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IMII Wraps Up Successful Technology Demo with Ionic Mechatronics to Enhance Workplace Safety in the Minerals Industry

SafeBox System Demonstration Showcases Major Leap in Lockout-Tagout Efficiency and Safety

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Saskatoon, SK: The International Minerals Innovation Institute (IMII) is pleased to announce the successful conclusion of an innovative technology demonstration project with Ionic Mechatronics, featuring their cutting-edge SafeBox lockout-tagout system. This collaboration highlights the potential of the SafeBox to transform safety practices within the minerals industry by reducing downtime and enhancing overall productivity.

The project, which included key IMII members The Mosaic Company, Nutrien, and Cameco, saw the deployment of the SafeBox System—a sophisticated, two-part device designed to isolate electrical, hydraulic, and pneumatic energy during lockout-tagout procedures. The SafeBox comprises a master control device and a field isolation device (FID) that together streamline complex safety operations involved in automating lockout-tagout across a mine/mill process or circuit.

A Breakthrough in Speed and Safety

“This project clearly demonstrated the SafeBox system’s ability to efficiently manage complex lockouts in just seconds,” said Al Shpyth, IMII’s Executive Director. “Through this collaboration, we were able to deploy a significant number of SafeBox units—one Master and 11 Field Isolation Devices—showcasing the system’s capacity to streamline safety processes across multiple pieces of equipment. In under 20 seconds, the system was able to safely lock out all 11 circuits from one location, eliminating the need for multiple manual steps and significantly reducing the risk of human error.”

The SafeBox project represents a significant step forward, demonstrating the system’s ability to streamline complex lockout-tagout procedures and enhance safety and productivity within the minerals industry. IMII, in collaboration with industry leaders, is proud to highlight the real-world, measurable impact of this technology on safety and productivity.

Celebrating Innovation and Collaboration

IMII has long been a champion of innovation within Saskatchewan’s minerals sector, and this project exemplifies the kind of cutting-edge developments that drive the industry forward. Ionic Mechatronics, the recipient of IMII’s 2020 Innovation Award, continues to demonstrate their leadership in safety technology with the SafeBox.

“By collaborating with leaders in the industry like Mosaic, Nutrien, and Cameco, we are able to test and refine a solution that addresses a real challenge faced by mineral operations today,” Shpyth continued. “This project underscores the importance of working together to advance the boundaries of what’s possible in workplace safety.”



A New Era of Workplace Safety: Video Release and Insights

To further showcase the transformative impact of the SafeBox, IMII is excited to release an exclusive video detailing the system in action during the demonstration project. The video - [Videos | IMII](#) - provides valuable insight into how the SafeBox system can be seamlessly deployed and the tangible benefits it brings to operators on the ground.

“This video is a powerful tool for any company considering adopting this technology,” said Shpyth. “It’s not just about demonstrating a product; it’s about sharing a vision for a safer, more efficient future in the minerals sector.”

The SafeBox trial deployment took place at The Mosaic Company’s Belle Plaine Pilot Compaction Facility, running from 2022 through 2024. IMII extends its sincere thanks to Mosaic for hosting the trial and to all the project collaborators for their invaluable contributions.

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About IMII:

The International Minerals Innovation Institute (IMII) is the trusted hub for expertise and innovation in Saskatchewan’s minerals industry, driving transformative change, inspiring actionable solutions, and building a sustainable and globally respected minerals sector in the province. As a member-based organization governed by industry, post-secondary education, and government, we unite to accelerate technological innovation, develop a representative workforce, and promote thought leadership. Together, we drive progress and shape the future of the minerals sector.