



**BEOWULF MINING plc**

# Becoming a trusted European supplier of metals needed for the Green Transition

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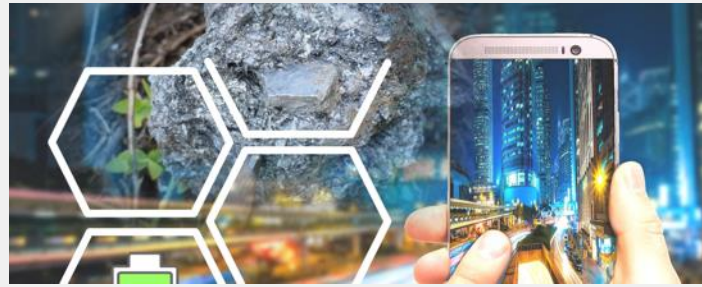
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# Strategic Position

Developing production assets in stable jurisdictions and proximity to growing downstream markets



1

High-grade magnetite iron concentrate for a decarbonising steel sector.

One of Europe's largest undeveloped iron ore deposits.

Targeting a production start in 2026.

2

Sustainable and secure supply of natural flake graphite to Europe's rapidly growing lithium-ion battery sector.

Developing downstream anode materials production capability.

3

New supply of metals for Europe's Green Transition.

Lead, zinc, copper, gold and silver exploration targets.



**Jokkmokk Iron**



**GRAFINTEC**



**BEOWULF MINING plc**



# ESG

## Sustainability, Participation and Transparency

Beowulf Mining seeks to be recognised for living its values of **Respect, Partnership** and **Responsibility**.

In its structure and systems, the Company is focused on four pillars in the construction of a sustainable organisation:

1. Corporate Governance;
2. Stakeholder Engagement;
3. Having a Long-term Time Horizon; and
4. Transparency and Accountability in our actions and communications to stakeholders.



- Identified specific **UN Sustainable Development Goals** and relevant actions under each goal which the Company is building into its development plans.
- Also comply with **The Equator Principles** - factored into our thinking, design, engineering, and planning of our operations and management systems.
- The Company's ESG Policy can be viewed following the link below:  
<https://beowulfmining.com/about-us/esg-policy/>



Our goal is to create  
the most sustainable  
and modern mine in  
Sweden.

Fossil-free iron ore is  
needed for fossil-free  
steel making.



# Kallak North 'Only'

Targeting a production start in 2026



## Market leading

- 71.5% magnetite iron concentrate with low levels of impurities.
- Next best magnetite product on the market is LKAB's magnetite fines ("MAF"), widely regarded as unique, until now.

## Ideal location

- Norrbotten County, Northern Sweden.
- Excellent transport infrastructure. Railway is ~ 40km to the east.
- Routes to regional fossil-free steelmaking projects and ports for export.
- Access to renewable power supporting Net Zero goals.

## ESG goals

- Starting with a 'blank sheet of paper' when it comes to embodying creativity and innovation in the project.
- Partnership with the local community is an important focus area for maximising long term benefits.
- The mine can give Jokkmokk municipality a thriving, diversified and sustainable economy that lives on long after mining has finished.



# Kallak North ‘Only’ Base Case – 2.7Mtpa

Scoping Study Results (Jan 2023) – Many Possibilities to Increase Value

NPV(8): **US\$177 million**

IRR: **14.5%**

Payback period: **4.5 years**

Using spot prices to calculate **US\$161/dmt for BF** and **US\$177/dmt for DR**, with a conservative production split of 67% being sold to BF and 33% being sold to DR the **NPV(8) increases by 479% to US\$852 million**.

## High-grade concentrates

- Direct Reduction (“DR”) grade 70.07% iron.
- Blast Furnace (“BF”) grade 68% iron.
- High grade concentrates that will yield significant premiums over and above the Platts 65 iron ore index pricing in the long term.
- ‘Base Case’ assumes 67% of Kallak production is sold to the international BF market and 33% sold to the domestic DR market.

## Net Zero by design

- Electrification of the mine, both fixed plant and mobile equipment.
- Fossil-free iron concentrates for a decarbonising steel sector.

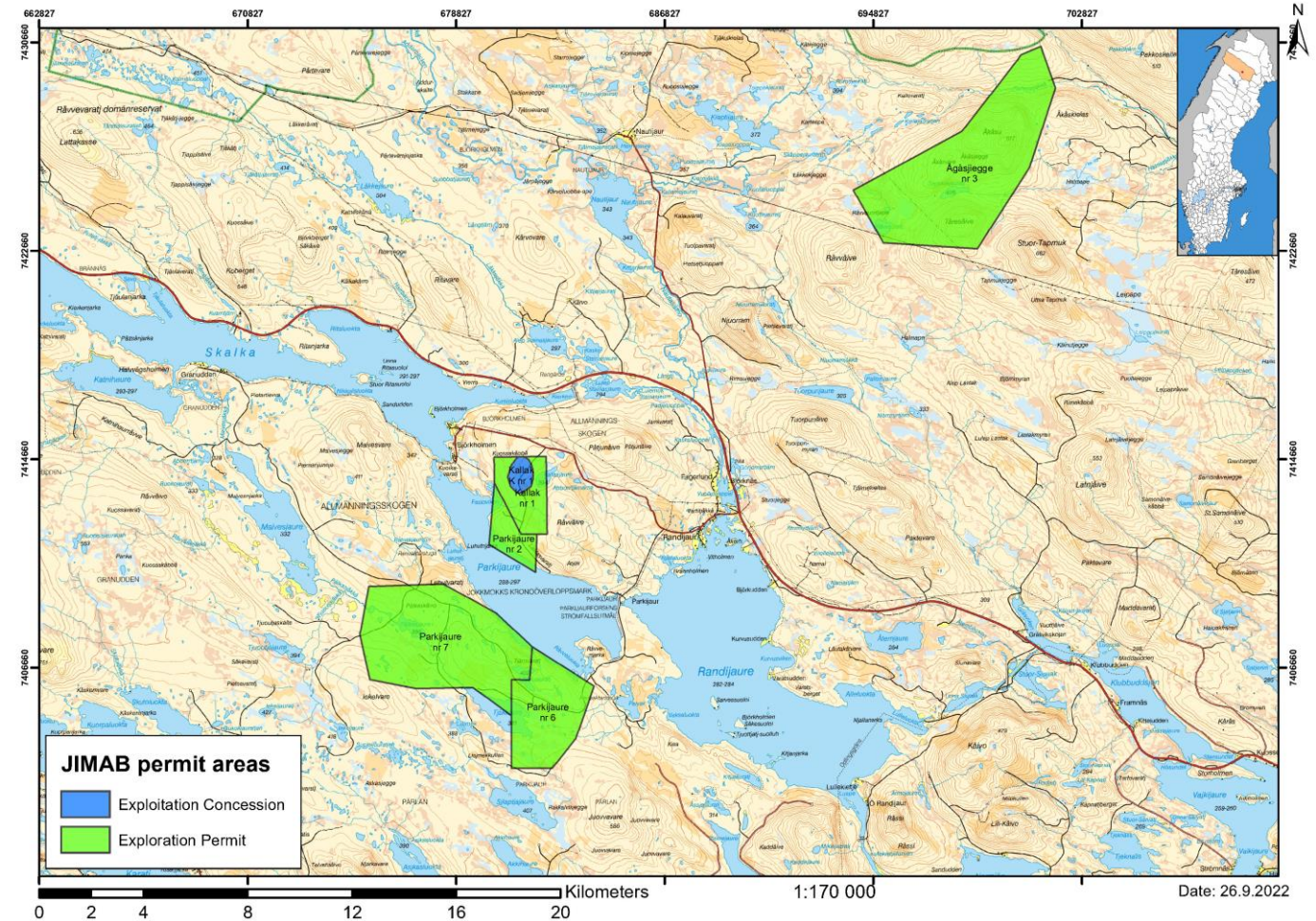
## Value upsides

- Increased concentrate production. Potential ore sorting to boost head grade.
- Greater proportion of sale to Direct Reduction customers. Testwork already suggests silica content can be reduced by reverse flotation of the iron concentrate.
- Green premiums for Net Zero supply.
- Extended mine life through conversion of exploration targets to resources.

# Kallak North - a small piece of the jigsaw

A longer life mining operation well beyond Kallak North 'Only'

- Kallak North has a Measured & Indicated Mineral Resource of 111Mt @ 28% Fe.
- In the Kallak area, 389 million tonnes of iron mineralisation has been estimated, including:
  - Kallak North:
  - Kallak South: and
  - exploration targets across the Company's Parkijaure nr 2, 6 and 7 licences.
- The Company also has the Agåsjiegge nr 3 licence, which the SGU has previously estimated contains 75 million tonnes of magnetite iron mineralisation (not classified).





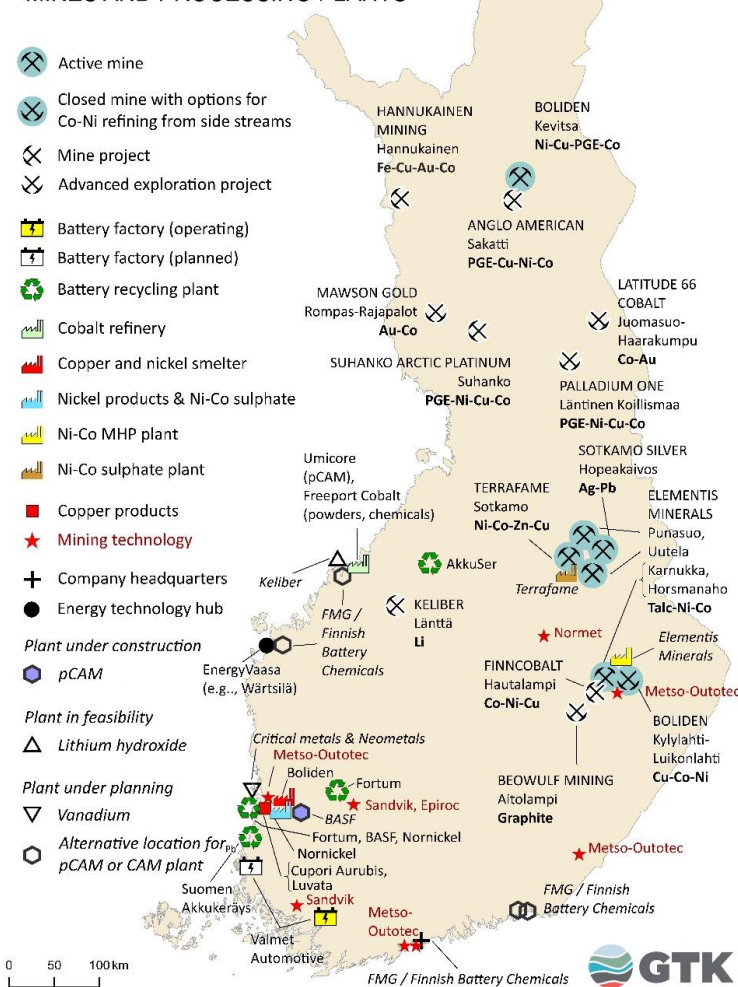
# Natural Flake Graphite Supply to the European Lithium-ion Battery Market

# Graphite for Lithium-ion Batteries

Rapid market growth, overreliance on imported supplies

- Graphite is the material of choice for anodes in lithium-ion batteries.
- Graphite demand will increase with demand for electric vehicles and the need for greater renewables storage surges.
- In 2021, the US Geological Survey estimated global graphite production of 1 Mt, with China accounting for 82%, and Norway, the only listed producer in proximity to Europe, accounting for 1.3%. Natural flake graphite is on the EU's Critical Raw Materials' list.
- Geopolitical tensions, the European Green Transition, and a focus on sustainable and secure supply chains, as well as self-sufficiency, has led countries to re-assess their overreliance on Chinese supply of strategic materials including graphite.
- Envisaged benchmarks identified under the EU's Critical Raw Materials Act depend on a favourable legal framework and investments as well as a few other factors.
- EU targets for 10% of natural flake graphite mining in Europe will only be achievable if all current projects are permitted and go into operation and at least one or two additional projects can be identified and realised.

BATTERY MINERAL  
MINES AND PROCESSING PLANTS





# Grafintec – Strategic Position in Finland

Aiming to be a leader in the sustainable supply of anode materials

## 1 Flake Graphite Inventory

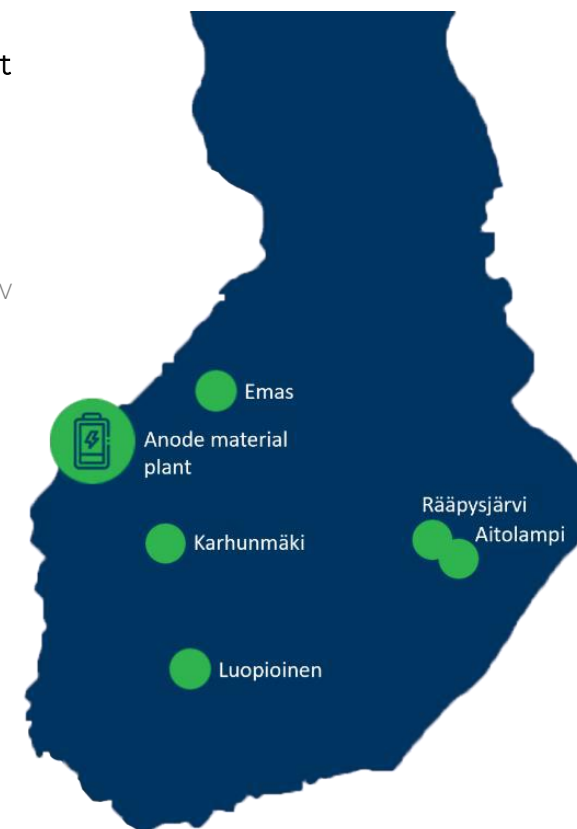
- Aitolampi project - total Indicated and Inferred Mineral Resource of 26.7 Mt at 4.8% Total Graphitic Carbon ("TGC") for 1,275,000 t of contained graphite (including 11.1 Mt at 5.7% TGC for 630,000 t of contained graphite when using a cut-off grade of 5% TGC).
- Exploration upside with other graphite prospects.
- Provide **security of supply** in the longer term of high-grade concentrate to downstream facilities.
- Diversified supply - discussions with several mines to secure supplies of imported raw material in the short term.

## 2 Anode Materials Production

- **Partnership with established graphite and anode company** – Combination of proprietary process and technical know-how, and Grafintec's regional knowledge of market developments, access to funding opportunities and high-quality natural flake graphite resources, and recycled graphite feedstocks.

## 3 GigaVaasa

- **GigaVaasa - site reservation agreement** with the municipality of Korsholm, securing Plot 1, Block 3017 for the establishment of an anode materials plant.
- **The GigaVaasa area is dedicated to the battery value chain** and provides access to renewable energy, well developed infrastructure, a plot area with room for expansion, as well as possible synergies with other industries as part of a sustainable green ecosystem.



Source: Grafintec

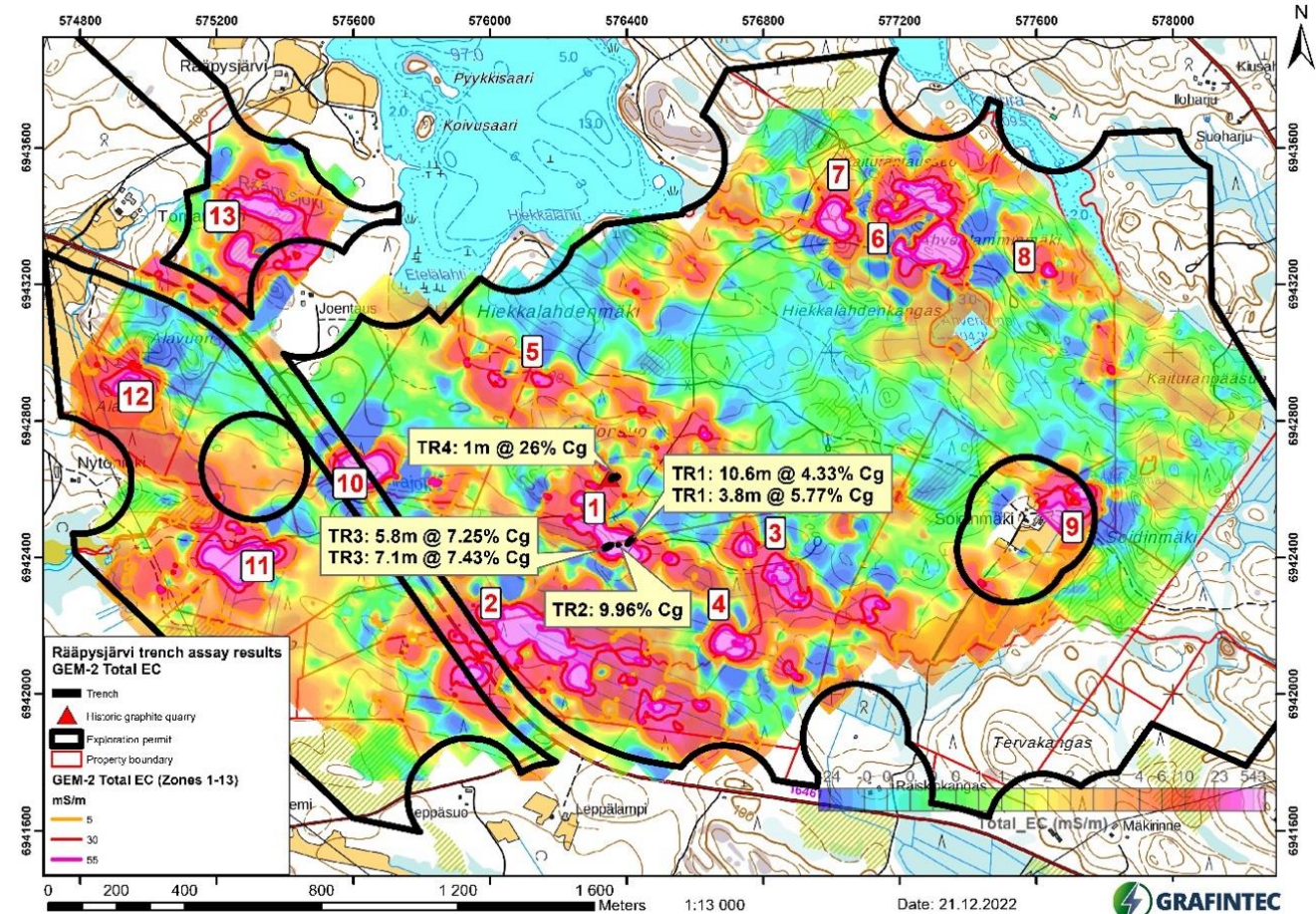


# Building an inventory of natural flake graphite

Long term security of supply to anode materials production

*Exploration programmes focused on securing long-term sustainably produced primary raw material supply to feed a Finnish graphite anode value chain.*

- Rääpysjärvi – Electro-magnetic conductive area signals potential for a new flake graphite discovery.
- Only eight kilometres north-northwest of Grafintec's Aitolampi project in the municipality of Tuusniemi in Eastern Finland.
- Flake graphite mineralisation discovered in four trenches. See plan for trench assays and grab sample assay.
- >50% graphite assay from historic quarry at Rääpysjärvi is exceptional and indicates the potential for localised very high-grade mineralisation.







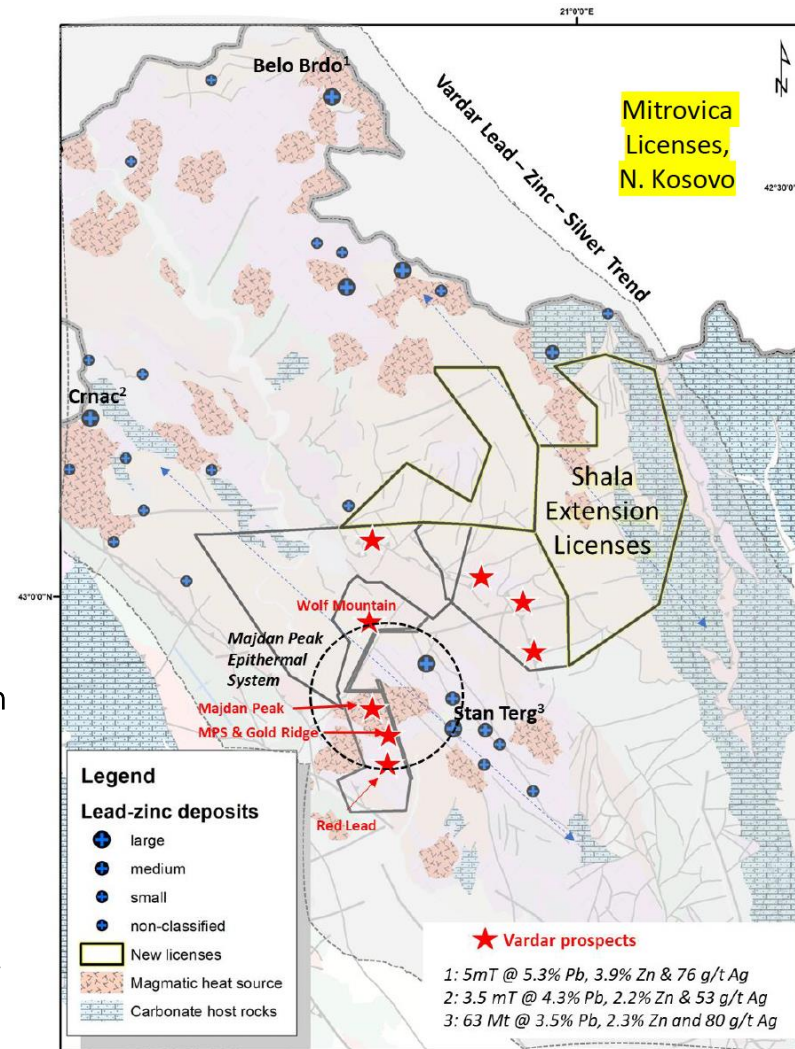
# Base Metals Supply for the European Green Transition



# Vardar Minerals – Making Discoveries in the Tethyan Belt

## State-of-the Art Exploration

- The Tethyan Belt of south-east Europe can be regarded as the region's chief copper-gold (lead-zinc-silver) province.
- Vardar has two exploration projects:
  - Mitrovica: lead, zinc, silver, copper, gold:
    - Discovered Large Polymetallic Epithermal System. Polymetallic epithermal deposits (copper, gold and lead-zinc) form at shallow depths and are important sources of base and precious metals - highly desirable exploration targets.
    - Compelling exploration targets have increased the significant 'district' potential of Majdan Peak.
    - Red Lead - Highly prospective lead-zinc-silver exploration target identified.
  - Viti: copper, gold, lithium:
    - Viti package, centred on prominent caldera feature identified in magnetic data, targeting Porphyry Copper /epithermal deposits + conceptual Lithium-Boron model.



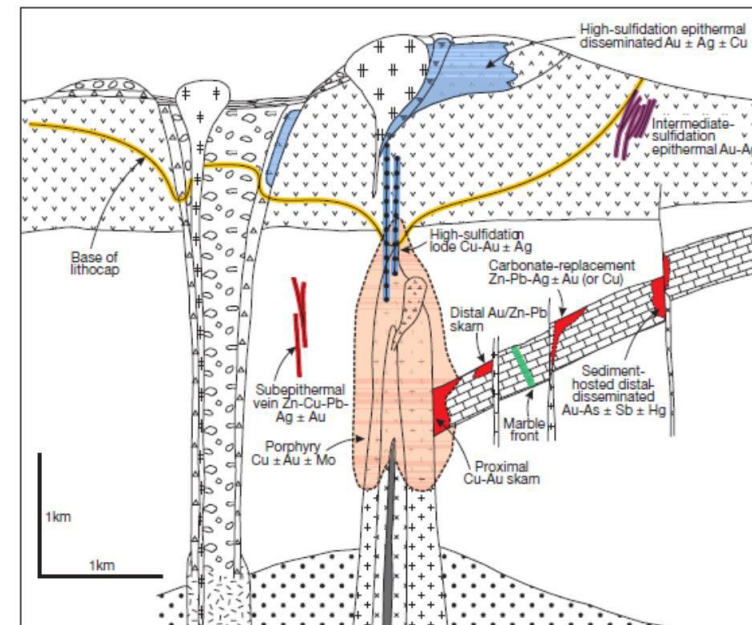


# Majdan Peak

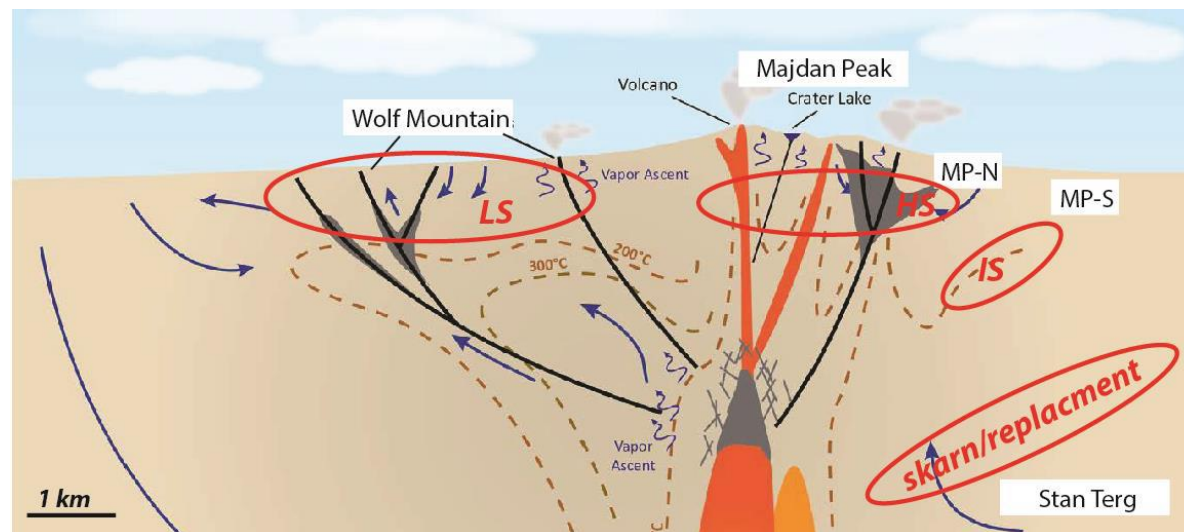
## Textbook porphyry/epithermal system

- *Potential for epithermal mineralisation of economic grades.*
- *Comparable with the Chelopech copper-gold deposit in Bulgaria (Proven and Probable ore reserves of 1.6 million ounces of gold and 336 million pounds of copper).*

(right) ideal porphyry model (Sillitoe, 2010)



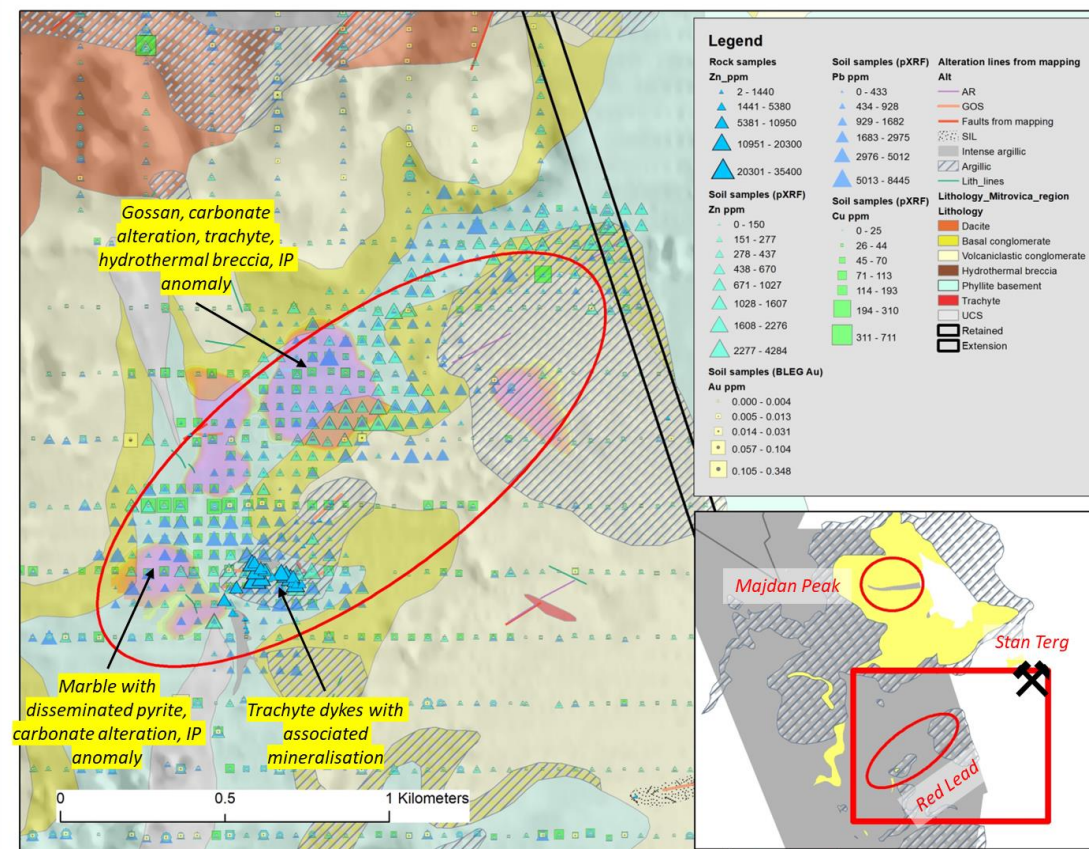
- Alteration size and type comparable to World Class epithermal deposits.
- Textbook geophysical signature.
- Rock sample results = potential for high grade gold intersections.
- Soil sample signature typical of High Sulphidation epithermal response.
- High potential for related porphyry, replacement/skarn type (Stan Terg), Intermediate Sulphidation and Low Sulphidation deposits



# Red Lead

## Highly prospective Lead-Zinc-Silver Exploration Target

- Red Lead shares similarities observed at the neighbouring world-class Stan Terg deposit, such as the same host rocks, trachyte heat source, hydrothermal breccias and hydrothermal alteration patterns.
- The Stan Terg deposit is located just two kilometres to the east of Red Lead and has a resource of 63 million tonnes at 3.5% lead, 2.3% zinc and 80 grammes per tonne silver (based on past production and estimated remaining reserves at the same grade).
- Red Lead is highly prospective for the same metals and possible economic mineralisation.



Red Lead Target with soil sample and rock grab results overlain on geological mapping. IP anomalies are highlighted in magenta.

# Creating value in 2023

Activity across all businesses



- Q2 2023 – Kick-off Pre-feasibility study. Focus on value drivers.
- Environmental Permitting.
- Build partnerships in the local community.
- Initiate strategic partner discussions.

**Targeting a production start in 2026.**



- Complete PFS for Finnish anode materials hub by end of H1 2023.
- Optimise Aitolampi Scoping Study in the context of downstream configuration.
- Fully define Grafintec business model and production plan.

**Developing anode materials production capability.**



- Tremendous exploration success last year has created the opportunity to spin-off Vardar. Options being investigated.

**Targeting a discovery.**





# Board and Management



**Johan Röstin**  
Non-Executive Chairman

Johan was the CEO of ferry operator ForSea for three years, 2017-2020, and before that the CEO of Copenhagen Malmö Port AB, 2009-2017. He has significant experience in infrastructure, logistics, capital investments and permitting processes, and has held Board, executive and senior management positions during his career. In his role at ForSea, Mr Röstin led the company to create a new brand, a stronger organisation and set the company on its sustainability journey.



**Christopher Davies**  
MSc DIC in Mineral Exploration FAusIMM  
Non-Executive Director

Fellow of the Australasian Institute of Mining and Metallurgy, Chris is an exploration/economic geologist with more than 30 years' experience in the mining sector with substantial knowledge of graphite and base metals. Chris has worked as a geologist in Africa, Australia, Yemen, Indonesia and Eastern Europe. His most recent role was as a Consultant to an Australian Group seeking copper-gold assets in Africa where he carried out technical due diligence and negotiated commercial terms for joint venture partnerships. Chris was Operations Director of African Eagle until March 2012 and Country Manager for SAMAX Resources in Tanzania, which was acquired by Ashanti Goldfields in 1998 for US\$135m.



**Kurt Budge**  
MBA MEng in Mining Engineering ARSM  
Chief Executive Officer, Beowulf Mining plc

Over 20 years' experience in the mining sector, during which he spent five years as a Business Development Executive in Rio Tinto's Business Evaluation Department. He has also been an independent advisor to junior mining companies on acquisitions and project development as well as a General Manager of Business Development for an AIM listed mining company. Kurt was Vice President of Pala Investments AG, a mining focused private equity firm based in Switzerland and has worked as a mining analyst in investment research.



**Rasmus Blomqvist**  
MBA MSc in Geology and Mineralogy MAusIMM  
Managing Director, Grafintec Oy

Rasmus, the founder of Grafintec, joined Beowulf in January 2016. He has been working in exploration and mining geology for over 18 years and holds an MSc in Geology and Mineralogy from Åbo Akademi University, Turku Finland, and an Executive MBA from Aalto University Executive Education, Helsinki Finland. Since 2012, Rasmus has been exploring for flake graphite within the Fennoscandian shield and is one of the most experienced graphite geologists in the Nordic region. He has also over the years gained an extensive knowledge of the graphite anode materials value-chain. Prior to Grafintec, Rasmus was Chief Geologist for Nussir ASA managing its exploration team and achieving significant exploration success for the company. Prior to Nussir, Rasmus worked as an independent consultant for several international mining companies including Mawson Resources, Tasman Metals and Agnico Eagle and has experience in graphite, gold, base metals and iron ore, within the Nordic region. Rasmus is a member of the Australasian Institute of Mining and Metallurgy ("MAusIMM").



**Ulla Sandborgh**  
BSc in Civil Engineering  
CEO of Jokkmokk Iron Mines AB

Ulla has held senior positions in private enterprise and public institutions, in sectors including infrastructure, electricity and water. Her most recent role was a Director General, Ministry of Enterprise, The Government of Sweden, in which role she was responsible for issues affecting the limestone and cement industries and accountable for the development of a strategy to promote the efficient and sustainable usage of water. Ulla has extensive experience in managing permitting processes and, as part of this, engaging with stakeholders, ensuring interests are safeguarded and benefits shared.





**BEOWULF MINING plc**



**Kurt Budge**  
Chief Executive Officer

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