



MEDIA RELEASE: SECOND LIBS FIELD TRIAL VALIDATES BREAKTHROUGH DOWNHOLE GEOCHEMISTRY TOOL

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MinEx CRC, in collaboration with CSIRO and UniSA, has completed the second field trial of its Laser-Induced Breakdown Spectroscopy (LIBS) downhole geochemistry tool delivering high-quality geochemical data from a number of blast holes at the Australian Automation Robotics Precinct (AARP). This marks a major step towards achieving downhole real-time multielement geochemistry with significant time and cost benefits.

Backed by MinEx CRC's industry sponsors — Anglo American, Fortescue, Imdex, Newmont, Rio Tinto, Sandvik, BHP, and Vale — the technology is being developed hand-in-hand with the companies that may ultimately commercialise and deploy it.

Industry representatives from Newmont Corporation, Imdex, and Rio Tinto attended the trial to see the technology in action and explore its real-world applications.

Key achievements of the field trial included:

- **Proven field performance** – validation of a redesigned optical front end and camera system, upgraded following the 2024 trial.
- **Enhanced durability and connectivity** – ruggedisation for field conditions, and improved data transfer.
- **Scalable, high-resolution data capture** – successful collection of geochemical data from multiple drill holes under varying deployment conditions, optimising tool performance.

Early trial results have confirmed the system's ability to consistently capture high-quality LIBS data downhole in the field, delivering near real-time, geologically relevant insights with robust QA/QC parameters. The tool's strong performance throughout the AARP trial has achieved the key milestones required to advance to the next stage of testing. Building on this success, the project team is preparing for upcoming trials at Newmont's Boddington mine in Western Australia in early 2026.

Downhole LIBS is a novel sensing technology that delivers rapid, in-hole geochemistry, capable of being deployed during drilling campaigns. Unlike conventional downhole sensing technologies and X-ray based infield chemistry analysis, LIBS can detect all elements in the periodic table — including light elements such as lithium, carbon, and oxygen — with little or no sample preparation. This capability enables faster decision-making, reduces exploration costs, and supports the discovery of the critical minerals needed for the clean energy transition.

"This milestone shows how LIBS is moving rapidly from the lab to the field," said Andrew Bailey, CEO of MinEx CRC. "Technology has to keep pace with the changing needs of the resources industry, and by working directly with our industry partners we are delivering solutions ready for deployment."

"Having Newmont, Imdex and Rio Tinto attend this trial and engage directly with the technology demonstrates industry interest in evaluating this emerging technology for the mining industry," said Jessica Stromberg, Senior Research Scientist at CSIRO and MinEx CRC Downhole Geochemistry Project Leader. "Field trials like this are critical for refining the design and proving the tool's performance under real-world conditions."

With its lightweight design, wireline deployability, and ability to deliver hundreds of analyses per metre, the LIBS tool represents a first-of-its-kind innovation for the mining industry. Ongoing development will focus on field trials and calibration in varied geological settings.

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**About MinEx CRC**

MinEx CRC is the world's largest mineral exploration collaboration, bringing together industry, government, and research partners to develop new technologies that improve exploration success, lower costs, and support Australia's transition to net zero.



MinEx CRC Laser-Induced Breakdown Spectroscopy (LIBS) downhole geochemistry tool.



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MEDIA:

[MinEx CRC LIBS Downhole Geochemistry and EM Swept-frequency Tools Feature in Coring Magazine](#)

[MinEx CRC Technologies Feature in the April/May Edition of Australasian Drilling Magazine](#)

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