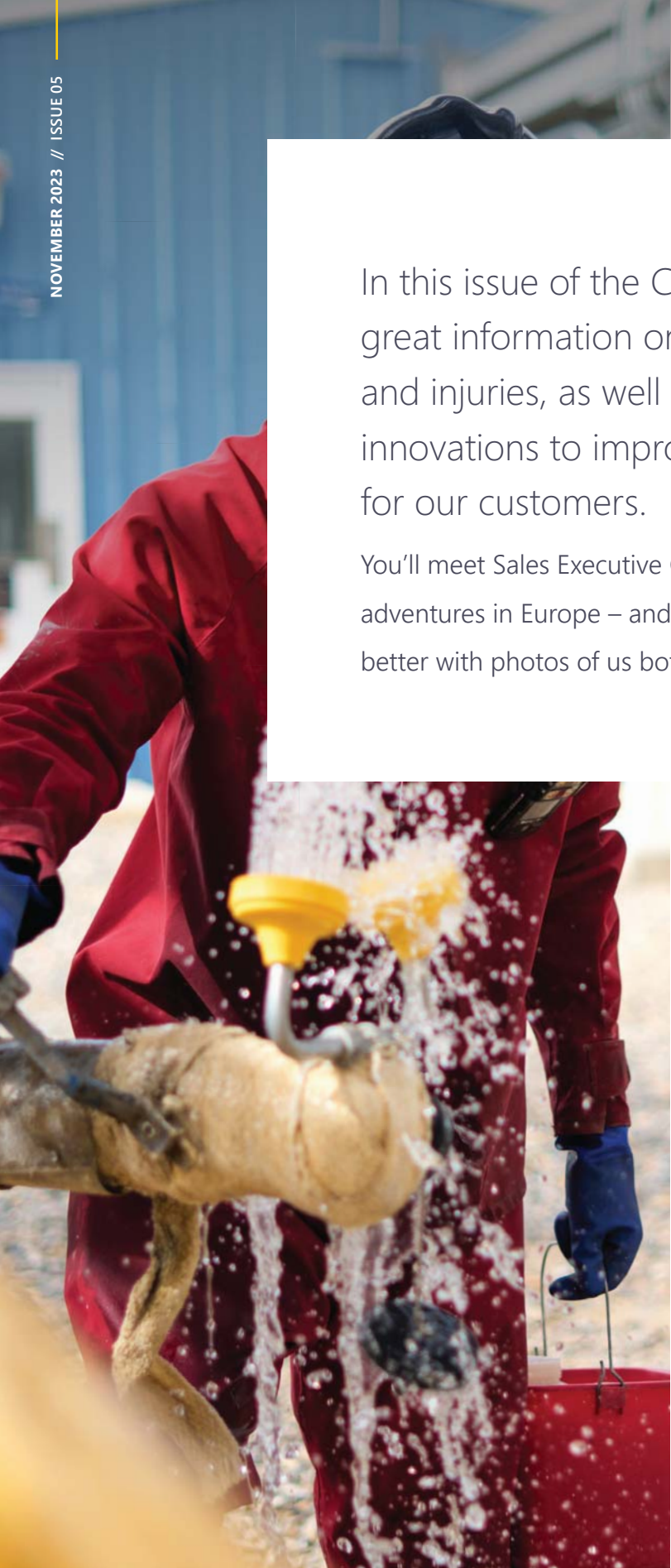


THE CYANCO STANDARD

cyanco
Your Mining Solution

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In this issue of the Cyanco Standard you will find some great information on how to reduce on-site incidents and injuries, as well as catch a glimpse into our latest innovations to improve reliability and security of supply for our customers.

You'll meet Sales Executive Gregg Zoccola and hear about his latest adventures in Europe – and we invite you to get to know Cyanco a little better with photos of us both at work and at play. Read on for more!

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Looking Back to Prevent Future Accidents & Injuries: Cyanco's New EHSS Director Highlights Best Practices for Incident Investigation



MARK MOELLER, *Director of EHSS*

Greetings! By way of a quick introduction, I'm relatively new to Cyanco, coming from a diverse background across the Oil & Gas and Manufacturing industries, most recently as Regional EHSS Manager at Valvoline.

At the outset of my career, I spent seven years in the U.S. Army – including 27 months of active duty in Iraq. I am a Certified Safety Professional, with American Society of Safety Professionals (ASSP) certification in Corporate Safety Management and Electrical Safety – as well as a CPR/AED-certified Combat Life Saver...which all goes to say that I've been in the business of keeping people safe for a good, long while!

Through the years I have developed a strong belief that ensuring employee safety starts with a deep understanding of incidents (past and present) in order to prevent future ones. This means diving deep into historical incident reports, 'Good Catches,' and 'Near Misses.' It also means conducting your present-day incident investigations properly.

As an example, imagine an unplanned release due to a loose hose fitting within your operational circuit. Instead of focusing exclusively on the failure of one piece of equipment – i.e. inspecting and replacing the coupler then calling it a day – did you check the maintenance record? When was it last inspected? Did you look at similar failures in your incident history? Have there been related Near Misses or Good Catches? Did you ask if this was the right kind of hose to begin with? Is it the right size, made of the right material and does it fit properly?

If you skip those steps, you may end up replacing the coupler numerous times and running the risk of future releases. On the flip side, you may have followed all those

steps, but previous reporting didn't convey the full picture or get to the root cause of the issue. Either way makes it difficult to prevent future incidents. That's why proper incident investigation is so important.

We might know 'what' happened at the outset of an incident investigation, but we should never presume we know 'why' it happened until we have completed the process. You have to get to that 'why' before you can fully understand an issue and address its root cause. If you're looking to up your game on incident investigation and reporting, here are a few tips to consider:

- » Start by looking at your archive of past incident reports. Check to see if they have all been resolved, and if so, was it a quick-fix or something more proactive that served to truly prevent future incidents? Close out any outstanding issues and use these learnings to deepen your understanding of potential risks and hazards.
- » Next, make sure you have a formal, consistent incident investigation process in place. Everyone should be following the same steps, asking the same questions and filling out the same forms. That helps to limit personal bias or subjective thinking throughout the process that could result in missed steps. If you're not capturing all the pieces, you might not get to the actual problem or be able to prevent the incident from reoccurring.
- » Eliminate further guesswork by defining a hierarchy of incident types, including severity levels that would dictate deeper analysis.

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» Once an investigation has begun, make sure to avoid placing the majority of investigative focus on worker error. People are only one part of the equation, and efforts to ‘fix’ the human element are typically inefficient and unsustainable. Accidents almost always result from multiple causes or defects, and you can only truly uncover root causes by considering the full spectrum of workplace dynamics. Only then can you address safety issues at a systems level, with broad, sustainable improvements.

Finally, once all evidence has been gathered, data analyzed, root causes determined, conclusions formulated and corrective actions developed, it’s really important to close the loop by documenting the incident report and sharing the findings broadly.

You can’t communicate enough when it comes to incident resolution and future incident prevention. It not only drives desired safety behaviors, but also builds trust by showing that your organization takes safety seriously,

is following up on incidents and fixing problems. When it comes to industries like ours, where we’re working shoulder to shoulder in a high-stakes environment, you must trust the person beside you. You have to trust they’re going to do what they say, they’re following the rules and doing their jobs properly. That 100% includes leadership – and 110% includes the people in charge of keeping everyone safe!

Thank you – and be safe out there!

Please let us know if you’re interested in any of Cyanco’s safety services, including cyanide safety training, or help attaining your ICMC certification. Reach us at appliedtech@cyanco.com

National Protect Your Hearing Month

This is always a great time of year to remind ourselves of the need to protect our industrial employees from the dangers of noise-induced hearing loss (NIHL). See the table to the right for some easy ways to minimize or avoid the risks NIHL.



NOW HEAR THIS!

Take Action to Protect Your Hearing

Use Available Noise Controls

- Remain inside cabs or other enclosures with the windows and doors closed
- Replace noise controls (e.g. curtains, seals) after equipment maintenance or inspection as needed

Maintain Equipment

- Ensure correct machine lubrication, belt and bolt tensions, and motor performance
- Replace broken, worn out, and misused parts that contribute to equipment noise.

Move Away from Loud Areas

- Avoid circumstances where communication is affected by noise
- Take scheduled breaks and lunch breaks in quiet areas

Use Hearing Protection

- Use hearing protection consistently when working in noise
- Ensure protection is correctly worn with other safety equipment and is comfortable for extended wear

Cyanco Continues to Invest in Innovation

A team of Cyanco scientists was recently awarded a U.S. patent for finding an alternative method of producing sodium cyanide by replacing caustic soda (sodium hydroxide) with sodium carbonate as an alternative starter material.

According to patent recipients Roy Norcross, Director of Applied Technology, and Si-Kai Tan, Cyanco's Director of Engineering and R&D, the idea to look for potential improvements in the traditional process came about when caustic pricing had risen dramatically, due in part to COVID impacts on the market.

"At that time, we were seeing a 3-4X increase above what we would normally pay for caustic, driven by high energy costs, an increase in demand and an unstable global supply chain," said Kai.

For 30+ years, Cyanco has used caustic soda to create a chemical reaction that turns hydrogen cyanide gas into a salt – sodium cyanide. While sodium cyanide is used in multiple applications across a diversity of markets, Cyanco is the only producer in the world that focuses exclusively on supplying the mining industry with this critical reagent.

"We asked ourselves the question, 'What else can we use that gets us to sodium cyanide with a more stable supply chain?'" said Roy. "We landed on sodium carbonate, another sodium salt, which is pretty easy to source (as it is produced in Wyoming), without so many associated market pressures."

According to Roy, the next step was lab simulations to test the carbonate, with its different chemical properties, pH and solubility, to see if it created a viable chemical reaction to turn hydrogen cyanide gas into sodium cyanide...which it did.

"We were able to create a practical reaction on a lab scale," said Roy. "From there, we handed it over to Kai and his team to test it on a practical scale at the plant."

The scale-up tests were also successful, proving carbonate to be a realistic option to caustic in the chemical process of producing sodium cyanide on an industrial scale. This work earned Roy, Kai and a team of Cyanco scientists U.S. Patent # 11,608,274!



Since that time, the cost of caustic has come down significantly, so the carbonate option takes its place, for now, as a viable back-up should the caustic market become volatile again.

"It's a cost-driven technology that provides us with a great alternative," said Kai. "As raw materials pricing comes down, caustic remains the most feasible material for our process. That said, we are very proud of this work that gives us a viable option should we ever need it. This is just one more example of how Cyanco maintains its position as the world's biggest, most secure and trusted supplier of sodium cyanide."

"I have been with Cyanco (in all its iterations) for nearly 37 years," said Roy. "The thing that keeps me engaged and excited to be here is the fact that we keep investing in innovative ways to continuously improve. Let's face it – this is a mature industry that's been using this mature technology for over 100 years. Yet we remain committed to finding new ways to be the best at what we do. From new ways to stabilize our product in extreme climate conditions to optimizing raw materials usage to improved yields and product quality, we're always innovating."

Roy's Applied Technology engineers provide a variety of services for customers as well, both on-site and in the lab – including analysis, detoxification services, product use and handling optimization and ICMC certification.

"No matter what we're doing, the end result has to benefit the customer," adds Kai. "We have invested heavily in our plants to ensure reliability and efficiency, and that means our customers never have to worry about their sodium cyanide supply. From extreme weather conditions to a global pandemic – no matter what is happening in the world – Cyanco will be there with what they need when they need it."

Going Global – a Q&A with Gregg Zoccola, Cyanco Sales Executive



Gregg Zoccola has been with Cyanco since 2019, bringing over 30 years of experience in the chemicals industry to his current position. Gregg was formally trained as an engineer, holding a BS in Civil Engineering and an MS in Environmental Engineering. Combining his technical knowhow and industry experience, he now helps Cyanco in the expansion of its business into international markets.

Gregg, how's it going with Cyanco's growth opportunities on the world stage?

Actually, pretty great. We have renewed some important contracts in Canada, closed a significant supply contract into West Africa, and have made tremendous progress in establishing a footprint in the European market this year.

How do you select new markets you'd like to enter?

When you're making the decision on whether to enter a new market or not, you have to consider the long-term potential for sustained profitability. A lot of things factor into that, like how established your competitors are – and how much it would cost to flip those accounts in order to gain market share. For a chemicals business such as ours, there's not a lot of upside to engaging in a market or geography that is already saturated and/or commoditized. In other words, Cyanco is never going to enter a new space as the lowest price supplier. We don't compete on price alone, unlike other 2nd and 3rd tier suppliers. As the only Tier 1+ producer of sodium cyanide in the world, Cyanco is all about total value and that included safety, quality, reliability, service and price.

As of right now, what's the biggest opportunity in your sights?

Europe represents one of our biggest new opportunities, which began with a phone call from a distributor in the region who was looking for sodium cyanide. At the time, Russia had just invaded Ukraine, affecting our competitors in their ability to provide regional customers with cyanide. At the same time, Asian producers were stretched thin with supplying Russia. This unique situation created a large, unmet need in Europe that we have been able to leverage.

What happened after you took that call?

The distributor turned out to be a young, passionate business owner who sells a variety of reagents and

solutions to the mines. He became Cyanco's regional consultant about a year ago, and we have greatly benefited from his experience and his customer network ever since.

It would normally have taken 3-5 years to establish ourselves in this geography, but one year later, we find ourselves with RFPs in hand, having 1-1 conversations with a majority of the area's big players.

You just got back from a recent trip to Europe. How was it?

Our consultant put together a brutal schedule! Over the course of four days, I think we were on seven different planes. I rented four different cars, driving from city to city, as well as visiting some very remote places. It was tough, but we knew we had to show up and make a personal connection with these mines.

What are customers looking for in Europe?

Of course, you're going to have price discussions right out of the gate. However, once everyone understood the full spectrum of what Cyanco has to offer, we were invited to move beyond price negotiations and began to conduct on-site product trials.

How did you get them to consider the total value Cyanco brings to the table?

We were persistent! And, we were honest in telling them we would never even try to compete with low-cost suppliers. We were also compassionate regarding the challenges these mines have faced regarding their vital cyanide supply. Now everyone in this region knows us. They know Cyanco is in it to support the mining industry as a whole. Unlike other Tier 1 suppliers, we don't have 3-5 other businesses that are drivers for the cyanide molecule. Cyanco exists solely to serve the mining industry.

What's next?

We are fortunate to have secured some important contracts with the bigger European mines, representing tens of thousands of tons. We also expect to leverage numerous spot opportunities with smaller mines in the future. It's been a very exciting time, and we look forward to expanding and growing with our new customers in this new market!

Industry Events

Cyanco was a proud sponsor at the 2023 Idaho Mining Association Conference

Cyanco is proud to support the North American mining industry from celebrating the rich mining history in Idaho to sponsoring our traditional hospitality event at NVMA.

See you at the SME Foundation Benefit Golf Tournament November 17!

Cyanco is a proud sponsor of this year's 4th annual fundraiser, with proceeds going to the valuable education, outreach and professional development programs supported by the SME Foundation. We hope to see you there!

<https://sme-golf.perfectgolfevent.com/>



WORK HARD. PLAY HARD.

At Cyanco, Teamwork is one of our core values. Whether it's participating in our annual paintball tournament or celebrating holidays. Sometimes that just means getting together and having fun! Interested in joining a company where 'Teamwork' is one of the core values? Check out open positions at <https://cyanco.com/careers>



CYANCO VALUES AT WORK



ONE TEAM. ONE GOAL. SAFE PRODUCTION.



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