THE OFFICIAL PUBLICATION OF THE SASKATCHEWAN MINING ASSOCIATION

ORE

MINE STREET, SASKATCHEWAN

THERE'S A REASON THIS FAMILY IS SMILING – AND THEY'RE NOT ALONE.

THE SUBMARINE AT CIGAR LAKE

A SUBTERRANEAN STORY OF MINING INGENUITY

50 MILLION CARATS

THE DIAMONDS ARE HERE – NOW TO GET AT THEM.

45 YEARS
SASKATCHEWAN MINING ASSOCIATION

FALL 2011/WINTER 2012

Aerial view of Boundary Dam, Estevan, Saskatchewan

ORE is produced solely by the Saskatchewan Mining Association.

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COVER PHOTO
The Chovan family – parents Mike and Karen with children Mason and Ashley - are among many in Saskatchewan who benefit directly from mining. Mike Chovan is the project controls lead for BHP Billiton Canada's Jansen potash project while Karen Chovan is a senior specialist in Environmental Leadership with Cameco Corporation. The couple moved to Saskatoon from Fort McMurray in 2006 to take up jobs in Saskatchewan's mining industry after having worked in oilsands-related jobs. For Mike, moving to Saskatoon was a return to his hometown, while Karen has extended family who originate from Saskatchewan.

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MINING: GREAT FOR SASKATCHEWAN COMMUNITIES!

A MESSAGE FROM SMA EXECUTIVE DIRECTOR – PAM SCHWANN

With mining's unprecedented reinvestment of profits back into Saskatchewan – over $43 billion in Saskatchewan in the next two decades – it is an exciting and prosperous time here in Saskatchewan.

This edition of *ORE* takes a look at what that re-investment by the exploration and mining industry in Saskatchewan means at the community level.

Our feature story, *Mine Street*, describes the buzz being generated in Saskatchewan as a result of the robust mining and exploration sectors – from the corner store in rural or northern Saskatchewan to the many new consulting firms that have set up shop. While direct royalties and taxes are one obvious measure of benefits, there are many other measures of how the exploration and mining sector in Saskatchewan contributes to the growing economic and social success of our province. The many faces of prosperous communities are yet another indicator of how Saskatchewan is enriched by this mining investment. Young families, such as on the cover of this issue of *ORE*, are revitalizing communities and represent the new and confident face of Saskatchewan.

Additional articles in this edition of *ORE* describe other types of investments by the mining industry including those in exploration, technology and innovation, and our most important investment – people. Clearly, mining investment brings multiple benefits to Saskatchewan communities – from A to Z.

A lot of you have contacted us to let us know how much you enjoyed the inaugural edition of *ORE*. We appreciate your feedback. I hope you will find this edition of *ORE* equally engaging and informative!

A MESSAGE FROM SMA PRESIDENT – DAVID NEUBURGER

Community – a word that brings a sense of belonging, whether it refers to our social or professional 'communities', or our home communities. And with belonging also comes responsibility.

The mining industry in Saskatchewan shares a strong sense of responsibility to our communities. This is even more evident in recent years as 'sustainable development', 'social license' and 'corporate social responsibility' have become part of our language. At the most fundamental level these principles demonstrate that a strong industry needs supportive communities.

There are so many ways that our industry has positive impacts in Saskatchewan communities. Mining's dynamic growth continues to create and sustain many well-paying jobs for people who live in the communities around our mining operations and head offices. There are also numerous spin-off economic benefits for fabrication shops, construction companies, engineering firms and other service companies. A number of these service firms are true 'made in Saskatchewan' successes.

We make our mark on our communities through direct investment. You do not have to look far to see the names of mining companies on sports facilities, parks and cultural events. There's also a long history of strong support for our province's educational institutions. In northern Saskatchewan the mining industry has been a long-time partner with the provincial government and Northlands College in the multi-party training plan. This plan has created hundreds of training-to-employment opportunities for northern Saskatchewan students over the past two decades.

Most impressive is the impact our industry has on our communities through the generosity and dedication of our people, whether it is our emergency responders volunteering in their home communities or the donations of our industry's employees leading the annual United Way giving campaign.

Mining … great for Saskatchewan … great for our communities!

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SMA CALENDAR OF EVENTS

NOVEMBER 2011

- **CIM MEMO (Maintenance Engineering/ Mine Operators' Conference 2011)****
  November 6 - 9 (Saskatoon)
- **Industrial Safety Supervisor Course***
  November 15 – 17 (Saskatoon)
- **Ministry of Energy & Resources Open House****
  November 28 - 30 (Saskatoon)

FEBRUARY 2012

- **SMA AGM***
  February 10 (Saskatoon)

MARCH 2012

- **3rd Edition of *ORE**** The Official Publication of the Saskatchewan Mining Association

APRIL 2012

- **Saskatchewan Mining Supply Chain Forum***
  April 4 (Saskatoon)

MAY 2012

- **Saskatchewan Mining Week***
  May 20 – 26
- **44th Annual Emergency Response/Mine Rescue Skills Competition***
  May 26 (Regina)

*SMA hosted events
**SMA affiliated events

YOU'RE HIRED!

MINING LEADS INDUSTRIES IN FIRST NATIONS AND MÉTIS INVOLVEMENT

Mining's record in Aboriginal involvement – particularly here in Saskatchewan – is second to none. Statistics Canada's most recent census (2006) shows that, "The mining industry is the most significant employer of Aboriginal peoples in Canada." At almost seven per cent, the rate of involvement is more than double the participation rate in the general Canadian labour force. The jobs also represent some of the highest weekly earnings in the economy, averaging $1,100 per week compared to the national weekly average of $747, according to data from Natural Resources Canada.

Taking the spotlight is Saskatchewan; the involvement rate of 20.7 per cent is the highest in Canada. (See table below.) That's not surprising to Brad Darbyshire, general manager of Points Athabasca Contracting, a limited partnership that uniquely involves three First Nations and four non-First Nations communities in the Athabasca Basin along with Graham Construction, a 25 per cent owner. Points Athabasca has won close to $400 million in contracts since its formation ten years ago, and "there are now more opportunities than ever before," according to Darbyshire. "Mining's importance to Aboriginal peoples is immense. Mining enables Aboriginal people to exercise their right to participate in business, and is particularly good in that regard because of the diversity of trades, functions and roles which allow for many different entry levels into the workforce." He estimates that hundreds of jobs have been created in Basin communities through various ventures.

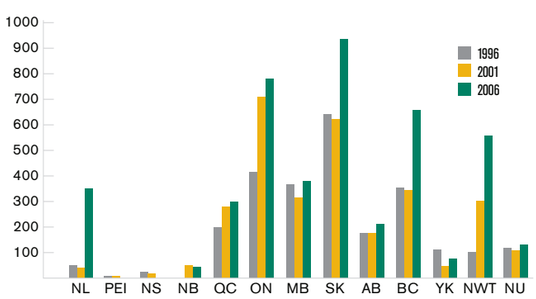
Involvement of First Nations and Métis employees is "an opportunity, not an obligation," says Gary Merasty, vice-president of corporate social responsibility at Cameco, Canada's largest industrial employer of Aboriginals, at a rate of roughly 50 per cent. "With that ratio, if you're Aboriginal, you don't feel like a minority," Merasty points out. He says there are several factors which improve retention. A major factor is the 7-day-in, 7-day-out schedule (see *Tagging Along*, p. 32), which allows employees to stay in their home communities, especially in the North. This can have additional benefits to the community. "Some of our northern employees, such as electricians, spend their week off applying their skills within their home community," Merasty said.

Companies operating in the north – notably AREVA Resources Canada, Cameco and Claude Resources – have been exemplary in their commitment to First Nations and Metis employment and business development, but other major companies are also firmly committed to greater participation. At PotashCorp, Leanne Bellegarde is director of Aboriginal strategy. She cites three principal goals: ensure that First Nations and Métis peoples know about the opportunities to do business with and work for the company; support and enable them to take full advantage of these opportunities; and ensure a corporate culture that welcomes and encourages this involvement. "The reality is that Saskatchewan has a significant and growing young Aboriginal population," says Bellegarde. "We need to take advantage of that fact."

Chris Ryder, vice-president of external affairs at BHP Billiton, says, "It's a matter of fairness, of reflecting the demographics." As BHP Billiton presses forward toward a major potash mine opening in 2015, Ryder points to their Ekati Diamond Mine in the Northwest Territories, where 30 per cent of the workforce is Aboriginal. "It isn't enough just to create job openings and have a policy," Ryder says. "You need to actively engage with the community at all levels, especially with the children and youth. You need to generate hope and aspirations."

All the signs point to more and more Métis and First Nations peoples joining the mining workforce in Saskatchewan. The timing is right, given the demand for skilled and professional workers in all aspects of mining. What's more, it is now second and third generations who are "coming to the table" to use Brad Darbyshire's words, and it is not just entry-level jobs. Today, First Nations and Métis employees can be found throughout the organizational spectrum, including senior management, and that trend will continue. With an ongoing, long-term commitment to education, training and sustainable employment, Saskatchewan's mining industry has many more chapters to write in this success story. ■

ABORIGINAL PEOPLE IN THE MINING WORKFORCE



Source: Statistics Canada, Census 1996, 2001, and 2006.

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www.mihr.ca
www.nrcan.gc.ca
www.pointsathabasca.ca
www.kitsaki.com

Cut and polished diamonds from the Star kimberlite

50 MILLION CARATS

THE DIAMONDS ARE THERE. NOW, TO GET AT THEM.

George Read can see diamonds long before most of us. As senior vice president of exploration and development at Shore Gold, he loves what he sees in Saskatchewan.

ORE: How long have you been fascinated with diamonds?

Read: When I was attending university in South Africa, I always did well with a professor who specialized in diamonds, but you might say I actually got into diamond exploration by default. In 1983, I went to see one of my professors at the University of Cape Town about a job application for a nuclear corporation in South Africa. However, when I walked into his office he had just been talking with someone at De Beers and had told them, "George is your man." That was it.

ORE: Was it the search for diamonds that brought you to Canada?

Read: Yes. I was on a visit to Canada for De Beers, for the Victor Mine in the James Bay lowlands of Ontario. I was interpreting the minerals in the area. During that time (the late '80s) an exploration program in Saskatchewan had discovered an anomaly southwest of Prince Albert. De Beers wanted me to be present while they dug into an old road quarry near Shellbrook.

ORE: What did you find?

Read: It was an exciting discovery – very exciting times! The local De Beers geologist had discovered kimberlite pebbles in the sorted material called "road metal." We dug down – all we needed was a backhoe – and the kimberlite was right there. That was very unusual. The Shellbrook discovery in 1988 was a precursor to the Fort a la Corne discovery in August 1989.

ORE: You said this was a very important discovery. Why?

Read: Normally, a kimberlite orebody is carrot-shaped. This formation was mushroom-shaped. Fort a la Corne had erupted 100 million years ago on the eastern margin of what was known as the Western Interior Seaway.

Kimberlite forms craters which are highly unstable. In most cases when it is on the surface it turns into clay and eventually blows away. In the case of Fort a la Corne, shortly after the eruption the kimberlite was buried by the marine mudstones of the expanding sea. The feeder pipe – the carrot underneath the mushroom – was preserved, but so was the mushroom. This today is the target of our exploration.

ORE: But it's Shore Gold, and not De Beers, who is pursuing development, right?

Read: Yes. I joined Shore Gold in 2003. You must realize that key aspects of these kimberlites never became known until Shore sunk a shaft and recovered a major bulk sample in 2005. Our report on our findings valued the diamonds at $135 a carat. We also saw that the diamond distribution was coarse. That told us we could expect to see big diamonds in the future, probably bigger than 100 carats. It was Shore's work that proved there were diamonds in Saskatchewan worth pursuing. It was a pivotal change.

ORE: You're getting a lot of attention because of your findings.

Read: We have the best dollar per carat value of any evaluation prospect in Canada. Shore also has the largest mineral resource. We're talking about indicated and inferred resources, which comes to 50 million carats in the ground. The tonnages involved in the body itself far surpass the tonnages in any other exploration in the world. These are massive bodies.

It's most important also to remember that in all these massive numbers of kimberlites only two kimberlites have had enough information on them to make a production decision. That's Star and Orion South, both owned by Shore Gold. Those two kimberlites suggest that we can have a 20 year mine life – in Fort a la Corne. But that's only the beginning. Even while we're mining Star and Orion South, there is a whole lot more kimberlite nearby that can be seriously evaluated.

> "The tonnages involved in the body itself far surpass the tonnages in any other exploration in the world. These are massive bodies."

ORE: What's next?

Read: We plan to break ground in 2012 and be mining diamonds by 2016. We have location in our favour, with good roads and easy access to infrastructure, particularly electrical power.

The proposed mine is very big. You would be able to see the two open pits from space. Star would be 2 km across. Eventually it would fill with water and become a deep-water lake; the overburden waste pile adjacent to it could literally become a ski hill.

ORE: What about the environmental impact?

Read: Diamond mining is environmentally benign. You extract the diamonds using the physical properties of diamonds, such as their density and their ability to stick to grease, rather than having to use a lot of chemicals or other harmful processes.

ORE: What kind of numbers are you looking at?

Read: The capital costs would be something like $1.9 billion; as much of that as possible will be spent right here in Saskatchewan. We would employ about 500 people in a large spectrum of professions and trades.

ORE: And the challenge?

Read: The biggest challenge now is finding an investment partner with deep pockets. We have to raise the capital to do the work. No doubt, the cost of removing the waste that overlies the kimberlite is high. However, the prize is fantastic.

[ed. Note – The Fort a la Corne discovery was also very significant because it identified kimberlites that were "in place". The earlier Shellbrook discovery was a piece of kimberlite that had been ripped away from its source.] ■

SASKATCHEWAN'S DIAMONDS: THE MYSTERY

Saskatchewan Energy and Resources has recorded three known periods of diamond exploration: 1948, 1961 and the present. The earlier two were, "shrouded in mystery" and, until now, "never substantiated by physical evidence."

The 1948 episode featured a character by the name of John J. ("Johnny") Johnson who claimed to have discovered five diamonds; when asked to show them, he said he sent them to South Africa for assessment. He asked for exclusive diamond exploration rights for the entire province, but was granted a three-year licence for a hundred square mile area – in the same area where the kimberlites now have been discovered, near Cumberland House. Records show he then had a dispute with the Department over interpretation of his land rights; that dispute is the last known historic record of Mr. Johnson and his diamond venture. The five diamonds, if indeed they ever existed, also disappeared with Mr. Johnson.

The next episode, in the early '60s, starts with a mining course taught to inmates at the Prince Albert Penitentiary. When one of the inmates was released, "This man – this was all a deep dark secret, cloak and daggerish sort of business – this man had gone to Winnipeg; that was his home, and got in touch with...a family that had some money. Then he returned here with this idea about these diamonds... and he was convinced there was a diamond mine across the river. Naturally, this couldn't be completely a secret, so in no time at all practically all of Prince Albert was staking diamond claims...It ended up, of course – nothing – no diamonds." Heilga Reydon, Department of Natural Resources (Kupsch and Hanson, 1986, p.91)

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www.shoregold.com

www.geology.com/diamond

www.saskmining.ca

www.er.gov.sk.ca
(pdf) History and Current Status of Diamond Exploration in SK

Preparing the furnace for the first gold pour

FROM EXPLORE TO ORE

When asked for advice about taking a mining venture from exploration to production, Ron Netolitzky laughs and replies, "Don't do it!" In fact, Golden Band Resources has done it, aided by his legendary experience in mining, including his exploration work in the La Ronge Gold Belt that dates back to the '70s. Netolitzky is executive chairman of Golden Band, which celebrated the pouring of its first gold bar on January 12 of this year.

Netolitzky was there at the beginning over a decade ago, along with another renowned Saskatchewan geologist, Klaus Lehnert-Thiel, who joined Golden Band as a director in 1993 and explored on the company-claimed property. "As an explorer, you visualize a big orebody under your feet," says Netolitzky. "There's the thrill of the chase."

Exploration is the first phase of any mining venture, and generally one that risk-tolerant investors are willing to support. Finding investors is critical. "You'd be crazy to borrow money to explore," cautions Netolitzky. "You need to write your own cheque." The payoff for stakeholders is when you make a discovery; it's the first of two times that you can count on to drive up company value. The second time is when you actually go into production. The time in between is filled with challenges.

Thirteen years were spent acquiring and delineating the Golden Band properties. The time had come. "You keep selling shares as an exploration company, and eventually you're not going to sell any more shares unless you move to the next stage," explains Netolitzky. "Investors want to start seeing a return. You need credibility."

Thus, at the Golden Band annual general meeting in October 2006, the company announced its vision: "To be Saskatchewan's next producing gold company by discovering and developing quality reserves in a profitable and socially responsible manner." They termed their strategic plan *The Path to Production*. Their annual report states their goal was, "to delineate sufficient ounces of high-grade gold resources (greater than 10 grams per tonne of gold) within trucking distance (i.e. 75 km) of Golden Band's Jolu mill. This would form a core resource to commence operations." *The Management Discussion and Analysis* stated that they anticipated production could begin within a few months of a positive feasibility study,

First Gold Bar, Roy Lloyd Mine, La Ronge Gold Project, January 12, 2011


Kitsaki Procon JV employee installing the jaw crusher


Two-boom jumbo drill

with a relatively low capital investment and the necessary government approvals. *A Preliminary Economic Assessment* (PEA) was underway to outline the production potential of the Bingo deposit.

At this stage of the game, it's all about proving to investors that your venture will make money. It is also a time when the venture begins a major change in its operations and management. "When you explore, you can pick up your tent and go home," says Netolitzky. "When you start a mine you have a major long-term commitment."

In 2007, the focus according to the annual report was, "to maintain strong and diverse exploration programs and to become a sustainable gold producer." Golden Band more than doubled their staff, including, "the addition of three Vice Presidents with extensive Saskatchewan experience." Finding employees and contractors proved to be a serious challenge, as was the case for every resource company in Saskatchewan. Everyone was competing to attract qualified workers, many of whom were still heading to the oilsands of Alberta.

Golden Band continued to make progress, despite challenges. The project proposal was submitted to the Province for the building and operating of the mines and a mill. Golden Band signed service and cooperation agreements with La Ronge Indian Band and its economic development agency, Kitsaki Management Development Limited Partnership. Golden Band was taking "well-measured steps" on its Path to Production. All of Golden Band's operations are within the traditional lands of the Lac La Ronge Indian Band.

The next stage of development after exploration and feasibility studies is to build the operations. Major activity in 2008 included underground development of the Bingo deposit, including decline access and exploration drifts. (i.e. horizontal passageways that pursue gold veins.) On the feasibility side, there was good news. The independent authors of the PEA concluded that Golden Band's expanded La Ronge Gold Project "has a realistic potential for economic viability." Things were shaping up. The bulk sampling at Bingo "proved that horizontal and vertical continuity of the gold mineralization conforms to the geological model and preliminary indications from assay results correlate well with the resource model."

As of April 30, 2008, the company had spent more than $13 million on flow-through expenditures (i.e. the tax benefits are "flowed through" to the investors rather than used by the company, which doesn't need tax write-offs in the early stages, because it's not making any profits). Mining, in case you didn't already know, is a high-stakes and often complicated financial milieu.

The goal was to start gold production in 2009. However, "I am very frustrated that we did not make that goal. But it wasn't for lack of effort," announced Rodney Orr, then president and CEO (now vice-president of corporate development), at the AGM on October 16, 2009. The markets globally had collapsed in late 2008. By the start of 2009 even the most seasoned investors were in shock and in no mood to take on the risk attached to opening a gold mine. To make matters more difficult, Golden Band could not include inferred gold resources in its *Pre-Feasibility Study* – something they had been able to do in their earlier *Preliminary Economic Assessment* so they could demonstrate only a three-year and not an eight-year project. Through 2009, they had hunted for new investors. They even tried China, but all offers meant losing control of the company. Later in 2009, they went back to the North American markets, which "seemed to be turning" – and engaged firms based in Toronto and New York. Regardless, they still had to struggle with the numbers – to prove the viability of the project. As for their stock value, Golden Band was in that phase which Ron Netolitzky says is typical, a time when, "There is a big flat period where prices drop and investors wait and see." The one bit of good news was that they received provincial environmental approval in May of 2009, which allowed them to start production when they were ready.

Ironically, if Golden Band`s numbers had been bigger, it probably wouldn't be around in its present form. A mining

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company grows by either exploration or acquisition. Smaller ventures like Golden Band usually do it through exploration. Large giants will often take the second route. In this case, though, no big player was interested. Golden Band forged ahead alone.

The perseverance paid off. In 2010, Golden Band was back on track. The Bingo deposit's mine was named the Roy Lloyd Mine after the Saskatchewan mining executive who was also a company Director, but who passed away in 2005. All permits and licenses had been secured, and the Jolu Mill was ready to go. By the end of the year, the company was about to make its breakthrough gold pour.

Today, still in its first year of production, Golden Band Resources has reached its initial target of processing 400 tonnes per day and is heading toward the objective of 700 tonnes per day. The company has the mineral dispositions that cover much of the La Ronge Gold Belt – over 875 km^2 – with 12 known gold deposits and an immense exploration potential for more. What goes around comes around: some of these deposits had been identified by Netolitzky in his early work in the area in the 1970s and 1980s.

As one journey ends, another begins. "You need a totally different skill set to run an operating mine and mill," says Netolitzky. "There are many more people involved. You're now dealing with complicated accounting procedures, regulators, shareholders, stakeholders, human resources, operating and maintenance issues, suppliers, debt servicing, cash flow – the list goes on."

He says that as an operating mine, "You need staying power." An optimist by nature – but also one who knows his business very well – Netolitzky has no doubts. Golden Band has arrived, and it's here to stay. ■

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www.goldenbandresources.com

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MINE STREET, SASKATCHEWAN

Saskatchewan's mining industry is changing not only how we are viewed by the rest of the world. In communities throughout the province, it's also changing how we see ourselves.

"When PotashCorp announced their big mine expansion, that's the day life changed around here," says Monica Merkosky, Rocanville's town administrator, referring to the corporation's $2.8 billion investment at its Rocanville site. Although some of that change has been challenging (The town's original subdivision filled up within weeks after the announcement, and they are now working on solving the housing shortage with several developers), she is emphatic about the prosperity and optimism mining has created in her community.

Monica's sentiment is shared by those in other towns and cities throughout the province, wherever mining has a presence. "I come from a farming community," Monica explains. "When I moved to Rocanville, I was dumbfounded by what mining can mean to a town."

Proudly known for agriculture – with 46 per cent of Canada's arable land – Saskatchewan now has the second largest mining industry in Canada. In 2010, that meant an estimated value of more than $7 billion in mineral production – an increase of roughly 35 per cent from the $4.6 billion in 2009. What's more, this isn't a brief windfall for our economy; it's here to stay. That's a remarkable contrast to the outlook for most economies in the developed world as they face growing unemployment and overwhelming debt. Here at home, the Saskatchewan Mining Association is forecasting a $43 billion investment in new mines and expansions alone, over a 20 year period. Additionally, a 2010 report commissioned by the SMA estimates that some 30,000 jobs exist in the province directly because of mining, or because of mining's overall economic impact. The report also predicts that direct employment in the industry has the potential to double in the coming years.

The people of Rocanville see it every day. Just a few miles from town, a camp of 1,000 workers was set up for the mine expansion. That meant an immediate demand for infrastructure, but rather than set up its own temporary facilities, PotashCorp worked with the Town of Rocanville in a unique partnership resulting in an expanded water treatment facility and the doubling in size of its lagoon

From Rocanville to the world: Global demand for potash and other minerals is reshaping Saskatchewan communities.

The upbeat mood in Lanigan: store owner Jim Sereda with customer Jackie Stephan

Photo courtesy of Lanigan Advisor

and sewage capacity. PotashCorp paid the entire cost of the engineering and construction; in return, the company uses the facilities free of charge. The potable water is hauled from the town to the camp and construction site by a local trucking company, illustrating the "multiplier effect" of mining investment.

Speaking of multiplier effects, the Town of Esterhazy recorded 18 births in May. A daycare that opened in February quickly filled to its 40-child limit. Enrollment is increasing in kindergarten and grade one. A campaign has been launched to raise $6 million for a new hospital and care home. There are already five doctors in the community. "When Mosaic is doing well, Esterhazy is doing well," explains Judy Parker, the town's economic development officer. She estimates that roughly 75 per cent of the town's economy stems from the presence of Mosaic and its new $1.4 billion K-3 mine brownfield expansion. "But we're not a company town in the old sense," she adds. "Mosaic's management is very open and very approachable. They act like partners in our economic growth. They're great corporate citizens not only for Esterhazy but for all the communities within this region."

> "We are building a local base of expertise that rivals anything elsewhere. This has created a growth of opportunities, and taken our mining engineering and support industry to a next level of capability."

All operating mining companies in the province share Mosaic's philosophy of community involvement and "buying local". Don Atchison, mayor of the City of Saskatoon, says that people in Saskatchewan readily understand the philanthropic side of mining companies, through major donations and support of major events, but he feels many citizens don't fully appreciate the, "magnitude of the importance to the economy." Noting that Saskatoon is well on its way to becoming "the mining capital of Canada," Mayor Atchison has a long list of the benefits of mining, not the least of which is the creation of a balanced economy that, according to Atchison, "took us through the Recession unscathed."

AMEC would be on the mayor's list of shining examples. The global engineering firm had approximately 100 employees in their Saskatchewan Mining Group at the end of the '90s. Today, they employ more than 400. "For awhile, you could see licence plates from virtually every province of Canada in our parking lot, along with some from the States," recalls Will Brandsema, vice-president and general manager of the Mining and Metals Business Unit in Saskatchewan. "We are building a strong local base of expertise in our commodities. This has created a growth of opportunities, and taken our mining engineering and support industry to a next level of capability. We can look forward with confidence to new developments in our province and beyond." These new opportunities are now within reach for Saskatchewan businesses and entrepreneurs thanks, in part, to what Brandsema calls "a sea-change in the perception of Saskatoon and Saskatchewan by the outside world."

One of the great things about mining is you don't need to be an international engineering firm in a major city to reap the rewards. Robertson's Trading in La Ronge has been around for 44 years. Scott Robertson, whose father started the business, says the company supplies what he calls "the grassroots mining work: exploration, geophysics, line-cutting – the guys with dirt under their fingernails." These customers need tents, snowshoes, axes, sleeping bags and prospecting tools. He points out, only half-jokingly, that the best scenario for his business would be, "if there's lots of exploration and nobody finds anything." A lifetime resident of La Ronge, Scott says that the mining and exploration industry presents "good-paying jobs and real opportunities to succeed on your own" in La Ronge.

Jim Sereda, who owns the pharmacy in Lanigan, points out the importance of not only mining's diversity, but also its sustainability. "When my wife and I moved here 14 years ago and bought the existing pharmacy, it was the mines that gave us the confidence to proceed," he says, adding that, "It's a tremendous corporate attitude to support what's in your own backyard." Jim not only sells a lot of first aid supplies to the industry; his wife, Stacey, now runs a family clothing store they bought four years ago. "A family clothing store in a small town might seem like a risky venture," says Jim, but just as with the pharmacy, the presence of the mines gave them the confidence to proceed with the venture. It's doing well – and Jim is even more optimistic about the future. "I feel our community and our province are on the cusp of unprecedented growth," he says. Mining is a key factor in ensuring that rural communities participate in that growth, by creating the infrastructure – what Sereda defines as "the foundation you need to make it happen. You have to be someplace where the services you need are available."

Another valuable characteristic of mining is that it has to come to the ore, wherever it is. You can move auto plants out of Oshawa, but you can't move the uranium deposits out of the Athabasca Basin. That fact is not lost on Brad Darbyshire, general manager of Points Athabasca Contracting. It brings the jobs nearer to once-remote communities. "You can live where you grew up and still have a well-paying career with opportunities for advancement."

The ability to attract and retain a healthy diversity of professional and tradespeople is a recurring theme in the people we spoke to for this article. For Judy Parker in Esterhazy, "Young people who grew up here now have the opportunity to come back here – and to bring their families and earn a good living." They also add to the community in ways you might not consider, such as fixing and maintaining the equipment of the volunteer firefighting unit in Rocanville, or wiring a house for a neighbour in Sandy Narrows. As Monica Merkosky will tell you, mine personnel also can be great coaches for sports teams, presidents of home and school organizations, burger-flippers at the annual Canada Day celebrations, and all-round great neighbours.

Small towns are also good for mining. In contrast to the Hollywood stereotype of the rough mining town, Saskatchewan's communities offer the sense of belonging, of safety, of neighbourhood values that many families in the world can only dream about. "A young guy just came here from Alberta, and has decided to stay and raise his family here," says Judy Parker.

Mining and communities are coming together in exciting, innovative and mutually beneficial ways. To use Judy Parker's words, in every corner of Saskatchewan, "Mining brings optimism." ■

FROM A – Z

A SAMPLING OF SASKATCHEWAN COMMUNITIES THAT ARE BENEFITTING DIRECTLY FROM MINERAL EXPLORATION AND MINING

- A Air Ronge
- B Belle Plaine
- C Coronach
- D Denare Beach
- E Esterhazy
- F Fond du Lac
- G Grand Coulee
- H Hatchet Lake First Nation
- I Île à la Crosse
- J Jansen
- K Kamsack
- L Lanigan
- M Moose Jaw
- N Nipawin
- O Oxbow
- P Prince Albert
- Q Quill Lake
- R Rocanville
- S Saskatoon
- T Tuxford
- U Uranium City
- V Vanscoy
- W Willow Bunch
- X Xena
- Y Yorkton
- Z Zelma

ORE | THE OFFICIAL PUBLICATION OF THE SASKATCHEWAN MINING ASSOCIATION FALL 2011/WINTER 2012


Rare earth mining is essential for high-performance batteries that can replace fossil fuels.

NO MINING. NO GREEN PLANET.

Regardless of your view on global warming, everyone can agree that we can do more to reduce harmful impacts of humans on our earth. The challenge, though, is that it is very hard – some would say impossible – to curb human demand for energy. For example, from 1980 to 2007, global energy demand grew by 66 per cent. This is not just from developed countries. The emerging BRIC countries (Brazil, Russia, India and China) are consuming an ever-larger share. The answer, then, is to develop technologies which provide that energy, but with less impact on our environment.

Despite the debate over particular energy sources – such as solar, wind or nuclear – the best solution seems to be a multi-faceted approach. This strategy is now accepted even by many people who used to be adamantly anti-nuclear, most notably Patrick Moore, one of the early members of Greenpeace, and Stewart Brand, author of *The Whole Earth Catalogue*. Surprisingly for some, coal can also be part of the picture, thanks to new technologies.

All of the technologies, however, rely on mining. Saskatchewan mining, in particular, can play a major role in the advancement of green mining solutions. Let's start with Great Western Minerals, with its head office in Saskatoon, a mineral property at Hoidas Lake, Saskatchewan and vertically integrated operations in England, the USA and South Africa. The company focuses on finding and processing minerals which contain the 17 chemical elements in the periodic table called "rare earth elements" (REEs). They are called "rare earth" because it is difficult to find deposits of them in a high enough concentration to warrant mining.

REEs are key materials for the hybrid car and electric vehicle industry – and essential for energy-efficient lights and efficient wind turbines. They are also essential for the new technologies driving cell phones, tvs, computers and other digital devices. Rare earth elements allow us to make extremely powerful magnets, which in turn make it possible to reduce the weight of batteries by up to 90 per cent. That is readily appreciated by users of cell phones and laptop computers, but lighter batteries also make cars lighter – even airplanes – allowing them to travel farther with less fuel consumption. Batteries made of REEs can also withstand very high temperatures, which is important, especially for automobiles.

The necessity of rare earths in today's technology is the reason behind global concern over China's export policies. China has a monopoly (90 to 95 per cent) of current world supply – a fact not lost on car manufacturers such as Toyota and its hybrid cars, international electronics companies like Apple and its iPods, and others. China's new quota restrictions on the exporting of REEs has been strongly criticized by the United States and European Union, as well as the World Trade Organization, which claims that China's limits on raw-material exports "break global trade rules." The importance of finding deposits elsewhere in the world – including Saskatchewan – has become paramount if we want better, greener technologies to continue, let alone increase.

Most people know about the importance of potash as a fertilizer, but one by-product – potassium hydroxide – is used to make more environmentally-friendly soaps and numerous other products such as non-phosphate detergents. Potassium hydroxide is also used in the bulk etching of silicon wafers used in very small

With coal generating 41 per cent of the world's electricity, there is significant global interest in Saskatchewan's clean coal advancements.

electronic products (i.e. micro-electronics).

For solar solutions, we need silica sand to make the glass panels. Silica sand has been quarried in Saskatchewan since the 1930s. There are significant deposits located throughout the province, representing millions of tonnes of sand. Winn Bay Sand, for example, is quarrying sand near Deschambault Lake.

There are compelling reasons for including nuclear as part of the overall green solution. Firstly, it is the only current viable alternative to carbon-based energy on a massive scale. According to the World Nuclear Association, as of September 1, 2011 there were 439 reactors in the world, with another 63 under construction – 16 of these in China. Operating reactors provide 14 per cent of the world's electricity, which includes almost 24 per cent of electricity in OECD countries (i.e. members of the Organization for Economic Cooperation and Development) and 34 per cent in the European Union.

China's appetite for energy is described by BBC News as "insatiable". The BBC reports that 80 per cent of China's electricity comes from coal, and there are plans for 544 new coal-fired power stations. China is choking on its own pollution, but coal is so plentiful. The answer is truly clean coal technology. Saskatchewan, the third largest coal producer in Canada with total reserves estimated at more than five billion tonnes, is providing that answer.

Places like China need to look carefully at what's being done at SaskPower's Boundary Dam project, and they are. (See p.26: *Coal Becomes Clean at Boundary Dam*). The new plant will be three times cleaner than natural gas, according to Michael Monea, president, Carbon Capture and Storage Initiatives. Michael also shares the view that all forms of energy can play a role in a cleaner, greener Earth. "With this new process, coal can be part of the overall integrated solution. It's not a question of getting rid of coal, but rather of cleaning it up."

At Bienfait, Saskatchewan, Sherritt Coal is showing that the answer to cleaner coal energy is coal itself. In June 2010, Sherritt completed the construction of its joint venture (with Norit Canada) of an activated carbon plant. The common raw material for carbon is coal. Carbon becomes "activated" when it is specially treated to increase the pores on its surface. The increased porosity results in an increased "capture" of harmful chemicals (notably mercury) emitting from a chimney.

According to Mark Plamondon, senior vice president of Sherritt International's Coal Division, the total demand for activated carbon throughout North America is expected to increase significantly. "With tightening mercury emission standards throughout North America, coal-fired electricity generators will need to implement new technologies, such as activated carbon injection, to be in compliance." said Plamondon. "As a result, demand for activated carbon is expected to outpace supply over the next few years."

But what about mining itself? Pam Schwann, executive director of the Saskatchewan Mining Association, says the mining industries in Saskatchewan and Canada have been leaders in sustainable practices, and continue to pioneer advancements. She points to the Green Mining Initiative announced in May 2009, which the industry describes as, "a proactive effort by Natural Resources Canada to reduce Canada's mining footprint."

Schwann also points out that mining and exploration are temporary uses of the land. "In total, Saskatchewan's mining industry uses only one-tenth of one per cent of available land in the province," Schwann says. "That's a footprint that is less than the size of Saskatoon, and a footprint that is being reduced as mining companies decommission and reclaim their operations on an ongoing basis."

Green mining can produce green solutions. With a global population that has now surpassed seven billion, we just may be able to turn the lights on around the world – and see a better future. ■

DIGGING DEEPER

www.saskpower.com

www.sherritt.com

www.world-nuclear.org

www.gwmg.ca

The remote operated vehicles ("mini submarines") were small enough to fit into the cage on Shaft 1. They were controlled from surface through an umbilical cord that spun out from a reel on the back of the vehicle.

THE SUBMARINE AT CIGAR LAKE

The thought of a submarine operating in northern Saskatchewan sounds like a wild-eyed fishing tale, but that is exactly what happened at the Cigar Lake uranium project during 2008 and 2009.

During the Cigar Lake remediation, Cameco employed a mini-submarine or ROV developed for the offshore oil industry, similar to the one shown here.

Photo courtesy of sub-Atlantic

To say the Cigar Lake uranium deposit is important is an understatement. It is the world's largest undeveloped high-grade uranium deposit. It has also proven to be one of the most challenging deposits to develop, requiring teamwork, technology and innovation to resolve technical issues and get the mine ready for production. Located about 430 metres below the surface, the pod of high grade uranium ore is surrounded by an envelope of clay.

An early technical challenge to the development of the Cigar Lake deposit was figuring out how to safely access the ore through the clay zone. This early challenge was overcome by the installation of freeze pipes that froze the orebody and surrounding clay, providing the rock with additional strength. Another challenge to mine development occurred in 2006 when a water inflow flooded the mine's underground workings. This is where the story of a mini-submarine operating in northern Saskatchewan makes its first appearance. The inflow source was identified and sealed, and dewatering and remediation activities were initiated.

In August 2008, Grant Goddard, Cameco's then general manager of the Cigar Lake Project, was on his way to a Cameco board meeting to report the good progress being made. Then he got the call from the site. "Grant, we've got water coming in again." Goddard immediately turned around, quickly changed from his business suit to his work clothes, and headed back to the site.

This time, the flood was puzzling as well as disheartening. "We had done all the testing and were convinced everything was fine," explains Goddard, now Cameco's vice-president of Saskatchewan Mining North. "The dewatering was going smoothly, until we hit the 430 metre mark underground."

Anyone who has had water problems knows how difficult it can be to find and stop a leak. Try doing it in total darkness almost a half-kilometre under the earth's surface. "It's not like you can just swim down a mine shaft and start looking around," notes Goddard. However a remotely operated vehicle (ROV) – essentially a robotic submarine – could. "We had used one in remediation work the first time," says Goddard. "However, these machines were designed for use primarily in clear ocean water, mainly in the Mexican Gulf. That's a far cry from the cold, confined and completely dark environment of a flooded mineshaft." Knowing the difficulties, Goddard and his team – comprised of engineers, geoscientists, millwrights and others – went to work.

The first step was to bring in a new ROV with more features. The new sub was about a metre wide, 1.5 metres long and 1.5 metres high, and was controlled above-ground using screen monitors. Periodically, especially when the propellers would stir up the materials in the shaft, the monitors displayed little of value. Goddard describes it as, "driving at night in a snowstorm, with your brights on. All you see are the flecks coming at you from out of the darkness."

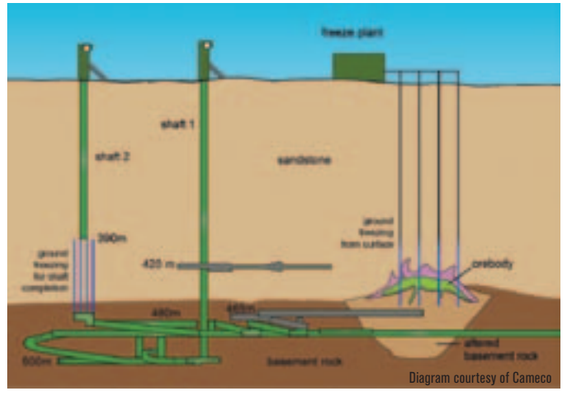


Diagram courtesy of Cameco

If you couldn't see the hole where the water came from, maybe you could feel it. Goddard and his team knew that the water from the inflow would be slightly colder than the water in the mine, but only by one- or two-tenths of a degree. That was enough. They fitted a highly sensitive thermometer on the nose of the ROV. Whenever it detected colder water, the operator would steer in that direction. "It was like a bloodhound following a scent trail," explains Goddard. They also used images generated by sonar (i.e. sound) to help plot their routes.

The images justified Goddard's confidence in the remediation work that had already been done. They were looking for a new source. Eventually, they found it – a hole in the ceiling of the horizontal tunnel. (Miners call these tunnels "drifts" while they call the ceiling the "back.") The hole was about two inches wide by six inches long. For eons, it had been filled with clay amid the rock formation. However, when the tunnel was drilled, filled with water from the first flood and then drained, the clay eroded and the water came pouring in. So now you know where it is and what caused it. How do you repair it?

As the diagram shows, the inflow source is several metres from the vertical mine shaft. If you attempted just to pour concrete into the hole, all you would end up doing is creating bigger problems from excess concrete backing up into the mine shaft. Once again, the team's ingenuity rose to the challenge. They decided they would use a heavy-duty Kevlar bag that, when inflated, would be big enough to plug the entire dimension from floor to ceiling; they would lower it into the tunnel then "inflate" it with concrete.

A dry run test at surface in 2009 used two sea containers to simulate the size of the opening to the mine tunnel. The special Kevlar bag in the middle was later filled with concrete underground to seal the tunnel.

That's great in theory, but how do you actually do it? The tunnel was littered with materials, from scrap pieces of wood to an entire abandoned Bobcat. Preparing the site for the bag would be a major challenge in itself; otherwise you would not get a proper seal and the flooding would happen all over again. The ROV was small and floating; the most it could lift was seven or eight pounds – about the same weight as a laptop computer.

Goddard's team decided to drill holes down to the tunnel, near the inflow source. They then lowered cables down these holes and used the ROV to attach the cables to whatever needed to be moved or removed. They would then operate the cables from the surface, dragging even the stranded Bobcat to a better position. They also created special tools for the ROV, such as cutting devices, to help with the cleanup.

Like generals preparing for D-Day, the crew examined every small detail of their plan. They used a fish-scale to ensure that the ROV could lift and place the materials correctly. They practiced for five days on a mock shaft above-ground. They colour-coded the straps on the bag to make it easier to identify them when the bag was in the tunnel.

Finally, it was time. First they lowered a "hot stab skid" – in essence a base with a hose that would be used to fill the bag when it was lowered onto it. The bag was lowered into the tunnel. The ROV positioned the bag onto the skid, then carefully stretched it out using the colour-coded straps. The concrete began to pump into the bag, and the tunnel was permanently sealed.

All it took was three days – and 14 months of preparation.

"Our team was very dedicated and used technology in new ways," Goddard says. The project won an Exceptional Engineering/Geoscience Project Award in 2011 from the Association of Professional Engineers and Geoscientists of Saskatchewan. Dewatering of the mine is now underway with a target of mid-2013 for first production. And, 430 metres below the surface of the Athabasca Basin, sits a very lonely Bobcat. ■

COAL BECOMES CLEAN AT BOUNDARY DAM

With a 300-year supply of coal, it makes sense for Saskatchewan to find cleaner ways to use it. At SaskPower's Boundary Dam, they have done exactly that. "This is big." says Michael Monea, president, Carbon Capture and Storage Initiatives. "It is the world's first fully integrated package on an old plant. We are taking an old plant – Boundary Dam 3 – and making it virtually new again, all the while within a scale that is economical."

For more than a century, the method of coal-fired electrical generation has remained virtually the same. However, in the 1960s public concern about the use of coal reached international proportions. As we moved into the new millennium, the pressure on regulators to "clean up coal" continues to mount. In response, the Canadian federal government is targeting 45-year-old plants to be shut down, starting in 2015. That's a huge problem in Saskatchewan, because Boundary Dam's plants are going to be that age in 2013, 2014 and 2018.

Coal as a fuel source is not going to go away; it provides a reliable, economical and readily available source of power throughout the world. The realistic question is not whether coal will continue to be used for power generation, but how to use it in a more environmentally sustainable way. At the start of this century, China began adding new coal-fired plants at the rate of one per week, and currently relies on coal for 79 per cent of its electricity, according to the World Coal Association. The WCA cites other countries that depend highly on coal for their electricity, such as South Africa (93 per cent), Australia (76 per cent) and Poland (90 per cent). The USA is lower, but still significant, at 45 per cent, and at home in Saskatchewan, coal provides most of our electrical needs. From both a health and an environmental perspective, development of a superior and cost-efficient clean coal technology here in Saskatchewan can have far-reaching impact. The benefits here at home include marketing that technology to eager and willing buyers.

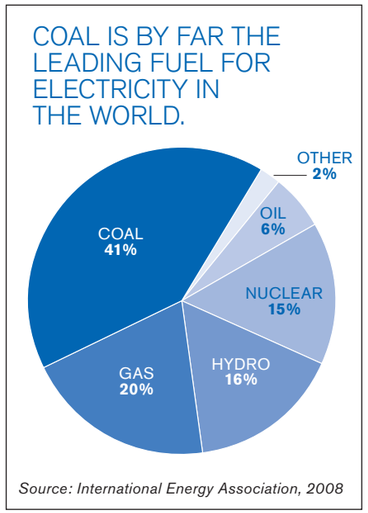
SaskPower's $1.24 billion refurbishment will result in coal-fired power generation that will be three times cleaner than natural gas. It will also remove virtually all of the sulphur dioxide – the source of acid rain – from its emissions.

In addition to environmental concerns, economics is also a major factor. The project is economically viable because SaskPower can sell CO_2 to oil and gas companies for enhanced oil recovery operations. The federal contribution of $240 million was also pivotal to economic viability.

Although a coal-fired plant is more expensive to construct than a natural gas facility, much lower costs for coal make the two comparable. Furthermore, coal costs are much more predictable. Keeping costs predictably lower is a social as well as an economic responsibility, notes Monea. "Some studies have shown that for the economically disadvantaged, as much as 60 per cent of their income has to go to utilities – to heat and power. We have to keep that in mind. We can't take low energy costs for granted. Imagine future generations where it costs more to heat and light your house over thirty years than it does to buy it."

SaskPower is confident that Boundary Dam 3 will live up to its promise. "The technology is proven, which is why the engineers have the confidence they do," says Monea. "What they have done is refined the technology, so our engineers can predict the costs much more confidently." He adds that SaskPower has worked with injection and permanent storage of CO_2 for more than a decade.

"The whole world is watching to see if the projections can come true – if it really can be done," says Monea. He and his team and others are only too happy to have their plant on display. "The more public awareness the better." ■



Source: International Energy Association, 2008

SASKATCHEWAN MINERAL VALUE RANKS #2 IN CANADA

With potash surging back in 2010 to be the country's leading commodity by value of production, Saskatchewan came close to Ontario as the leading mining province in Canada. Potash value jumped from $3.4 billion in 2009 to $5.69 billion. Uranium, which is produced solely from Saskatchewan, also made the top 10 commodity list, with a value of $1.23 billion.

Overall Value of Mineral Production: 2010	
Ontario	$7.792 billion
Saskatchewan	$7.084 billion
British Columbia	$7.074 billion
Quebec	$6.770 billion

Source: Natural Resources Canada, Mineral Production information Bulletin, June 2011

SLICE OF EARTH

Lorne Beug, 1979
Glazed and coloured clay; 18.5 cm x 16.5 cm x 16.5 cm.

Photo courtesy of MacKenzie Art Gallery

eARTh

HOLDING THE PRAIRIE IN THE PALM OF YOUR HAND

Some European settlers who came to the prairies in the early 1900s got off the train, only to realize for the first time that they had agoraphobia – the fear of wide-open spaces. Indeed, the prairie is so expansive, never-ending and, for some, overwhelming. How do you get your mind around it? For Regina sculptor Lorne Beug, you create *Slice of Earth*. "I wanted to create the essence of the earth that you could hold in your hands," says Beug. Each of the coloured clay layers represents a different geological formation, leading to the surface, or present-day. Beug says he has always been fascinated with clay – that you can "shape the earth" and then, through the firing process, harden it to its previous state as rock. It is a statement about the earth, made from the earth.

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OUR CEOs: BEYOND THE BIO

JAMES PROKOPANKO
CEO, MOSAIC

In each edition of *ORE*, we go beyond the official CEO bios to give our readers insight into the leaders of Saskatchewan's mineral mining and exploration companies. This edition features Jim Prokopanko, CEO of Mosaic, the world's leading producer and marketer of concentrated phosphate and potash – and internationally recognized for its corporate citizenship.

What does a kid growing up in Winnipeg's north end in the '50s and '60s learn about running an international company? A lot.

Jim Prokopanko recalls a neighbourhood filled with families from Eastern Europe. They were, to use his term, "hyphenated Canadians." Yes, they were proud Canadians, but also proud to identify themselves by their roots, as in "Polish-Canadian" and "Ukrainian-Canadian." It gave him a sense of a bigger, multicultural world. "It wasn't until I started university," he jokes, "that I met people with less than ten letters in their last name."

Throughout his life, Jim has seen – and demonstrated – the value of bringing together diverse entities. His education is an example. At the University of Manitoba, Jim earned a B.Sc. in computer science (when computers were in their infancy) and then decided to earn a B.Comm. Later, he earned an MBA from the University of Western Ontario. Armed with his science-business education, this city kid who had absolutely no farm experience whatsoever got his first job with Cargill.

Jim's steady ascent of Cargill's corporate ladder can be attributed primarily to his ability to motivate others. "As a leader," says Jim, "you will be judged by how well you enable and empower others to succeed." That ability is what he himself looks for when he is considering promotions within Mosaic, which he joined as CEO in 2006.

As Mosaic's CEO, he is inspired by the innovation he sees in the corporation's operations around the world – even in parts of the organization that have been around for more than 50 years. He likes the transformation since he became CEO. Mosaic is now an aligned, cohesive and unwavering organization, now willing to stretch for loftier goals. "In my 30 years in business, I've never had more fun than right now," says Jim.

The new culture in Mosaic did not come about quickly. "A popular misconception is that a CEO can simply order change and change will happen," Jim explains. "It doesn't work that way. You can't order change; you have to inspire it." He tells his managers and employees not to worry about what could have or should have been done in the past. His favorite saying is, "The best time to plant a tree was 20 years ago. The next best time is now."

Change is really what Jim and his company are all about – change on a global scale, the kind of change that Mosaic's products can bring to a hungry world. He has travelled to more than 40 countries as CEO, not to just the airports and downtown hotels, but to the rural areas Mosaic serves. In countries like India and China, he has seen primitive farms that, "hearken back to Biblical times." Jim recalls a small village just a couple of hours from New Delhi. "It may as well have been centuries ago." He pauses. "It gets your attention."

Jim's travels to these distant farms has taught him how even simple changes can have a profound effect on ag productivity and bring prosperity to a village. "It's amazing what a slight modification in water management, how deep you plant your crop, or just a small bit of fertilizer, can do."

With a world population that has now hit seven billion, small miracles are critical to survival. Agriculture is an essential discipline to prevent starvation, illness, even war. To Jim, agriculture has risen greatly in importance on a world scale. He thinks it's an ideal profession for young people today. "It's an exciting career choice for bright young minds," he says. "You can literally change the world."

That is what Jim and his team of thousands are doing. From the Canadian cultural mosaic of Winnipeg to the international Mosaic he now leads, Jim Prokopanko doesn't just plant trees. He makes them grow. ■

TAGGING ALONG

JOHN DESJARLAIS JR., MECHANICAL ENGINEER CAMECO CORPORATION

It's a sunny Tuesday afternoon in Saskatoon as John Desjarlais Jr. drives to the West Wind Aviation mine flight terminal at the airport. He checks in, and by 2:30 p.m. he's on his way to Key Lake in northern Saskatchewan. Two hours and 570 km later, the plane touches down, and John begins his routine 7-day-in schedule at Cameco's Key Lake uranium mill.

The next morning, John begins his shift at 6 a.m., starting with meetings to plan what needs to be done for the day to keep the mill running smoothly and safely, and then carrying out the work. As time permits, he will also concentrate on projects he's proposed such as improving a pipeline system. It's a long day; he will knock off work around 7 that evening. "But the time goes by quickly," he says. "There are so many different people I get to talk to, different locations, and different problems to solve."

There's strong camaraderie at Key Lake, something that John describes as "a family dynamic." Once his shift is done, there are a number of options such as the gym, recreational programs, and of course the legendary dining. "The food is very good – actually too good at times," laughs John. One of his favorite activities is a dinner alternative: a cook-out around a campfire with his friends. "Because you are away from your loved ones for a week, your friends at Cameco become very important," he notes.

The following Tuesday, John is on the plane heading back to Saskatoon, where he'll land in the early evening. "My wife is a nurse who also works on a rotational schedule, so we're lucky. We often have five, six or even seven days off together," says John. That has allowed the young couple to travel throughout North America and to popular winter hot spots in the Caribbean. Besides, the 7-day-in / 7-day-out routine is nothing new to this couple. They grew up with it; both of their fathers worked at Key Lake.

John was raised in Cumberland House and started out with Cameco as a radiation technician with a diploma he earned from Northlands College in La Ronge. Engineering, though, was his goal. Through Cameco's career transition program, John remained an employee of Cameco while pursuing his engineering degree at the U of S. He continued working at Key Lake in the summer until he graduated from engineering this past May. Not content to advance only his own career, John started a student group at the U of S that helps integrate northern students into the urban university environment, which is often quite different from their home communities. He continues to "pass it forward", to tell other northern young people what can be accomplished. This past June, John traveled over waterlogged roads to speak to students at his former high school in Cumberland House and encourage them to stick with math and science and pursue their dreams.

"I love what I do," John says. "My favorite part is solving problems and helping people. It is very gratifying." ■

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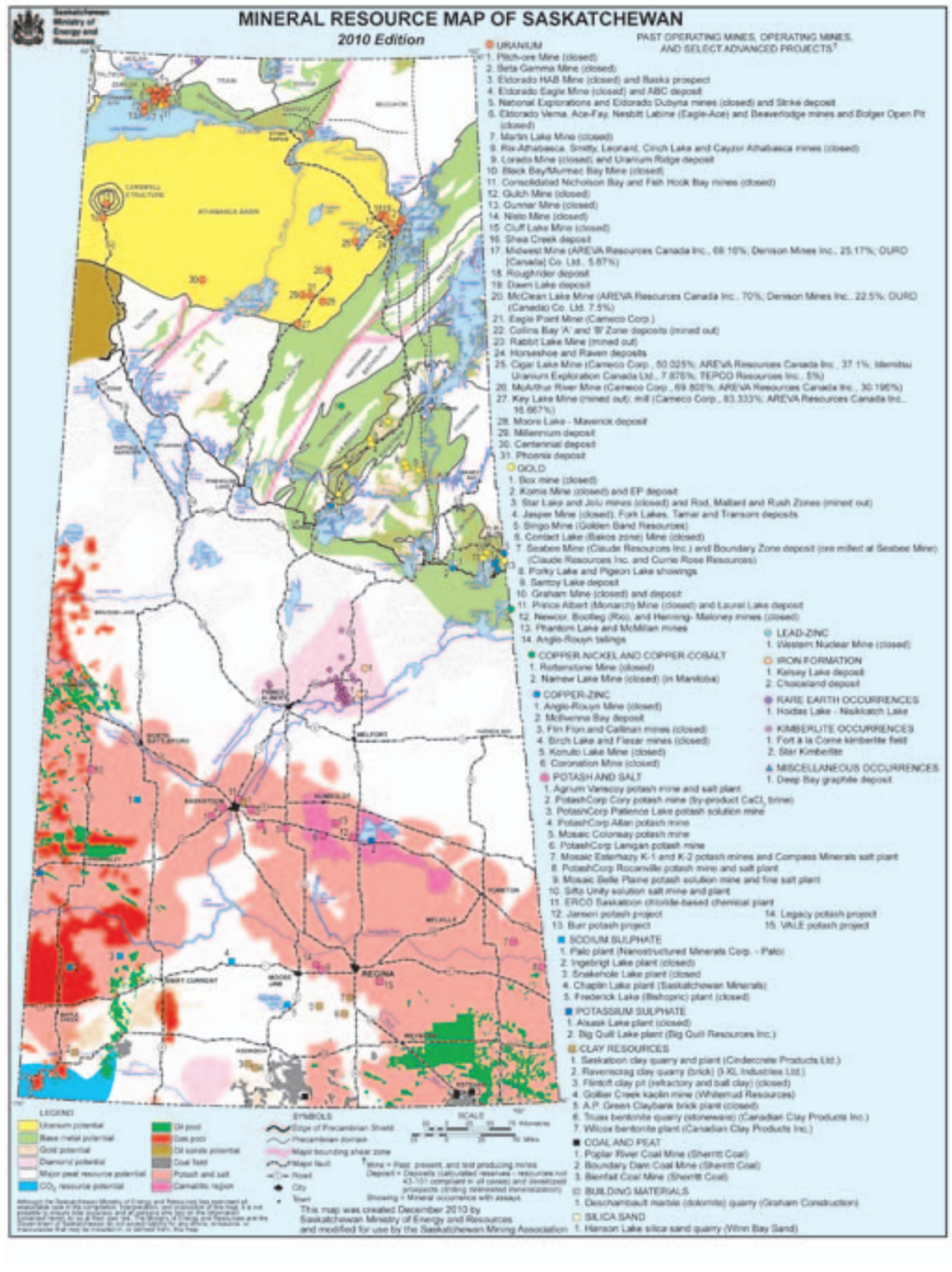

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BHP Billiton
Cameco Corporation
Canadian Salt Co. Ltd. (The)
CanAlaska Uranium Ltd.
Claude Resources Inc.
Denison Mines Corp.
Fission Energy Corp.
Forum Uranium Corp.
Golden Band Resources Inc.
Great Western Minerals Group Ltd.
Hathor Exploration Ltd.
HudBay Minerals
Hudson Bay Exploration & Development Co. Ltd.
JCU (Canada) Exploration Company Ltd.
JNR Resources Inc.
K&S Potash Canada GP
Kitsaki Procon Joint Venture
Mosaic Canada
Mosaic Potash Belle Plaine
Mosaic Potash Colonsay
Mosaic Potash Esterhazy
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PotashCorp Cory
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Strongbow Exploration
Thyssen Mining Construction of Canada
Titan Uranium Inc.
UEX Corporation
Vale
Wescan Goldfields Inc.
Western Potash Corp.
Winn Bay Sand Limited Partnership

IN OUR NEXT ISSUE:

- It's more than a game. What it takes to win the annual Emergency Response/Mine Rescue Skills Competition and why it is so important.
- Seven Days In: working at a fly-in mining operation - it's not all work and no play
- Rock'n the Classroom GeoVenture – Mining's Education Outreach Program
- Help Wanted – Careers in Exploration and Mining - Highlights from the 2011 Exploration and Mining Labour Market Studies
- Supply and (big) demand: Saskatchewan's mining supply sector
- Plus our CEO profile, Tagging Along, Interview and other interesting mining bits!











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