Germanium 76 Confirmed in Historic Concentrate at Bleiberg Mine

HIGHLIGHTS

- **Ge76 Confirmed in Bleiberg Concentrate:** Battery Age Minerals has successfully tested and confirmed the presence of Germanium-76 (Ge76) in the concentrate from historical mining operations at the Bleiberg mine in Austria, marking a key milestone in the Company's progress on the project.
- **Strategic Focus on Semiconductor Applications:** The confirmation of Ge76, a critical isotope for semiconductor technologies, reinforces Bleiberg's potential as a strategic supplier of materials essential for the rapidly growing tech sector. The North Atlantic Treaty Organisation (NATO) in December 2024 identified Germanium as one of only 12 raw materials essential for defence and energy security.
- **Historical Significance of Bleiberg Mine:** The Bleiberg mine, with a 700-year history, was a major global producer of several critical minerals, including germanium, and has historically contributed approximately 172 tonnes of germanium, solidifying its importance in the global market[1].
- **2025 Exploration Plan:** The Company is preparing for a comprehensive exploration program at Bleiberg, with plans to submit its maiden drilling permit in early 2025. Fieldwork will also be focused on the identification of historic concentrate and tailings material at both Bleiberg and Hochibir across numerous historic workings and mineral occurrences.

Battery Age Minerals Ltd (ASX: BM8, "Battery Age" or **"the Company")** is excited to announce the confirmation of Germanium-76 ("Ge76") in the concentrate from the historic Bleiberg mine. The testing, which was conducted as part of the Company's ongoing exploration activities, has successfully identified Ge76 at an atom abundance of *7.41% (Table 1),* in the sample taken from historical mining and beneficiation operations. This breakthrough represents a pivotal moment for the Company as it works to unlock Bleiberg's full potential as a significant source of critical minerals for advanced technology applications.

The Bleiberg mine, located in Carinthia, Austria, has a remarkable history dating back 700 years. Historically, it was one of Europe's top producers of high-grade germanium, along with other valuable minerals such as zinc, lead, molybdenum, and cadmium. The mine produced approximately 172 tonnes of germanium over its operational life, cementing its legacy as one of the world's largest sources of the critical material.

Battery Age's recent testing of the Germanium concentrate has confirmed the presence of Germanium-76 (Ge76), a vital isotope for the semiconductor industry. Ge76 is particularly important for applications in infrared optics, fiber-optic systems, advanced transistors, and other cutting-edge technologies. This confirmation positions Bleiberg as a potential strategic supplier of Ge76 to meet the growing global demand for critical materials essential for semiconductor manufacturing.

With the global semiconductor industry continuing to expand, particularly in high-tech fields such as electronics, telecommunications, and defense, the demand for high-quality germanium has never been greater. The confirmation of Ge76 in Bleiberg concentrate is a significant indication of the Company's Bleiberg project's potential as a strategic high-quality supplier of this critical material.

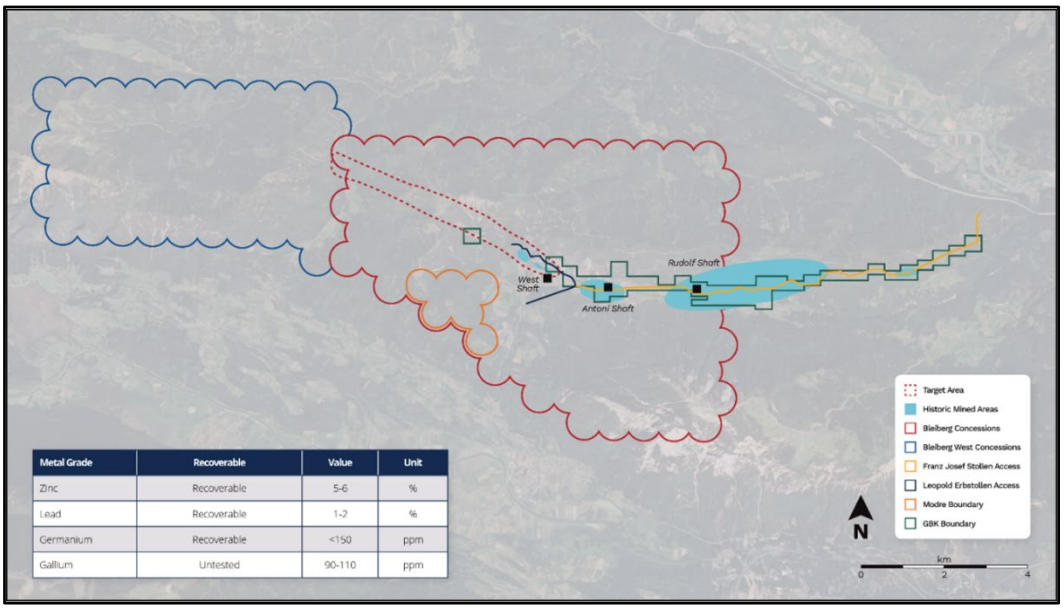
As the world's leading producer of germanium, China's recent export restrictions have exacerbated concerns over the stability and reliability of global supply. Battery Age believes there is a need for alternative and secure sources of this critical material, particularly for industries such as semiconductors, telecommunications, and defense technologies.

Battery Age is moving forward with the identification and additional testing of other historical concentrates and tailings across the project area to fully assess its quality and suitability for advanced technological applications. The Company is also preparing for a comprehensive exploration program, with plans to submit its maiden drilling permit in early 2025. These activities will further define Bleiberg's potential as a strategic source of critical minerals for the global market.

	Abundance (Atom%)
Ge70	21.12
Ge72	27.47
Ge73	7.71
Ge74	36.30
Ge76	7.41

Table 1: Results from Ge Isotope separation analysis conducted on concentrate from historic Bleiberg mine.

Figure 2: Bleiberg Zinc Lead Germanium Project located in the state of Carinthia, Austria.



Metal Grade	Recoverable	Value	Unit
Zinc	Recoverable	5-6	%
Lead	Recoverable	1-2	%
Germanium	Recoverable	<150	ppm
Gallium	Untested	90-110	ppm

Figure 2: Battery Age exploration tenure, historic mining corridor and production shafts. Inset table demonstrates historical data for the Bleiberg Mine from previous workings[1].

Battery Age CEO, Nigel Broomham, commented:

"We are extremely pleased to confirm the presence of Germanium-76 in the Bleiberg concentrate. This is a significant milestone and further reinforces our belief in Bleiberg's potential as a key supplier of critical materials for the rapidly growing semiconductor industry. Given the increasing demand for germanium, and the recent supply chain challenges, this confirmation on potential quality comes at a crucial time. We are excited to continue advancing the Bleiberg project and look forward to sharing further results with the market in the coming months."

The Company will continue to keep the market informed on the results of further testing and its exploration plans as it moves forward with its efforts to establish its Bleiberg project as a key global source of germanium for high-tech applications.

References:

1. Zeeh,S. and Bechstadt,T. (1994). Carbonate-Hosted Pb-Zn Mineralisation at Bleiberg-Kreuth (Austria): Compilation of Data and New Aspects. In: Fontbote,L. and Boni,M. editors, Sediment Hosted Pb-Zn Ores, Special Publication No. 10 of the Society for Geology Applied to Mineral Deposits. pp. 271-2962.

   Cerny,I. (1991). Lagerstättenforschung in Kärnten Neuergebnisse und Aspekte für die Zukunft. Carinthiall 181./101. Jahrgang S. 119-129 Klagenfurt 1991.

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   Multi-Met (2023) Bleiberg Project - Multi-Met, Multi. Available at: https://multimetdev.com/projects/bleiberg-project/.

   Schor, D. (2021) TSMC details 5 nm, WikiChip Fuse. Available at: https://fuse.wikichip.org/news/3398/tsmc-details-5-nm/ (Accessed: 25 February 2024).

   Leach. D, Taylor. R, Fey. D et al.(2010), , A deposit model for Mississippi Valley-Type lead-zinc ores, USGS Scientific Investigations Report 2010-5070-A.

   Mining Insights Pty Ltd, Independent Geologists Report, 1 December 2022.

2. Refer to earn-in terms and structure set out in the Company's announcement dated 16 May 2024 and Prospectus dated 7 December 2022.

[ENDS]

Release authorised by the Board of Battery Age Minerals Ltd.

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Competent Person Statement

The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves.

The information in this release that relates to Exploration Results is based on information prepared by Dr Simon Dorling. Dr Dorling is a member of the Australasian Institute of Geoscientists (Member Number: 3101) and a consultant of Battery Age. Dr Dorling has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code (Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves). Dr Dorling consents to the inclusion in the release of the matters based on their information in the form and context in which it appears.

Compliance Statement

This report contains information on the Bleiberg Project extracted from an ASX market announcement dated 8 December 2022, 2 February 2023, 13 July 2023, 26 February 2024, 26 March 2024 and 16 May 2024 released by the Company and reported in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). The original market announcement is available to view on www.batteryage.au and www.asx.com.au. Battery Age is not aware of any new information or data that materially affects the information included in the original market announcement.

Forward-Looking Statement

This announcement may contain certain forward-looking statements and projections. Such forward looking statements/projections are estimates for discussion purposes only and should not be relied upon. Forward looking statements/projections are inherently uncertain and may therefore differ materially from results ultimately achieved. Battery Age Minerals Limited does not make any representations and provides no warranties concerning the accuracy of the projections and disclaims any obligation to update or revise any forward-looking statements/projects based on new information, future events or otherwise except to the extent required by applicable laws. While the information contained in this report has been prepared in good faith, neither Battery Age Minerals Limited or any of its directors, officers, agents, employees or advisors give any representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this announcement.

Appendix 2 – JORC CODE, 2012 EDITION – TABLE 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• The sample is recorded as Zinc and Germanium concentrate from the historic Bleiberg operations • The sample is considered to be a fair representation of the Zinc and Germanium product which the mine was producing • The sample is considered to have been fed from the mineralised sources of the historic orebody from which they were derived.

Criteria	JORC Code explanation	Commentary
	• *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• No drilling has been referenced or reported
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• No drilling has been referenced or reported
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• No drilling has been referenced or reported

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• No drilling has been referenced or reported
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The analysis is carried out by ICP-SFMS (ELEMENT XR, ThermoScientific) using internal standardization and external calibration with bracketing isotope SRMs.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No drilling has been referenced or reported

Criteria	JORC Code explanation	Commentary
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The location of the sample has been recorded from the Bleiberg mining operations
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• No data spacing and distribution has been referenced
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• No drilling has been referenced or reported
Sample security	• *The measures taken to ensure sample security.*	• No drilling has been referenced or reported
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No external audit has been undertaken at this stage.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or*	• No known impediments.

Criteria	JORC Code explanation	Commentary
	national park and environmental settings. • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Mining in an around Bleiberg dates back to more than 1000 years of mining • Hundreds of kms of lateral development, stopes, shafts have been established over nearly a millennia of mining in the district • State owned Mining company ran multiple exploration campaigns • Mapping was carried out between early 1950's and late 1980's • Geochemical rock chip sampling was carried out in association with mapping • Data for 16 DDH for about 5,700m can be located in annual exploration reports from 1974 to 1980; very limited analytical data
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Bleiberg mineralisation is classified as "carbonate-hosted base metal" or MVT mineralisation; the principle commodities are zinc, lead, germanium • The Bleiberg base metal mining district is located in southern Austria, near the border with Slovenia and Italy; Bleiberg is one of several mining camps straddling the Periadriatic Lineament, a major crustal fault line
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar*	• No drilling has been referenced or reported

Criteria	JORC Code explanation	Commentary
	○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No drilling has been referenced or reported
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement*	• No intercept widths or drill holes have been referenced

Criteria	JORC Code explanation	Commentary
	to this effect (eg 'down hole length, true width not known').	
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• A map of the location of the project has been included.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• No drilling has been referenced or reported
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No results have been referenced or reported
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Battery Age will continue with identification and additional testing of other historical concentrates and tailings across the project area to fully assess its quality and suitability for advanced technological applications. • The Company is also preparing for a comprehensive exploration program, with plans to submit its maiden drilling permit in early 2025