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Abstract Book

SAIMM
THE SOUTHERN AFRICAN INSTITUTE
OF MINING AND METALLURGY

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The capability constraint our industry can no longer ignore

Rebuilding the pathway from education to competent professional practice

G. Lane
Vuuma, South Africa

What is commonly described as a skills shortage has become a much broader capability challenge. The minerals industry does not simply need more qualified people; it needs capable practitioners who can apply their knowledge, make ethical and technically sound decisions, manage risk and carry responsibility in demanding operating environments.

Warning signs are emerging across the development pipeline. Thirty-three final-year mining engineering students will not graduate unless they secure the workplace experience required by their curricula, while a further 275 third-year students require workplace exposure. In 2025, only five Certificates of Competency for mine surveyors were issued, while seven experienced surveyors left the industry. These are not isolated education or human-resources concerns. They are symptoms of a fragmented capability system and represent growing operational, safety, succession and licence-to-operate risks.

This presentation will map the pathway from school and tertiary education through workplace exposure, structured graduate development, mentoring, professional registration, statutory certification, specialist development and continuing professional growth. It will identify the critical transitions at which talented people are delayed, lost or fail to progress into competent professionals. It will also examine why investment in automation, digitalisation and artificial intelligence increases—rather than reduces—the need for strong technical and professional capability.

The presentation will challenge industry leaders to place capability on the strategic balance sheet, assign clear accountability and invest in sustained, measurable development pathways. It will also consider the shared roles of government, universities, employers, regulators and professional bodies, while encouraging students and young professionals to take active ownership of their development.

Rebuilding this pipeline requires collective responsibility. Industry and its partners must create the pathway, while young professionals must be equipped and encouraged to walk it.

Gary Lane
Director
Vuuma Collaborations

Gary Lane is an engineer, executive, and recognised thought leader in the mining industry, with extensive experience across mining operations, technology, and organisational performance. He is the President of the Southern African Institute of Mining and Metallurgy (SAIMM) and the founder of Vuuma Collaborations, where he focuses on helping organisations transition from effort-driven activity to people-centric operating models that deliver measurable value.

In addition to his industry leadership roles, Gary has founded and led multiple start-ups aimed at driving innovation and meaningful change in the mining and industrial sectors, particularly at the intersection of people, process, and technology. His work spans operational excellence, systems thinking, governance, and leadership development, with a strong emphasis on translating strategy into practical, on-site execution. He is particularly passionate about building capable teams, strengthening operating models, and applying data-driven value driver frameworks to improve safety, productivity, and long-term sustainability in complex operating environments

Kondwani Banda

Project Development Manager
Bio2Watt Energy Holdings

Kondwani Banda is a Professional Engineer and Project Development Manager with more than a decade of experience spanning the energy, mining, metallurgical, consulting, and research sectors.

He currently serves as Project Development Manager at Bio2Watt Energy Holdings, where he leads the development of large-scale anaerobic digestion and biomethane projects across Southern Africa. His work focuses on renewable energy development, biomethane production, bio-CO_2 utilisation, commercial structuring, stakeholder engagement, and project delivery.

Prior to joining Bio2Watt, Kondwani held project management and business improvement roles at Hatch and OIM Consulting, where he managed multidisciplinary projects and operational excellence initiatives across the mining and minerals industry. He also spent several years at Mintek, contributing to metallurgical research, pilot plant campaigns, pyrometallurgical process development, and industry-funded innovation programmes.

Beyond his professional career, he is actively involved in advancing the engineering profession through SAIMM, ECSA, and continental engineering initiatives. As Chairperson of the SAIMM CPD Committee, he has led the development of SAIMM's professional development framework and initiatives aimed at supporting professional registration, mentorship, and lifelong learning. He also serves on the FAEO External Relations Committee, helping strengthen collaboration between engineering institutions across Africa.

His passion lies in developing people, strengthening the profession, and creating pathways that enable engineers and metallurgists to thrive throughout their careers.

Building capability for the future: The SAIMM Academy as a centralised learning ecosystem for mining and metallurgy

W. Broodryk
Implats, South Africa

The mining and metallurgical industries are facing an increasingly complex skills challenge. Rapid technological advancement, digital transformation, evolving sustainability expectations, and the retirement of experienced professionals are creating significant capability gaps across technical, digital, leadership, and professional disciplines. At the same time, learning opportunities remain fragmented, dispersed across organisations, institutions, and service providers, making it difficult for professionals and employers to access structured, industry-aligned development pathways. Introducing the SAIMM Academy, a new initiative of the Southern African Institute of Mining and Metallurgy (SAIMM) designed to address these challenges through a centralised, accessible, and industry-led learning platform. The Academy aims to bring together leading industry experts, technology providers, universities, professional practitioners, and training organisations to deliver high-quality learning opportunities spanning mining, metallurgy, digital technologies, leadership, sustainability, and operational excellence. The skills shortages identified through industry stakeholder engagement, the growing importance of Continuing Professional Development (CPD), and the need for recognised, accredited learning pathways that support career development from graduate level through to senior leadership are explored. By creating a collaborative ecosystem that connects education, industry needs, and professional development, the SAIMM Academy seeks to become a cornerstone of lifelong learning for the mining and metallurgical sectors, supporting workforce capability, knowledge transfer, and the future competitiveness of the industry.

Wouter Broodryk

Group Corporate Processing Specialist
Implats

Wouter Broodryk is the Group Corporate Processing Specialist at Implats with extensive experience in metallurgical processing, project development, and strategic technical support across the PGM mining value chain. He has contributed to operational improvement initiatives, capital project planning, technical reviews, and executive-level reporting across concentrators, smelters, and refineries. His work includes supporting strategic processing initiatives, advancing digital transformation and process optimisation, contributing to graduate and technical development programmes, and engaging with industry bodies such as the SAIMM, SAMMRI and METF. He heads up the SAIMM Technical Programme Metallurgy and the SAIMM Academy. Wouter is recognised for combining technical depth with structured execution, stakeholder engagement, and a strong focus on sustainable value creation.

Beyond compliance: Preparing future mining professionals for the realities of industry

T. Graham
COMODEX, South Africa

The mining industry continues to face a growing challenge in developing graduates who are fully prepared for the realities of operational mining environments. While many graduates enter the workplace with strong theoretical and academic foundations, there is a noticeable gap in practical readiness, workplace confidence, communication skills, leadership ability, and exposure to the operational demands of the mining industry. As mining operations continue to evolve in complexity, technology, safety requirements, and workforce expectations, industry increasingly requires young professionals who are adaptable, safety-conscious, technically capable, and able to integrate effectively into multidisciplinary operational teams from an early stage in their careers.

Traditional development approaches within higher education and training environments have historically focused heavily on classroom-based learning, compliance-driven training, and theoretical assessment models. Although these approaches remain important for building foundational knowledge, they often provide limited opportunities for students to engage in real-world problem solving, practical decision-making, behavioural development, and experiential learning before entering the workplace. As a result, many graduates struggle to transition confidently into operational environments where communication, accountability, teamwork, leadership, situational awareness, and practical application of knowledge are critical.

This presentation explores how experiential learning models can help bridge the gap between university education and operational mining readiness through industry-integrated development initiatives. Through the Mine Mentor Exchange Programme (MMEP) and COMODEX initiatives, students from multiple South African universities have been exposed to immersive and practical learning experiences designed to simulate the realities of mining environments while developing both technical and behavioural competencies.

These initiatives include simulated underground mining challenges, QR-based HIRAC and risk assessment exercises, technical problem-solving activities, workplace readiness workshops, leadership and behavioural development programmes, industry mentorship, mine exposure opportunities, competency benchmarking, reflective learning practices, and Equine-Assisted Leadership and Development (EALD) experiences. Together, these activities aim to create learning environments where students are not only taught technical concepts, but are also required to apply critical thinking, communication, teamwork, accountability, and leadership in practical settings.

The presentation will showcase how experiential learning environments can significantly improve confidence, engagement, workplace awareness, leadership behaviour, accountability, communication skills, and operational readiness among young mining professionals. Particular attention will be given to the role of practical exposure in helping students better understand the expectations, pressures, safety culture, and interpersonal dynamics of mining operations.

The session will further explore the growing disconnect between academic preparation and operational expectations within the mining sector. It will discuss the importance of integrating practical exposure earlier within graduate development pipelines. The presentation argues that future mining professionals require more than technical competency alone. The modern mining environment increasingly demands individuals who are capable of collaboration, communication, adaptability, leadership, and behavioural awareness in addition to technical capability.

Examples from the University of Johannesburg Mock Mine 'MineReady Skills Extravaganza' and other structured workplace readiness initiatives will be used to demonstrate how simulated mining environments can create meaningful opportunities for experiential learning. These initiatives expose students to practical underground-style challenges, safety-focused decision-making activities, technical simulations, leadership exercises, and collaborative problem-solving scenarios that mirror real mining environments.

In addition, the presentation will examine how experiential learning contributes to the development of safer and more competent workplaces by encouraging active participation, reflection, accountability, and practical understanding rather than passive knowledge transfer alone. By combining technical development with behavioural and leadership-focused learning, experiential programmes may assist in producing more confident and industry-ready graduates who are better prepared for long-term success within the mining sector.

Ultimately, this presentation argues that the future of mining education and graduate development will require a blended approach where theory, simulation, mentorship, leadership development, workplace exposure, and industry engagement work together to develop operationally-ready professionals. As the mining industry continues to evolve, collaborative and experiential development models may play an increasingly important role in building sustainable talent pipelines and preparing the next generation of mining professionals for the realities of modern mining operations.

Tanya Graham

Managing Director
Comodex Consultancy

Tanya Graham is the Managing Director of COMODEX Consultancy and the founder of the Mine Mentor Exchange Programme (MMEP), an industry-driven development initiative focused on bridging the gap between mining education and operational readiness.

With extensive experience across mining training, leadership development, workplace readiness, and industry engagement, Tanya has become known for her practical and innovative approach to developing young mining professionals. Her work focuses on creating experiential learning opportunities that expose students and graduates to the realities of the mining industry before entering the workplace.

Under her leadership, COMODEX has developed and facilitated a range of industry-aligned programmes incorporating simulated mining environments, HIRAC and safety-based learning, mentorship, technical development, leadership training, and competency benchmarking. She has also led collaborations with universities, mining companies, suppliers, and professional bodies to strengthen graduate development pipelines within the South African mining sector.

A strong advocate for human-centred leadership in mining, Tanya also integrates Equine-Assisted Leadership and Development (EALD) into mining leadership programmes, helping individuals and teams develop communication, accountability, emotional awareness, and leadership presence in high-pressure environments.

Her work is centred around one core belief: that real competence is built through practical exposure, guided experience, mentorship, reflection, and industry engagement — not through theory alone.

Through COMODEX and Mine Mentor, Tanya continues to champion innovative approaches to mining skills development, with a focus on building confident, competent, and industry-ready professionals for the future of mining in Africa.

Water is not free how mechanical flow control closes the loop on mining's hidden carbon liability

P. Telle
Ultra Control Valves, South Africa

African mining houses have committed to aggressive net-zero carbon targets. The industry response has focused on solar installations, fleet electrification and renewable energy procurement. Yet one of the largest, most addressable sources of Scope 2 carbon emissions remains largely unexamined: the energy consumed pumping water that should never have gone underground.

This presentation introduces the Energy–Water Nexus as it applies to deep-level African mining operations. Every litre of process or service water sent unnecessarily underground represents two pumping events: the downward journey and the upward return. At scale, this translates directly into megawatt-hours consumed and tonnes of CO_2 emitted — liabilities that appear on the electricity bill but are rarely traced back to the valve that should have stopped the flow.

Drawing on over four decades of direct experience in African mine hydraulics, Peter Telle will present three documented field applications in which the transition from manual valve control to tamper-proof mechanical flow enforcement delivered simultaneous wins across water conservation, pumping energy reduction and ESG compliance. Topics covered include: the quantifiable impact of gland service water management on slurry pump performance and process efficiency; the role of automated stope isolating systems in eliminating off-shift water waste and reducing mudslide risk; and the use of demand-responsive pressure reduction to actively suppress network leakage without civil intervention.

The central argument is this: mechanical control does what policy cannot. A properly specified, fit-and-forget flow control valve does not rely on operator discipline, does not fail when a pilot tube fills with mine dirt, and does not require a 20-week import lead time when it needs replacement. It delivers measurable, auditable reductions in water consumption, energy use and regulatory exposure that a mine's ESG board can report on with confidence.

Peter Telle

MD
Ultra Control Valves

Peter has been in the valve industry for many years.

Was involved in supplying the first 100bar Pressure Reducing system on one of the underground water supply systems for a mine in the Anglo American group. Has since been in some Valve companies and always with a high level of involvement in Control valves. Peter now has his own company (Ultra Control Valves) since 2010 and has grown from a low base to R3M per month. One of the developments is supply of complete Reticulation systems for the mines including waterhammer analysis and water saving. Some Unique valves have found favour, especially the Australian Maric Flow control valve. Besides popular as a water saving device, it has become the Industry standard for Slurry Pump Gland service control. So besides being a problem solver, Ultra now also have a large range of Commodity items such as Butterfly valves and RSV Gate valves available from stock.

Water saving systems Ultra have been involve in has become the core of its business with high potential for growth.

Managing tax and fiscal risk in mining, from compliance to strategic advantage

R. Naidoo
Latita Africa, South Africa

Mining companies across Africa are operating in a more demanding tax and fiscal environment. Rules are changing, enforcement is increasing, royalty systems are evolving, and stakeholders are paying closer
attention to how mining businesses manage financial risk. In this environment, tax is no longer just a compliance issue handled in the background. It affects project certainty, cost control, capital allocation, and long-term business stability.

This session will explore how mining leaders can move beyond reactive compliance and take a more strategic approach to tax and fiscal risk. It will unpack some of the main areas of exposure across the mining value chain, including cross-border transfer pricing, royalties, indirect tax leakage, and disputes with revenue authorities.

Using practical case studies, the session will show how mining groups are strengthening governance; aligning tax strategy with operational decision-making, and using data and technology to improve visibility and control. I will also look at how companies can better manage multi-jurisdictional risk in Africa, engage more effectively with regulators, and prepare policy changes linked to energy transition and resource nationalism.

Attendees will leave with a practical framework for identifying, measuring and managing fiscal risk, as well as clear insights on how tax can support stronger, more stable and more sustainable growth.

Ms Roxanna Naidoo

Director of Global Strategy
Latita Africa

Roxanna Naidoo is the Director of Global Strategy at Latita Africa, an Admitted Attorney of the High Court of South Africa and Tax Practitioner. Her foundation in civil and criminal litigation, combined with advanced tax expertise, equips her to distil legal complexity into decisive guidance for corporate leaders.

Roxanna advises clients in the oil and gas, mining, and renewable energy sectors on cross-border tax planning, contentious revenue matters, and regulatory compliance. She works with multidisciplinary teams within Latita Africa and coordinates with a network of strategic partners across Africa and major global hubs, delivering solutions that align fiscal obligations with long-term commercial objectives. Known for rigorous analysis, clear communication, and commitment to practical results.

Roxanna has helped multinationals manage risk, unlock investment value, and maintain stakeholder confidence in challenging jurisdictions. She is a regular contributor to professional forums and mentors emerging practitioners in legal, tax, and governance disciplines across Africa and beyond.

Snakes & hazards – Dynamic risk assessment in practice

C. Bierman
Straight6, South Africa

This session introduces a practical, field-tested approach to turning risk assessment into a real-time, instinctive process on the ground. At its core is a simple but powerful concept: using a universal human response — a snake represents a hazard — to create a shared mental model that cuts across language, culture, and experience. This allows teams to recognise, interpret, and respond to risk consistently, regardless of background. The framework categorises hazards into three clear types — hidden, visible, and developing — each linked to a specific behavioural response. This creates not just awareness, but a clear action pathway for frontline teams during point-of-work risk assessments. The result is a shift from compliance-driven systems to active, behaviour-led risk management — where hazard identification, communication, and decision-making happen instinctively and in real time.

This is a practical session focused on how to:

- Create a shared understanding of risk across diverse teams
- Improve consistency in frontline decision-making
- Increase proactive hazard identification and reporting
- Strengthen ownership of safety at the point of work

Casjahn Bierman

Director
Straight6

Casjahn Bierman is the Founder and Program Director of Snakes & Hazards, an innovative behavioural safety and hazard identification programme that helps organisations improves safety culture through practical, engaging risk awareness.

With more than a decade of experience working alongside mining, manufacturing, construction and heavy industry across Africa and internationally, Casjahn has developed a unique approach that transforms the way people recognise, discuss and manage workplace hazards. By using the behaviours and characteristics of snakes as memorable analogies for different hazard types, the programme simplifies complex safety concepts into practical actions that employees can apply every day.

Since its launch in 2014, Snakes & Hazards has been implemented at operations in South Africa, India and several African countries, supporting organisations in improving workforce engagement, proactive hazard reporting and leadership involvement in safety. Casjahn has facilitated programmes for leading companies in mining, cement, manufacturing, energy and industrial sectors, helping thousands of employees develop stronger hazard recognition skills.

Continuous online heavy metal monitoring: Driving process stability and environmental responsibility in modern mining operations

R. Bernert
SEIBOLD Wasser Analysatorenfabrik GmbH, Austria

Traditional laboratory water analysis methods in the mining sector are constrained by expensive sample logistics, which are susceptible to handling failures and changes in the sample conditions. This limits comprehensive process understanding. To advance sustainable and responsible mining operations, fully automated, continuous, and unattended online measurement procedures offer a reliable solution for monitoring heavy metals in water systems.

Practical mining deployments demonstrate the direct environmental and operational benefits of robust colourimetric online analysers that utilise a flow-injection design, full-spectra photometers, and non-toxic reagents to deliver high-precision metrics without requiring sample filtration. In Canada, real-time nickel monitoring at two-hour intervals empowered process engineers to instantly recognise anomalies and stabilise operations, significantly lowering consumable usage and enhancing output quality. Furthermore, remote operations at the Consorcio Minero Horizonte in the Peruvian Andes (exceeding 3000m elevation) utilise this system for continuous, unattended 24/7 arsenic monitoring at both the inlet and outlet of their water treatment plant to manage highly variable sample conditions. Similarly, at Rio Tinto Canada (Havre-Saint-Pierre), unattended nickel monitoring across multiple treatment stages ensures strict water quality control. It implements specialised safety sequences that automatically empty all hoses and cuvettes during power disruptions. Ultimately, integrating automated online monitoring minimises environmental risks, ensures zero unplanned downtime, and lowers total operational costs, providing a foundational technology for responsible resource stewardship.

The SEIBOLD Wasser has developed robust colourimetric online analysers that utilise a flow-injection design, full-spectra photometers, and non-toxic reagents to deliver high-precision metrics without requiring sample filtration. By tracking complex mathematical kinetics across 1000 spectral points rather than a single data point, this technology provides excellent measurement quality across flexible ranges from low ppb to high ppm levels.

Key Presentation Highlights

- Overcoming Laboratory Limitations: Traditional sampling logistics are expensive, prone to manual errors, and compromise sample integrity, which restricts actionable process insights.
- Advanced Analytical Capabilities: The system features automated six-point calibration, automated dilution across flexible ranges, and standard addition techniques using completely non-toxic reagents.
- Process Optimisation for Sustainability: Real-time data chains allow process engineers to immediately stabilise operations, leading to higher quality and reduced consumable demands.
- Proven High-Altitude & Remote Resilience: The technology has been successfully deployed 24/7 in harsh environments, such as the Peruvian Andes at over 3000m elevation, for unattended inlet and outlet water treatment monitoring.
- Failsafe Environmental Protections: Active installations at global mining operations, including Rio Tinto Canada, feature automated line-purging capabilities to safeguard equipment and maintain data integrity during power failures.

Rainer Bernert

Managing Director
SEIBOLD Wasser Analysatorenfabrik GmbH

Rainer Bernert is an Austrian entrepreneur, engineer, and specialist in online water analysis with more than two decades of experience in industrial process measurement and environmental monitoring.

As owner and managing director of SEIBOLD Wasser Analysatorenfabrik GmbH, he leads the development of advanced online analysers for heavy metals and critical water quality parameters used in mining, metallurgy, power generation, semiconductor manufacturing, and drinking water applications worldwide.

Throughout his career, Rainer has focused on one central question: How can complex laboratory analyses be transformed into reliable, autonomous online measurements that operate continuously under real industrial conditions?

His work has contributed to the deployment of online monitoring systems for parameters such as arsenic, uranium, copper, nickel, zinc, manganese, iron, chromium, and other metals in challenging process and environmental waters. These systems are used by mining companies, smelters, water utilities, and industrial operators across Europe, Asia, North and South America.

Rainer is particularly known for promoting measurement approaches that combine flow injection analysis, reaction kinetics, and multi-wavelength photometric techniques to improve measurement quality, reduce maintenance requirements, and provide greater confidence in online analytical results.

Beyond product development, he works closely with mine operators, laboratory specialists, environmental professionals, and process engineers to bridge the gap between analytical chemistry and practical field operation. His philosophy is simple: the best analyser is not the one with the most complexity, but the one which delivers trustworthy data every day.

Today, his work focuses on the next generation of online heavy-metal monitoring, integrating advanced photonics, electrochemistry, and intelligent data evaluation to enable better environmental stewardship and more efficient industrial processes.

Damsak® reservoirs supports sustainable operations

D. Bredenkamp, G. Bredenkamp
Damsak, South Africa

Sustainable mining depends on practical solutions that reduce risk, protect resources and support long-term value. Water management sits at the centre of this challenge, especially as mines face growing pressure around ESG performance, decarbonisation and responsible resource use.

Damsak® helps mining operations meet these goals without adding complexity or cost. Unlike traditional steel or concrete tanks, collapsible reservoirs reduce the need for heavy civil works and permanent infrastructure. Their sealed design limits evaporation, prevents algae growth and protects water quality; helping mines use less water and reduce treatment demands in water scarce regions. This supports stronger environmental performance while improving operational reliability.

Ease of transport when empty, fast installation and scalable capacity result in lower indirect energy use and fewer emissions across the asset lifecycle. By aligning water storage more closely with real operational needs, mines can avoid overbuilding and unnecessary capital spend. The result is a practical, low impact approach to water storage that supports responsible mining and real sustainability outcomes.

Responsible pump selection as a practical driver of sustainable mining

K. De Jonge
Pump & Abrasion Technologies, South Africa

Across mines and mineral processing operations where slurry transport is required, pump systems are often treated as a small part of a much larger process. In reality, they are amongst the most wear-intensive and consumable-heavy assets in a mineral processing plant, with a direct influence and impact on energy use, water consumption, maintenance demands, scrap generation, labour, operating expenditure and overall plant availability. For this reason, the way slurry pump systems are designed, selected, applied and supported should be viewed as an important part of responsible mining. Responsible pump selection is not only about selecting a pump that can meet a duty point. A slurry pump forms part of a wider system, and the conditions upstream and downstream of the pump can have a major impact on its performance, reliability and efficiency. Simply supplying a pump to match a flow and head requirement, without properly understanding the full application, does not address the potential problems within that system. The responsible approach is to analyse the pump within the context of the system in which it operates, identify the factors that may be increasing operating cost or reducing wear life, and make equipment decisions that support long-term performance rather than short-term replacement. This has a direct impact on wear life, which in turn affects both cost and sustainability. When pumps and components remain in service longer, fewer parts are manufactured, transported, installed and discarded. This reduces the amount of material consumed by the application, lowers maintenance demand, limits scrap generation and reduces the frequency of unplanned stoppages. It also helps reduce the hidden expenditure associated with repeated changeouts, emergency repairs, labour, transport and production interruptions. In certain instances, through correctly-specified pump systems, operating life has improved from weeks to many months. Electricity consumption is another important consideration. Slurry pumps are often continuously operating assets, and inefficiencies in pump selection or system design can compound over time. Field data has shown that better-matched pump systems can reduce power usage while still meeting the required operational duty. This lowers operating cost and reduces the emissions associated with energy consumption. Water consumption will also be addressed, particularly in relation to slurry pump sealing. In the correct applications, selecting the appropriate shaft seal can completely eliminate gland service water, saving millions of litres of water annually. In applications where water must still be used, improved sealing arrangements have removed the need for treated gland service water, reducing site complexity and supporting more responsible water use. The intended presentation is educational, and case-study driven. It will explore real on-site data and field analysis reports collected by Pump and Abrasion Technologies over the past 20 years, across various commodities, applications and mine sites around the globe. The presentation will highlight the trends observed in these applications and show how responsible slurry pump selection can help mines improve wear life, reduce water consumption, lower electricity consumption, control operating expenditure and make better long-term equipment decisions to help meet their ESG goals.

Kilian De Jonge

Head of Sales - EMEA
CURVE Pump & Abrasion

Kilian de Jonge is an engineering and commercial leader with experience in mineral processing, metallurgy, plant operations and business development within the mining industry.

He holds a BEng in Chemical Engineering, specialising in Mineral Processing. He began his career in process engineering, working on equipment selection, plant optimisation, commissioning and process design.

Kilian later moved into operational management, where he led beneficiation plant operations and multidisciplinary teams responsible for production, safety, maintenance and continuous improvement. During this period, he held several legal appointments under South Africa's Mine Health and Safety Act.

He then progressed into technical leadership, supporting multiple processing operations through plant audits, metallurgical support, commissioning and process optimisation.

Today, Kilian is Head of Sales for the EMEA region at Pump & Abrasion Technologies. Drawing on his technical and operational background, he works closely with mining and mineral-processing operations to understand their challenges and identify practical engineering solutions that improve equipment performance, reliability and operating efficiency.

His current responsibilities include strategic planning, business development, team leadership and the development of long-term customer partnerships across diverse international markets. Having worked in engineering, plant operations, metallurgy and commercial leadership, Kilian operates at the intersection of technical expertise and business strategy. He believes that the best outcomes are achieved through collaboration, practical problem-solving and a clear understanding of the customer's operational requirements.

At the SAIMM ESG presentation, Kilian will present "Responsible Pump Selection as a Practical Driver of Sustainable Mining," focusing on how pump selection and system design can influence energy use, water consumption, maintenance, wear life and plant availability.

Decarbonisation is reshaping the future of industrial competitiveness

E. Wessels
RS South Africa

As mining and industrial organisations accelerate their sustainability agendas, engineering innovation, renewable energy and digital technologies are emerging as critical enablers of long-term resilience and growth. Sustainability is no longer viewed solely through the lens of compliance or corporate responsibility. Increasingly, organisations are recognising that decarbonisation, energy efficiency and responsible resource management can deliver tangible business benefits, from reduced operating costs and improved resilience to enhanced investor confidence and long-term competitiveness.

This presentation will explore how organisations are integrating sustainability into business strategy and operational decision-making, with a focus on decarbonisation, energy efficiency and responsible resource management. It will examine the role of engineering teams in supporting the energy transition through renewable energy integration, electrification strategies and improved asset performance.

The discussion will also highlight how digital technologies, including artificial intelligence, predictive maintenance and intelligent monitoring systems are enabling more sustainable industrial operations by improving efficiency, reducing waste and extending asset life. In addition, the presentation will address the growing demand for technical skills that combine engineering expertise, data literacy and sustainability knowledge.

The session will demonstrate how engineering innovation, digital transformation and sustainability principles can work together to create more resilient, efficient and competitive industrial operations while supporting long-term environmental and business objectives.

Erick Wessels

Sales Director
RS South Africa

Erick Wessels is the Sales Director at RS South Africa and a member of the company's Executive Management Team. A seasoned commercial leader with nearly two decades of experience across the industrial, manufacturing and MRO sectors, Erick has built a reputation for driving sustainable business growth, developing high-performing teams and creating long-term value through strong customer partnerships.

His career began in field service engineering, where he developed a practical understanding of industrial operations and the challenges faced by maintenance, engineering and production teams. This hands-on technical foundation has been instrumental in shaping his customer-centric approach and his ability to connect strategic business objectives with operational realities on the plant floor.

Erick transitioned into sales and commercial leadership roles with global organisations, including Thermo Fisher Scientific and Fluke Corporation, where he gained extensive experience managing complex portfolios, leading regional teams and delivering growth in highly regulated and performance-driven environments across South Africa and Sub-Saharan Africa. Throughout his career, he has successfully combined technical expertise, commercial acumen and market insight to help organisations improve performance, optimise operations and achieve sustainable business outcomes.

As Sales Director at RS South Africa, Erick is responsible for driving the company's commercial strategy, strengthening customer engagement and identifying opportunities for growth in a rapidly evolving industrial landscape. He is passionate about building exceptional teams and fostering a culture of collaboration, accountability and continuous improvement. His leadership philosophy is rooted in the belief that empowered people, strong partnerships and innovation are key enablers of long-term business success.

A strategic thinker with a strong focus on execution, Erick plays a key role in shaping business direction and influencing critical decisions that support RS South Africa's growth ambitions. He is particularly interested in the intersection of digital transformation, sustainability and industrial performance, and how organisations can leverage technology, data and innovation to remain competitive in an increasingly complex operating environment.

Erick is recognised for his ability to translate market trends and customer challenges into practical, actionable strategies that deliver measurable results. His expertise spans sales optimisation, business development, customer experience, team leadership and strategic planning, enabling him to help organisations navigate change while maintaining operational resilience and commercial effectiveness.

At Electra Mining 2026, Erick will share insights on how decarbonisation is reshaping the future of industrial competitiveness and the role that engineering innovation, renewable energy integration and digital technologies play in enabling sustainable growth. Drawing on his extensive industry experience and market perspective, he will explore how organisations can embed sustainability into operational decision-making, strengthen resilience and unlock long-term value while meeting the evolving expectations of customers, stakeholders and society.

Through his leadership and advocacy for customer-focused innovation, Erick continues to contribute to the advancement of more efficient, sustainable and future-ready industrial operations across the region.

From electrification to intelligence: Accelerating sustainable mining through technology

C.W. Marais
ABB, South Africa

Mining is entering a new era where productivity, sustainability and resilience are no longer competing priorities – they must be achieved together. As operations become increasingly electrified, connected and data-driven, the organisations that succeed will be those that integrate technology with strong leadership and a clear transformation strategy.

In this session, Patrick Kazadi will explore how mining companies can unlock greater operational performance through the convergence of electrification, automation and digital technologies. Drawing on ABB's experience across Sub-Saharan Africa, he will share practical perspectives on how intelligent operations, energy optimisation and data-driven decision-making are helping mining companies reduce emissions, improve asset performance and build more resilient businesses.

Beyond technology, the session will examine the leadership mindset required to successfully navigate industrial transformation, placing equal emphasis on people, partnerships and innovation to deliver long-term value.

Delegates will leave with practical insights into how integrated technologies and collaborative leadership can accelerate the mining industry's transition towards a safer, smarter and more sustainable future.

Charl Willem Marais

Executive Leader

Charl Willem Marais is an executive leader in process automation, mining technology and industrial electrification, with extensive experience across mining, pulp and paper, power conversion and heavy industrial sectors. He current-ly serves as Local Division Manager for ABB South Africa's Process Automation Process Industries division, where he leads commercial and operational performance across key industrial segments, including mining and pulp and paper.

Charl has held senior leadership roles across ABB and the broader mining technology sector, including global product management, sales and operations leadership, field service management and engineering execution. His experience spans South Africa, Sub-Saharan Africa and global markets, with a strong focus on business growth, customer value creation, operational excellence, electrification and technology-led transformation.

With an MBA from the University of Stellenbosch Business School and a background in electrical and electronic engi-neering, Charl brings a practical combination of strategic business insight and deep technical expertise. He is passion-ate about helping mining and industrial customers improve safety, productivity, reliability and sustainability through automation, electrification and digitally enabled solutions.

At Electra Mining, Charl shares insights from more than two decades of experience in industrial technology, mining applications and leadership across complex engineering and commercial environments.

Egon Worthmann

Electrification Leader and Division Manager
ABB South Africa and Sub-Saharan Africa's Electrification Distribution Solutions

Egon Worthmann is an Executive Leader serving as Electrification Leader and Division Manager for ABB South Africa and Sub-Saharan Africa's Electrification Distribution Solutions. With more than 30 years of experience, Egon has shaped the future of industrial technology, electrification, and energy-efficient solutions across Southern Africa.

Throughout his career at ABB, Egon has held senior roles spanning product management, Service, operational excel-lence, and quality management across the ABB power divisions. His expertise encompasses South Africa and Sub-Saharan Africa, with a strong focus on business growth, customer value creation, operational excellence, and tech-nology-led transformation.

He has worked closely with key industries including mining, Renewables, manufacturing, utilities, and infrastructure, enabling organizations to navigate changing market demands while accelerating their operational and sustainability goals.

Egon holds a BSc in Electrical Engineering from the University of KwaZulu-Natal. He is passionate about solving energy challenges and enabling safe, reliable energy grids across Africa.

Graham Abrahams

Senior Vice President and Motion Business Area Leader
ABB South Africa

Graham Abrahams is the Senior Vice President and Motion Business Area Leader for ABB South Africa, with more than 20 years of experience shaping the future of industrial technology, electrification and energy-efficient solutions across Southern Africa. Having built his career within ABB, Graham has successfully progressed from sales and product management roles to leading some of the company's largest and most strategically important businesses.

Widely respected for his commercial leadership and deep industry expertise, Graham has been instrumental in driving business growth, expanding ABB's market presence and helping customers improve productivity, reliability and sustainability through advanced technologies. Throughout his career, he has worked closely with key industries including mining, manufacturing, utilities and infrastructure, enabling organisations to navigate changing market demands while accelerating their operational and sustainability goals.

Today, Graham leads ABB's Motion business in South Africa, championing innovations that are transforming how industries operate through energy-efficient motors, drives and digital solutions. As a passionate advocate for sustainable industry and the energy transition, he continues to play a key role in advancing technologies that help businesses reduce emissions, improve performance and remain competitive in an increasingly complex world.

AI can support decarbonisation and responsible mining through better day-to-day operational decision-making

V. Svintsov
OES Ventures, in Dubai, UAE

In mining, sustainability is often shaped by the same operational decisions that improve efficiency. Increasing average speed at an open-pit mine, reducing fuel use, operating with a smaller equipment fleet, or freeing dispatchers from routine manual work can all have a direct environmental effect.

This presentation will discuss how AI can support responsible mining by improving operational decision-making at site level. It will focus on practical applications such as fleet utilisation, fuel efficiency, production planning, exception management and real-time visibility across mining operations.

The session will outline how AI and better use of operational data can help mining companies connect measurable improvements in productivity with sustainability and a positive environmental impact.

Vladimir Svintsov
CEO
OES Ventures

Vladimir Svintsov is CEO of OES Ventures, a mining technology company developing AI-driven operational control solutions for open-pit mining.

He has more than 15 years of experience across mining, industrial operations, technology transformation, and strategy consulting. Before joining OES, Vladimir held senior roles at Eurasian Resources Group, McKinsey & Company, and The Boston Consulting Group.

Throughout his career, he has focused on operational excellence, business transformation and the application of technology to complex industrial environments. At OES, Vladimir leads the development of AI-native solutions designed to improve mining productivity, optimize fleet operations and enable real-time operational decision-making.

Vladimir holds an MBA from INSEAD, a Master's degree in Economics and a degree in Mathematics.

Am I doing it again? Recognising the patterns that shape our careers

Z. Fakhraei
Sound Mining, South Africa

Starting a career in an environment where you are underrepresented can shape how you approach risk, mistakes, opportunities and even your own capabilities. Reflecting on nearly three decades as a female mining engineer across two countries and cultures, this presentation explores how our experiences can create patterns that influence the decisions we make throughout our careers. Through personal experiences, supported by research on women and underrepresented groups in engineering and STEM, it considers themes including self-doubt, fear of failure, risk-taking and belonging. The presentation also explores the role of mentors, colleagues and leaders in helping us recognise and challenge these patterns. Sometimes a single conversation, encouragement at the right moment, or someone willing to advocate rather than simply support can influence the direction of a career. It also considers how experienced professionals can help younger generations navigate challenges without having to discover every dead end for themselves. The message is not that we should eliminate fear, avoid mistakes or take risks without consideration. Rather, we need to recognise when past experiences or fear are influencing today's decisions, learn to manage risk, seek guidance when needed, and give ourselves permission to move forward.

Zohreh Fakhraei

Project Manager and Principal Mining Engineer
Sound Mining Solution (Pty) Ltd

Zohreh Fakhraei is a Project Manager and Principal Mining Engineer with more than 25 years of experience in the mining industry. She holds a B.Sc. in Mining Engineering and an M.Sc. in Rock Mechanics and was among the first female mining engineers to graduate in Iran following the Iranian Revolution.

Since relocating to South Africa in 2013, Zohreh has worked with Sound Mining, where she leads and contributes to multidisciplinary mining studies and projects across a range of commodities and countries.

Zohreh is a registered Professional Engineer (Pr. Eng.) with the Engineering Council of South Africa and a certified Project Management Professional (PMP). She is a Fellow and Council Member of the Southern African Institute of Mining and Metallurgy (SAIMM), Chairperson of the SAIMM Diversity and Inclusion Committee, and a member of the ESGS Committee, serving on its Gender Equity Alliance Subcommittee. She is passionate about supporting greater inclusion in the mining industry and creating opportunities for young professionals to develop, connect and progress in their careers.

Take control from screen scrolls: Women in Engineering for Leadership development, mentorship and career pathways using non- scrolling platforms

M. Bezuidenhout
Fraser McGill, South Africa

South Africa's engineering profession continues to face a gender imbalance, with women representing approximately 16% of registered engineering professionals. While progress has been made in attracting engineering studies and technical careers, the challenge remains to create sustainable pathways for leadership development and mentorship advancement.

In an increasingly digital world, professional growth is often influenced by online platforms. However, there is a distinction between professional networking platforms that promote meaningful engagement and high-volume social media platforms that prioritise short-term visibility and rapidly-consumed content. For women in engineering, the focus should be on leveraging platforms that facilitate professional relationships, knowledge-sharing, mentorship opportunities rather than competing for attention in fast-moving social media environments.

Women engineers face unique challenges in developing networks, accessing mentorship opportunities and increasing visibility within technical communities. As a minority within the profession, opportunities to engage with experienced engineers, participate in technical discussions and showcase expertise are critical to long-term career success.

Professional development should emphasise technical competence, mentorship, professional registration and industry networking. The visibility of engineering achievements and innovations should inspire generations into the profession.

These objectives are best supported through platforms that encourage substantive engagement and long-term professional relationships. Professional communities can support mentorship by connecting emerging engineers with experienced professionals, providing guidance on technical development and professional registration, and supporting career transitions into leadership and management positions.

Exposure to engineering executives and industry decision-makers creates opportunities to participate in professional committees and technical working groups. Developing communication, strategic thinking and stakeholder engagement skills requires recurring effort and alignment with the needs of industry leaders and mentors. Awareness of opportunities across consulting, mining, manufacturing, infrastructure and technology sectors can further provide access to leadership roles, project management opportunities and executive development programmes.

For South Africa's engineering profession to increase female representation beyond the current 16%, intentional efforts are required to strengthen professional networks that encourage participation, mentorship and leadership development.

Key initiatives may include sharing dedicated Women in Mining (WiM) professional groups, like WiMSA on LinkedIn, virtual mentorship programmes linking students, graduates and senior engineers. This may also be at the level between the South African Institute of Mining and Metallurgy's Young Professionals and the Engineering Council of South Africa's mentoring programmes. I trust this forms part of the gap identified as pillar 2 out of the five pillars, namely the 'unifying fragmented efforts into a cohesive, operational strategy' as indicated in the Women in Mining Strategy 2025–2027.

The existing initiatives remain essential as affordable workshops and industry leadership roundtables provide lasting value when delivered through professional channels. The recognition of engineering achievements through industry bodies creates a more sustainable impact than content that is quickly lost within scrolling social media feeds.

Women in Engineering initiatives have an important role to play in developing South Africa's future leaders. By prioritising professional networking platforms that encourage technical excellence and long-term visibility, the profession can strengthen leadership development and mentorship for current and future generations of women engineers.

Madelein Bezuidenhout

Process Engineer
Fraser McGill

Madelein is a broadly-trained Chemical Engineer with 10 years post-qualified experience in metallurgical and technical projects. Her professional career kicked off at Western Platinum Limited (Lonmin) in Marikana during 2012 through which she furthered her studies in an international course of statistical projects, namely Six Sigma Black Belt. With extensive experience in platinum group metals (PGM) beneficiation, she also has exposure to processing methods in chrome and base metals. In 2026 she gained the PMBOK accredited Project Management accreditation. Madelein is currently working as a Process Engineer, specialising in the Mining and Minerals industry and her key expertise are Project Management, Statistical Analysis for Process Improvement, Concept and Feasibility Study reporting and all the inner aspects of the metallurgical testing required to make the feasibilities bankable.

More than a mentor: Mentorship, exploration and finding your path in mining

T. Graham
COMODEX, South Africa

The mining industry is built on experience, knowledge and the ability to transfer both effectively. Yet mentorship is often viewed simply as supporting students or young professionals entering the sector. In reality, meaningful mentorship has a much broader role to play across every stage of a mining career.

More Than a Mentor explores mentorship as a tool for continuous development, knowledge transfer, career exploration and building competence across the mining industry. From students entering the workplace, to professionals exploring different disciplines and career pathways, to experienced leaders responsible for developing the next generation, mentorship creates opportunities to learn beyond the boundaries of a job title or qualification.

The presentation challenges the traditional idea that a mentor's role is simply to provide advice. Effective mentorship should create exposure, encourage people to explore different areas of the industry, challenge thinking, identify development gaps and connect theoretical knowledge with practical experience.

In an industry facing skills shortages, changing technologies and the loss of experienced professionals, mentorship must become more than a relationship between two individuals. It should form part of how the mining industry deliberately transfers knowledge, develops competence and creates sustainable career pathways.

Ultimately, mentorship is not about telling someone which path to follow; it is about creating the exposure, opportunities and support that allow people to discover where they can contribute, grow and create value within mining.

Tanya Graham

Managing Director
Comodex Consultancy

Tanya Graham is the Managing Director of COMODEX Consultancy and the founder of the Mine Mentor Exchange Programme (MMEP), an industry-driven development initiative focused on bridging the gap between mining education and operational readiness.

With extensive experience across mining training, leadership development, workplace readiness, and industry engagement, Tanya has become known for her practical and innovative approach to developing young mining professionals. Her work focuses on creating experiential learning opportunities that expose students and graduates to the realities of the mining industry before entering the workplace.

Under her leadership, COMODEX has developed and facilitated a range of industry-aligned programmes incorporating simulated mining environments, HIRAC and safety-based learning, mentorship, technical development, leadership training, and competency benchmarking. She has also led collaborations with universities, mining companies, suppliers, and professional bodies to strengthen graduate development pipelines within the South African mining sector.

A strong advocate for human-centred leadership in mining, Tanya also integrates Equine-Assisted Leadership and Development (EALD) into mining leadership programmes, helping individuals and teams develop communication, accountability, emotional awareness, and leadership presence in high-pressure environments.

Her work is centred around one core belief: that real competence is built through practical exposure, guided experience, mentorship, reflection, and industry engagement — not through theory alone.

Through COMODEX and Mine Mentor, Tanya continues to champion innovative approaches to mining skills development, with a focus on building confident, competent, and industry-ready professionals for the future of mining in Africa.

From qualification to influence: Building career pathways through mentorship, technical excellence and intentional leadership

J. Mvita
University of Johannesburg, South Africa

The presentation will explore how students and young professionals can move beyond obtaining an engineering qualification to building meaningful and sustainable careers. It will address the importance of mentorship and sponsorship, developing technical credibility, navigating non-linear career pathways, leading before receiving a formal title, and using professional organisations such as the SAIMM Young Professionals Council to build networks and access opportunities. The discussion will also emphasise the collective responsibility of industry, academia, professional bodies, and colleagues to create environments in which women in mining and engineering are supported, recognised, and positioned to lead.

Meta Jonathan Mvita
Researcher and Part-time lecturer
University of Johannesburg

Meta Jonathan Mvita is a dedicated PhD candidate in Chemical Engineering at the University of Johannesburg, expected to complete the program in 2026. Before this, he pursued a Master of Engineering (MEng) in Extraction Metallurgy from 2023 to 2024. He holds a Bachelor Honours degree in Metallurgy, also from the same institution, completed in 2022. Since 2023, Jonathan has served as a research assistant, contributing to significant advancements in the field of engineering. Over the years, he lectured on modules including Coal Processing, Nonferrous metallurgy, Metallurgy Practice, Refractory Technology, Advanced Reaction Engineering, Process Control, and Multi-Stage Operations, demonstrating a strong commitment to education. Jonathan has authored 19 peer-reviewed journals and conference proceedings, showcasing his research contributions and expertise in metallurgy and chemical engineering. The work focuses on sustainable practices and innovative solutions within the field, positioning him as a promising researcher and educator. Fascinated by Artificial intelligence concepts, programming, and statistics, MVITA believes in imparting the skills developed in relation to the use of intelligent systems.

Culture as a safety variable: Longitudinal engagement data from the mining sector

M. Otto
Motto Business Consulting, South Africa

Incident investigations in mining consistently uncover what the measurement data could have shown months or years earlier: a culture in which people did not feel that raising a concern would change anything. This paper argues that organisational culture — specifically the measurable dimensions of voice safety, management response capacity, workload sustainability, and psychological permission — functions as a quantifiable safety variable, not a background condition.

Drawing on longitudinal engagement data from three Southern African mining companies (n = 244), measured against a 20-year, 13-industry benchmark using the Motto Engagement Survey™, the paper identifies five structural tensions that constitute human risk indicators in high-hazard operational environments. These are: the voice-action gap (staff feel safe to ask but do not believe speaking changes outcomes); the management empowerment deficit (managers trusted at 87% but empowered at 44%); the commitment-compensation reserve (98% committed against 49% competitive pay); the conflict-avoidance culture (50% conflict positive outcomes against 94% innovation mindset); and the workload sustainability ceiling (61% workload coping — the lowest and most consistent item across all three datasets).

Critically, the paper also documents a measurable positive trajectory on the dataset between 2023 and 2025, demonstrating that targeted investment in communication, vision alignment, and development produces statistically meaningful movement in the items most directly linked to psychological safety and near-miss reporting behaviour.

The paper concludes with a six-point intervention framework grounded in what the longitudinal dataset shows produces the fastest and most durable movement in safety-culture indicators and presents the case for integrating validated perception measurement into safety management systems as a leading — not lagging — indicator of human risk.

Keywords: safety culture, organisational engagement, human risk, near-miss reporting,iInternal marketing, longitudinal measurement, mining sector, perception data

Mariheca Otto
Founder & MD
Motto Consulting & Surveys

Dr Mariheca Otto is a researcher and organisational diagnostician whose work has been quietly redefining what people data can tell us about the health of organisations. Since founding Motto Consulting & Surveys in 2005, she has built the Motto Engagement Survey™ into one of Southern Africa's most extensive longitudinal datasets: 20 years, 13 industries, 15,000+ data points across 10 countries.

Her diagnostic framework — the Motto Model™, developed through doctoral research in internal marketing — measures not what people say about their organisations, but how they experience them. The distinction matters: in every case where Motto data declined across two consecutive assessments, visible organisational disruption followed within 12 to 18 months.

Dr Otto works with leadership teams, CHROs, and boards who need their people decisions grounded in evidence. Her presentations do not offer frameworks. They offer two decades of proof.

From initiative to operating discipline — How women leaders can keep transformation alive

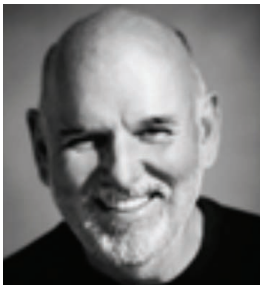
J. van der Walt
Umtali Strategy, South Africa

Mining organisations are not short of good initiatives. The challenge is keeping them alive once the launch is over, executive attention shifts and operational pressure returns.

This presentation explores why leadership, mentorship, inclusion and transformation programmes often lose momentum — and what it takes to embed them into everyday operating discipline. It will examine the role of ownership, accountability, career pathways, line leadership and organisational connection in turning good intent into sustained performance.

A particular focus will be placed on the leadership capabilities many women bring to complex mining environments: connecting functions, navigating competing priorities, building trust and maintaining continuity.

The central message is simple:
The launch is the easy part. The discipline is what comes afterwards.



Johannes van der Walt

Senior Principal
Umtali Strategy

Johannes van der Walt is an Australian-based international mining and industrial executive, Chartered Accountant and Senior Principal of Umtali Strategy, with more than three decades of leadership experience spanning mining, engineering, manufacturing, infrastructure, finance and enterprise transformation.

His career has taken him from Southern Africa to Australia, Asia, Europe and North America, including senior appointments as CEO, CFO, COO and Executive Director. Throughout that career, Johannes has worked at the intersection of strategy and execution—where commercial decisions, engineering capability, technology, people and frontline operations must ultimately come together to create sustainable enterprise value.

His connection with the resources sector began in Southern Africa and has subsequently extended across several of the world's important mining regions. His mining and industrial experience includes Secunda in South Africa; Kitwe in Zambia; the Hunter mining region of New South Wales; Moranbah in Queensland's Bowen Basin; and Mount Isa in north-west Queensland.

Across these environments, Johannes has been exposed to and supported operations associated with major resource organisations including Sasol, International Resources Holding (IRH), Anglo American, Glencore and BHP, together with mining contractors, OEMs, engineering organisations and specialist service providers supporting both surface and underground operations.

This combination of African and Australian mining experience has given him a practical appreciation of an issue that transcends geography: complex mining organisations rarely suffer from a shortage of capable people, technology or strategic initiatives. More often, value is lost in the connections between them.

Johannes' broader career has included experience with organisations such as PwC and Fluor, together with executive leadership of industrial, mining-services and OEM businesses including MAN and VLI. His responsibilities have encompassed corporate finance, commercial management, global manufacturing and supply chains, operational improvement, governance, organisational restructuring and business transformation.

Today, through Umtali Strategy, Johannes works with boards, executives and operational leaders to address organisational disconnects that can prevent strategy from being translated effectively into frontline execution.

Umtali Strategy's The Connected Mine™ philosophy focuses on connecting strategy, operations, technology, people, contractors and the pit face so organisations can identify emerging problems earlier, improve decision quality and convert organisational capability into measurable results.

Candice Naidoo

Founder and Managing Director
Kailash Mining Solutions (Pty) Ltd

I am the Founder and Managing Director of Kailash Mining Solutions, bringing more than 18 years of leadership experience across the global mining, manufacturing, and heavy engineering sectors. I've built a distinguished career driving business growth, strategic partnerships, market expansion, and high-value commercial agreements throughout Africa's mining industry.

Recognized for my ability to connect international manufacturers with mining operations across the continent, I've successfully led large-scale business development initiatives, negotiated complex contracts, and delivered value-driven solutions that support operational excellence and sustainable growth. My leadership experience spans executive roles including Managing Director, Sales & Marketing Director, Export Sales Manager, and Distribution Management.

A passionate advocate for diversity and inclusion, I'm committed to advancing the role of women in mining, STEM, and business leadership. In 2024, I was recognized by Women in Mining UK as one of the WIM100 Inspirational Women in Mining. I've also served in leadership and advisory roles with Women in Mining Africa (WiM Africa), Women in Mining South Africa (WiMSA), and the G100 Global Advisory Council's Sustainable Mining ESG Wing.

I hold a Bachelors Degree in Social Science from the University of the Witwatersrand, a Postgraduate Diploma in Business Management from MANCOSA, and further qualifications in Mining Engineering and Finance. I'm passionate about building sustainable businesses, developing future leaders, and creating greater opportunities for women across the global mining sector.

The Dromex story: The important role investing in local manufacturing has on the future of South Africa

A. Mysell
Dromax, South Africa

HAMMARSDALE, SOUTH AFRICA — What happens when a national workwear brand decides to build its own textile factory with zero prior manufacturing expertise, defying explicit warnings about the risks? What happens when that brand chooses to set roots in a rural KwaZulu-Natal town once synonymous with textiles, decades after the local industry collapsed?

Against all odds, Dromex opened those doors, filling the factory floor with individuals eager to hone their craft, build local capacity, and reawaken a historic manufacturing hub.

The Dromex Factory Story, a newly released short documentary, takes viewers behind the scenes of the brand's state-of-the-art facility in Hammarsdale, KZN. The film offers an unvarnished look into the operations powering a homegrown business that today employs over a thousand people and produces the vast majority of its workwear locally in South Africa.

At the heart of the film is Mbali, a factory worker whose journey serves as the narrative's golden thread. Her story illustrates the tangible impact of purposeful, stable employment on an individual, a household, and a broader community. Viewers are invited into Mbali's world, witnessing her deep-seated pride as the camera moves between her home life with her children and siblings, her roots in a township historically marked by economic adversity, and her steady professional growth on the factory floor.

Beyond individual stories, the documentary contextualizes Hammarsdale's complex industrial trajectory through insights from local historian Mr. Mduduzi Hlabanabemphika Gumede. By pairing historical perspective with modern industrial investment, the film illustrates the broader economic ripple effects of localized manufacturing.

Ultimately, the documentary serves as a tribute to the skilled workforce behind South African manufacturing. In bringing these stories to light, Dromex reinforces a vital message: that world-class quality, local talent, and industrial revival are actively thriving within South Africa's borders.

Andrew Mysell
Head of Marketing
Dromex

AKS Lining Systems is a locally based manufacturer of various thermos plastic (HDPE) lining systems

K. Wentzel
AKS Lining Systems, South Africa

This talk will cover some of the key products and their highly effective use in Mining applications. From small scale acid resistant tanks and containment areas, to large scale TSF, heap leach and pond linings. These products are also used extensively in rehabilitating existing concrete structures and can be post installed in many applications. This presentation will cover product specification and an overview of project specific applications.

Key take-home concepts – HDPE, Flexibility, Acid Resistance, Abrasion resistance, Rehabilitation, Large Containment, Local production, SADC market and exports.

Karlo Wentzel

Sales Manager (Geomembrane)
AKS Lining Systems (Pty) Ltd

Karlo Wentzel has over a decade of experience in the geosynthetics industry. After completing his Civil Engineering studies, he began his career working on large infrastructure projects before joining one of South Africa's largest construction companies, where he served as a Site Engineer for four years.

In 2016, he joined AKS Lining Systems, where he transitioned into the geosynthetics industry.

He has since progressed into the role of Sales Manager where his technical and practical background in construction along with his geosynthetics experience, specifically in geomembrane linings, allows him to assist clients in the mining, water, and infrastructure sectors, providing technical solutions for containment applications.

Using digital twins to reshape South African Innovation in mining

S. Heyns, L. van Eyk
University of Pretoria, South Africa

South African mining operations face intense pressure to maximize the reliability and lifespan of heavy machinery under extreme operating conditions. Traditional maintenance strategies for critical assets—such as load haul dumpers (LHDs), belt conveyors, shaft steelwork, and steel mills—often rely on reactive fixes or rigid schedules. These methods lead to costly, unscheduled downtime and premature component failure.

To unlock full design and operational innovation, this paper explores the digital evolution of physical asset management in a mining context. It differentiates between the Digital Model (a static virtual design with no automated data exchange), the Digital Shadow (one-way data flow from the physical asset to the digital replica), and the complete Digital Twin (fully automated, bidirectional data synchronization).

It further highlights the value of hybrid models for digital twinning of complex assets. By combining physics-based models (such as lumped mass models, finite element models, or computational fluid dynamic models) with data-driven models (machine learning algorithms analysing real-time sensor data), we create a versatile and powerful diagnostics and prognostics ecosystem with significant predictive potential. The physics-based model layer provides physics-based boundaries and engineering constraints, while the data-driven layer adapts the models to include real-world effects and effectively calibrate models to reality. In this process the physics-based layer reduces the amount of training data required to obtain reliable models.

Through practical South African case studies, this presentation demonstrates how hybrid-driven digital twins optimize heavy equipment. Key results include optimising the wheel torque control of a skid-steer ultra-low mining platform, optimising load haul dumper emergency braking for collision avoidance, predicting structural fatigue in shaft steelwork and maintenance of stainless steel mill rollers.

Ultimately, this paper argues that adopting the digital twin paradigm, can make a significant contribution to reshaping South African innovation in mining to improve safety, productivity, and asset longevity.

Philippus Stephanus HEYNS (call name: Stephan)

Professor
University of Pretoria

Stephan Heyns is professor in the Department of Mechanical and Aeronautical Engineering at the University of Pretoria and is responsible for the activities of the Centre for Asset Integrity Management in this department. He is further the coordinator and principal researcher of a joint SAMERDI (South African Mining Extraction Research, Development and Innovation) research programme in mechanised mining systems, between the Departments of Mechanical and Aeronautical Engineering and Mining Engineering, at this university.

Prof Heyns's personal research focuses on machine condition and structural health monitoring using vibration based condition monitoring techniques. His recent research has in particular focused on the use of physics-based models used in conjunction with data-driven models to create digital twins of complex systems such as mining equipment, for improved diagnostic and prognostic analysis and predictive maintenance. Prof Heyns has a keen interest in experimental techniques used for vibration analysis.

He is a fellow of the South African Academy of Engineering, an honorary fellow of the SA Institution of Mechanical Engineers, a fellow of the International Society of Engineering Asset Management and a fellow of the Royal Aeronautical Society.

Prof Heyns has served on the scientific committees of many international conferences, and regularly serves as reviewer for many international journals.

Prof Heyns is recognised by the South African National Research Foundation (NRF) as an internationally acclaimed researher. He is the author of more than 175 journal papers and 140 conference papers. He has supervised 30 PhDs and 110 master degree students to completion.

Digitalising outbound mineral logistics in africa: Offline-first material tracking, automated settlement and end-to-end traceability

B. Hart, H. Mostert, W. Smit
Metal Management Solutions, South Africa

The real innovation is not only tracking bags or automating invoices. It is connecting physical material identity, custody evidence, logistics movement and commercial settlement into one offline-resilient, auditable system.

Current outbound logistics systems often digitise individual steps, such as weighbridge capture, warehouse stock or invoicing, but fail to connect physical material identity, custody events, logistics status and commercial settlement into one auditable record.

This paper presents a field-proven, offline-first approach to digitalising the outbound value chain from dispatch to settlement, integrating four capabilities into a single source of truth.
Once a mineral product becomes saleable, its journey from processing plant to final sale crosses a web of disconnected stakeholders, borders, ports and data silos. This fragmentation creates bottlenecks, inflates cost, slows the cash-conversion cycle, and obscures provenance – exposing producers to disputes and illicit-trade risk. Conventional outbound logistics still depend on manual, paper-based capture exactly where connectivity is least reliable: the concentrator floor, the weighbridge and the remote inland corridor.

Outbound logistics management aggregates data from mines, off-takers, traders, and warehouse and transport systems into a shared, multi-tenant visibility layer spanning the full journey to port and sale. Material tracking captures product at bag and bundle level using dual-QR tagging and seal capture integrated directly with platform scales and weighbridges, eliminating handwritten weights and mis-linked lots. Settlement automation generates provisional and final invoices and resolves consolidated true-up and mark-to-market adjustments in a single recalculation pass at both invoice and bag level. Traceability embeds seal numbers, operator identities, timestamps and weights into each QR payload and an immutable local log, providing an audit-ready chain of custody supporting reconciliation, financial integrity, compliance and ESG objectives.

The enabling design choice is an offline-first capture layer – a ruggedised desktop and mobile application that writes durably to local storage and synchronises once connectivity returns, so capture never blocks on the network.

Two deployments evidence the approach. Across a complex multi-country operation, the platform managed more than 30,000 truck movements and approximately one million tons of product through five countries and three ports over 16 months, with full visibility of stock in transit alongside contract assurance. On a Zambian inland zinc corridor, source-level digital capture eliminated manual data-entry errors, halved disputes, and produced measurable returns on investment.

The paper concludes that treating capture, logistics, settlement and traceability as one integrated, offline-resilient system – rather than disconnected point solutions –materially accelerates cash conversion, strengthens provenance, and reduces commercial risk across African export corridors.

Settlement in mineral logistics is not only invoicing. It often includes contract pricing, provisional pricing, assays, moisture, deductions, penalties, FX, mark-to-market changes and final true-up.

Keywords: outbound logistics, material tracking, chain of custody, settlement automation, traceability, offline-first data capture

Brendan Hart

Metal Management Solutions
Commercial Director

Brendan Hart is Commercial Director at Metal Management Solutions (MMS), a process optimisation specialist for the mining value chain. He brings more than 20 years of consulting experience across data science and software, much of it focused on the mining sector, and leads the company's commercial management and business development.

A new technology to take mining innovation in mechanisation to a new level

A.S. Macfarlane, J. Porter
Rock Eater (Pty) Ltd, South Africa

Improvements in hard-rock mining have been limited by a seemingly difficult constraint to remove: the need to use explosives to break the rock from the solid into pieces that can be effectively moved through the mining system, without excessive loss of valuable product along the way.

Many attempts over many years, and with the expense of time and money, have resulted in limited success, and the realisation that cutting hard rock is a bridge too far due to the energy and capital that has to be applied.

Fundamentally, although cutting soft rock is highly efficient and continuous, whilst for hard rock (greater than 200 MPa strength), it is slow and expensive.

This presentation focusses on a technology which has been around for many years, but which has only recently been adapted for mining applications by Rock Eater. This technology is called Controlled Foam Injection (CFI).

The fundamental difference from rock cutting is that CFI breaks rock out in tension, which requires less than 10% of the energy required to break the rock in compression, (as is the case in rock cutting) resulting in very large savings in operational and capital costs, improved productivity through continuous mining and improved health and safety performance.

This presentation describes how CFI works in practice and illustrates the potential and current applications which have been identified, in discussions with both mining and civil engineering companies. These applications include tunnelling, stoping, mining and sliping in existing excavations, excavating continuously close to infrastructure, stonework in coal mines and other applications where there is no need for the use of explosives, and operations become continuous.

Two prototype units have been manufactured and commissioned, and these are in operation. These have the configuration and size of a standard trackless single boom roofbolter or drill rig, and are thus versatile and, apart from the breaker unit, based on standard mining equipment.

The presentation will include video material that shows these machines in operation, and the results obtained so far with this exciting piece of mining innovation.

Alastair Stuart Macfarlane

Strategic Consultant
Rock Eater (Pty) Ltd

Alastair has worked in the mining industry for 53 years, since graduating from Camborne School of Mines.

He has worked for Anglo American and AngloGold, rising to senior positions of Mine Manager and Consultant Mineral Resource Management.

He has worked as a Senior Lecturer at Wits University, lecturing at undergraduate and postgraduate levels, in Mining Engineering, Mine Planning, Financial Management and MRM. During this time, he developed courses and programmes at all levels.
He has consulted extensively in the South African mining industry, as well as in DRC, Zambia, Tanzania, Zimbabwe and Australia.

He was a co-founder and Director of a successful mining company in the Northern Cape and was a co-founder of the Mandela Mining Precinct.

He has served on the Council of the Association of Mine Managers and has been a President of the Southern African Institute of Mining and Metallurgy.

He has also spent 10 years as an Independent Non-Executive Member of the Board of Implats, where during that time he was the Chair of the Health, Safety, Environmental and Risk Committee.
He is still active in the mining industry, as a shareholder and consultant to Rock Eater (Pty)Ltd.

Minds at the coalface: Longitudinal engagement data from the mining sector what twenty years of engagement data reveals about thinking, innovation, and the permission gap in African mining

M. Otto
Motto Consulting & Surveys, South Africa

Mining attracts people who solve problems. The data shows they are not being permitted to. This session presents a longitudinal case study analysis drawn from three anonymous Southern African mining companies — measured against a 20-year, 13-industry engagement benchmark — and builds a practical framework for closing the gap between workforce capability and organisational permission structures.

The headline finding is both encouraging and challenging: across all three companies, every engagement dimension exceeds the 20-year cross-industry benchmark. Commitment scores sit at 94–99%. Innovation mindset sits at 94%. The workforce is capable, loyal, and technically oriented toward improvement. And yet: only 43% of managers are included in departmental change decisions, only 48% of staff believe they can change the systems they identify as broken, and only 46% believe that raising conflict leads to a productive outcome.

This session names that gap — the Innovation Paradox — and works through five structural tensions the data surfaces consistently across all three companies: the permission gap that suppresses 94% innovation mindset; the management cage that creates accountability without authority; the commitment-versus-compensation reserve that is drawing down without being replenished; the conflict avoidance culture that silences the honest debate innovation requires; and the workload sustainability ceiling that the data shows moves before attrition does.

Each tension is grounded in specific item-level data. Each is followed by a concrete, sequenced intervention derived from what the longitudinal dataset shows actually moves the scores — not in theory, but across repeated measurement cycles with real organisations.

Delegates will leave with a diagnostic lens for reading their own organisational data differently, a prioritised intervention sequence grounded in what the 20-year dataset shows produces compounding returns, and a clear argument for why thinking and innovation capacity — not technology or training spend alone — is the highest-leverage transformation variable available to African mining leadership right now.

Mariheca Otto
Founder & MD
Motto Consulting & Surveys

Dr Mariheca Otto is a researcher and organisational diagnostician whose work has been quietly redefining what people data can tell us about the health of organisations. Since founding Motto Consulting & Surveys in 2005, she has built the Motto Engagement Survey™ into one of Southern Africa's most extensive longitudinal datasets: 20 years, 13 industries, 15,000+ data points across 10 countries.

Her diagnostic framework — the Motto Model™, developed through doctoral research in internal marketing — measures not what people say about their organisations, but how they experience them. The distinction matters: in every case where Motto data declined across two consecutive assessments, visible organisational disruption followed within 12 to 18 months.

Dr Otto works with leadership teams, CHROs, and boards who need their people decisions grounded in evidence. Her presentations do not offer frameworks. They offer two decades of proof.

From dispatch to settlement: An integrated, offline-first system for outbound mineral logistics

B. Hart, H. Mostert, W. Smit
Metal Management Solutions

Once a mineral product becomes saleable, its journey from plant to sale crosses disconnected stakeholders, borders, ports and data silos. This fragmentation inflates cost, slows cash conversion and obscures provenance, exposing producers to disputes and illicit-trade risk. Conventional logistics still depends on manual, paper-based capture where connectivity is weakest: the concentrator floor, weighbridge and remote inland corridor.

Current systems digitise individual steps but fail to connect physical material identity, custody events, logistics status and settlement into one auditable record. This paper presents a field-proven, offline-first approach to the outbound value chain from dispatch to settlement, integrating four capabilities into a single source of truth.

Outbound logistics management aggregates data from mines, traders, warehouse and transport systems into a multi-tenant visibility layer to port and sale. Material tracking captures product at bag level using dual-QR tagging and seal capture integrated with scales and weighbridges. Settlement automation generates provisional and final invoices and resolves true-up and mark-to-market adjustments in one recalculation pass at invoice and bag level. Traceability embeds seal numbers, operator identities, timestamps and weights into each QR payload and an immutable local log, an audit-ready chain of custody for compliance and ESG objectives.

The enabling design choice is an offline-first capture layer: a ruggedised desktop and mobile application that writes durably to local storage and synchronises once connectivity returns, so capture never blocks on the network.

Two deployments evidence the approach. A complex multi-country operation managed more than 30,000 truck movements and roughly one million tons through five countries and three ports over 16 months, with full visibility of stock in transit. On a Zambian inland zinc corridor, source-level capture eliminated manual data-entry errors, halved disputes and delivered measurable ROI.

The paper concludes that treating capture, logistics, settlement and traceability as one offline-resilient system, not disconnected point solutions, accelerates cash conversion, strengthens provenance and reduces commercial risk across African export corridors.

Keywords: outbound logistics, material tracking, chain of custody, settlement automation, traceability, offline-first data capture

Brendan Hart
Metal Management Solutions
Commercial Director

Brendan Hart is Commercial Director at Metal Management Solutions (MMS), a process optimisation specialist for the mining value chain. He brings more than 20 years of consulting experience across data science and software, much of it focused on the mining sector, and leads the company's commercial management and business development.

Minestarter and electrical protection techniques for mining industries

W. Olivier
JTMEC, Australia

This presentation provides a comprehensive overview of the MineStarter , focusing on equipment designed specifically for mining safety. The session covers the system's advanced protection features built for harsh mining environments, detailing critical relay functions such as Earth Fault Lockout, Earth Leakage, Earth Continuity, and Frozen Contact Protection.

Furthermore, the unit explores the operational benefits of the system's Human-Machine Interface (HMI), which offers real-time monitoring data, diagnostics, and outlet control. Attendees will learn about the four primary operating modes: Drill/Other, Fan, Submersible Pump, and Pump Station. Finally, the presentation outlines troubleshooting protocols, event logging and system inputs for protection

Wade Olivier

Queensland Operations Manager
JTMEC Powered by EPIROC

Wade Olivier is an accomplished Electrical Manager with over 15 years of leadership experience directing complex underground engineering projects across the mining civil and infrastructure sectors. Known for his technical expertise in high-voltage distribution networks, hazardous area installations, and digital technology integration, Wade consistently drives operational safety, efficiency, and full statutory compliance in greenfield Brownfield and high-risk environments.

Throughout his career, Wade has served in pivotal leadership roles for prominent industry leaders, including Redpath Mining (Australia, South Africa and Botswana), CPB Contractors Australia, Lendlease Australia, and Glencore Australia. Most recently as Electrical Superintendent for the Redpath Mining Jwaneng Underground Project and Mogalakwena underground project, he spearheaded new surface and underground electrical reticulation systems, optimized high-capacity pumping stations, and successfully led a multidisciplinary team spanning Electrical, civil, structural, and piping works. A key driver of innovation, Wade has spearheaded advanced digital roadmaps on major sites—deploying cutting-edge solutions such as Proximity and Vehicle Detection Systems (PDS/VDS), LTE/TETRA networks, smart cap lamps, and environmental monitoring infrastructure and New electrical protection relays for mining outlets.

In addition to his field execution capabilities, Wade brings strategic foresight to supply chain management and project governance. He has repeatedly established global procurement pipelines to hedge against inflated local market costs and mitigate critical lead times. His prior portfolio encompasses landmark civil tunnel projects—including Brisbane's Cross River Rail and Sydney's Northconnex Tunnel—where he managed high-voltage Roadheader reticulation, high-voltage substation commissioning, and rigorous safety compliance frameworks.

Wade holds formal certifications in Competencies (S1, S2, S3), Explosion-Protected Electrical Equipment in Hazardous Areas (EEHA), High Voltage Switching across Australia. Combined with his hands-on experience in trade-level troubleshooting and technical training delivery, he excels at bridging the gap between EPCM design engineers, corporate stakeholders, and frontline execution team.

Currently
Wade Has Joined the JTMEC team to grow and implement Minestarter technologies to the mining market across Africa and Australia.

From fibre to foresight: South African innovation in conveyor condition monitoring

Y. Hleta
PositioNXT, South Africa

Mining conveyors are long, complex assets with numerous moving components, limited opportunities for inspection and significant operational consequences when failures occur. Conventional inspections and point-based monitoring remain essential, but mines increasingly require continuous condition awareness to support earlier fault identification and more targeted maintenance interventions.

This presentation examines distributed acoustic sensing using fibre-optic cables as an innovative, integrated approach that complements existing conveyor inspection and condition-monitoring practices. A single fibre can provide continuous sensing over long distances and may enable changes in acoustic behaviour to be detected and located. The technical challenge is not simply collecting large volumes of data, but distinguishing potential fault signatures from normal operating variation, validating them against known equipment conditions and converting the results into information that maintenance teams can use.

A South African development initiative led by PositioNXT will provide the practical case study. It will illustrate the journey from defining the operational problem and collecting representative field data to developing and evaluating detection methods and incorporating the resulting insights into existing maintenance workflows. During development, targeted physical inspections are required to verify detected events, match acoustic signatures to actual equipment conditions and reduce false alarms. Once validated, the system should provide continuous condition awareness between scheduled inspections and direct maintenance teams to specific locations requiring attention, rather than creating another layer of general inspection.

The presentation will consider both the potential and current limitations of fibre-optic conveyor monitoring. The broader lesson is that successful innovation requires collaboration between mines, suppliers and technical specialists and the local capability to convert promising technology into solutions that are reliable, maintainable and practical within the mine's operating environment.

Yenzokuhle Hleta

Business Development & Applications Engineer
PositioNXT

I am a Business Development and Applications Engineer at PositioNXT, specialising in the application of Distributed Fibre Optic Sensing (DFOS) technology within the mining industry. I hold a BSc Honours degree in Mechanical Engineering from the University of the Witwatersrand, and I combine my engineering background with business development, project management, and data-driven problem solving.

In my role at PositioNXT, I work across the technology-to-market journey, from identifying customer needs and developing commercial opportunities to managing proof-of-concept projects and supporting the deployment of DFOS solutions. My work focuses particularly on conveyor condition monitoring and underground ventilation monitoring, using fibre-optic sensing to generate data that can improve operational reliability, safety, and efficiency.

I have experience managing pilot projects, engaging with mining stakeholders, developing technical and commercial proposals, and working with technology partners to translate emerging technologies into practical industrial applications. I have also gained international project experience through the deployment and commissioning of distributed acoustic sensing systems in mining environments.

I am particularly interested in the intersection of engineering, technology, data, and business. I enjoy solving complex industrial problems and turning technical concepts into practical solutions that create measurable value. My long-term goal is to contribute to the development and commercialisation of innovative technologies that can have a meaningful impact on industry.

Dennis Naude

Lead Engineer, Systems, Product Design and Engineering
Baker Hughes

With over 30 years of experience including industrial automation, test and measurement, condition monitoring system deployments and industrial wireless product development, Dennis has been with the company since it started developing wireless sensors in 2009. Over time his role has evolved from providing support for and performing wireless sensor system deployments to implementation of the business quality management system, including manufacturing of equipment for use in hazardous locations, to providing support for and obtaining country specific approvals for global market access. Today he is part of the world class team based in Cape Town that designs, develops and manufactures industrial wireless products for use in hazardous locations.