."

Dmytro Siergieiev, Kallak Project Director, adds;"On selected occasions, we organise community meetings where we spend the entire evening with local villagers talking about the project, technical details and potential adverse impacts and seeking to respond to concerns and collect feedback and suggestions. Local stakeholders will be the most affected groups, and it is our key priority to make sure we are in a position to identify, quantify and minimise potential impacts. This is best achieved through face-to-face dialogue."

The Kallak project is located in a region that is critical to Sámi culture and the immediate area surrounding the project is used year-round for reindeer herding. Recognising the importance of the land in the vicinity of the project is paramount to achieving a long-term sustainable operation with minimal impact.

Anders Forsgren, CEO of Landman Consulting, states;"Understanding Sámi villages' departure points, reindeer grazing cycles, and land use across different seasons, together with building trustworthy relationships, is the foundation of a well-informed dialogue and, in extension, a well-supported reindeer herding impact assessment."

Anders is a land-owner in his own right, and an independent consultant with over 30 years' experience in assessments of mining impacts on Sámi communities.

Pre-Feasibility Study

Technical development of the project has made substantial strides over the past year. Metallurgical testing, led by Bo Arvidsson, a metallurgist with over 50 years' of experience in iron ore processing, demonstrated the ability to upgrade iron ore from Kallak to a world-class magnetite concentrate. Moreover, due to the ore's natural composition, this is achieved purely through a physical beneficiation process. Multiple steps of magnetic separation, including a final stage of high-frequency electro-magnetic oscillation, allow the Company to produce a high-grade, low-impurity product whilst avoiding the use of flotation and the associated chemicals. Design work for the beneficiation plant was provided by Zenito Limited, a highly specialised engineering consultant with extensive experience in iron ore processing facilities and was finalised along with infrastructure requirements and design for the project as a whole.

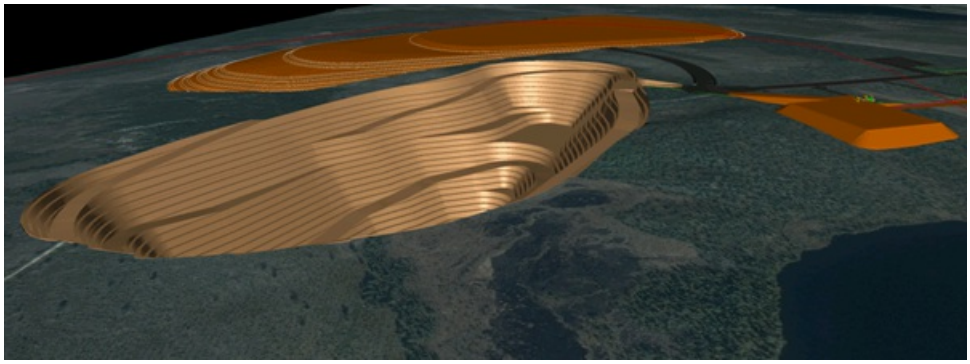

Figure 1. Side view of the planned open pit at Kallak with moraine stockpile (back) and ROM pad and crusher (right).

The development of the mine requires the stripping of moraine overburden which is stockpiled to the west of the open pit. The Kallak orebody outcrops at surface with a low life-of-mine strip ratio of 0.5 : 1. Waste is utilised in construction or transported to the waste rock dump ("WRD") and the ore is transported to the run-of-mine ("ROM") pad. From the ROM pad, ore is crushed and transported by conveyer to a crushed ore stockpile.

The next stage in the process involves milling the crushed ore in a semi-autogenous (SAG) mill to produce a fine powder prior to magnetic separation in a series of Wet Low Intensity Magnetic Separators (WLIMS). A single concentrate is produced with a grade of 68.8% iron ("Fe") content which is then further upgraded with the non-chemical high-frequency electro-magnetic separation using LJC Technology to over 70% Fe and less than 2.5% combined silica and alumina.

This wet concentrate can then either be pumped in slurry form to the railhead or dried with filter presses for alternative transportation. The waste stream from the processing plant, consisting of fine-grained material or tailings, is pumped to the tailings storage facility ("TSF").

Waste management studies were undertaken by Geosyntec Consultants, an international consulting company with an excellent track record in tailings management and storage facility design in Sweden and worldwide. The team's expertise and dedication has enabled the Company to produce a robust design for the embankment, deposition and construction strategies that fulfils both Swedish and international requirements. Safety, and thus robust design, is the top priority for Beowulf and Jokkmokk Iron. Therefore, it was crucial to achieve a design aligned with best industry practices, adapted to local conditions, and optimised for cost-effective construction and maintenance.

Bernardo Meneses, principal design engineer at Geosyntec, says: "Our goal has always been to challenge old knowledge and bring in successful solutions trialled at other sites around the world, which was possible due to the inclusive climate of the project. It has been a pleasure working on the Kallak project with the team around it, and I am looking forward to taking the current design into the next phase.".

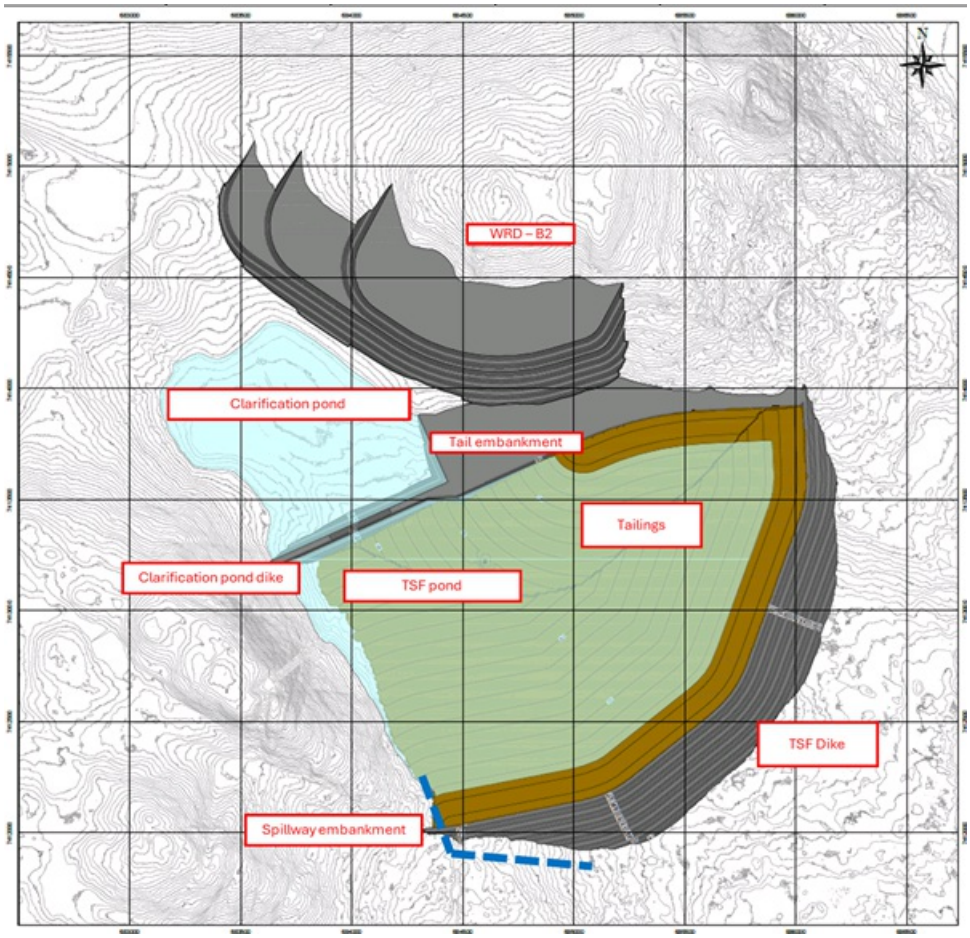

Figure 2. Plan view of the waste rock dump and the tailings storage facility with associated water ponds.

Environmental permitting

The Kallak project encompasses over two dozen workstreams delivered by various consultants, all contributing to the environmental permit application. The work began with the collection of baseline data, some of which requires a minimum

of two years of records in compliance with Swedish and EU regulation. This work also builds on previous information collected for a preliminary impact assessment completed for the exploitation concession application in 2013 . Last year, the remaining work was streamlined, and to date, we have completed assessments of vibrations, rock fall, noise, dust impacts, hydraulic testing, and groundwater impact. We are well underway with waste characterisation and recipient impact assessment. Additional work has been initiated to conduct nature and cultural heritage inventories along the transport corridor, which was until recently an undefined scope due to the transport solution not being finalised.

Karin Törnblom, team leader at Bergab and EIA lead for the Kallak project, comments;"Mining operations are complex and encompass all possible disciplines when it comes to environmental impact assessment. Additionally, any permitting process risks facing shifting legal requirements, industry practices and recent court decisions along the way. We at Bergab are delighted to be supporting Jokkmokk Iron in the Kallak project, which has assembled an extremely experienced and dedicated project delivery team.".

Dmytro Siergieiev, Kallak project director, added; "I am very pleased to have Bergab's team on board - they demonstrated fantastic devotion through the planning and ramp-up phase, consultation process, and ongoing review of environmental studies. I am looking forward to pulling together a high-quality environmental permit application together with Karin, her team and the rest of the project delivery team."

Transportation

Kallak is strategically located near a well-established iron ore and steel cluster in Northern Sweden, including LKAB's operations in Malmberget, Svappavaara, and Kiruna; Boliden's Aitik mine near Gällivare; Kaunis Iron's operation in Kaunisvaara outside of Pajala and reloading station in Pitkäjärvi outside of Svappavaara; SSAB's steel plant in Luleå; and emerging projects such as the Viscaria mining operation in Kiruna; Stegra's planned green steel facility in Boden; the Hybrit green steel development in Luleå; a potential pellet plant in Narvik; and ongoing expansions at all operational facilities mentioned above.

Jokkmokk Iron will produce a fine-grained concentrate that needs to be converted into pellets prior to use in steel making. Currently there are no independent pellet plants within the Nordic region although Stegra and Kaunis Iron have announced preliminary plans to build a pellet plant in Narvik. At present, the Middle East represents the largest market for Kallak's anticipated product. In order to access this and other international markets, the magnetite concentrate from Kallak needs to be transported to a port. Several options were investigated, and the Kallak team visited ports in Luleå, Piteå, Skellefteå, and Umeå in Sweden's Bothnian Bay, and Narvik on the North Sea coast in Norway. As an ice-free and deepwater port capable of receiving capsize vessels and given its long history of iron ore handling and shipping, the port of Narvik is the company's preferred option at this stage.

Figure 3. Preferred transport route from the mine site at Kallak to the port.

Jokkmokk Iron's contribution to the logistics network in Northern Sweden would be up to 2.8 million tonnes ("Mt") of magnetite concentrate per year, which is slightly larger than Kaunis Iron's current production rate at the Kaunisvaara Mine, six times that of Viscaria's planned operation outside of Kiruna, and just over 10% of LKAB's current transport volumes. All these volumes rely on the Malmbanan (or Ore Railway). The railway infrastructure between Gällivare and Riksgränsen on the Swedish border is receiving increasing attention from the Swedish government, and it is widely acknowledged that more needs to be done to secure future logistics requirements. Jokkmokk Iron's transport requirements are already considered in modelling future capacity requirements on the Malmbanan. Prior to reaching the Malmbanan,

are already considered in modelling future capacity requirements on the Malmbanan. Prior to reaching the Malmbanan, the project intends to utilise the Inlandsbanan (railway) between Jokkmokk and Gällivare. The Inlandsbanan will require some upgrading, and the Company is engaged in dialogue with both the Swedish Transport Administration and the managing entity, Inlandsbanan AB, to map and prioritise necessary upgrades along this critical route.

A major concern of local stakeholders, raised through the public consultation process, is the transport between the mine site at Kallak and the railhead outside of Vaikijaur, north of Jokkmokk. Historically, multiple options were suggested, such as building a designated rail track, trucking, conveyor belt, or pipeline.

A railway requires by far the largest investment, cuts through pristine landscapes, and involves the longest permitting and construction process.

The trucking option has historically been considered the only viable option due to its attractive capital cost and clear implementation path based on recent regional experience with similar supply chains. This option would require a fleet of 90-tonne trucks for efficient material movement and up to 135 movements a day in each direction. This equates to a truck passing in each direction along the route every six minutes for 20-hours per day. Additionally, a complete upgrade of the road with a new superstructure and four layers of tarmac would need to be built, which requires time for planning, investment decisions from the Swedish Transport Administration, permitting, and construction. A material portion of the investment and maintenance cost for this road upgrade would need to be carried by the Company. Emerging technology allows for electric fleet operation based on the project requirements and simulations by several suppliers demonstrated efficient material movement between the mine site and the terminal outside of Vaikijaur. This solution has, however, substantial implications for local reindeer herding, residents, tourism, and road safety, and while it provides attractive capital expenditures, it carries the highest operating costs of all options considered.

A conveyor belt would require the clearing a 40 kilometre ("km") long corridor that, in most sections, cannot be adjacent to existing infrastructure and would therefore need a dedicated service road. Along with loss of, and impact on nature, water rights issues, and extensive capital expenditures, a conveyor would require active inspection and maintenance. The construction would be almost two meters high, including foundations and cover and would therefore present a barrier to the free passage of reindeer and other animals.

The preferred option of a pipeline offers significant benefits over these alternatives. Instead of dewatering the concentrate at the plant site, wet concentrate, further adjusted to the required solid ratio, is pumped using positive displacement or centrifugal pumps through a pipe to the railhead. The filter presses intended to dewater the concentrate would be moved from the mill to a dewatering plant at the railhead. The concentrate is dewatered to the target 7-8% moisture, shifted by conveyor belt into a weatherproof storage facility prior to loading onto trains. The filtrate formed as a result of dewatering is collected and pumped back to the mill in a dedicated return water pipeline where it is recirculated as process water. In this way, all process water is reused, any potential magnetite loss at the dewatering facility is recirculated back to the beneficiation plant, no water treatment plant is required at the railhead and environmental risks are minimised. The terrain between the mine site and the railhead is downhill for magnetite concentrate and uphill for return water. The pipeline diameter may vary in the range of c.200-300 millimetres and will be determined more precisely in the next engineering phase together with other design criteria such as pipeline material and wall thickness, liner requirements, corrosion protection, installation depth and heat tracing, instrumentation and monitoring and the construction approach and schedule. This option provides the ultimate transport solution for the first 43 km between the mine and the railhead with major advantages including low or no impact on reindeer herding, water and the natural environment, noise and dust issues, and is safe and reliable. Although there will be an increased initial capital expenditure requirement for the installation of the pipeline, it has the lowest operating costs of all the options considered making the project more robust to lower commodity prices and the preliminary studies undertaken suggest it is value accretive to the project.

Figure 4. Example of pipeline installation in cold climate.

Based on the above, a pipeline to transport magnetite concentrate from Kallak to the railhead outside of Vaikijaur is the Company's preferred option. Further, the Company has received positive responses and support from local and regional stakeholders, industry colleagues, and engaged authorities. It is the Company's goal to optimise the technical setup, construction schedule, and capital costs of the pipeline, and incorporate this option into the permit application and ongoing pre-feasibility work.

Table 1. Preliminary assessment of major transport alternatives between the mine site at Kallak and the railhead on Inlandsbanan outside of Vaikijaur.

Impact	Trucking	Conveyor belt	Pipeline
Operational			
CAPEX			
OPEX			
Feasibility			
Social and environmental			
Reindeer herding			
Nature			
Water environment			
Noise			
Dust			
Safety			
Energy			
Impact			
Low/ low impact			
Moderate/ moderate impact			
High/ high impact			

Other stakeholder engagement

Jokkmokk Iron continues to engage with all relevant authorities to inform them about project development plans and discuss possible ways forward to ensure the project is well-positioned prior to submitting the environmental permit application. The Company is grateful for the time and support given so far and looks forward to further cooperation. Beowulf and Jokkmokk Iron's objective is to work towards agreed milestones and maintain timelines to enable swift and efficient handling of the application once submitted.

The Company's engagement also involves representatives of political parties, governmental agencies, municipalities, and industry partners, focusing on transparent dialogue, permitting and project development, future cooperation, and product offtake.

Next steps

The focus of activity at Kallak over the coming months, and subject to the availability of capital, is to submit the environmental permit application and complete the PFS. Additional technical and environmental studies are required to confirm the viability of the pipeline transport option as discussed above. Further environmental workstreams that are yet to be completed include the Reindeer Herding Analysis, World Heritage Impact Assessment, Social Impact Assessment and ecological compensation. These studies are required for the submission of the environmental permit application and will be advanced over the coming months.

Approximately 80% of the Kallak Mineral Resource is categorised as higher confidence Measured and Indicated categories (16 Mt grading 33.6% total iron ("Fe_{total}") of Measured, and 95 Mt grading 27.0% Fe_{total} in Indicated[1]). However, there is also a minor portion in the Inferred category (25 Mt grading 28.3% Fe_{total}) including some areas close to surface and will therefore form part of the mine inventory in the earlier years of the mine life. This material needs to be converted into the Measured and/or Indicated categories in order that it can be included in the Mineral Reserve and mine schedule and

therefore a limited drilling programme is planned. When this drilling and sampling has been completed, the Mineral Resource estimate will be updated and from that the Mineral Reserve and mine plan will be generated. The final stage of the PFS will involve estimating the overall capital and operating costs, building the financial model and finalising the report.

The lead consultant for the Pre-Feasibility Study is SLR Consulting**Ben Lepley, PFS lead for SLR Consulting, notes;** "The project has progressed significantly, and once the infill drilling is completed, we are ready to update the Mineral Resource and Reserve estimates, mine design and mine schedule, which we believe will not differ materially from that currently assumed due to the current level of confidence in the estimates. Following this, the economic analysis of the project will be completed, and the final report will be pulled together for delivery to Jokkmokk Iron."

Further activities

In addition to the activities directly related to the development of Kallak, the Company is involved in a number of other initiatives:

- Research projects
    - Kallak has been a focus of debate and discussion for a long time. Over the past year, interest has rekindled, and we are pleased to see public interest from students, communities, researchers, suppliers, and politicians.
    - Several research applications are underway, with Kallak serving as a case study for topics in both social (e.g. symbiosis between industry and society) and technical (e.g. novel transportation solutions for bulk commodities in cold climates) fields.
- Web site
    - An updated web page for Jokkmokk Iron Mines (https://jokkmokkiron.se) was launched to meet the rising demand from local communities for regular updates and to provide a platform to collect insights, questions, and concerns, ensuring we are in a position to address them.
- Data collection
    - Morgan has completed a course in environmental sampling, enabling the company to conduct most of the environmental sampling in-house. This allows Beowulf to better manage and engage with data while also reducing associated running costs.

Permitting update

On 9 April 2025, the Mining Inspectorate approved the award of exploration license Kallak nr 102 to Jokkmokk Iron. The licence is a new licence covering the area of the previous exploration licence, Parkijaure nr 2, held by the Company.

The Kallak nr 102 exploration licence is situated immediately to the south of the Kallak nr 101 exploration licence awarded in October 2023 which itself surrounds the Kallak exploitation concession, Kallak K nr 1, awarded in March 2022.

The Kallak nr 102 exploration licence area includes part of the Kallak South-North deposit which contains total resources of 21 Mt at 26.9% Fe in Indicated category and 6 Mt at 23.4% Fe in Inferred category as well as the Kallak South-South deposit, which hosts 8 Mt at 26.1% Fe in Inferred category. The Kallak South deposits, in combination with the independently estimated exploration target of 25-75 Mt at 20-30% Fe, have the potential to add a number of years to the Kallak mine life.

The exploration licence was issued with permit identification number 2025:38 according to the Minerals Act (1991:45) by the Mining Inspectorate of Sweden ("Bergsstaten"). The exploration permit covers an area of 285.10 hectares, remains valid from 9 April 2025 until 9 April 2028 and gives the exclusive right for the Company to undertake exploration work within the granted area in order to demonstrate the mineral potential.

The application for Kallak nr 102 was submitted on 19 January 2025 after the Company was awarded an exemption from the customary one-year moratorium on licence renewals following the termination or expiry of licences. This exemption was granted in light of the Company's significant historical work completed, the Kallak K nr 1 exploitation concession awarded to the north and reasonable prospects for discovering additional iron ore.

The terms of Kallak nr 102 are standard for exploration permits with the Company being required to submit a work plan prior to drilling and other exploration activity, reaching agreements with landowners to undertake activity and providing

prior to drilling and other exploration activity, reaching agreements with landowners to undertake activity and providing compensation for any impacts caused by this exploration activity.

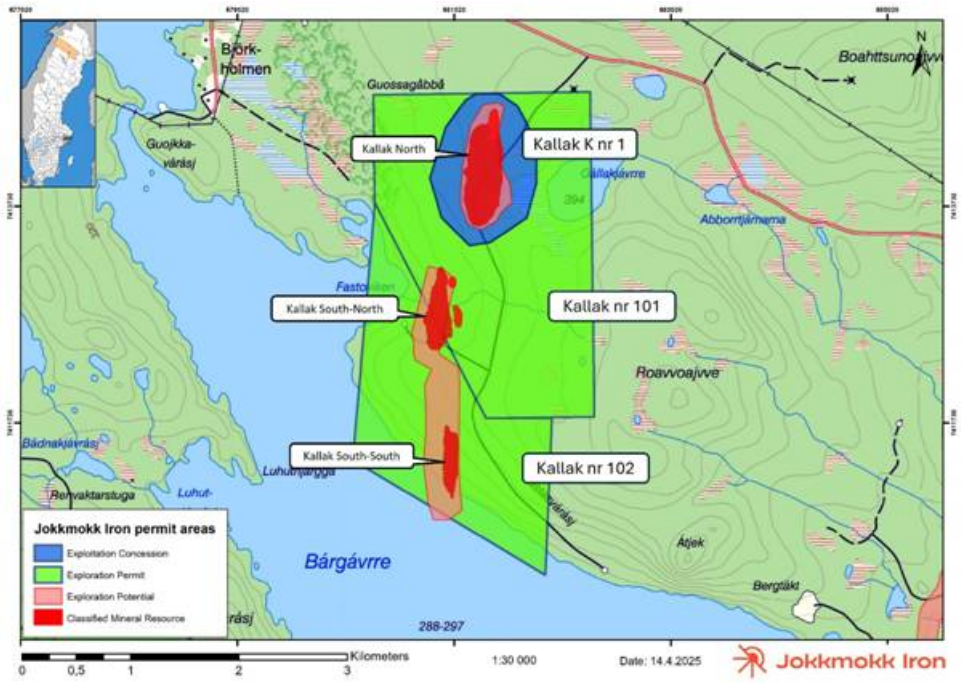

Figure 5. Exploration licence Kallak nr 102 with exploration licence Kallak nr 101 to the north and surrounding the Exploitation Concession Kallak K nr 1.

In conclusion

Kallak has been defined as Sweden's "*largest undeveloped quartz banded iron ore deposit*" and "*of national interest*" by the Swedish Government in a statement released on 18 January 2024. The project has the potential to produce a high-grade, low impurity concentrate that will be an important feedstock to support the decarbonisation of the steel industry. At the same time, Kallak is surrounded by communities, culture, and nature that deserve preservation. It is the Company's top priority to deliver a sustainable, world-class project that delivers benefit to all stakeholders.

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About Beowulf Mining plc

Beowulf Mining is a mining company with main activities in exploration and development in Sweden, Finland and Kosovo. Beowulf's portfolio is diversified by commodity, geography and stage of development of the projects and consists primarily of iron ore, graphite, gold and base metals. Beowulf Mining is headquartered in London, England.

Cautionary Statement

Statements and assumptions made in this document with respect to the Company's current plans, estimates, strategies and beliefs, and other statements that are not historical facts, are forward-looking statements about the future performance of Beowulf. Forward-looking statements include, but are not limited to, those using words such as "may", "might", "seeks", "expects", "anticipates", "estimates", "believes", "projects", "plans", strategy", "forecast" and similar expressions. These statements reflect management's expectations and assumptions in light of currently available information. They are subject to a number of risks and uncertainties, including, but not limited to , (i) changes in the economic, regulatory and political environments in the countries where Beowulf operates; (ii) changes relating to the geological information available in respect of the various projects undertaken; (iii) Beowulf's continued ability to secure enough financing to carry on its operations as a going concern; (iv) the success of its potential joint ventures and alliances, if any; (v) metal prices, particularly as regards iron ore. In the light of the many risks and uncertainties surrounding any mineral project at an early stage of its development, the actual results could differ materially from those presented and forecast in this document. Beowulf assumes no unconditional obligation to immediately update any such statements and/or forecast.

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[1] Mineral Resources were reported in 2021 (and re-stated as part of the 2023 Scoping Study) by independent consultant Baker Geological Services ("BGS") and in accordance with the 2017 PERC reporting standard.

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