Anomalous Rare Earth Elements in Smoky Quartz Samples within Quantum's Quest Property

written by Raj Shah | August 1, 2025

August 1, 2025 (Source) – Quantum Critical Metals Corp. (TSX.V: LEAP | OTCQB: ATOXF | FSE: 86A1) ("Quantum" or the "Company") is pleased to announce that it has completed additional research on its Quest critical mineral property which was acquired earlier this year to compliment the Company's growing strategic resource portfolio (see news dated January 16, 2025).

The mineral claim is in the Lake Chapiteau region of Québec and hosts a region of critical and rare earth elements in syenite granitic rocks. The highlights of the mapping and sampling program completed by former owners of the project were reported previously including notable anomalous values of barium, beryllium, fluorine, gallium, niobium, rubidium, tantalum, thorium, zinc and zirconium.

An anomalous sample was reported as collected within Quantum's claim boundaries in the report titled "PROGRAMME D'EXPLORATION DANS LE SECTEUR DU LAC CHAPITEAU, FOSSE DU LABRADOR, NORD-DU-QUEBEC, ETE 2010" on SIGEOM. The SIGEOM database is a collection of geomining information containing the entire Québec geoscientific database collection over a period of the past 150 years. SIGEOM had recorded the sample as sedimentary rock, however upon review, the assessment report stated it was a hand selected sample of smoky quartz taken from an outcrop of quartziferous syenite with rapakivi texture which is more likely the lithology for rare earth type mineralization. Quantum has staked an additional claim cell that adjoins the current one to expand the exploration potential for rare earth

elements.

Tables 1 to 3 summarize the anomalous assays from this sample* which contained 20% Total Rare Earth Elements (“TREE”), with 8.7% being light rare earth elements (“TLREE”), and 11.3% being total heavy rare earth elements (“THREE”). The sample also contained 226 gpt gallium, 78 gpt germanium and 15,060 gpt beryllium.

Table 1. Light rare earth element assays (ppm or grams per ton)

Sample ID	Ce	Gd	Hf	Ho	La	Nd	Pm	Pr	Sc	Sm	TLREE ppm	TLREE %
205273	29900	9340	320	3150	7430	23800	n/a	5010	13	8110	87073	8.7

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Table 2. Heavy rare earth element assays (ppm or grams per ton)

Sample ID	Dy	Er	Lu	Tb	Tm	Y	Yb	THREE ppm	THREE %
205273	14100	10800	1710	2130	1870	69400	12500	112510	11.3

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Table 3. Other anomalous elements (ppm or grams per ton)

Sample ID	Be	Eu	F	Ga	Ge	Nb	Th	Pb	U
205273	15060	133	1000	226	78	69.9	4710	1790	1920

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The data reported in this release has been taken from historical exploration assessment reports. None of the historical information in this news release has been independently verified by the Company and should not be relied upon.

**Grab samples are discrete samples which are typically, but not exclusively, constrained to mineralization. Grab samples are*

selective in nature and collected to determine the presence or absence of mineralization and are not intended to be representative of the deposit in its entirety.

CEO Marcy Kiesman commented, "Quantum is continuing to unlock its portfolio of critical minerals and rare earth assets to power the next generation of high tech and defence industries. Domestic sources of yttrium, beryllium, neodymium and cesium are essential to help fill the growing global supply gap. Quantum continues to elevate its position to meet the growing global demand for critical and rare earth elements by stockpiling a portfolio of first-class assets with exciting historical assays."

Next Steps:

The Company is investigating a site visit in an effort to collect duplicate samples to confirm the assay results from previous work. Depending on access, the Company is also looking to potentially delineate the extent of the mineralization and take additional representative samples of the area.

Why this project matters

On April 4, China's Ministry of Commerce implemented export restrictions on seven rare earth elements (REEs) and related magnets used in the defense, energy, and automotive industries, in response to increased U.S. tariffs on Chinese goods. The measures target seven of the 17 REEs—samarium, gadolinium, terbium, dysprosium, lutetium, scandium, and yttrium—and require exporters to obtain special licenses for international shipments.

*Source:*https://www.csis.org/analysis/consequences-chinas-new-rare-earths-export-restrictions#:~:text=China%20first%20weaponized%20rare%20earths,

antimony%2C%20graphite%2C%20and%20tungsten).

On June 11, 2025, after two months of China's export restrictions on seven rare earth elements and magnets triggered by U.S. tariffs, U.S. and Chinese officials reached a new trade framework in London. Under the agreement, China will resume supplying rare earth minerals and permanent magnets to the United States, while the U.S. will maintain a fixed 55% tariff on Chinese goods. The deal builds on an earlier Geneva truce but underscores the precariousness of Western supply chains, prompting calls for accelerated domestic development of rare earth mining, processing, and magnet manufacturing to reduce reliance on Chinese export control leverage. *Source:* https://www.csis.org/analysis/trump-strikes-deal-restore-rare-earths-access

About Rare Earth Elements

Rare Earth Elements (REEs) are a group of 17 chemically similar metallic elements that are essential in many modern technologies. They include:

- The 15 lanthanides on the periodic table (Lanthanum to Lutetium)
- Scandium and Yttrium, which share similar properties and often occur in the same mineral deposits

Despite their name, most REEs are not rare in terms of crustal abundance, but they are rarely found in economically viable concentrations.

Light vs. Heavy Rare Earth Elements

REEs are generally split into two categories based on their atomic number and geochemical behavior:

Feature	Light REEs (LREEs)	Heavy REEs (HREEs)
Elements Included	La, Ce, Pr, Nd, Pm, Sm	Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu + Y
Abundance	More common in Earth's crust	Less abundant and harder to extract
Typical Minerals	Bastnäsite, Monazite	Xenotime, Ion-adsorption clays
Economic Value	Generally lower	Generally higher (e.g., Tb, Dy, Lu)
Applications	Polishing powders, catalysts, magnets	High-performance magnets, phosphors, lasers, medical tech
Weathering Behavior	More mobile during weathering	More likely to remain in residual clays

About Gallium

Gallium, a critical component in semiconductors, telecommunications, renewable energy sectors and may also be considered as a possible heat exchange medium in nuclear reactors. Canada and the USA rely on gallium for telecommunications, defense, and green energy. Gallium is also used in semiconductors, AI circuitry, radar and microchips and could be more critical than previously realized.

Source: https://www.metaltechnews.com/story/2022/09/12/critical-minerals-alliances-2022/gallium-may-be-more-critical-than-realized/1087.html

Gallium Market Size and Growth:

1. *Market Size*

In 2023, global high-purity gallium production was estimated at

320 tonnes, with total primary production capacity reaching 1,100 tonnes per year. Demand for gallium is projected to grow due to its role in semiconductors, 5G technology, and renewable energy applications.

2. *Key Applications:*

- Semiconductors: Gallium arsenide (GaAs) and gallium nitride (GaN) are critical in chips for smartphones, satellite communications, and defense systems.
- Renewable Energy: GaN is used in solar cells and LEDs.
- Emerging Technologies: Gallium is a key component in next-generation technologies such as quantum computing, 5G networks, and advanced radars.

3. *Geopolitical Considerations*:

China has imposed export controls on gallium, exacerbating supply chain challenges for the U.S. and its allies. These restrictions are part of a broader trade conflict over critical technologies. Countries like the USA are ramping up efforts to develop domestic gallium sources and processing capabilities to reduce reliance on China.

About Critical Minerals

Critical minerals are essential components in modern technologies, including renewable energy systems, defense applications, and advanced electronics. Both the United States and Canada have identified specific lists of critical minerals vital to their economic and national security. The U.S. Geological Survey’s 2022 list includes 50 critical minerals, while Canada in 2024 has designated 34 minerals as critical.

Recent geopolitical developments have heightened concerns over

the supply chain security of these critical metals. China, which holds a dominant position in the production and processing of several critical minerals, has implemented export bans affecting the West. These actions underscore the strategic importance of diversifying supply chains and developing domestic sources for critical metals to mitigate geo-political risks and ensure the stability of essential industries.

Sources

Liu, S.-L., Fan, H., Liu, X., & Meng, J. (2023). Global rare earth elements projects: New developments and supply chains. *Ore Geology Reviews, 157*, 105428. https://doi.org/10.1016/j.oregeorev.2023.105428

Nasdaq. (2024). Rare Earth Metals: Heavy vs. Light (Updated 2024). *Nasdaq.com*. https://www.nasdaq.com/articles/rare-earth-metals%3A-heavy-vs.-light-updated-2024

Natural Resources Canada. (2024). Rare earth elements facts. *Government of Canada*. https://natural-resources.canada.ca/minerals-mining/mining-data-statistics-analysis/minerals-metals-facts/rare-earth-elements-facts

U.S. Geological Survey. (2024). Rare Earths – Mineral Commodity Summaries 2024. https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-rare-earths.pdf

MDPI. (2023). Understanding Rare Earth Elements as Critical Raw Materials. *Sustainability, 15*(3), 1919. https://www.mdpi.com/2071-1050/15/3/1919

ScienceDirect. (2023). Global rare earth elements projects: New

developments and supply chains. https://www.sciencedirect.com/science/article/pii/S0169136823001439

https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-gallium.pdf

https://www.usgs.gov/news/national-news-release/usgs-critical-minerals-study-bans-gallium-and-germanium-exports-could

https://www.metaltechnews.com/story/2024/11/20/tech-metals/tech-metals-bans-could-cost-us-billions/2040.html

About Quantum Critical Metals Corp.

Quantum Critical Metals Corp. (TSX.V: LEAP) (OTCQB: ATOXF) (FSE: 86A1) is a Canadian mineral exploration company focused on advancing critical metals projects that power next-generation technologies. With a growing portfolio of promising assets—including the NMX East Gallium-Rubidium-Cesium Project in Québec, the Discovery Gallium-Rubidium-Cesium and polymetallic project in Québec, the Victory Antimony Project in British Columbia, and the newly acquired Prophecy Germanium-Gallium-Zinc Project in British Columbia, among others, the Company is strategically positioned to support the West's transition to a secure and sustainable critical metals supply.

George M. Yordanov, P.Geo., a consultant to the Company, is the Qualified Person (as such term is defined in National Instrument 43-101), who has reviewed and approved the scientific and technical disclosure contained in this news release.

To stay updated on Quantum's latest developments, sign up for our mailing list and visit www.quantumcriticalmetals.com and www.sedarplus.com.

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