

# MINE II

Wednesday, October 30, 2013



Mesabi Daily News • Hibbing Daily Tribune  
Grand Rapids Herald Review • Chisholm Tribune Press

# Chisholm Incentive Programs Offered!

## Chisholm Development Association: New Business Incentive Program

\* \$250 per month for 12 months towards your lease or mortgage payment

### SpruceUp Grant

\* \$500 Grant towards a storefront improvement

### Main Street Loan Program

\* Low Interest Loans for up to \$30,000

### CDA Business Loans

\* Low Interest Loans up to \$100,000 for business expansion or retention

## City of Chisholm:

### PUC New Business Incentive Program

\* Up to 20% your water/sewer bill for 12 months

## Chisholm Community Foundation/CDA: New Housing Incentive Program

\* \$5,000 Grant towards construction of a new single family home in Chisholm or Balkan

### \* All program applicants must meet program guidelines and requirements

\*\* The Chisholm Development Association, City of Chisholm and Chisholm Community Foundation reserve the right to terminate these programs at any time.

**Please contact Amy Rice,  
Chisholm Development & Economic Director  
for more information.**

cda-ceda@ci.chisholm.mn.us or call 218-966-0115

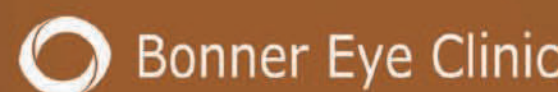


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# TRUCK MONTH

### 2013 Ford F-150 XLT Regular Cab 4x2



3.7 V-6, 6 spd. auto., power seat, power pedals, trailer tow pkg., Oxford White.

|  |          |
|--|----------|
| MSRP   | \$31,450 |
| Retail Customer Cash                             | \$1,750  |
| F-150 XLT Bonus Customer Cash                    | \$500    |
| F-150 XLT Special Retail Customer Cash           | \$1,000  |
| Ford Credit Retail Bonus Customer Cash           | \$1,000  |
| **Retail Trade-In Assistance Bonus Customer Cash | \$2,000  |
| Rapids Ford Discount                             | \$2,305  |

**SAVE OVER \$8,500**

### 2013 Ford F-150 STX Supercab 4x4



5.0 V-8, 6 spd. auto., full power, tilt, cruise, trailer tow pkg., chrome step bars, fog lamps, 18" alum. whls., Sync voice activated system, satellite radio, Race Red.

|  |          |
|--|----------|
| MSRP                                   | \$37,685 |
| 201A Equipment Group Discount          | \$1,500  |
| Retail Customer Cash                   | \$2,250  |
| 5.0L Special Retail Customer Cash      | \$500    |
| F-150 STX Bonus Customer Cash          | \$1,000  |
| Ford Credit Retail Bonus Customer Cash | \$1,750  |
| **Rapids Ford Discount                 | \$2,767  |

**SAVE OVER \$9,700**

### 2013 Ford F-150 XLT Supercab 4x4



3.5 EcoBoost, 6 spd. auto., full power, chrome step bars, 18" chrome clad wheels, bucket seats, Blue Flame.

|  |          |
|--|----------|
| MSRP   | \$41,355 |
| 301A Equipment Group Discount                    | \$500    |
| XLT Chrome Pkg. Discount                         | \$750    |
| Retail Customer Cash                             | \$2,250  |
| F-150 XLT Special Retail Customer Cash           | \$1,000  |
| F-150 XLT Bonus Customer Cash                    | \$500    |
| Ford Credit Retail Bonus Customer Cash           | \$1,000  |
| **Retail Trade-In Assistance Bonus Customer Cash | \$2,000  |
| Rapids Ford Discount                             | \$3,131  |

**SAVE OVER \$11,100**

### 2013 Ford F-150 Supercrew XLT 4x4



3.5 EcoBoost, 6 spd. auto., full power, tilt, cruise, power pedals, chrome running bds., 18" chrome clad whls., reverse sensing, rear view camera, trailer tow pkg., trailer brake controller, Blue Flame.

|  |          |
|--|----------|
| MSRP   | \$45,050 |
| 302A Equipment Group Discount                  | \$1,750  |
| Retail Customer Cash                           | \$2,250  |
| F-150 XLT Special Retail Customer Cash         | \$1,000  |
| F-150 XLT Bonus Customer Cash                  | \$500    |
| Retail Trade-In Assistance Bonus Customer Cash | \$2,000  |
| Ford Credit Retail Bonus Customer Cash         | \$1,000  |
| **Rapids Ford Discount                         | \$3,330  |

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## YOUR AREA TRUCK HEADQUARTERS

### NEW 2012 Ford F-350 XL Super Cab 4x2



6.2 V-8, 6 spd. auto., 3.73 electronic locking axle, trailer tow pkg., clearance lights, upfitter switches, Sterling Gray.

|   |          |
|---|----------|
| MSRP                                    | \$33,905 |
| Retail Customer Cash                    | \$4,000  |
| *Ford Credit Retail Bonus Customer Cash | \$1,500  |
| Rapids Ford Discount                    | \$3,577  |

**SAVE OVER \$9,000**

### 2013 Ford F-250 XLT Supercab 4x4



6.2 V-8, 6 spd. auto., 3.73 locking axle, chrome step bars, fog lamps, 18" chrome whls., reverse sensor, elect. shift on the fly, camper pkg., powerscope trailer tow mirrors, Ingot Silver.

|   |          |
|---|----------|
| MSRP                                    | \$45,075 |
| Retail Customer Cash                    | \$2,500  |
| Special Package Retail Customer Cash    | \$1,000  |
| *Ford Credit Retail Bonus Customer Cash | \$1,500  |
| Rapids Ford Discount                    | \$3,034  |

**SAVE OVER \$8,000**

### 2013 Ford F-250 Crew Cab Lariat 4x4



6.2 V-8, 6 spd. auto., 3.73 locking axle, trailer tow pkg., reverse sensor, snow plow pkg., leather buckets, Ruby Red Metallic.

|   |          |
|---|----------|
| MSRP                                    | \$50,720 |
| Retail Customer Cash                    | \$2,500  |
| *Ford Credit Retail Bonus Customer Cash | \$1,500  |
| Rapids Ford Discount                    | \$3,748  |

**SAVE OVER \$7,700**

### 2014 Ford F-350 Crew Cab Lariat 4x4



6.7 Diesel, 6 spd. auto., 3.31 locking axle, roof clearance lights, Leather heated/cooled seats, Remote Start, White Platinum

|                      |          |
|----------------------|----------|
| MSRP                 | \$59,550 |
| Retail Customer Cash | \$1,000  |
| Rapids Ford Discount | \$4,726  |

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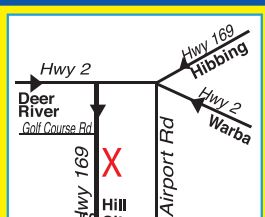
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# MINE II

WEDNESDAY, OCTOBER 30, 2013 • PAGE 3



MARK SAUER/MESABI DAILY NEWS

Rock and dust fill the air as an Oct. 3 blast at United Taconite concludes.

## He's having a BLAST! Mine engineer says it's all about science

**KELLY GRINSTEINER**  
HIBBING DAILY TRIBUNE

EVELETH — Do not call mine blasting an art.

Mike Indihar will tell you that it's not, and give you several reasons why.

"The public thinks that what we do today is the same way we did it 30 years ago, but that's not true," said Indihar, senior mine engineer at Cliffs Natural Resources' United Taconite in Eveleth. "It is so different today."

And he'd know.

Indihar has been in the mining industry since 1979, and worked in various capacities within both operations and engineering. He's been at United Taconite since 2006, and from that time on has focused solely on drilling and blasting.

The 56 year old calls

himself a geek, and admits the job is still fun.

"I'm still challenged every day, and that's what makes it exciting," said Indihar.

For those who like status quo, mining isn't the ideal industry.

"What's really fun in engineering in mining is that it's always changing," he said. "You do a blast, and then it's gone. Now you do a different one. You build a road, mine it down and then move on to build a new road. Things change all the time."

Indihar likes the changes, and the challenges.

"The most difficult part of the job is finding enough time to accomplish what you want to accomplish," he said. "There are so many

**SEE BLAST, PAGE 4**



Senior blast engineer Michael Indihar poses over the site of a blast. Indihar designs a system for each week's blast, which takes into account geological, safety, and noise conditions to provide an explosion that produces the proper size rock for the trucks and crushers as well as keeps noise and vibration to a minimum for surrounding communities.



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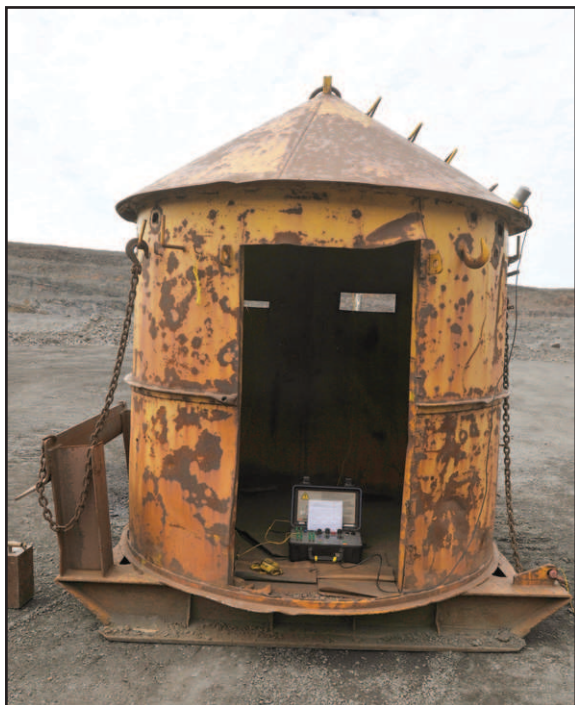
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Indihar lifts the protective cover off a drilled blast hole. The covers are in place until charges are set in the hole then sealed with rock.



An area being prepped for blasting takes on a moonscape look at United Taconite.



A protective steel enclosure keeps control equipment safe.



MARK SAUER/MESABI DAILY NEWS

United Taconite Senior Engineer Indihar explains how each blast is controlled and coordinated.

## BLAST

FROM PAGE 3

things we want to do, but there are no clones yet."

And by clones he means someone who thinks and acts like him, one that will act without question or hesitancy. They just "do."

"The science is all there, and if I don't understand it, I know where to get that understanding," he said. "But you only want to take baby steps, small steps, until you get yourself off on a tangent. You can't optimize a bad design. You have to start with a good design."

Today's technology and how it's changed the game in blasting also keeps Indihar intrigued.

"Years ago people referred to blasting as an art form, but it really isn't today," he said. "... The challenge today is to make sure we have a good business plan for the money that's spent."

And in terms of blasting, that means knowing your geology, or the qualities of the rock being blasted, doing your homework by tapping and sharing successes with industry leaders, and testing the patterns and products to determine the best bang for the buck.

"Trying this and that, not wanting to give up what works, always trying something else and not knowing what you will get, that's an art form," said Indihar. "We work from the other standpoint of really building on the science that comes into it so that way we can determine what's going to happen next, and that's worked well for us."

Today's blast is in Thunderbird Mine north, and is the second to the last in this particular area. Its number is 1295\_1305.

Just over 609,000 pounds of gassed emulsion explosives will move 779,800 long tons of ore, which Indihar said is equivalent to 873,400 short tons.

This particular gassed emulsion is a newer formula. It was introduced here earlier this year and is proving to be a good fit both in terms of use and cost, he said.

There is 1,400 pounds of explosive in each of the blast's 488 holes. Each hole is 12-1/4 in diameter and the average depth is 40 feet.

Technology has allowed them to go with smaller holes in recent years.

"We are urban mining," said Indihar, referencing the mine's proximity to the communities of

Virginia, Midway, Eveleth and Ridgewood, among others. "... Most think that the bigger the better, but not necessarily with blasting. With the smaller holes, we drill more of them and they're closer together so that gives us better distribution. ... With energy costs so high today, we really do a far better job with the smaller holes. It saves us a lot of money and does a better job."

Each of those 488 holes also contains 13 feet of crushed rock at the top to control the energy.

"It keeps the energy in the ground," he said. "We don't want energy to vent up into the air and create noise and dust issues. We want the energy to break the rock and move horizontally, not vertically. ... We want to be good neighbors."

The holes are in rows. The time between each hole during the blast will be 25 milliseconds (a millisecond is .001 second). The time between each row will be 142 milliseconds.

"With these numbers, they create a very high frequency through the ground, which is what we want so there's not big displacement," said Indihar, explaining that low frequency could cause a house to move as compared to

SEE BLAST, PAGE 5

## BLAST FACTS:

- ❑ Mine blast in Thunderbird Mine North at United Taconite in Eveleth on Oct. 3, 2013.
- ❑ Blast No. 1295-1305.
- ❑ 779,800 long tons of ore (equivalent to 873,400 short tons).
- ❑ 690,200 pounds of explosives (gassed emulsion).
- ❑ 488 holes: Average depth 40 feet, 12-1/4 in diameter.
- ❑ 1,400 pounds explosive per hole.
- ❑ 13 feet of crushed rock placed in the top of the hole to control the energy.
- ❑ 25 milliseconds between holes by 142 milliseconds between rows of holes (millisecond is 0.001 seconds).
- ❑ Timing accuracy is 1 to 2 millisecond.
- ❑ Blast duration: 5.7 seconds.

MINE II



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MARK SAUER/MESABI DAILY NEWS

The United Taconite blast crew gets ready for a test blast.



Virginia's Mineview in the Sky is seen from the United Taconite pit.

# BLAST

FROM PAGE 4

high frequency which will only rattle windows and shakes pictures on a wall.

"And if we get above 25 hertz, neither will move," he added. "It's like putting your finger on a pitch fork."

The duration of this blast will be 5.9 seconds — from the first hole to the last. Indihar said this will be kind of lengthy for a blast.

"When I started here six years ago, blast duration was like 1.5 to 2 seconds," he said.

United Taconite used to get calls from area residents when they'd blast, especially when the blasts began to last longer.

"They'd say it was really big, and by big they meant long, so that took awhile for people to get used to as we transitioned to this style," said Indihar.

They still do a test blast using an electronic cap and plunger prior to each blast, which he said is often louder than the actual blast.

"Now we don't get complaint calls because there really isn't any damage in our communities — even though it's only 1,500 feet from our blast," he said. "We are very close so we have to be cognizant, very much on our game and very consistent in what we do. We work hard to create stability



The United Taconite blast team sets up its electronic detonation station from a safe overlook.

and consistency so I don't have any surprises later on."

Having previously tested and now having the ability to actually model what type of frequency will go out into the communities has made a big difference.

"It's a really wonderful science that we have today," said Indihar. "We are all smart, but the tools we have today compared with 10 years ago are much greater and allow us to do many more things."

United Taconite blasts about once a week, typically around the noon hour

any Tuesday, Wednesday or Thursday.

Today is Thursday, Oct. 3, and it's just before noon.

The holes are set. Loading them took several days. The blasting crew of Tony Vita, Mike Intihar and stemming loader Glen Maki have made this blast pattern.

Buried in each hole is a blasting cap which contains a computer chip that corresponds with the electronic detonator. Colorful wires are strewn between the hole. Those computer chips communicate through the computer system to the blast crew.

"We have a nice, even distribution



The electronic detonation system uses a two-key and two-button trigger, which makes an accidental blast impossible.

of all of our holes and a very accurate detonator system so that we're consistent each time," said Indihar.

Fly rock is bad. A perimeter is set up around the blast site for such. The end products should only be carbon dioxide, water and nitrogen.

The test blast is ready to go. With a little coaxing and some instructions, I set it off by pushing the plunger. In the distance, there's a loud "pop" and a small cloud of smoke.

All seems good to go. No weather inversion will be stopping this blast.

The airplane is flying overhead. The Minnesota State Patrol and local law enforcement are given word to shut down Highway 169. Mine personnel are at their assigned posts for safety. A security sweep ensures that all of the mine's roads are cleared and equip

SEE BLAST, PAGE 7

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The blast begins on the far edge of the drill pattern.

MARK SAUER/MESABI DAILY NEWS



The blast continues to walk through the hole pattern. The whole sequence takes about five seconds.



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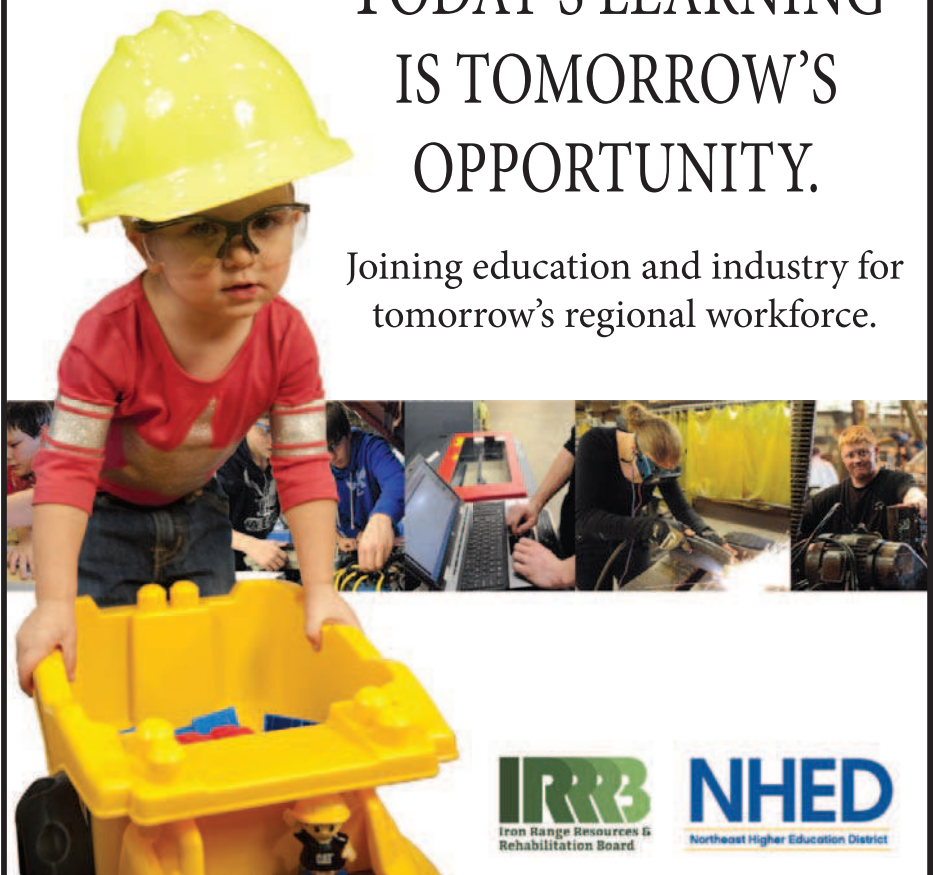
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A pickup truck is dwarfed by an ore shovel which is in turn dwarfed by the towering walls of the United Taconite pit.



Crushed ore is loaded into rail cars for a 16-mile ride to United Taconite's processing plant in Forbes.

MARK SAUER/MESABI DAILY NEWS

## BLAST

FROM PAGE 5

ment has been checked.

The blast crew moves to a hillside about 1,500 feet away.

The countdown begins.

10, 9, 8 ...

Following 3, 2, 1 there's a five second pause. It's during this pause that the radio airwaves are open, and allows one to signal if for some reason the blast needs to be stopped.

It's eerily quiet, the two firing buttons on the detonator are pushed and boom.

Blink once, twice, maybe a third time, and it's done. You feel the rumble, and hear the rock fall.

It sounds like rain.

The broken up earth — roughly 779,800 long tons of taconite ore — emerges below the rising gray and white clouds.

□

The blast is done and the blast crew heads back down the hillside.

They go to inspect the blast pattern, verify that the shape of the pile is what was expected and consistent with the timing.

"We want to ensure that it moved the right way and formed the right shape — no surprises," said Indihar.

"And to make sure that it's safe for people to go in there to work."

This time the blasted rock looks just as it should.

"Look at how pretty even it's distributed," he added. "It's because of how we designed it."

Again, Indihar credits technology.

"Five years ago it did not look like this," he said. "It's the new science, and it's fun because you can actually start to understand it. It's not an art anymore because you can predict where things will go and why they go there."

Soon the shovel will return and resume digging. The drill will also move in and start making holes for the next blast pattern — this one will only be about 300 holes.

"This pattern will take us about two months to dig out, so it takes us longer to dig a pattern than it does to drill it," said Indihar.

The taconite ore will be hauled to the crusher, then put on the rails to the pellet plant in Forbes. The blast crew will review what just happened, and possibly watch the video of it if need be. They video every blast.

What just happened won't be repeated. Indihar said more blasts will occur, but something will be slightly different in the next one and the next, and so on.



Blast engineer Indihar sports an "I love explosives" sticker on his safety helmet as he makes a final inspection of preparations for a blast.

"What we do today, won't be done tomorrow," he said. "We've changed a lot in five years, and I expect we will change a lot in the next five years. It's very dynamic, non-sta-

tionary where we are today and that makes it very exciting."

And since he's having a blast, that's where he wants to stay.



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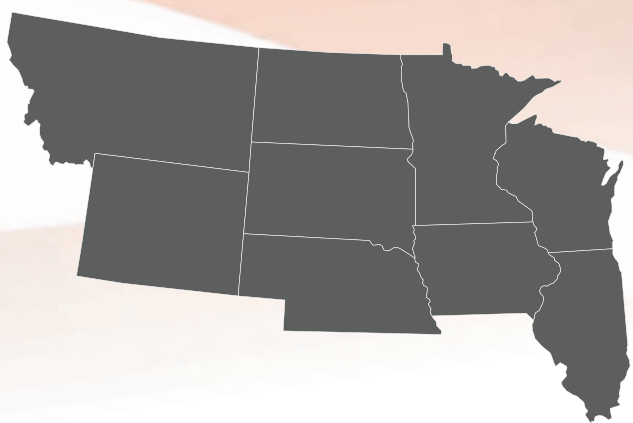
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# HAMMERLUND CONSTRUCTION



BRITTA ARENDT/GRAND RAPIDS HERALD-REVIEW  
Tom Hammerlund, Sr., is pictured on the site of the future Essar Steel mine where his company, Hammerlund Construction is doing major prep work for the project.

## Grand Rapids firm led by ‘senior,’ on ground floor of mining operations

**BRITTA ARENDT**  
GRAND RAPIDS HERALD-REVIEW

GRAND RAPIDS — While his business is construction, Tom Hammerlund, Sr., knows a heck of a lot about mining.

That’s because, from Magnetation and Essar Steel on the west end of the Iron Range to Northshore Mining in Silver Bay, the company that is his namesake, Hammerlund Construction, has been on the ground floor of building or expanding many of the

region’s mining operations.

Known to nearly everyone as “Senior,” more for his seniority than age, Hammerlund started his Grand Rapids-based construction company in 1988 with one truck and one backhoe. Today, he owns more trucks and equipment than he can count.

Not only does he have crews working on site preparations for one of the country’s newest iron ore mines, his company is also involved in work for large utility companies as well as various county and municipal projects.

For someone who has built his company into one of the largest construction operations in the Northland, one might think Hammerlund could comfortably sit back and enjoy retirement, especially since his oldest son has been taking over the phones. But that’s not Senior’s style. His bright red truck, dubbed “Senior’s Office,” can be seen passing other red Hammerlund trucks on work sites throughout Itasca County.

On a recent sunny day in October, Senior was driving his office on an

Essar work site. Leaving the site on a remote mine road, he stopped the truck and grabbed a small Ziplock bag on his dash. In the bag, he keeps a rough square magnet. With the magnet in hand, Senior bent down and rolled it in the gravel. Picking it up, the magnet had attracted a mass of what looked like gravel but must have contained iron filings.

“It’s everywhere,” he said with a hint of excitement.

Hammerlund knows the resources  
**SEE HAMMERLUND, PAGE 9**



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A Hammerlund crew brings heavy equipment into a construction site.

## HAMMERLUND

FROM PAGE 8

of the western Range are not depleted. He knows there is great potential in the red dust that has sat dormant for decades — the red dust and rock his crews are currently moving. In fact, the mining industry in northern Minnesota has become the key to diversifying Hammerlund Construction.

Building a legacy in the land he loves

After growing up in Robbinsdale, Minn., Tom Hammerlund, Sr., was 18 when he moved to California and started work as a dozer operator. He spent the next 10 years there working on underground piping.

When Minnesota called him home, Hammerlund decided that Grand Rapids would be the place to start a business of his own. For the first couple of years, he ran the business entirely by himself. Then his son joined the company.

"We started with water and sewer then moved from residential to municipalities," explained Senior. "Back then we were a small-time operation."

But Hammerlund Construction didn't stay small.

"We continued to expand and grow from smaller to larger projects, more pipe work and road work was a natural expansion."

With more and more machinery acquisition, the company was banking on return on investment.

"We needed year-round work."

Unlike many construction companies in the metro areas that collapsed with the housing industry slump, Hammerlund Construction survived the 2004-2005 recession in most part because of work at the mines. Then, in 2008, Hammerlund was awarded part of a contract to put in five miles of railroad spur for Itasca County's preparations for Essar Steel.

Hammerlund's quality work impressed Essar Steel, LLC, and the company was hired to do the first earth work for the project's site north of Nashauk.

After the project sat idle for nearly a year due to financing, Senior was happy to see his guys back at work this month, prestripping to rehabilitate the old Butler Mine tailings basin.

This work and other concrete and construction work at other mines throughout the Northland has made Hammerlund a respected name throughout the mining industry. In fact, Senior was invited to be involved in the early re-

search work for Magnetation, the company that developed innovative technology to recycle taconite tailings. Hammerlund Construction

built the first trial plant for this new mining venture. Senior now serves on the board of Magnetation Inc., and Hammerlund Construction has continued to play a part in Magnetation's expansion to multiple locations.

"When government spending on road work went down, we needed to diversify and mining was it," said Senior. "We had the equipment and the experience and it's been a nice diversification."

Hammerlund Construction prides itself on quality work within budget. The contracts the company has acquired is accredited to the reputation Senior has established which reaches well beyond Grand Rapids. It's not an easy task to be considered for contracts that are not put out for public bid. The strenuous prequalification often requires a five to 10-year safety record, proven experience and appropriate equipment.

"It can be daunting to go through prequalification, but it's a privilege to get the opportunity to bid on those contracts," he said.

While the company has taken on more diverse projects, it continues to be recognized for the work of its roots.

"We want to continue to expand, but we haven't backed off of municipal work."

This year, Hammerlund Construction rebuilt Haines Road in Duluth, which was destroyed in the floods of 2012. "That was Duluth's largest road project."

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The work ethic Senior has instilled in his employees is hard-driving and productive.

"The goal is to get to work," he said.

Senior is putting even more people to work. With Hammerlund Construction specializing in site prep, earthwork and utilities, a new sister company — Champion Steel based in Keewatin — is ready to take projects to the next level. Champion Steel has been established for installation and erection of structural steel, millwright work, and optical and laser alignment.

"Now we can take projects from the ground up."

And that's just what Senior's doing as his part in rebuilding the Iron Range.

For more information about Hammerlund Construction, Inc., visit [www.hammerlundconstruction.com](http://www.hammerlundconstruction.com).



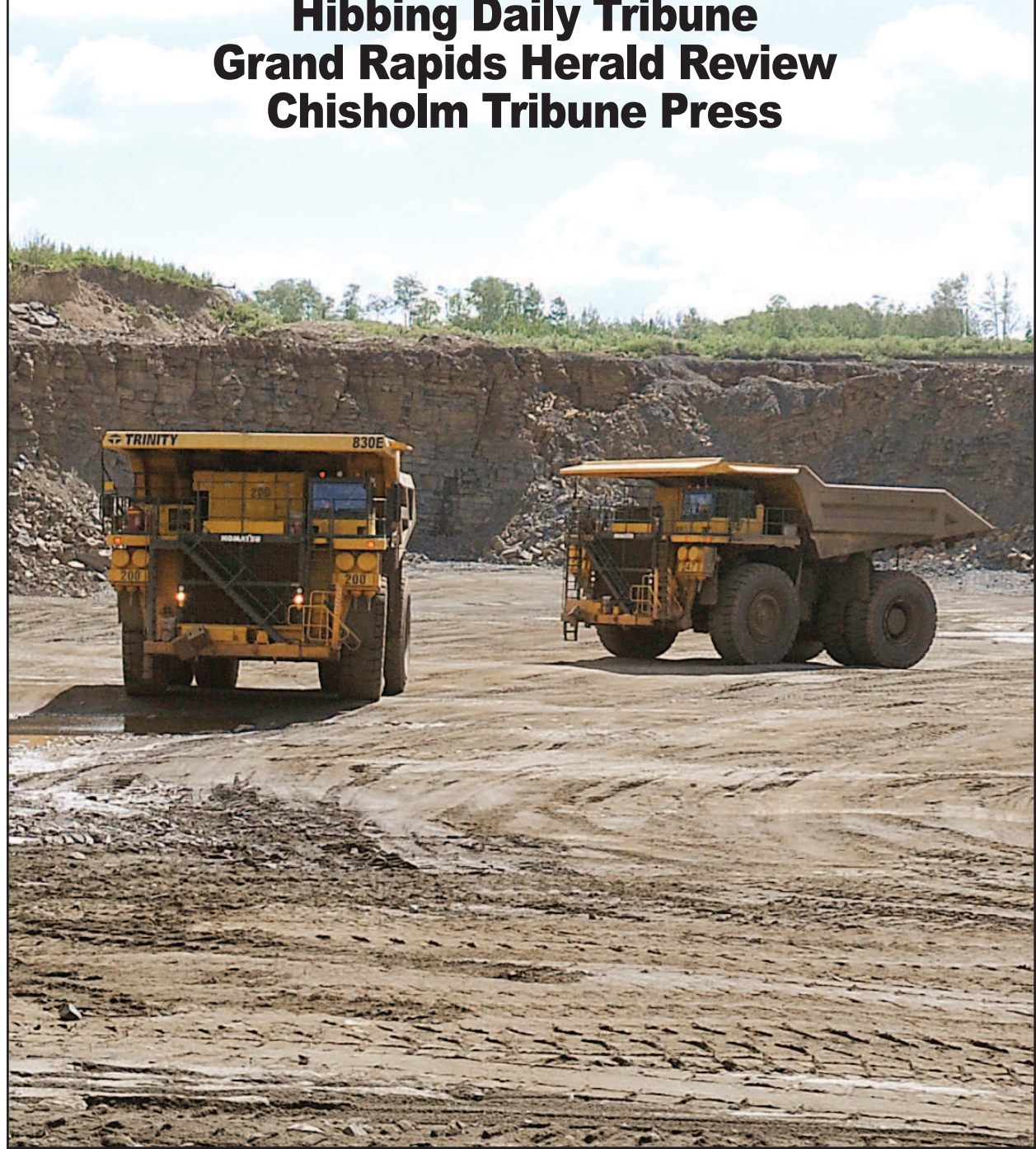
Tom Hammerlund, Sr., (left) talks with Hammerlund Construction grading superintendent Jodi Neary on a site for Essar Steel Minnesota.

BRITTA ARENDT/GRAND RAPIDS HERALD-REVIEW

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# BATTY IN SOUDAN



MARK SAUER/MESABI DAILY NEWS

Little brown bats fly out of a tunnel which leads from the Soudan Underground Mine. The mine is home to as many as 12,000 of the mouse-sized bats.

## Underground mine home to unfairly maligned flying mammals

ANGIE RIEBE  
MESABI DAILY NEWS

SOUDAN — It's an early-August evening at the Soudan Underground Mine State Park. Sunset is yet around the corner, when suddenly a rather unusual occurrence takes place. A bat has already begun its nightly search for food.

"Bat, bat, bat, bat, bat, bat, bat," says the bat, as it pursues a moth in the vicinity.

"Moth, moth, moth, moth, moth, moth, moth," says the moth.

Pretty soon, the bat — blindly, with its eyes closed — captures the moth, based only on sound.

OK, so maybe it wasn't a real bat.

Or moth, for that matter. Simply a couple kids running around and pretending to be the winged creatures in a game designed to demonstrate a bat's use of echolocation to find its prey.

James Pointer of the Minnesota Department of Natural Resources and interpretive supervisor at the park

explains to the children and adults gathered there how bats emit sounds and listen to the echoes bouncing off objects to locate insects in the dark.

The real bats that reside at the Soudan Underground Mine have some time, still, before they make their appearance.

SEE BATS, PAGE 11

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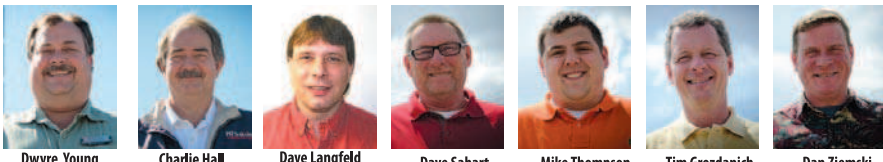
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**Soudan Underground Mine Interpretive Supervisor James Pointer of the Minnesota Department of Natural Resources acts out animal characters as he tells a story of how bats came to be during a bat ecology program for families in August.**

## BATS

FROM PAGE 10

A short time later, another bat begins to fly around the audience of visitors seated near the former mine's Alaska Shaft.

Nope, not the real deal this time either. Merely a puppet Pointer uses to teach bat biology.

A bat-themed Trivial Pursuit game ensues — the questions based on facts about bats around the world. Families — some from nearby, others farther away, California and elsewhere — battle it out in teams, learning about bats' habitat and prevalence and the mammal's importance to the ecosystem.

The activities are all part of a popular interpretive program that's been held for eight or so years at the state park, which is operated by the DNR. Pointer leads several "Batty about Bats" presentations each summer. They aim to dispel some of the myths about bats.

"Bats get a bad rap, but they really do a lot of good," he said. They eat mosquitoes, which most people, Minnesotans, for sure, can appreciate. They help farmers by eating pests that destroy crops, preventing use of pesticides. They are even pollinators. Banana trees, for example, Pointer notes, are pollinated by bats, which live on all continents except Antarctica.

His program is most informative. There's lots of learning going on; lots of fun and games. But everyone is anticipating the first glimpse of the stars of the evening. "When will we see the bats?" asks a youngster. "They should be coming out pretty soon," Pointer says as twilight begins to fall.

The highlight of the presentations is, of course, when the bats emerge from their underground home.

Bats have resided for many decades at the Soudan mine, many of them hibernating far below the surface where underground iron ore mining took place until 1962.

According to Bat Conservation International, hibernation spots for bats are dwindling because natural caves have so many human visitors or are closed for safety reasons. That makes underground mines such as Soudan — with their consistent temperatures and high humidity — some of the nation's premier bat hibernation grounds.

The Soudan mine, in fact, has the largest population of wintering bats in the state.

The mine is "a nice safe place, a nice area of protection for them," Pointer said. "In the mine there are no predators, no animals that could eat or kill them. There are no raccoons to go after them. They are virtually undisturbed."

Researchers estimate 8,000 to 12,000 bats use the Soudan Underground Mine year-round. The majority are little brown myotis, which are about the size of a mouse. There are also some northern myotis.

They have been spotted on almost all levels — from the 10th level at 650 feet below the surface, to the 27th level, 2,341 feet underground.

During the mine's operation, there were several vertical shafts leading to the underground tunnels that extended toward the ore bodies. The two shafts that remain open are points of access for the bats.

Shaft No. 8 extends to Level 27 and is used during public tours. The Alaska Shaft ends at Level 12. It's in a more remote area, making it a good place to hold the bat programs, Pointer said.

The mine is also home to physics laboratories, where scientific research has been conducted since the early-1980s. When the laboratories were being built, researchers noticed clusters of bats outside the lab.

However, bats were probably residing at the mine even during its mining days, Pointer said. Anecdotal evidence indicates that as mining extended to deeper levels, bats began to occupy the upper abandoned levels.

The Soudan mine has become an important spot for bat studies and conservation.

Since 1983, bat research has been conducted sporadically, including summer bat counts and banding of bats. In 2001, a metal cage was constructed over the entrance to the Alaska Shaft to make their access easier. Previously they had to crawl through old railroad ties, making them vulnerable to predators such as hawks and cats. They now fly in and out through the cage.

And a study supported by funds from the State Wildlife Grants Program was held from 2004-2005. Bat detectors were used to track the creatures' movements. It found an increase in activity during the beginning of May and a drop at the end of June. Activity picked up again in late-August and early-September.

"In the spring, April and May, bats are waking up from hibernation," Pointer explained. "June and July is the



**Children act out the roles of a bat and a moth using sound to locate the prey during a bat ecology presentation put on by the Soudan Underground Mine State Park.**

maternity season." The females "leave the mine and go off and have babies. In August and September they gather up again" before making their way deep into the mine to hibernate. At that time, "mothers have their pups with them and they double in number," he said. It is also when mating takes place.

The bats that leave select a warm environment to roost — perhaps in a hollow tree or "someone's attic," Pointer said. Some migrate a distance to find suitable habitat. One banded bat was tracked to Park Rapids, Minn.

The interpretive programs are held in late-July and August, when activity increases and bats spiral up the mine shaft to the surface every night to hunt for insects. After all, that's ultimately what visitors, like those on this early-August night, have come to see.

It's a rather chilly evening for August. As dusk is drawing near, visitors bundle up in jackets and blankets. They swat at mosquitoes — even more reason to wish the bats would soon appear.

But these visitors are not going anywhere. They continue to await the bats' emergence.

Although bats can live more than 30 years, BCI

studies show bat populations throughout the country have been declining due to pesticides, destruction of habitat, and because many people dislike them and kill them.

Others are falling prey to a fungus that causes a disease called white-nose syndrome, transmitted primarily from bat to bat. It is not known to be a threat to humans, but the fungus has been confirmed at the Soudan mine and visitors taking mine tours are required to

walk across special mats to remove spores from footwear to protect the bats.

Educating the public about bats is an important role played by park staff.

"Bats are misunderstood and misrepresented," Pointer said. "And they don't deserve it." In October, he takes his presentation on the road, doing programs with a Halloween theme at schools, preschools, and Head Start locations.

It's his goal to "alleviate fears and concerns about bats," he said.

However, despite the extent of bat research, there are some things about the creature that remain elusive.

For example, it's not known, he said, how bats at the Soudan mine know just exactly when to emerge from the shaft for their nightly feeding. "They alter their flight time based on what the sunlight is doing," he said. Yet, "underground, they don't see the sun."

During his initial year

SEE BATS, PAGE 12

MARK SAUER/MESABI DAILY NEWS



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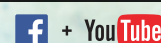
Pictured above fishing with his sons Tyler, 10, and Carter, 8, Kurt enjoys the outdoors like only a northern Minnesotan can. An avid boater and angler, he spends a lot of his leisure time enjoying the resources he's charged with protecting as Minnesota Power's environmental audit manager.

For Kurt, the responsibility of protecting northern Minnesota's environment is professional, but it's also very personal.



Kurt's professional background in aquatic toxicology helped prepare him to participate in the design of a novel wastewater treatment mechanism at Minnesota Power's Laskin Energy Center that removes extremely low levels of mercury via addition of metal scavengers and multimedia filtration. Use of this wastewater technology at Laskin was a first, both for the utility and for the state of Minnesota.

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MARK SAUER/MESABI DAILY NEWS

James Pointer, Interpretive Supervisor at the Soudan Underground Mine State Park, talks about bats in front of an old mine shaft that bats use an entrance and exit to their underground home.

## BATS

FROM PAGE 11

at the mine, the interpretative programs were all scheduled at the same time, and by the last one in August — when the sun was setting earlier — “the bats came out so early.”

The theory, Pointer said, is that bats base their knowledge on barometric pressure. But no one knows for sure. “It’s one of those unsolved mysteries,” he said.

□

“I see one! I see one!” a child yells, as, indeed, a bat has finally surfaced. “There’s another one!” spots a second youngster.

Pointer compares the bats’ journey out of the shaft to “popcorn popping ... the old-fashioned way.” There’s one or two bats to begin with, and “as

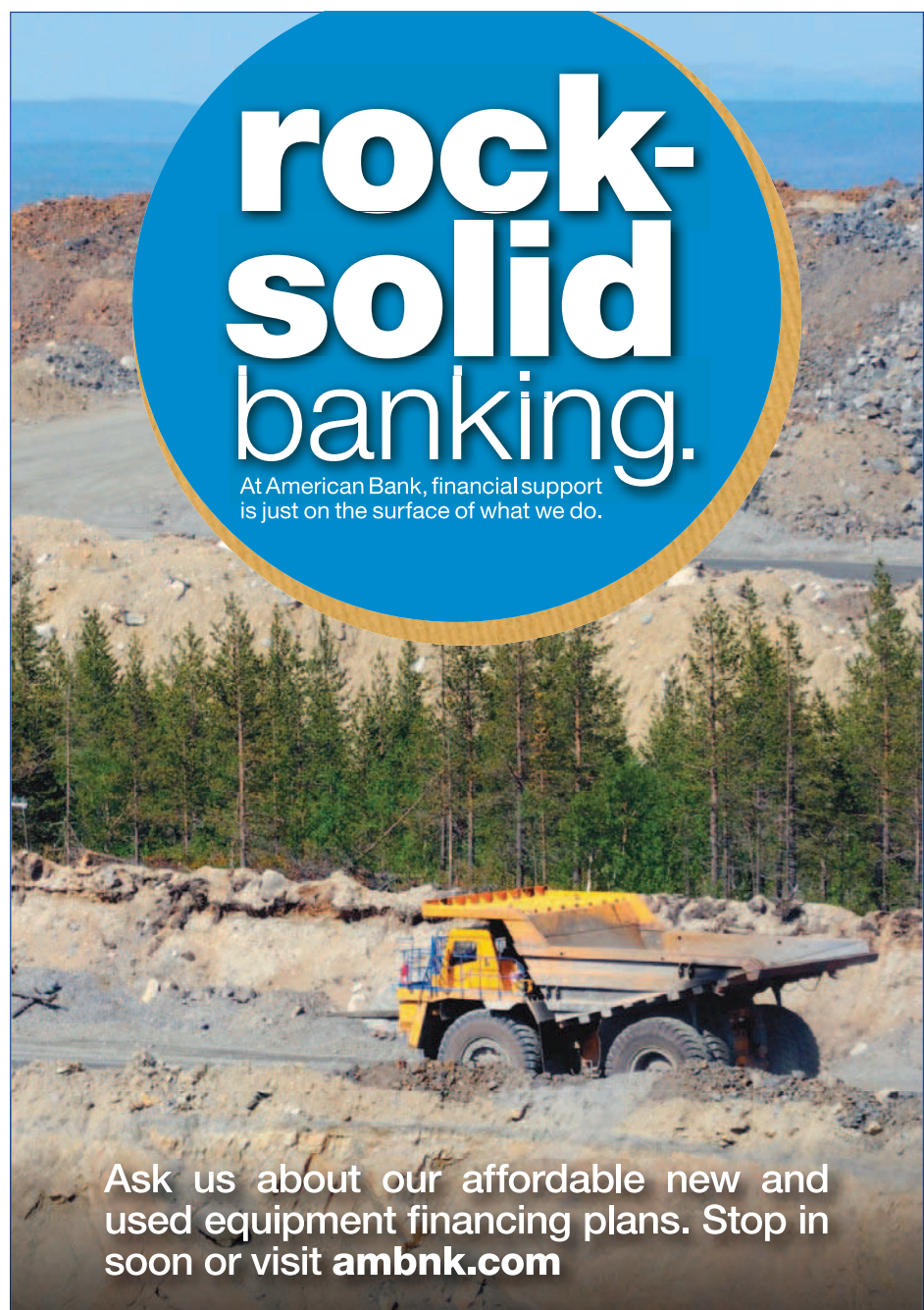
time goes on and things heat up, you get more and more bats that come out.”

As the bats continue to swarm out through the openings in the cage, the visitors gather at the chain-link fence surrounding the shaft to watch their display.

Before long bats are everywhere. Hundreds of them overhead. Maybe a thousand or more.

A few visitors implore them to hurry up and eat some of the mosquitoes.

This is a typical summer evening at the Alaska Shaft — a very usual occurrence. A scene that puts smiles on the faces of those who are now experiencing what they have anticipated all evening — a live and in person showing of the bats of the Soudan Underground Mine.



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# EARLIEST FEMALE MINERS



MARK SAUER/MESABI DAILY NEWS

Mildred Jansson, 90, poses in her Hibbing home Wednesday morning, Oct. 2. Jansson was one of the pioneering female miners of the Iron Range.

## Women helped to win the war back home

**ANGIE RIEBE**  
MESABI DAILY NEWS

HIBBING — Mildred Jansson was away at beauty school in Chicago in 1943 when her dad “petitioned” her to return to the Iron Range.

“The war had broke out and he said to ‘come home — there’s a job for

you.’ I went right away,” the 90-year-old said on a recent day at her residence in Hibbing.

It was then that Mildred — 20 years old at the time — made mining history.

She was among the earliest female miners on the Range.

While the young guys were off serv-

ing in World War II, the mines were in need of workers and started to bring in women to do the jobs vacated by the men, Mildred said.

She and a young woman named Virginia Gordon became the “first and second hire by Mr. Henry ‘Hank’ Hughes” at the Butler Brothers mining company near Mildred’s hometown of

Nashauk.

The women did a variety of labor. They loaded ore cars, repaired gas shovels, drove trucks. Mildred served as a guinea pig of sorts. She pre-tested many of the jobs at the mine — proving them suitable for women — before subsequent females were allowed

SEE WOMEN, PAGE 15

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# 'Nobly she rises to her new place in society'

From: The Butler Miner monthly newsletter, a publication by and for the employees of Butler Brothers mining company, which was located near Nashwauk.  
Published: June 1943

## Women at War

To every woman there is a special tribute to be paid during a war. For it is upon her the home front rests primarily while her men fight for victory. In the home and in the factory women have a definite share in winning the war.

This is all the more amazing as a woman's psychology is directed entirely in another way. She is not as a rule aggressive; normally she is a sheltered, protected person, loving and loved. As state of war alters all this — she is torn with anguish at seeing all her loved ones go off to battle, knowing full well that some will not return. Her stability is shattered, and far from being protected herself, she must care for her family by herself. Her whole being is shaken.

But nobly she rises to her new place in society. In the home she must meet new problems through the restrictions of rationing; outside, she assumes the role of men. She is a welder, a miner, a cab driver, or a ship builder, and even in the war itself she helps by joining the women's auxiliary groups. In

SEE BUTLER, PAGE 15

# THE BUTLER MINER

A Paper By and For Butler Brothers Employees

Volume III Number 1

June 1943

## Women in Mining . . . A Story Without Words



In 1941 →

← and Now!



Back Row: Hi Reese, Bernard Oja, R. McEachin, Leo Kneip, Henry Hughes, Bert Andreas, Eugene Klefer, Harold Trask, R. Kaminen, Ted Zontell, W. Schlander, Ned Swallow, Don Drake, Leo Lambert, Billy Michaels, Martin Brown, Don Miller, Bud Sedlock, Matt Bergan, Phil Eldred.  
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SUBMITTED

The cover of the June 1943 issue of The Butler Miner shows some of the mining company's employees in 1941 compared to 1943, when women became part of the workforce, taking on the role of men at the Iron Range mines during World War II while the guys were off to service.

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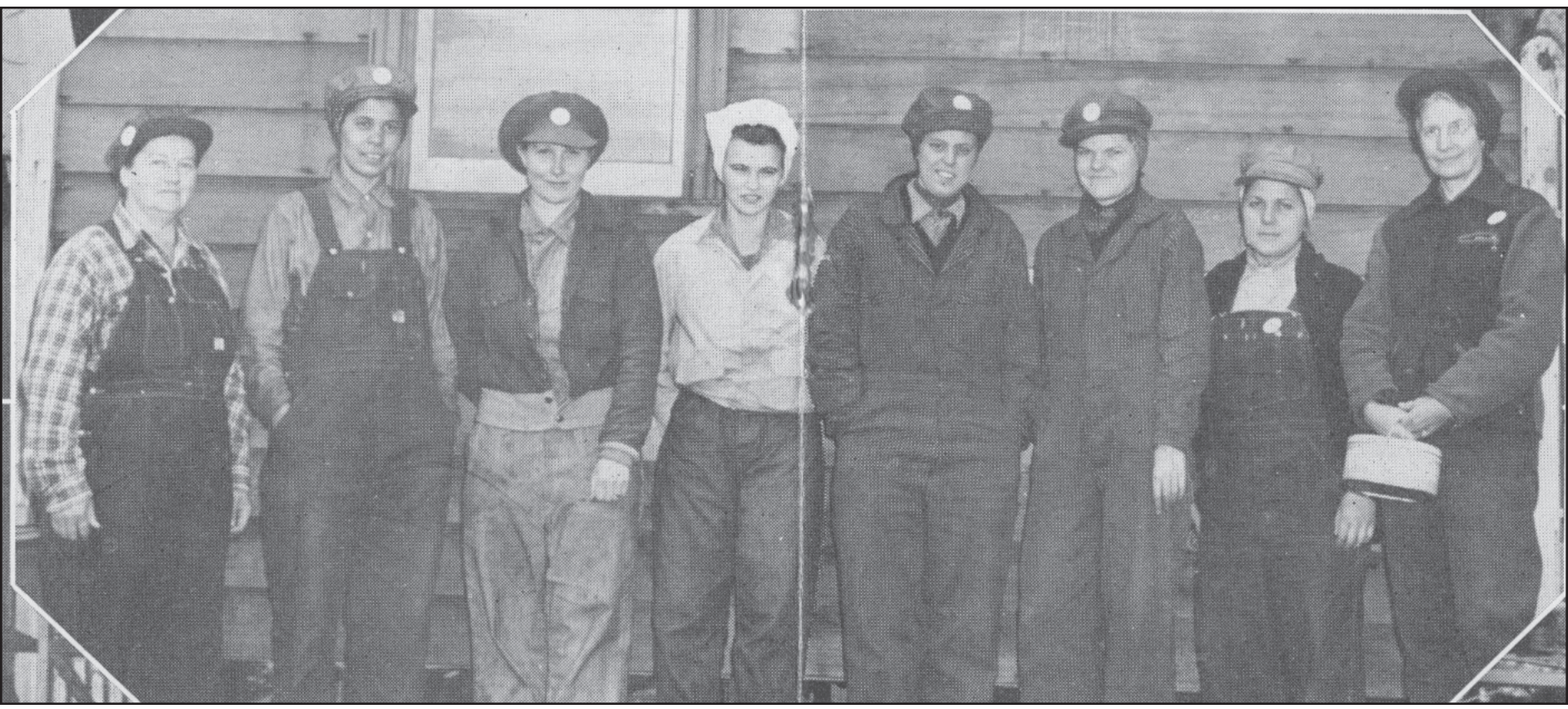
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Mildred (Nelson) Jansson, third from right, and a group of other female miners, pose in this 1943 photo in front of a women's dry house a Butler Brothers' mine near Nashauk.

## BUTLER

FROM PAGE 14

truth, she is the home front.

When the intricate system of rationing was first set up, most of them thought it harsh and difficult. We men felt ourselves tightening our belts and doing without everything we were used to. We sighed for those steaks and chops of pre-war days — 16 points a week just wasn't enough for anyone. But what has been the result? There is not one of us who is not well

fed. This is a direct result of the work of women. They have studied the new menus and nutrition aids all designed to make ration points stretch for our needs. And too, the homemaker has learned to plan so that when she is buying her foods, she finds no difficulty in the ration system. Yes, in the home woman has adapted herself very well to the emergencies of war.

Now in the shops and factories, woman has had even more to undertake. She has learned men's jobs. She has forced her natural feminine frailty to become accustomed to hard work

and long hours. That she has done well in whatever she undertakes (and) is acknowledged by her employers. She is capable, willing and eager to learn.

Perhaps the secret of it lies in her psychology. Because she does see the men go off to a war, she is determined that the strife will be as short-lived as possible. If, through her concentrated efforts, the war can be shortened one day, one hour even, then she feels no amount of work is too great to give towards that goal. Hers is no mercenary motive. It is simply a desire to help

and get her men back again.

After the war, woman will have gained strength and courage just as she did after the last war. She will be an even more valuable mate for having learned what parts sacrifice, hard work, and sorrow play in our lives. Now woman is bending her energy towards winning the war — later she will be a potent factor in making peace a living thing and not just a word to be idly mouthed by ambitious politicians.



SUBMITTED

Mildred Jansson, now 90, is shown in a 1940s photo.

## WOMEN

FROM PAGE 13

to take on the tasks, she said. Hughes kept a close eye on Mildred's capabilities and "took my word" when she said other women could also do the work.

Mildred's first duty was to clean conveyer belts at one of the company's several plants located in a

now-extinct area called Cooley. Pretty soon, however, she was onto loading iron ore into railway cars. It was the job she most loved.

During the mining operations, the ore was hoisted up a conveyer belt before going through the washer; it then went to the rock crusher and through a shaking process to remove sand before it was delivered into a big container ready for loading, she said.

SEE WOMEN, PAGE 16

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# WOMEN

FROM PAGE 15

Her role involved climbing up on a platform and pulling a lever to fill each car. "The young boys who were left (at home) pulled the breaks and pushed the cars up," and she signaled when she needed a new car, said the former miner. "Nothing was automatic in those days."

Often the foreman would come by "to see it was rolling," she said. "It was very important to have clean belts and make sure nothing was spilling over. They wanted to get the most out of every shift." Mildred said she loaded about 45 cars per day with iron ore, and what was left over went to the stockpile.

Her next job was as a scaler. She was responsible for climbing atop the railway cars to retrieve ore samples from the corners and middle of each car. "When your bag weighed about 25 pounds you started a new one," she said. "The most I did was 33 on a shift."

The ore was tested in the lab to see how much sand it contained, and loaders labeled cards on each car and logged records in the office, Mildred explained. "They wanted clean ore going out."

The Butler Brothers' women were scheduled on all three shifts. It was seasonal work, from late-April or early-May through Oct. 15, Mildred noted.



**Mildred (Nelson) Jansson, who worked for the Butler Brothers mining company from 1943 to 1945, is shown during her mining days.**

She was employed with the company the seasons of 1943 through 1945, making 80 cents per hour. Her dad, who was a foreman of the wash plant and had worked for Butler for more than 20 years, joked that after all that time "he only made one dollar an hour," she said.

The majority of Mildred's mining days were spent as a loader, but she also drove a pickup truck for a while — hauling men, tools and fresh water in barrels to the guys.

"I got a lot of experience driving. I'm still driving, by the way," said the 90-year-old with a smile.

"They put you where you were needed," said Mildred, who worked in three of the company's plants. At one point she was assigned to operate the overhead crane in the shop in "Second Cooley." But that position was short-lived.

"I didn't want that job. I couldn't eat — I was so anxious," she said of

maneuvering the crane "above lots of heads. ... I told Mr. Hughes I hadn't eaten in two weeks" and he took her off the job.

"Nobody ever complained" about her handling of the crane, she said. However, "they didn't have girls for that" ever again while she worked at the mine.

Women assuming "men's jobs" was a new thing to everybody at the mine, but the ladies were always treated with respect, Mildred said.

An article by a male writer in The Butler Miner monthly newsletter from June 1943 notes how the war forced everyone to adapt to new conditions.

"In the home and in the factory women have a definite share in winning the war," he wrote. "...she assumes the role of men. She is a welder, a miner, a cab driver, or a ship builder... Now in the shops and factories, woman has had even more to undertake. She has learned men's jobs. ... She has done well in whatever she undertakes (and) is acknowledged by her employers. She is capable, willing, and eager to learn."

The newsletter's cover displays two photos of miners — one from 1941 and the other from 1943. "Women in Mining ... A Story Without Words," it says. There are only men in the first image, but several handfuls of women in the second.

Photos inside the newsletter, including one of Mildred with a group standing in front of a women's dry house,

show female miners doing a variety of jobs — one is pictured opening a valve at a pump house, another repairing a gas shovel, and a third cleaning up ore spillage at the screening plant.

Like everyone else, the women looked forward to payday, Mildred said.

"The girls I worked with were all very friendly. There were no young men around so we had to make our own fun," said Mildred, who owned a 1935 convertible. As the one with the wheels, "I took them around," she said.

When they went out, a funny thing occurred, she said, explaining with a laugh. The older guys

they worked alongside did not recognize the ladies, who at work wore overalls and coveralls and had their hair tucked inside scarves and hats.

Mildred's mining career came to an end when her shifts were finished for the season in 1945 and she married Evert Jansson, whom she'd met the previous year during a visit with her grandparents in Canada.

Mildred (Nelson) Jansson enjoyed "66 good years" with her husband, a carpenter, who died last January at age 89. They lived in Grand Rapids and later moved to Florida. Together they had two sons and two

daughters, along with a granddaughter, four grandsons and "four greats," said Mildred, who now lives part of the year in Hibbing.

A lot has changed in the mining industry since Mildred signed on as a miner 70 years ago. "I'm an antique," she said.

And while she was part of making mining history, the 90-year-old — at the time — never really gave the significance of her work much thought.

"I didn't think nothing of it," she said of being one of the first female miners of the Iron Range.

## BUTLER BROTHERS:

- ❑ Founded in the 20th century by six brothers from Waterford, Minn. — Walter, John, William, Pierce, Cooley and Emmett.
- ❑ Without formal education in geology, mining or engineering, they went on to become major players in Minnesota's mining industry.
- ❑ In 1894, five of the six brothers formed Butler-Ryan Co., with fellow investors Mike P. Ryan and John Jaggard.
- ❑ In 1897, Walter Butler received the contract for Butler-Ryan Co. to build the Minnesota State Capitol.
- ❑ After a tour of the Mesabi Range by John Butler in 1902, Butler Brothers turned their attention from construction to iron ore mining.
- ❑ Their first iron ore mining operation began on May 7, 1902, at the Leetonia Mine, west of Hibbing.
- ❑ In 1908, Butler Brothers undertook their first mining contract with M.A. Hanna and Co.
- ❑ By 1913, Butler Brothers operated 18 stripping contracts.
- ❑ Due to poor health and a general loss of interest in the mining industry, the original six Butler brothers began to slowly turn away from mining in the 1920s.
- ❑ In 1948, the remaining family members sold majority stock ownership of Butler Brothers to Hanna Mining Co.

MINE II

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**GUEST COLUMN**

**MARK DAYTON**  
Governor

**‘We must get this right. I am determined we will.’**



Gov. Mark Dayton during an interview at Mesabi Daily News.

MARK SAUER/MESABI DAILY NEWS

ST. PAUL — My Iron Range education began, when I went to work for Gov. Rudy Perpich in 1977.

I learned a lot from him about the character of Rangers (and also about a few Range characters!). I learned about the importance of a job, and how drastically family life changed, when there was no work in the mines. Those hardships have forged the exceptional strength, resiliency, and determination of Iron Rangers.

For them, mining means jobs, mostly good-paying jobs, with health and retirement benefits. They enable Rangers to live in the area they love, raise their families in tight-knit communities, and enjoy hunting, fishing, and other outdoor activities.

That is why the shock waves were enormous when, in 1985, Butler Taconite Company announced it was closing its plant in Nashwauk. I was then Minnesota’s commissioner of Economic Development. I will never forget walking with Gov. Perpich into the high school gym, filled with sev-

eral hundred miners and their families. They were praying for a miracle, and we didn’t have one.

Years later, I had the same feeling, when U.S. Sen. Paul Wellstone and I met with LTV workers in Hoyt Lakes. It was awful to see the suffering of good men and women, who had worked hard to help the company achieve success, who wanted to keep on working, and who then were abandoned.

When a community has endured a plant closing and hundreds of citizens have lost their livelihoods, more jobs and new business opportunities become high priorities. Thus, most Rangers I know support the proposed non-ferrous mining projects in their region. After 115 years excavating iron ore and then processing it into taconite, people on the Range are used to mining.

Non-ferrous mining, however, is different. Extracting the desired metals requires deep digging, followed by processing, which leaves behind toxic

wastes that must be contained. Other residents in the Arrowhead region, especially along the North Shore, as well as other Minnesotans, are strongly opposed to this kind of mining.

The environmental review of Minnesota’s first non-ferrous project has dragged on for eight years. That’s far too long, even allowing for the project’s complexities. More environmental review lies ahead, primarily by two federal agencies and the Minnesota DNR.

A draft of their preliminary review will soon be made public. That will be followed by months of public comments. By law, all of that additional information must be considered by the responsible agencies before they issue their final Environmental Impact Statement (EIS). If the final EIS is determined “adequate,” then the company begins to apply for the necessary permits from state and federal agencies. However, an agency’s decision that the final EIS is “adequate” does not signify its approval of the

permits required for the project.

I know many Minnesotans who support non-ferrous mining, and many who oppose it. They all care deeply about the future of our state. Both proponents and opponents are certain that they are right, and that the other side’s position would be ruinous.

I intend to remain undecided, until all of the scientific studies, expert analyses, and public comments have been completed and I have reviewed them.

I have always believed that sound economic development and strong environmental protection are complementary objectives. Minnesotans want and deserve both. Each one is crucial to our state’s future.

That is why we must get this right. I am determined that we will.

□

*DFLer Mark Dayton was elected governor in 2010. He plans to run for re-election in 2014.*



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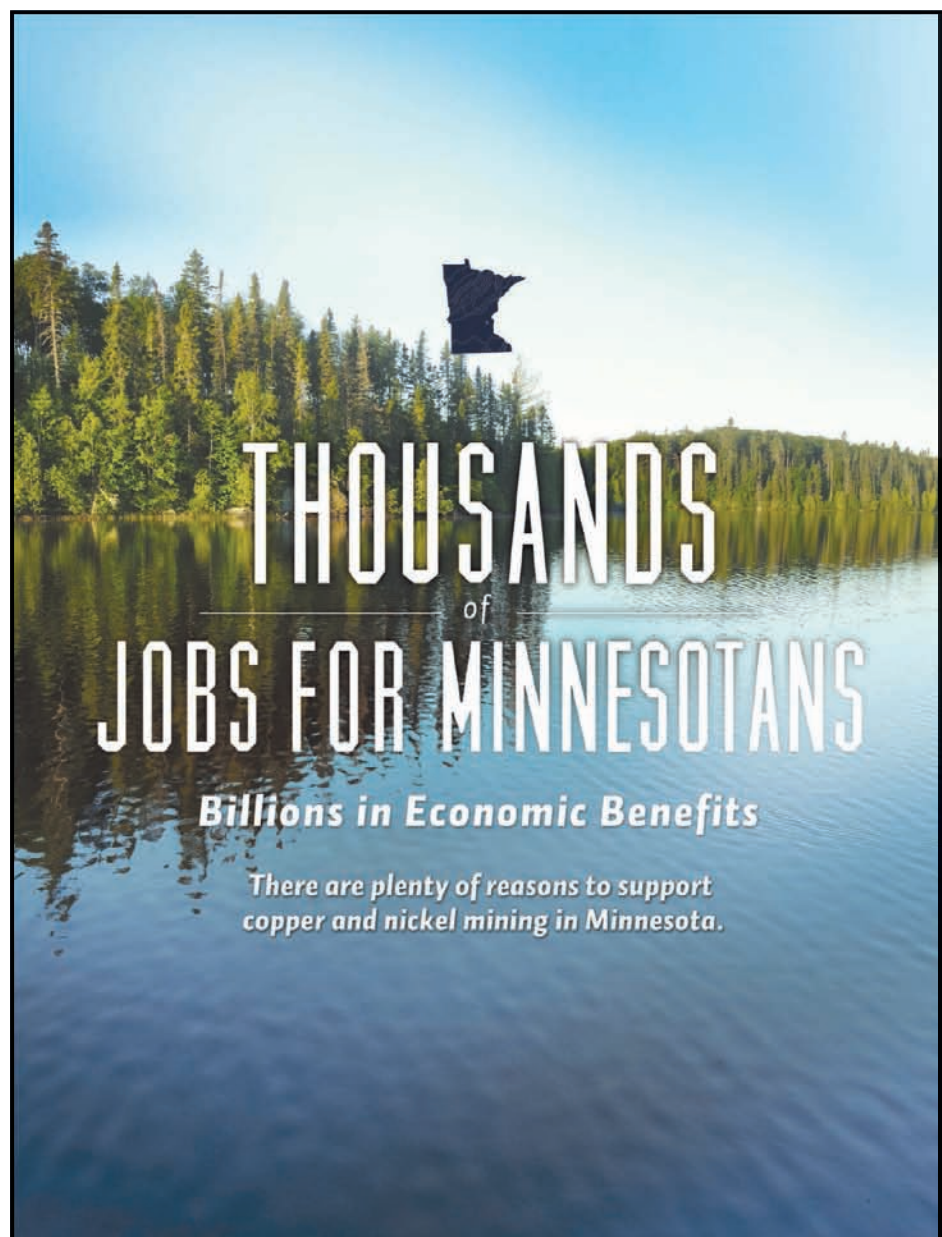
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# POWERING THE MINES



LISA ROSEMORE/GRAND RAPIDS HERALD-REVIEW

A substation under construction at the Essar Steel Minnesota site near Nashwauk in 2012.

# MP, Como feed heavy users

**LISA ROSEMORE**  
GRAND RAPIDS HERALD-REVIEW

Most people who live on the Iron Range know that ore is mined, turned into taconite pellets, then shipped off to the refineries where the pellets are turned into steel.

But have you ever given any thought to what the power bill for a mine must be?

The Minnesota Power bill to a min-

ing operation "looks the same," only with many more lines listing different tiers of energy, said Pat Mullen, vice president of marketing and corporate communications for Minnesota Power.

Bills are sent out monthly, although some mining operations choose to pay in advance.

The mines are "clearly our largest

industrial customer," he said.

Some of the largest electric loads in the nation are on the Mesabi Iron Range, Mullen said. That is directly related to mining operations.

While Mullen declined to offer actual power usage by the mines, citing customer confidentiality, he did offer some comparisons to give an idea of

how much electrical power the mines use.

Generally, at any one time, Minnesota Power's largest mining customer demands more power than the city of Duluth, Mullen explained. That includes all industrial uses in the Duluth city limits, residential and other business electricity demands.

Mining customers account for nearly half of Minnesota Power's revenue,

**SEE POWER, PAGE 19**



A coal car is moved into place before it is rotated and dumped. The coal falls to a conveyer belt below and is then moved to the Boswell Energy Center's coal stockpile.



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# POWER

FROM PAGE 18

he said. "It's a big thing here."

It was in part due to mining why the Boswell Energy Center in Cohasset was built where it was.

Boswell was built near large electric loads, said Mullen.

While the power bill may look similar, except for the amount due, one thing a mining operation does not have in common with a residential customer is power outages. Power outages are less frequent due to how the power is delivered to the mines.

Mullen explained that dedicated lines which carry a much larger voltage deliver electricity to the mining operations. For a complete power outage to occur, there would need to be some catastrophic event.

It's high reliability, he said.

With the massive amount of electricity the mines use, Mullen explained that on a regional basis, that's very important as the high usage by the mines helps keep rates low for all users. They helped pay for the power infrastructure.

Earlier this year in April, Minnesota Power completed construction of substations and transmission lines to the Essar Steel Minnesota site outside of Nashwauk.

According to a statement released by Minnesota Power at the time, Essar will require approximately 110 megawatts of electricity once it reaches full production.

The project included building 28 miles of lines and 21 miles of lines re-routed or removed. The statement said the project took two years to complete construction and installation of \$35 million in transmission assets.

Essar is a power customer of the Nashwauk Public Utility Commission, which in turn purchases power from Minnesota Power.

But it doesn't just take electricity to power a mine. It also takes fuel, and lots of it.

Will Norman, chief operating officer of Como Oil and Propane, said that fueling the mines is "a small part we play."

Como Oil supplies all Cliffs Natural Resources mining operations, including diesel fuel for Cliff's three facilities in Minnesota. Como Oil also supplies propane for those operations.

Como works 24 hours a day, seven days a week, 365 days a year to keep the mines in fuel, said Norman.

"It's a lot of pressure to keep operations running," he said, adding that "we feel fortunate to fill their fueling needs."

The mines use "millions of gallons of fuel per year," Norman said, explaining that 98 percent of that is diesel fuel. The diesel fuel is used for mining equipment, including trucks and loaders.

"The vehicles inside the mines," Norman said.

He said that Como Oil

**SEE POWER, PAGE 20**



LISA ROSEMORE/GRAND RAPIDS HERALD-REVIEW

A substation under construction at the Essar Steel Minnesota site near Nashwauk in 2012.



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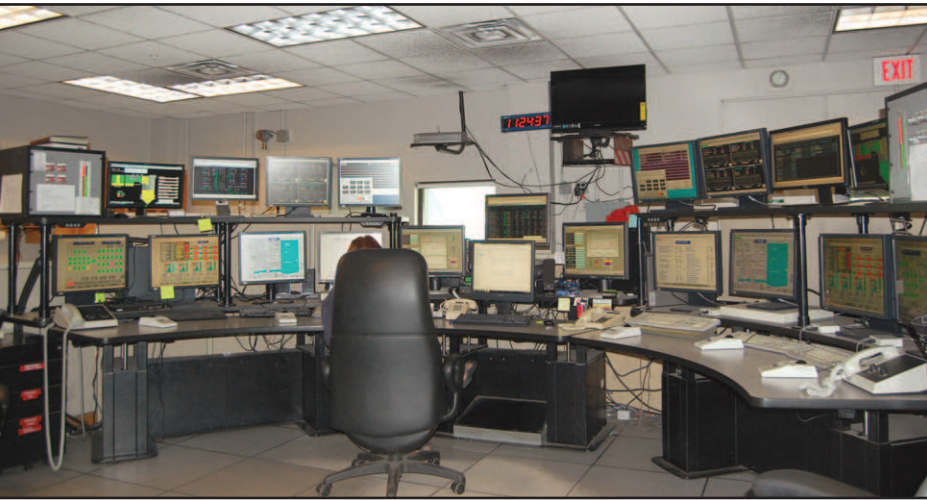


The Boswell Energy Center in Cohasset generates power used by area mines.

LISA ROSEMORE/GRAND RAPIDS HERALD-REVIEW



Coal pulverizing equipment at Unit No. 4 at Minnesota Boswell Energy Center in Cohasset. The coal is pulverized into a fine dust, which allows for optimal combustion, before it is injected into the boiler. Optimal combustion is part of the equation for the most efficient transfer of energy from coal to flame to water to steam to electricity, according to a spokesman from Minnesota Power.



A worker at Minnesota Power's Boswell Energy Center in Cohasset monitors Unit No. 4 from the control center.

## POWER

FROM PAGE 19

blends fuel for Como, which can change each week. Diesel fuel is susceptible to freezing but Norman said they haven't had a freeze up in the eight years they've been supplying fuel.

Safety is the number one issue and in addition to the strict safety stan-

dards upheld by the mines, Como Oil employees undergo extensive training and are "fully-trained to take precautions."

All fuels provided by Como Oil come from the Calumet Refinery in Superior, Wis., the former Murphy Refinery.

"We're fortunate to have a refinery so close," said Norman.



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**GUEST COLUMN**

**STEVE RAUKAR**  
County Commissioner

# Future costs of mining projects difficult to assess

## But we can be a standard for post-mining stewardship

The revelation that PolyMet's tailings and waste rock runoff may require long-term treatment is neither a surprise nor fatal to sulfide mining in the Arrowhead Region of Minnesota.

Since the early stages of the Industrial Revolution, economists have struggled with the problem of "externalities." Those costs of our economic activity that are borne by society as a whole and not reflected in the price of the goods produced.

The black fogs of London's coal economy, the acid mine runoff that has contaminated Appalachian rivers and streams, and the public funds dedicated to reclamation of abandoned iron ore sites here on the Range are good examples of the marketplace's frequent inability to fold all the costs of production into the price of the goods and materials we produce.

One of government's principle roles, at the federal, state and local levels, is to reduce the number of externalities (costs not reflected in the price of a product that are passed on to society to pay) associated with economic activity.

So we have regulations for mine safety, reclamation, air and water emissions, to name a few. While these regulations are important for their direct impact on the workers and communities that host mining activity, the underlying goal of these laws is to reduce the costs society must pay now and in the future to support displaced workers, clean up contaminated soils and waters, community disruption and ensure a stable and productive future landscape.

And it is the future costs (both environmental and economic) of current mining proposals that are the most difficult issue to assess. Yet it is essential to both the mining industry and our communities that we get it right. Industry leaders must determine that an ore body is economically viable based on vast amounts of data, sophisticated models of future prices and costs of production, alternative competing ore bodies in other countries, the regulatory parameters under which they will work, and, ultimately:

an assumed long-term return on investment.

Public officials, their agency administrators, and the folks in the communities we represent must employ a parallel and equally deliberative approach. We owe ourselves and potential regional investors our best efforts in articulating our expectations. So here's a set of principles and assumptions that I suggest we use to guide our community dialog:

1. Take responsibility for the consequences of our consumer demands. The idea that we are environmentally conscientious by importing our goods and exporting our pollution is both unethical and counter-productive. Uninformed opposition to these mining proposals may lead to development of mineral reserves at locations and in countries far less capable of managing these enormous enterprises. It is already obvious that mineral bodies developed in less progressive countries rarely accommodate the long term externalities or true costs of mineral production. And the impacts and societal costs are passed on to both indigenous populations and our global environment.

2. Simply applying a "just say no" approach is naïve and simple-minded. Blind opposition to the new minerals that may be mined in the region could forego an opportunity to build our communities, create new wealth for our citizens, and provide a stunning array of opportunities for our students and young families. More significantly, the "not here" folks will not have an influential voice in structuring the process by which both private and public expectations are defined.

3. Ensure that there is a mechanism by which the future costs of reclamation and active as well as passive water treatment are incorporated into the "cost of production" models employed by the mining companies. The only way we can define the true cost of production is to ensure that future costs are clearly assessed and an independent financial entity is established to create a model by which a revenue stream to cover post-mining

costs are captured and protected.

Finally, if we can provide potential regional investors with an objective set of expectations, a model for the long-term financing of their post-mining responsibilities, and the institutional structures by which to assure the public that these responsibilities will be fulfilled, Minnesota will have accomplished two globally significant impacts:

a. Potential investors will make their determinations within the Duluth Complex based on a realistic assessment of their long-term responsibilities, the total cost of production, and a realistic price that reflects their responsibilities; and ...

b. Minnesota will set a standard for post-mining stewardship that will be a model for responsible mining worldwide.

Steve Raukar of Hibbing is a St. Louis County commissioner.



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# IRON MAN MEMORIAL STATUE



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An assembled Ironman Statue is ready to be erected skyward in late June 1987.

## 'We're gonna have an erection'

**BILL HANNA**  
MESABI DAILY NEWS

CHISHOLM — The ironworker, wearing the dirt and grime of a hard day's labor, yelled out to an editor while throwing back a brew on the outdoor porch at the Sawmill Saloon

& Restaurant. "Hey, you gonna cover the Iron Man ceremony?" he said. "When's the unveiling?" he was asked in return. "We're not gonna have an unveiling ... we're gonna have an erection," he replied with obvious pride of his part

in building a statue unlike any other in the country — and the third tallest, to boot. And, it was quite an erection that summer of 1987, when the statue was assembled, erected and dedicated on the nation's 211th birthday, July 4, 1987.

How appropriate. After all, the Iron Man does represent the hard-working generations of Iron Rangers who helped build this country with the ore that was forged into steel for bridges and rails for a growing nation and the weapons of war to help save the

SEE IRON MAN, PAGE 23



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The Ironman Statue is lowered to its base.

IRON RANGE RESEARCH CENTER



MARK SAUER

The Chisholm Fire Department cleans off the Iron Man Statue located on the edge of town in this 2008 file photo. The fire department gives the towering landmark a bath each summer to keep it looking its best.

## IRON MAN STATUE BY THE NUMBERS:

- ❑ Located just off Highway 169 on entryway into Chisholm.
- ❑ Project officially started during the nation's Bicentennial celebration in 1976.
- ❑ Designed by sculptor Jack Anderson of Lake Linden, Mich.
- ❑ Completed in June 1987; dedicated on July 4, 1987.
- ❑ The base and Iron Man figure stand 85 feet high.
- ❑ It weighs 150 tons.
- ❑ Third largest free-standing memorial in the United States. Only the Statue of Liberty in New York City harbor and the Gateway Arch in St. Louis rise higher.
- ❑ Iron Man's head is 6-feet high.
- ❑ The miner's helmet is 50 inches long, 24 inches high.
- ❑ Iron Man's shoulders measure 11 feet across.
- ❑ Distance from shoulder to waist is 9.5 feet.
- ❑ The pants measure 17.5 feet from the waist to the cuff.
- ❑ The waistband is 228 inches.
- ❑ His boots are 6 feet long, 57 inches high, 2 feet wide.
- ❑ His bootlace is 80 inches long.
- ❑ The shovel weighs 400 pounds.

**MINE II**

## IRON MAN

FROM PAGE 22

world from tyranny. Since then the Iron Man has become an iconic symbol of the industrious nature of the men and women of the Iron Range.

It is a much photographed and videoed memorial. And thus Iron Man has a big national following, popping up on travel websites.

This past summer he was even a star in a Minnesota Twins' TV promotion spot. The announcer referred to Texas having the Texas Rangers, but Minnesota has the Iron Rangers. The visual used? The Iron Man statue.

Perhaps that bowed head of the Iron Man, which sculptor Jack Anderson said represented the weariness of miners heading home after toiling in the mines, also now symbolizes the heavy burden of several losing Twins' season in a row.

The Iron Man, and the base he stands on, can handle that dual heavy weight. He is a very, very big statue. Only the Statue of Liberty in New York and the St. Louis Arch are larger free-standing memorials.

Check out these mea-

surements:

- From base to top of helmet: 85 feet high.
- Head: 6-feet high.
- Helmet: 50 inches long; 24 inches high.
- Pants: 17.5 feet from waist to cuff.
- Waistband: 228 inches.

And a giant of a man needs to haul around an appropriate-sized shovel weighing 400 pounds.

The big guy's dedica-

tion was a big day on the Range. Iron Rangers, then Gov. Rudy Perpich and U.S. Rep. James Oberstar, headlined a list of speakers who spoke of the importance of what the Iron Man symbolizes. They also had high praise for Chisholm Free Press Publisher Veda Ponikvar, who was instrumental in seeing the memorial through 11 years of sometimes

controversial fundraising and development.

But after all the speeches and plaudits, a comment by a young woman, reported by the Chisholm Free Press, conveyed the true meaning of the memorial.

"The miner reminds me of my dad," said the woman, with tears in her eyes.

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MARK SAUER/MESABI DAILY NEWS

Al Franken during an interview at Mesabi Daily News.

**GUEST COLUMN**

**AL FRANKEN**  
U.S. Senator

**‘Glad progress is being made’ on Polymet copper/nickel project**

WASHINGTON — For generations, mining has played a unique role in the economy, and the culture, of our state.

I travel to the Iron Range as often as I can. And whenever I’m there, I meet with workers who are rightly proud to be earning good paychecks in good jobs, producing steel for skyscrapers, iron ore nuggets for electric arc furnaces, and much more.

Mining is a true Minnesota tradition. So, too, is respect for our environment and careful stewardship of our natural resources — not just for our own sake, but for the sake of our children, grandchildren, and future generations.

Nobody knows this better than Iron Rangers, who enjoy both the economic opportunities offered by mining and the quality of life provided by Northern Minnesota’s beautiful landscape and abundant recreational opportunities.

Minnesotans know that growing our economy and protecting our environment are both critically important to maintaining the unique character of our state. And for generations, we’ve proven that strict environmental standards and a strong mining industry don’t have to be mutually exclusive.

Today, many with an eye toward the next generation of mining are talking about the proposed Polymet project.

Copper-nickel mining could be a significant economic boon for the region, diversifying the Range’s economy and offering a new source of jobs in a part of our state where new jobs are badly needed.

Moreover, these precious metals could be used in a variety of energy-saving next-generation technologies like electric cars and wind turbines — and mining them here at home means we don’t have to import them from abroad.

That said, there are concerns that

this mine could cause harm to Minnesota’s environment.

Similar mines in other parts of the world have caused real environmental damage, and the first draft of an Environmental Impact Statement examining the Polymet project gave many pause about its potential ramifications.

But I don’t believe that our commitment to the economic development of the Iron Range needs to threaten our environment, nor that our commitment to preserving Minnesota’s environment should threaten the viability of our mining industry.

I’ve met with Polymet officials on several occasions. And as they work toward a new plan to mitigate the environmental impact of the proposed mine, I am optimistic that the company will be able to allay these concerns, allowing the project to move forward — and delivering on the promise of new jobs and a stronger

Iron Range economy.

To that end, it’s encouraging to see PolyMet working closely with stakeholders like the Environmental Protection Agency, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, the U.S. Forest Service, the Army Corps of Engineers, and area tribal communities as they prepare their revised plan.

We’ll know more when the next draft of that plan is completed in the coming weeks. But I’m glad that progress is being made. And I remain both proud of Minnesota’s mining tradition and excited about its future.

*Democrat Al Franken is Minnesota’s junior U.S. senator. He was elected in 2008, defeating Republican Sen. Norm Coleman. Sen. Franken is up for re-election in November 2014.*

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# HAUL TRUCK SIMULATOR



HIBBING DAILY TRIBUNE

Hibbing Daily Tribune Staff Writer Tony Potter tries out the 793-F Caterpillar haul truck simulator at Hibbing Community College (HCC).

## 'State-of-the-art tool'

**TONY POTTER**  
HIBBING DAILY TRIBUNE

HIBBING — A horn honks once the box of a 793-F Caterpillar haul truck is lined-up with a loader.

The truck is the newest simulator at Hibbing Community College (HCC), which provides students with experiences similar to the everyday work of a mine truck operator.

Like real life, the truck's box begins being filled once the vehicle is put in park.

After the truck bed is filled, the vehicle is put back in drive and heads uphill toward the dump site.

The base of the simulator shakes as the truck travels 8 miles per hour (mph) with the throttle wide open. It can get up to 30 mph while traveling downhill.

As rain starts to pour, the windshield wipers are turned on to ensure the road ahead is visible.

The rain eventually stops. And after a long drive up a mine path, the destination is reached.

Using the virtual truck's mirrors, the rear end of the truck is lined-up with the dump site. The vehicle then begins backing up.

The first attempt at backing up to

the dump site is crooked and unsuccessful. The process is restarted. With the steering wheel turned to the right, the truck is driven forward and straightens out.

Now, the vehicle is put back in reverse and again is backed up toward the dump site. Once the truck is near the site, it is put in park and the driver pulls the dump lever toward himself.

SEE SIMULATOR, PAGE 26

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03



HIBBING DAILY TRIBUNE

Simulators lead the way in today's education.

# SIMULATOR

FROM PAGE 25

Dirt begins to pour out of the truck's box until it's empty. Once the box is empty, it lowers. The driver knows the truck is ready to leave after the box appears at the top of the simulator screen.

With the truck box empty, the driver heads back to the loading site to get more dirt. On the way downhill, the driver simulates falling asleep behind the wheel. With the driver inside, the truck crashes into the loader. The virtual truck blows up, the base shakes violently and the screen flashes red.

The HCC haul truck simulator is

used to train Industrial Systems Technology students for work in various industries, including mining.

AdvancED Minnesota of the Northeast Higher Education District (NHED) and HCC in partnership with Essar Steel Minnesota LLC and Hibbing Taconite were awarded a Minnesota Jobs Skill Partnership (MJSP) grant for the simulator through the

state Department of Employment and Economic Development (DEED), according to AdvancED Minnesota release. The simulator cost \$1.4 million, according to Rick Mayerich, HCC instructor.

The machine, which simulates the everyday work of a truck driver, hits every key point of the job — from

**SEE SIMULATOR, PAGE 27**

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HIBBING DAILY TRIBUNE

Rick Mayerich, Industrial Systems Technology instructor, demonstrates the excavator simulator at Hibbing Community College (HCC).

## SIMULATOR

FROM PAGE 26

putting the key in the ignition to dumping a load of dirt.

"It's a state-of-the-art tool," Mayerich said. "It's a great tool for any truck driver. It prepares new drivers for what to expect and corrects bad habits that experienced drivers might have learned."

The machine usually simulates a generic mine site. But specific mine sites can be downloaded if needed to train a specific mine's employees, Mayerich explained.

Monitors connected to the simulator allow instructors to keep track of how students are doing. Simulations are also recorded so that instructors can show students what they did right or wrong, Mayerich said.

HCC also has three smaller simulators. The college acquired those machines in December 2011 for \$95,000 through monies provided by Applied Learning Institute (ALI) and Iron

Range Resources and Rehabilitation Board (IRRRB).

Those simulators include an excavator, front-end loader and grader. Industrial Systems Technology students are required to complete a total of 26 lab assignments on those simulators to graduate, Mayerich said.






First year students are exposed to the simulators, but aren't expected to complete any of the assignments.

"We want them to get a feel, but we don't have enough time to push them through any lab assignments," Mayerich said. "Students fresh out of high school don't have a lot of experience, and it takes at least six hours of machine time to get used to it."

By the time students have completed the two-year Industrial Systems Technology program, they have completed and passed all of simulator assignments, he added.



Hibbing Daily Tribune Staff Writer Tony Potter tries out the 793-F Caterpillar haul truck simulator at Hibbing Community College

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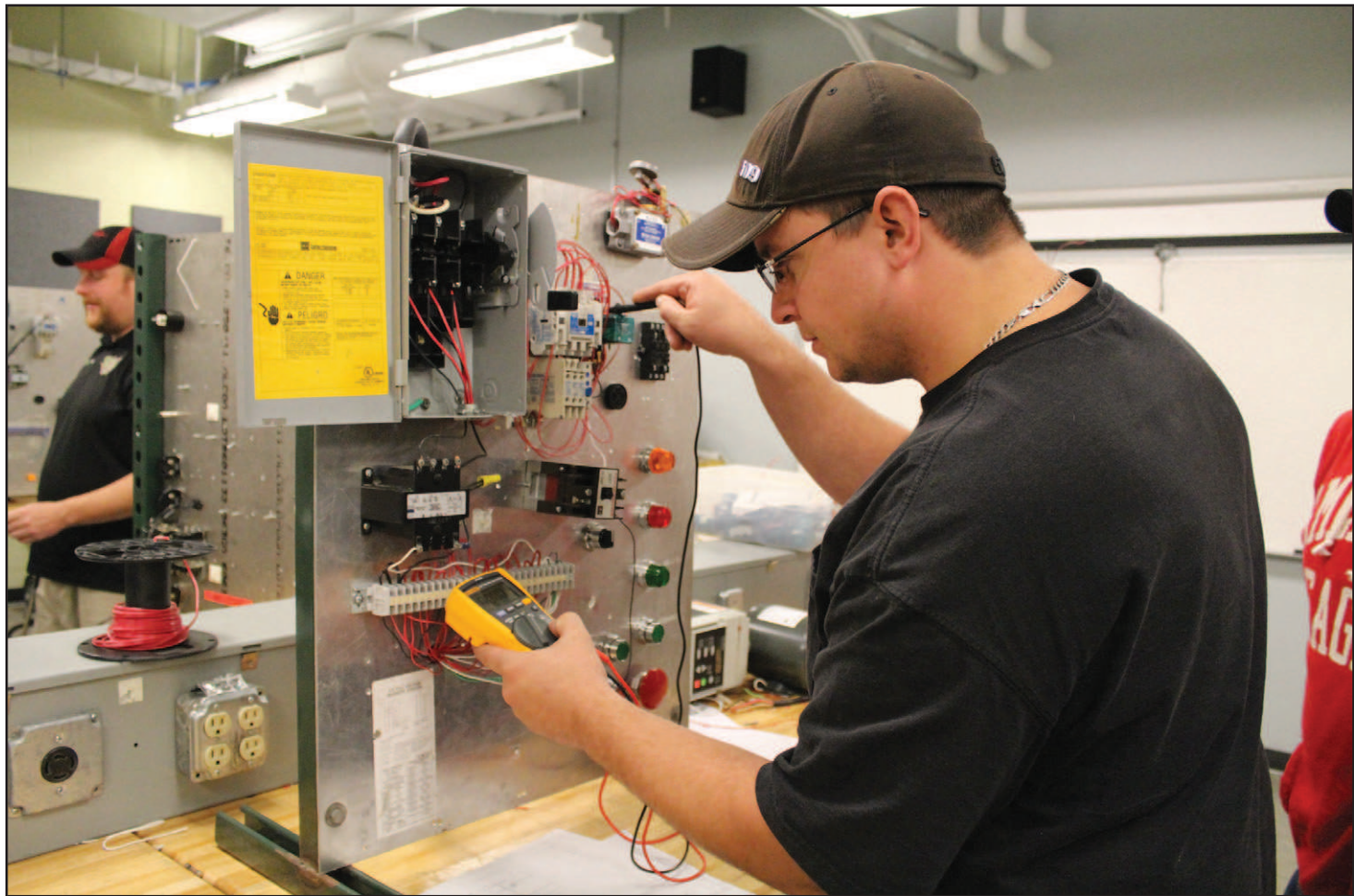
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# ADVANCED MINNESOTA



TONY POTTER/HIBBING DAILY TRIBUNE

Greg Shaw, student of the electrical maintenance program, checks continuity at Hibbing Community College.

## Industrial systems technology developed specifically for the mines

**TONY POTTER**  
HIBBING DAILY TRIBUNE

HIBBING — Students can't be taught how to run a mine. But they can learn the skills and techniques that translate to the mining industry.

"We can't teach students how to run a taconite plant because we don't have one," said Rick Mayerich, Industrial Systems Technology instructor at Hibbing Community College (HCC).

"... But we can teach them critical thinking and problem solving. And the importance of punctuality and attitude on the job."

HCC along with Mesabi Range Community and Technical College (MRCTC), Itasca Community College (ICC), Rainy River Community College and Vermilion Community College make up AdvancED Minnesota of the Northeast Higher Education District (NHED).

The schools have combined their

efforts in reorganizing the district's customized training, continuing education and advanced learning enterprises, and that includes providing mine safety and health administration (MSHA) training. About 7,000 individuals each year are participating in MSHA training through NHED, according to an AdvancED Minnesota release.

NHED has recently trained more than 16,000 different individuals and more than 32,000 total duplicated

individuals, which are those who participate in more than one training session.

"We have always said that we can accomplish more by working together, rather than competing against each other, and that mantra is earning dividends," said Dr. Trent Janezich, interim executive director of AdvancED Minnesota, in a release.

AdvancED Minnesota also provides other customized training opportuni

**SEE TECHNOLOGY, PAGE 29**

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# TECHNOLOGY

FROM PAGE 28

ties including: Occupational safety and health administration (OSHA), industrial training, leadership and continuing education.

HCC offers several mining-related programs, but Industrial Systems Technology was developed specifically for the mines, Mayerich said.

When the program began in 2006, it was named Industrial Systems Technology: Mining Emphasis. In 2008, the economy crashed and the mines quit hiring. The program was revamped to fit other industries, Mayerich explained.

"We were losing students who didn't want to go into the mines," he said. "The mines are still the primary goal. But now a plan 'B' is available."

The connection of Industrial Systems Technology to the mining industry is still strong. Students in the program learn how to operate equipment, read blueprints, weld, hydraulics, pneumatics, belt alignment and more.

The program's big draw is its simulators. It has three small simulators which are used to simulate operating an excavator, front-end loader and grater, and a large simulator which represents a 793-F Caterpillar haul truck.

"We are doing our best to introduce students to emerging technologies," Mayerich said. "Computers are

here to stay and the equipment is computer operated, so students need a good understanding of the how everything works."

The program allows students to put what they've learned to use by building gates for the Minnesota Department of Natural Resources (DNR), excavating and digging holes for Habitat houses and doing special projects for HCC.

Mayerich said that attending other HCC programs can also translate to a job in the mines. Students who graduate from the diesel mechanic and automotive programs learn skills that are important to the mining industry.

"Every company has mechanics," he said.

The students in the diesel mechanic and automotive programs spend the first year learning the theory and basics of their trade. The second year of both programs is spent developing advanced skills and doing customer repairs, Mayerich said.

Those who complete the electrical maintenance program at HCC are prepared for jobs in the mining industry as well, said HCC Electrical Maintenance Instructor Steve Murphy.

"Between construction and mining, they are the two biggest opportunities for electrical maintenance employment," he said, adding that his former students have found jobs with several mining companies.

Students in the program are taught every-

thing from what electricity is and how it works to how to maintain it.

"We do as much as we possibly can in two years," Murphy said. "There is a lot to learn, but the mines are a good partner. They give great feedback and information, which is very helpful."

Each of the mining-related programs offered at HCC average about 25 students per class each year, said Mary Brandt, HCC customized training representative.

The enrollment of the Industrial Systems Technology program is high this year. It had 39 students its first year and 26 students the second year, Mayerich said.

MRCTC offers a pair of mining-related educational programs: Industrial Mechanical Technology and welding, according to the MRCTC website.

Industrial Mechanical Technology, or the millwright program, teaches students about safety, measurements, troubleshooting, repair procedures and the use of hand and power tool. The program also covers hydraulics, pneumatics, lubrication systems, heating systems and welding. The program helps prepare students for jobs in the mines related to repairing plant and pit equipment from cranes to shovels, mining drills, graders and backhoes.

Welding is an entry-level diploma program that includes 33 credits and two semesters. The program prepares students for jobs that

translate to the mining industry such as welder, fitter and weld shop supervisor.

There are several other mining-related education options.

Iron Range Engineering (IRE) is a program that offers a bachelor's of science (BS) degree in northeastern Minnesota. It is a collaborative program between ICC, Minnesota State University in Mankato (MSU) and Iron Range industry in northeastern Minnesota located on the MRCTC campus.

IRE uses a project-based model of learning (PBL), where students solve real engineering problems related to the mining industry, according to Ronald Ulseth of MSU.

"(IRE) provides a skilled, technical workforce for the industries in our region while providing the young people of northeastern Minnesota with an opportunity to gain a BS in engineering here," he said.

The program allows students the opportunity to obtain engineering positions in mining and mining support industries upon graduation, Ulseth said.

"Of our 40 graduates, about half are employed in these positions," he said, adding the program began in 2009.

There are also customized training programs, which mines require workers to complete before they can do specialized work, such as auto mechanics. That usually takes two years of education and two years of hands-on experience in



TONY POTTER/HIBBING DAILY TRIBUNE  
**Lisa Alton, student of Industrial Systems Technology, uses an oxyacetylene torch to cut welding materials at Hibbing Community College**

the mines, Brandt said.

Depending on the mine, apprenticeships or trainee programs are available. Those consist of one to four years of training combined between the college and the mines, Brandt said.

HCC student Chad Luepke said the Industrial Systems Technology program instructors and curriculum are very helpful.

"It rocks," he said. "The professors do a good job of giving us a taste of the different things we will see in the field. It's a big help for anyone who wants to be in the mines or construction."

The program helps students understand what it takes to obtain and maintain a job in the mines, Luepke said.

"We do a lot of group critical thinking exercises that keep us on our feet," he said. The electrical maintenance program at HCC is well designed for what the mines are looking for, said Greg Shaw, a second-year student.

"We are learning lots of things that are used every day in the mines," he said.

Shaw said that he has learned about variable-frequency drives and programmable logic controllers (PLCs).

"We also have a mock up of a conveyor belt system which is found in the mines," he said. "We need to know how to put it together and make it work."

Getting a job in the mines is the overall goal, Shaw said.

"Mines are the power company, so that's my goal," he said.

Luepke agreed. "With the way the job market is going, I'm willing to take what I can get," he said. "But if I can get into the mines — great."

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# INDUSTRIAL LUBRICANT



SUBMITTED/GRAND RAPIDS HERALD-REVIEW

Pictured, from left, are Industrial Lubricant President Gary Oja, co-owner Andy Haarklau, employee Steve Chandler, co-owners Kathy and Jim Hoolihan, and employee Jim Young.

## Family Business for more than 70 years

**BRITTA ARENDT**  
GRAND RAPIDS HERALD-REVIEW

GRAND RAPIDS — From the mining work of the Iron Range, Jerry Hoolihan and his wife, Alice, established a family business that has grown and diversified for more than 70 years. It was 1942 and an era that was pre-taconite with natural iron ore

mines all over northeastern Minnesota. The Iron Range was busy with mining activity from Grand Rapids at Tioga Pit on Pokegama Lake all the way to Ely. And Jerry Hoolihan saw an opportunity to become an important vendor to those mines, selling grease. "The first office was in my sister's bedroom," said Jerry's son Jim, who, with his wife Kathy, are the second

generation to take on the business. Jim explained that his father was an International truck and tractor machinist prior to starting his business. "Because he was in the equipment business, he knew the needs." The business, Industrial Lubricant, was launched as a full-service lubrication system installation and service company serving the large equipment

operators along the Iron Range. Then Jerry's brother Dan returned to Grand Rapids after serving in World War II. Seeking election as Itasca County sheriff, Dan lost and instead joined his brother's company as a full-time salesman. The owner of a 1947 Stinson airplane, Dan put his skills to use as a

**SEE BUSINESS, PAGE 31**

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Jim Hoolihan's father, Jerry, was an International truck and tractor machinist prior to starting his business, Industrial Lubricant.

SUBMITTED/GRAND RAPIDS HERALD-REVIEW

## BUSINESS

FROM PAGE 32

pilot to hop from mine to mine and beyond.

"During World War II, the country had a real need for steel and ore, so the folks selling to the mines were developing solutions with applicability country-wide," said Jim. "So Jerry and Dan started selling nationwide, laying the groundwork for the future."

The Hoolihan brothers didn't sit back and simply pick up the phone to make sales calls, Dan actually landed his airplane on the haul roads at various mining sites. And because other mining operations, like copper and coal, used large-scale equipment similar to what was moving iron ore from the Northland, Industrial Lubricant became a national and international business.

"We had a world-class industry on the Iron Range so suppliers to the mines developed world-class solutions," added Jim, who moved back to Grand Rapids to work for his father at age 28.

Jim may have been young and eager to help his father's business grow but the state of the mining industry was not what it was when his father started out.

"It was the early 80s and the industry was down," explained Kathy, also a native of Grand Rapids who has become a big part of the company. "Scanning the situation back then and saying OK this is what we have to deal with, Jim went traveling to Canada and Texas."

The junior Hoolihan found success pitching his father's business out-of-state and started developing warehouses in places beyond Minnesota. Still, the main office and service center remained in Grand Rapids.

In 1984, Jim, Kathy and their oldest daughter moved to Wyoming for a

year to open an Industrial Lubrication outlet there. It was during this year that Kathy really learned all about the business, as she was involved in everything from driving fork lifts to answering the phones. Back on the Iron Range, however, the mining industry continued to decline.

But backed by world-class mining solutions they learned through relationships developed with Iron Range operations, "your challenges become your strength," said Jim as he explained how they applied their knowledge and experience to other industries.

Soon Industrial Lubricants became involved with railroad companies. Warehouses were opened in North Dakota, Texas, and Saskatchewan, Canada.

"When we started off, we had one- and two-men shops," Kathy explained. "Now shops have 20-plus employees at some locations."

Today, the company has more than 90 employees based at offices and warehouses throughout the country.

"We've made purposeful, deliberate expansion over time as we gained customers," said Jim.

At first, their new customers were mostly coal mines and railroads. Then others were sold on the convenience of contract lubrication services and the on-site personnel the company provides for large equipment that requires routine maintenance.

An extensive data base helps Industrial Lubricant monitor the customer's needs and respond accordingly with service and supplies.

"We're very knowledge-driven," Jim said.

While some customers are able to do this themselves, they still contract with Industrial Lubricant because "they know we're about more than a pound of grease — and that's a good thing."

Currently the company is seeing an

uptick in business contracts with new types of customers.

"And that is exciting," smiled Kathy.

When the couple moved back home as college graduates in 1979, "we saw area mining going down so now to see projects like Essar, Keetac and others is heartening," Jim explained. "Mining was the engine for our company, then the Range went from 50 open pit mines to eight taconite mines. So it is very heartening to see the evolution of the mines come full circle with good jobs. To see trucks come back with red dust on their tires is good."

Thinking about the red dirt being tracked through the office and staining their white trucks, Kathy smirked and said she's come to realize she

can't complain.

Most Industrial Lubricant service employees stay in the field all day, inspecting equipment for lubrication points and checking on filters. If they are not in the field, they are at the repair facilities. Jim explained that some properties want service once a week or more, depending on the amount of equipment and the weather.

"On the Iron Range, we developed a lot of cold weather solutions that have also worked in Canada, North Dakota and Wyoming," said Jim. "The Range had a wealth of knowledge and a wealth of experience. So we partly listened to our customers and followed our customers."

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Jim and Kathy Hoolihan, co-owners of Industrial Lubricant are pictured with portraits of the company's founders, Jim's father Jerry (left) and uncle Dan Hoolihan (right).

BRITA ARENDT/GRAND RAPIDS HERALD-REVIEW

## BUSINESS

FROM PAGE 31

working across mining industries, Industrial Lubricant employees have learned mining best practices which allows the company to transfer this knowledge to other mining operations.

"And that is a real benefit to our mining customers," Jim said.

Some of Industrial Lubricant's current Minnesota customers include U.S. Steel, Cliffs, Arcelor, Magnetation, Northland Constructors, Hammerlund Construction and Hawkinson Construction. Outside Minnesota, they work with North American Coal, Sherritt, Luminant (Texas Utilities), BNSF, UP and CN railroads.

Jim says their competition is "great nationwide," with companies such as Castrol and Exxon. What sets them apart from others, Jim believes, is Industrial Lubricant's focus on service.

"It's service that is intentional," he explained. "Being independent and privately-held gives us the ability to be focused on our customers."

With fluctuation in all mining industries, Industrial Lubricant has had to be nimble.

Kathy and Jim were pleasantly surprised when the natural gas fracking operations in North Dakota became a target for their services. While Kathy says "it fell into our laps," Jim playfully corrected her. "No, it was high-level strategic planning."

But jokes aside, "the lubrication needs here are the same as in North Dakota," said Jim.

In their 30-plus years with the company, Kathy and Jim have become familiar with all aspects of mining. Although she was trained in nursing, Kathy describes herself as a "high proponent of learning different things."

"It fascinates me to see the mines — they're huge operations,"

explained Kathy as she described the miles and miles of land involved in the coal reclamation process with large drag lines and Industrial

Lubricant's role in that process.

"The drag lines are expensive so they are willing to spend money to keep them up," she said.

While Kathy and Jim are co-owners of the company, Gary Oja has served as president of Industrial Lubricant since 2004. The Hoolihans describe Oja as integral to the company's success. It was because of Oja's leadership and Kathy's role in the company that Jim was able to take a leave of absence when he was chosen to lead the Blandin Foundation as president/CEO, from 2004 to 2011.

Today, back in the office, Jim says he still enjoys making sales calls but is now focusing on planning for the future of Industrial Lubricant.

"We have been purposeful in transitioning the company for the next 70-plus years for the next generation of leaders," he said.

"So we have family coming in behind us who are committed to seeing this business continue," added Kathy of their daughter, Mary-Helen, and son-in-law, Andy Haarklau, who have become co-owners and moved back to Grand Rapids with their young family.

The youth and energy of the new generation of Industrial Lubricant excites Jim and Kathy. And it's obvious that they feel confident in the company's future success because "we saw how necessary it is to develop a culture with our employees."

The Hoolihans envision a continued fit between the Iron Range and Industrial Lubricant "with the work ethic on the Range and the knowledge of the people and business in the area it works well to be in Grand Rapids," explained Jim. "It's world-class knowledge and world-class industry here."

For more information about Industrial Lubricant, visit [www.inclube.com](http://www.inclube.com).



Jerry Hoolihan (middle) is pictured providing service on a drag line on the Iron Range in the 1940s.

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**GUEST COLUMN**

**RICK NOLAN**  
U.S. Congressman



MARK SAUER/MESABI DAILY NEWS

Rick Nolan during an interview at Mesabi Daily News.

**‘The Range  
is our  
home. And  
mining is  
what we  
do!’**

As a born and bred Cuyuna Ranger, I spend a lot of time talking mining with my colleagues out in Washington. I tell them that up on the Range, mining is who we are. It's in our blood, our history and our way of life.

I explain that mining is about jobs. Mining is a big job that drives thousands of jobs. Two-thirds of all the iron ore used to make steel in the United States is mined right here — a capitol investment of more than \$4 billion dollars. Mining puts food on tables, kids through college and money in the bank.

I share a little history. Mining's "Greatest Generation" won World War II. Mining's unions created a middle class that's built thriving businesses, schools and communities.

I invite them to join all of us, and the thousands of visitors from all over the nation, who enjoy our clean air, clear lakes, pine forests, hunting, fishing and camping. No one appreciates the great outdoors more than us Rangers. It's a big part of the reason we live here, and we will never do anything to jeopardize our environment. I also remind our friends from out of town that the Range is our home. And mining is what we do.

We are sitting on one of the largest iron ore deposits on the planet — and, geologists tell us, quite possibly the world's deepest untapped reserves of strategic minerals critical to America's future technology development, consumer products industry and national security for the next century and beyond.

So what does the future hold for mining and for the Range families, communities and businesses that depend on it?

I'm convinced the future is bright. Just how bright will depend on our success in meeting four big challenges I've put at the top of my agenda as congressman.

**Grow Jobs and Protect the Environment**

We need to recognize that we are long past the days of having to choose between good mining jobs and a clean environment. We have the brains and the technology to do both.

Since taking office, I have toured every one of our major Range mining operations, meeting with company leaders and workers alike. And they all tell me the same thing: "We love our jobs and we love living here in God's country. And we won't do anything to harm either one."

The controversy over haze in Voyageurs National Park and the Boundary Waters is a case in point. The mining companies are willing to do whatever is necessary to help reduce haze. But installing new haze prevention technologies and equipment requires study and time. Those of us who are not mining experts need to realize that "one size does not fit all."

When I met with top EPA officials in Chicago this spring, I urged them to allow us a few more months to get it right. EPA relented, and the courts have since upheld our position. We will never back down from our national environmental goals, and we will deal with haze as fast as we can — the right way.

**Speed Up Permitting**

The permitting process is broken — overwhelmed by needless delays costing thousands of jobs and billions

of dollars in economic development. Minntac, Keetac and Mesabi Nugget are waiting on federal or state permits for projects requiring enormous new investments.

In meetings at the highest levels of the Environmental Protection Agency, the U.S. Forest Service and the U.S. Army Corps of Engineers, I have repeatedly pointed out that no business can be expected to invest and plan for the future when permitting requirements are subject to so many unnecessary and unpredictable delays and changes.

I am supporting federal legislation to streamline the permitting process, while working to assure strict, fair and timely environmental review.

**Improve Highways and Infrastructure — Without Undue Interference**

The controversies surrounding the Highway 53 rerouting project and the Highway 169 improvement project — both of which involve mining communities and access to mining resources — illustrate what happens when the state and federal governments get in the way of common sense.

Earlier this year, I invited Minnesota's new transportation commissioner, Charlie Zelle, and his top planning staffers to join me in visiting both sites, and meeting with local business and civic leaders and residents of the Virginia-Eveleth metro Range communities. Then I traveled to Chicago to meet with EPA officials and quite frankly tell them that the agency was overreaching in becoming involved with issues best left to highway planners.

As a result, EPA consented to bow

out of both the Highway 53 and 169 projects, and Commissioner Zelle has agreed to take the so-called 'Western Route' option for Highway 53 off the table. The point is, state and federal agencies can be good partners as we improve infrastructure around our mining communities. But nothing should replace good old-fashioned common sense.

**Research & Education for the Future**

Mining has rapidly evolved into a highly complex 21st Century industry, and we need to build a system of world-class education and research — right here on the Range — to support the industry, protect the environment and meet America's national security and consumer needs. Institutions like Mesabi Tech, Itasca Community College, NRRI and UMD are doing groundbreaking work, and we can do more. Much more.

I will be visiting with Rangers in the coming months to discuss some big ideas on how we move forward.

And finally . . .

I will never forget my Range roots and I'm proud of the role Minnesota's Iron Rangers played in building America and helping to win two World Wars. I'll work my fingers to the bone to insure we continue to have a vibrant mining industry that provides a solid standard of living for the hard working families of the Iron Range. And I'll work just as hard to protect the great outdoors we all enjoy.

*Rick Nolan is Democratic 8th District U.S. representative. His home is in the Brainerd area.*

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# DOM-EX THROUGH THE DECADES



KELLY GRINSTEINER/HIBBING DAILY TRIBUNE

Dale Witzman and Josh Huhta hook a wheel motor for a 240-ton haul to a crane in order to move it. The pair will dismantle and refurbish it. A completed one rests near it.

## Goes global by joining H-E Parts International

**KELLY GRINSTEINER**  
HIBBING DAILY TRIBUNE

HIBBING — It was more than three decades ago now that the late Dave Ellefson borrowed money from his father, and with the help of Dan Motter, began a business that focused on the recycling of mining equipment.

Ellefson was working at a local salvage yard at the time, and when he shared his idea of finding ways to repurpose surplus mining equipment with his superiors there, it didn't go very far.

"It was kind of a new concept — all this surplus mining equipment and what do they do with it," said Dana Ellefson, Dave's brother and longtime business partner.

"No one focused on recycling it, and when he approached the company, they really didn't want to get their hands dirty with used mining equipment, so Dave and Dan said why don't we do this."

And they did. They founded Dom-Ex in Hibbing. That was roughly 33 years ago.

"It had some really hard years at the beginning, and then it was kind of steady," recalled Ellefson, who's been there 29 years and currently serves as general manager of the Dom-Ex division. "It was a matter of doing the right thing, and doing it over and over

again — providing good customer service, good products — and it became a nice success story of something that worked out."

The Dom-Ex business model has remained the same for years.

"We go to the mines that have surplus. We buy it. Relocate it from wherever it may be in the world — some which we buy from the Range. We bring it here. We dismantle it, identify it, refurbish it and put it into inventory," Ellefson explained. "... We've done other things over the years, but the biggest focus has been on providing used and refurbished parts."

The Dom-Ex brand gained a reputation, as did the company and its owners. Many were saddened by Dave's untimely passing in 2007.

"He was the heartbeat (of this company)," said Ellefson. "He is still the heartbeat of what we're all about."

Dom-Ex no longer stands alone. In 2006, the company was acquired by H-E Parts International, a global supplier of new aftermarket parts, rebuilt and remanufactured components and used equipment to the global mining, quarry and heavy construction industries.

But the name was retained, changing slightly from Dom-Ex Inc. to Dom-Ex LLC.

Ellefson said the move was partially Dave's way of transitioning out of the business he had helped build while still taking some equity with him. Dave stayed on with H-E Parts Dom-Ex at the time of the deal, but passed

away before he fully retired.

Being acquired by H-E Parts International allowed Dom-Ex to have access to new capital, to foster rapid growth

SEE DOM-EX, PAGE 35



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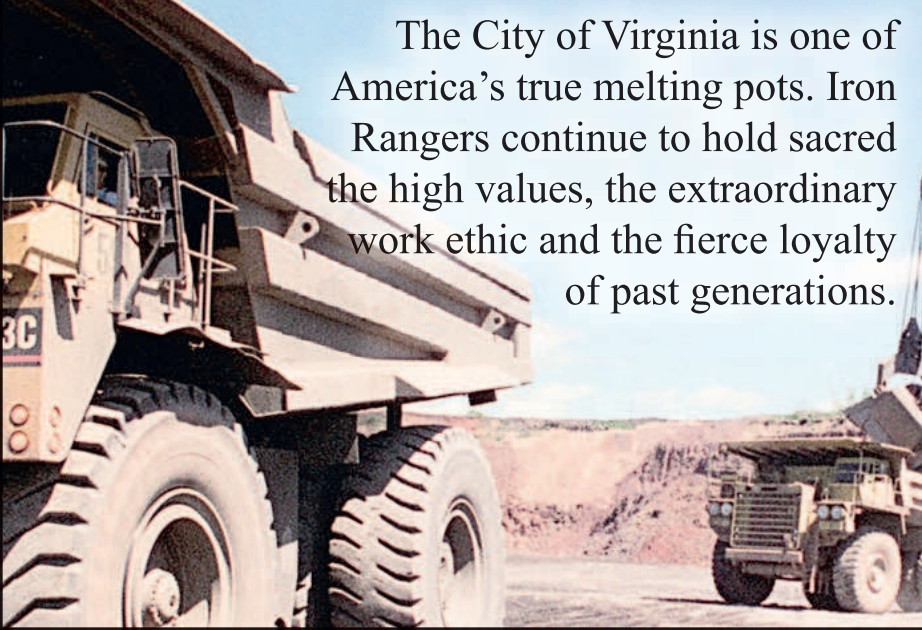
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Josh Huhta carefully watches as a wheel motor for a 240-ton haul truck is moved by crane in Dom-Ex LLC's rebuild and service center located in Lees Central Business Center in Hibbing.

KELLY GRINSTEINER/HIBBING DAILY TRIBUNE

## DOM-EX

FROM PAGE 34

and to benefit from the marketing and supply synergies of being associated with sister companies under the H-E Parts banner. Today, H-E Parts International has at least seven operations world wide.

In August, H-E Parts International established and launched H-E Parts Mining, which merged and now represents Crown Parts & Machine of Billings, Mont., and Dom-Ex LLC of Hibbing. The company created H-E Mining to provide a broad and efficient source of new, used and rebuilt parts and components for mining and construction equipment.

Consolidating the growing range of products and brands offered by the two companies makes H-E Mining one of the largest independent sources of aftermarket parts, components and maintenance services in the industry, according to company officials.

"H-E Parts Mining brings Crown and Dom-Ex products together under one roof. Our customers will benefit from the combination of over 65 years experience, customer service and product innovation," stated Mike Coffey, chief operating officer (COO) of H-E Parts Americas, in a company release. "The mining industry now has access to a one-stop source for new, remanufactured, certified rebuilt and used products in support of mining trucks, shovels, excavators and support equipment."

Scott Alexander, president of H-E Parts Mining, said customers had been asking for a streamlined solution for acquiring both Crown and Dom-Ex products from the same company.

"H-E Parts Mining is that solution," he stated. "Our unified company simply fulfills their request."

H-E Parts Mining provides in-house engineering, manufacturing and remanufacturing of aftermarket components for heavy haul trucks, electric shovels and support machinery. This company also provides quality used, refurbished and OEM (original equipment manufacturer) surplus new replacement parts as well as used equipment sourcing, asset disposal and equipment relocation and rebuild services.

H-E Parts Mining is headquartered in Billings, Mont., the city in which Crown Parts & Machine is located.

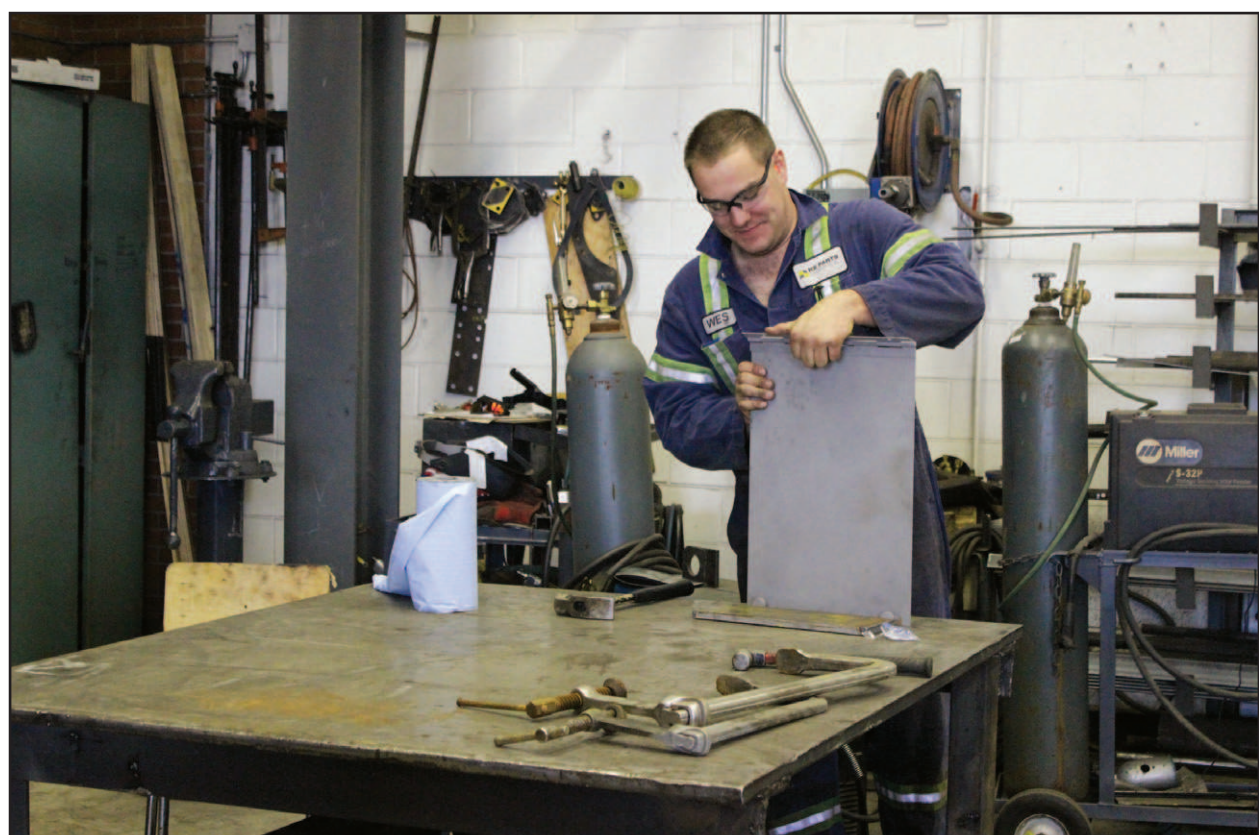
Like Dom-Ex, Crown Parts and Machine is also a 30-plus year successful business. It was acquired by H-E Parts International in 2008.

Introducing the Crown division is a main aim for H-E Parts Mining Dom-Ex right now, according Shane Pence, North Central District Manager for H-E Parts Mining.

Crown is a manufacturing facility that focuses on providing new, remanufactured or certified rebuilt parts and components. "A lot of it they manufacture themselves," said Pence, who's office is in Hibbing. "Some are distributed parts that we get from other suppliers that the OEMs might get them from, but we're able to offer customers a discounted rate for the same quality."

Dom-Ex, which currently employs about 40 people, serves mainly as a surplus agent. This division sources — buys, rebuilds then sells — equipment parts and components.

"Whatever the customer needs, and we'll service it world wide," said Pence. "We buy surplus equipment, tear it down, inspect it ... it all depends on the customer's needs. We really do span a wide spectrum of needs and how



Wes Lorange pounds a piece of metal back into shape at the Dom-Ex LLC rebuild and service center located in Lees Central Business Center in Hibbing.

they're provided for." Ellefson said he sees a lot of benefits bringing Crown and Dom-Ex together under H-E Parts International.

"It's a new venture of bumper-to-bumper services," he said. "We have 10 companies to tap, and every one has a slightly different offering. Anything from a mining truck to a big haul truck or shovel, we could probably be a cost-savings alternative for them."

Pence said one of their strategies is to develop and grow relationships here on the Range. They aim to provide customers with a superior alternative to traditional aftermarket channels by combining quality that meets or exceeds OEM specifications with competitive pricing and excellent customer service.

"We have a local presence here, so why not try to develop it more in our own backyard and grow it from there," he said.

Sales on the Iron Range are only about 5 to 8 percent of Dom-Ex's business, according to Ellefson.

"It's a small percentage, but we are trying to raise that," he said. "... It's growing, but we're definitely all over the map. There's not just one area that accounts for most of our business. It's really spread out."

H-E Parts International is trying to have a presence anywhere there's

major mining activity — be it gold, copper, coal or taconite. It has locations in Australia, Malaysia, Chili, Canada and in the United States. The various locations also allow H-E Parts Mining to secure equipment from other areas in the world and sell locally.

"Having these other

operations really allows us to offer a lot of value, offer a lot of opportunities and other solutions to meet customers' needs that they might be getting them from somewhere else or at least giving them another option," said Pence. "We will not have the

SEE DOM-EX, PAGE 36

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# DOM-EX

FROM PAGE 35

solution for everything, but we have a lot of opportunities and solutions for a lot of things. It's just a matter of showing the customers that we can provide them lower cost and prolonged life alternatives to keep the mines going. We want to do that locally, and really want to get a stronger foothold here."

Right now the taconite mines are in a cost savings mode, according to Pence, due to the drop in pricing per ton for pellets. And while it has caused a slight dip in the level of sales this year, he said it can also be viewed as a positive.

"There is a big cost-savings crunch, so the mines are doing everything they can to minimize spending, which really gives us an opportunity," he said. "... It gives us the opportunity that when they do have a need, we can go in there and try to fulfill that need."

Pence believes the local mines will do well over the next few years.

"They will actually be alright. They will be steady, which means there will be opportunities," he said. "They will be looking for the best way they can save money, keep their fleet running healthy and minimize as much downtime as they can. Being local, hopefully we can capitalize on that. We are here and can facilitate their needs."

And Dom-Ex will do just that while leveraging all of H-E Parts Interna-



KELLY GRINSTEINER/HIBBING DAILY TRIBUNE

**Richard Wilson is doing some welding repairs to a Caterpillar D-11 dozer frame in Dom-Ex LLC's rebuild and service center located in Lees Central Business Center in Hibbing.**

tional's sister companies, added Ellefson.

"Collectively we are a stronger business unit," he said. "With the expertise of Crown, what Dom-Ex does and has traditionally done, and tapping the expertise of all our sister companies

together, we can better serve and fulfill customers' needs versus what just one company can do individually."

Looking back, Ellefson said there's a sense of pride in knowing that a small, home-grown business not only has

a mutually beneficial relationship with the mines on the Iron Range but now with the worldwide market.

"We reach all regions of the world," he added. "... I've always felt good about that."

## H-E PARTS INTERNATIONAL'S GLOBAL FOOTPRINT:

- ❑ H-E Parts CME (crushing and mining equipment), Perth, Australia. Focus: mining, quarrying and materials processing.
- ❑ H-E Parts Birrana, Adelaide, Australia. Focus: Mining — mobile equipment
- ❑ H-E Parts Morgan, Sanitago, Chile, and Richmond, B.C., Canada. Focus: Mining, oil and gas and forestry.
- ❑ H-E Parts Mining (representing Crown and Dom-Ex brands), Billings, Mont., and Hibbing, Minn. Focus: Mining — mobile equipment
- ❑ H-E Parts B&G Machine, Seattle, Wash. Focus: Heavy diesel remanufacturing.
- ❑ H-E Parts Distribution, Atlanta, Ga. Focus: Heavy construction — mobile equipment
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**MINE II**

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# LONG REACH OF IDEA DRILLING



Drill operator Josh Banks explains how the drill pipe is assembled.

MARK SAUER/  
MESABI DAILY  
NEWS

## Virginia company does a lot of exploratory drilling

**BILL HANNA**  
MESABI DAILY NEWS

ON BIRCH LAKE ROAD — The ride is bumpy and curvy, slow and methodical.

Even passenger trucks romanticized in television commercials as defying routes resembling a washboard, with Grand Canyon-like ruts and mini-boulders, must respect a road less traveled.

After all, no one ever said exploring is supposed to be easy.

But on a picture-postcard mid-October autumnal day in northeastern Minnesota, the rough route to this exploratory site of IDEA Drilling, about 15 miles east of Ely, is a pleasant journey.

The sunshine is warm and radiant; the sky a glorious textured and brilliant blue; the leaves, rustling in a welcome non-stop breeze, proudly

strut their stuff and show off a bright rustic rainbow of fall colors.

The day's weather is a godsend for IDEA Drilling workers, who are near completion of a job just off Birch Lake Road on leased state land.

"This is nice," said one of IDEA's workers. "It can get pretty rough and cold in the winter." Like 40-below zero. And that can be temperature alone, not factoring in wind-chill. Meanwhile, their protection from the

elements is the heavy-duty outerwear they don and bundle up in and a makeshift structure cloaked in tarps.

At this site, they are bringing up core samples from 3,500 feet below the surface for study by Twin Metals' geologists, who will determine the richness of the minerals. Twin Metals, with offices in the Twin Cities, Ely and Babbitt, is currently in the pre-feasibility study phase of its Iron

SEE IDEA, PAGE 38

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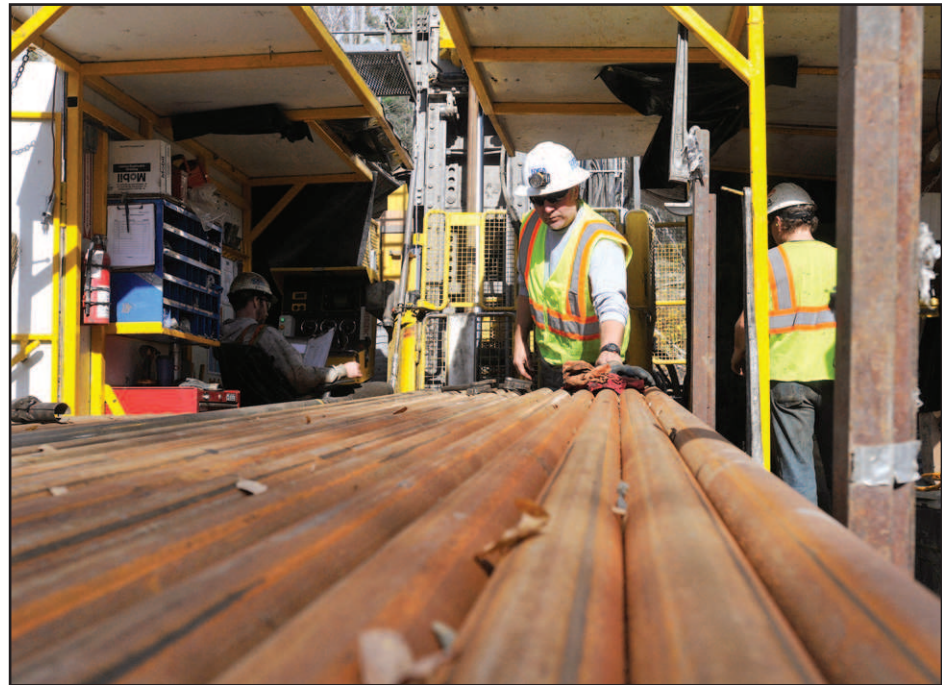


MARK SAUER/MESABI DAILY NEWS

Marty Vadis, former director of the Department of Natural Resources Land and Minerals Division and now working with IDEA Drilling, left, and Ron Burns, general foreman, are pictured at the IDEA drill site.



Red pipes indicate previous drill sites.



Drillers Bruce Ziminske, Josh Banks, and Jim Snodgrass cut through more than 3,500 feet of rock at a test site near Ely.



Core samples from 3,577 feet are marked and placed in a box for geologists to inspect.

**IDEA**

FROM PAGE 37

Range mining project. The company is looking at three mineral deposits in the vast and valuable Duluth Complex — the Maturi, Spruce Road and Birch Lake sites.

The Twin Metals' job estimates are as big as its projects. The company

anticipates:

- By 2016 more than 1,300 long-term will be on the company's payroll.
- From 2012 to 2016, more than 5,000 construction jobs will be created as the projects move forward.
- For every one mining job, another 1.8 spin-off jobs will also be realized.

SEE IDEA, PAGE 39



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Bruce Ziminske and Jim Snodgrass keep an eye on drill operations as they bore through the last 11 feet of a test hole.

MARK SAUER/MESABI DAILY NEWS



Bruce Ziminske checks drill pipe on a work site near Ely. The drill is capable of going more than 8,000 feet deep but most test holes are between 3,000 and 4,000 feet.

## IDEA DRILLING:

- ❑ Founded by Dick and Pam Backstrom in 1987 in Montana. Now headquartered in Virginia.
- ❑ Previously known as Northwest Drilling, an underground drilling company.
- ❑ Started with one drill rig.
- ❑ Moved to Minnesota in 1999 to pursue taconite drilling opportunities.
- ❑ Hired first two employees in 1999 who are still with the company: Brian McCabe, who is vice president of operations; Jim Hardy, who is shop supervisor.
- ❑ In 2000-2001 started drilling with PolyMet and Franconia copper/nickel/precious metals projects.
- ❑ Drilled 61,000 feet in 2003.
- ❑ Drilled 349,000 feet in 2007.
- ❑ Drilled 424,000 feet in 2008.
- ❑ Drilled 458,000 feet in 2010.
- ❑ Bill Travis joined company as president in 2010.
- ❑ Built 7,200 square foot cold storage facility in Virginia in 2011.
- ❑ Currently has a fleet of 19 drilling rigs.
- ❑ Employment ranges from about 85 to 150, depending on business.

**MINE II**

## IDEA

FROM PAGE 38

IDEA Drilling, which is headquartered in Virginia, is benefitting from Twin Metals' work during this exploratory stage of their venture. Some of IDEA's rigs (they have 19) and crews (they employ about 130) are involved in helping prepare Twin Metals to begin its copper/nickel/precious metals operations.

And most of their employees live on the Iron Range. On this afternoon off Birch Lake Road, Josh Banks of Hoyt Lakes, Bruce Ziminske of Soudan, Jimmy Snodgrass of Hoyt Lakes and Joe Johnson of Babbitt were working the CT 20 rig, which costs about \$1 million fully outfitted.

The four-man crew will work 12 hours and then give way to a new crew for the next 12 hours. When an area is drilled, it's a 24-hour/7-day job. A project supervisor is also on the job.

On this site, they are working a depth of 3,577 feet. The company has rigs capable of drilling down to 9,000

feet.

IDEA does work in several other states, including Montana, Colorado, Wisconsin, Michigan, Iowa, South Carolina and Arizona.

The company has performed diamond core drilling services since 1997 for copper, nickel, platinum, palladium and gold. It also does core drilling for reserve definition for taconite mines. Company President Bill Travis said the firm has plans to diversify its business through expansion to new areas of development and to customers outside of mining.

That's quite a success story for a company that was founded in 1987 in Montana by Dick and Pam Backstrom. The couple had one drilling rig at the time. They relocated IDEA Drilling to Minnesota in 1999; hired Travis as president in 2010; and built a 7,200-square-foot headquarters and storage facility in Virginia in 2011.

In 2012, the company made another key hire — former director of the Department of Natural Resources Land and Minerals Division Marty Vadis, who had retired from the DNR.

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MARK SAUER/MESABI DAILY NEWS

Drill operator Josh Banks works the controls on a drill as it gets close to 3,600 feet on a work site near Ely.



An IDEA Drilling crew works on a core sample at a test site near Ely. Crews have cut more than 500 test holes in the area looking for nonferrous metals.

## IDEA

FROM PAGE 39

Vadis is a key team member, Travis said, especially regarding environmental issues.

Vadis is a strong advocate of both mining and the environment. He says they can be compatible, not in conflict.

Vadis points with pride to a current unit from a company in Sweden that is being tested by IDEA Drilling, which significantly lowers the noise level of drilling rigs. Noise is the biggest concern and complaint of property and cabin owners who are within earshot of drilling sites.

"They (the company) are testing the experimental unit here and hoping to make it a commercial product. We've had four engineers from Sweden on site," Vadis said.

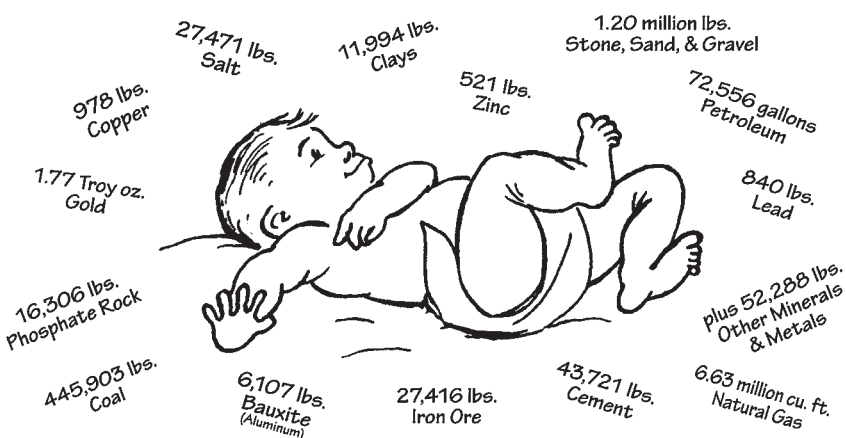
Vadis and Ron Burns, general foreman, then showed off previous drilling areas that have been reclaimed by nature, with the help of the company.

"We were drilling here a year ago," said Burns. "It's already starting to re-vegetate. It comes back really quick."

That site was not far from the one currently being drilled. The remote location also has several pipes painted red, signifying drill holes now abandoned and sealed for protection.

"We leave a very small footprint," Vadis said.

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# DULUTH COMPLEX



A gigantic nickel smelter is shown in operation in the Nadezhda factory near Norilsk, Russia. Russia is one of the world's largest producers of nickel.

SUBMITTED



A worker drills through ore that has several precious metals, including platinum, underground at the Impala Mines, in the Bushveld mining district in South Africa.

## One of largest mineral deposits ever

**CHARLES RAMSAY**  
MESABI DAILY NEWS

DULUTH — By any method that the Duluth Complex is rated, several experts say the nonferrous potential embedded in the geologic region makes it the largest mineral deposits ever.

The complex stretches from near Duluth northeast and north to near the Canadian border. Copper, nickel and precious metals group elements (platinum-palladium) are a major part of minerals in the complex. Two companies, PolyMet and Twin Metals, are preparing for production or getting near that goal after

environmental review and permits are obtained. More companies are busy exploring other locations for deposits.

"I have no doubt this

will prove to be the biggest undeveloped deposit," said Jim Miller, a geology professor at the University of Minnesota Duluth.

Another researcher, George Hudak, minerals division director at the Natural Resources Research Institute in Duluth, agreed. "This

is the largest untapped copper-nickel deposit in the world," he said.

• COPPER: According to Miller, two deposits in Chile are the largest,

Chuquicamata and El Teniente, with the Duluth Complex third-largest.

• NICKEL: Top global deposits are at Sudbury, SEE MINERAL, PAGE 42

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# MINERAL

FROM PAGE 41

Ontario, Canada and at Norilsk, Russia. Duluth comes in third.

• PMG (Precious metals group): Bushveld in South Africa is tops in platinum production and deposits, while Norilsk, Russia is the leading palladium producer. Duluth comes in third.

Although there has been some nonferrous mineral exploration in Minnesota in the 1960s to 1980s, a number of factors have come together to bring the Duluth Complex to the forefront of nonferrous deposits to be developed. Increasing population helping increase demand, the ongoing depletion of known and developed world resources, and the advancement of technology in using a cleaner, safer process to extract minerals, have all combined to put Duluth at the top, said Peter Clevenshine, Minnesota Department of Natural Resources Lands and Minerals Division assistant director.

"It's just too large not to be developed," he said. "Copper and nickel are resources we use all the time," Miller explained. "We can always reuse this material." Precious metals have become more important for catalytic converters on vehicles and other uses. The lower percentage of sulfide in the Duluth Complex, at 1 to 2 percent, is much lower than copper mined in the western U.S. Closed-

circuit hydrometallurgical methods, as compared to older-style, polluting smelter methods used in processing the nonferrous metals, are "a very efficient process," Hudak said. "That's a big differentiating process."

The U.S. still has huge reserves of lower-quality iron ore, taconite, but other countries such as Brazil and Australia have higher ore grade, much larger reserves and cheaper means of producing. It costs about \$30 a ton to process iron ore in Brazil. It costs about \$55 a ton on the Range, which then is shipped elsewhere.

"The cost is much higher for us," said Don Fasnacht, director of the Center for Applied Research and Technology Development at NRRI.

Another consideration for developing the Duluth Complex is for national security. Dependence on materials not within American borders can be harmful to the country, he said, "As a U.S. citizen, I think I'd want to have control over our resources," Fasnacht added.

One mineral, nickel, is especially crucial for steelmaking and other processes.

"This deposit holds a significant percentage of our domestic resources for these same metals," said Frank Ongaro, executive director for MiningMinnesota, a trade group for nonferrous mining. He noted that for nickel, "we are 100 percent dependent on foreign countries."

For copper, Americans consume twice as much

## LARGEST NONFERROUS DEPOSITS IN THE WORLD

### COPPER

1. Chuquicamata in Chile
2. El Teniente in Chile
3. Duluth Complex in Minnesota

### NICKEL

1. Sudbury in Ontario, Canada
2. Norilsk in Russia
3. Duluth Complex in Minnesota

### PLATINUM-PALLADIUM

1. Bushveld in South Africa
2. Great Dyke in Zimbabwe
3. Norilsk in Russia
4. Duluth Complex in Minnesota

Source: UMD Department of Geological Sciences

## MINE II

as is produced in the country, he said.

Research can help find ways to keep Range iron ore cheaper and more competitive, in taconite aggregate sales, and two methods already in use, Mesabi Nugget almost-pure iron nuggets, and reuse of iron tailings piles by Magnetation, he said.

Already, there has been much interest and involvement in the Duluth Complex from around the world. "We have a global marketplace, with global investment into Minnesota," Ongaro said.

Mining giant Antofagasta of Chile is partnering with Twin Metals, while Glencore of

Switzerland is helping PolyMet with resources.

The three major nonferrous mining firms in the complex, PolyMet, Duluth Metals (which controls 60 percent of Twin Metals) and exploring firm Teck American, are all Canadian based.

Minnesota environmental standards and technology will help to produce high-quality products, compare with other countries which are heavy polluters, Miller said. "We have the technology to show the rest of the world how to do it right."

And the time to develop the Duluth Complex, he observed, for high-paying jobs and the state economy, is now.

## NONFERROUS METALS PRODUCTION AND RESERVES

### COPPER

(in thousands of metric tons)

| Country      | 2011  | 2012  | Reserves |
|--------------|-------|-------|----------|
| 1. Chile     | 5,260 | 5,370 | 190,000  |
| 2. China     | 1,310 | 1,500 | 30,000   |
| 3. Peru      | 1,240 | 1,240 | 76,000   |
| 4. U.S.      | 1,110 | 1,150 | 39,000   |
| 5. Australia | 958   | 970   | 86,000   |
| 6. Russia    | 713   | 720   | 30,000   |
| 7. Canada    | 566   | 530   | 10,000   |
| 8. Mexico    | 443   | 500   | 38,000   |

### NICKEL

(in thousands of metric tons)

| Country                                     | 2011 | 2012 | Reserves |
|---|------|------|----------|
| 1. Russia                                   | 267  | 270  | 6,100    |
| 2. Canada                                   | 220  | 220  | 3,300    |
| 3. Australia                                | 215  | 230  | 20,000   |
| 4. New Caledonia (French Pacific territory) | 131  | 140  | 12,000   |
| 5. Brazil                                   | 109  | 140  | 7,500    |
| 6. South Africa                             | 44   | 42   | 3,700    |
| 7. U.S.                                     | NA   | NA   | 7        |

### PRECIOUS METALS GROUP

(in thousands of kilograms)

#### PLATINUM PALLADIUM

| Country         | 2011  | 2012  | 2011 | 2012 | Reserves |
|-----------------|-------|-------|------|------|----------|
| 1. South Africa | 145.0 | 128.0 | 82.0 | 72.0 | 63,000   |
| 2. Russia       | 25.0  | 26.0  | 86.0 | 82.0 | 1,100    |
| 3. Canada       | 7.0   | 6.5   | 14.0 | 13.0 | 310      |
| 4. U.S.         | 3.7   | 3.7   | 12.4 | 12.2 | 900      |

Source: U.S. Geologic Survey January 2013

## MINE II

There is a window now of about 50 to 100 years to develop complex to mine the ore, he said, as the technology, skilled workforce and infrastructure are present

on the Range already, while taconite mining is still going on.

"It's not a matter of if," Miller said of mining the Duluth Complex. "It's a matter of when."



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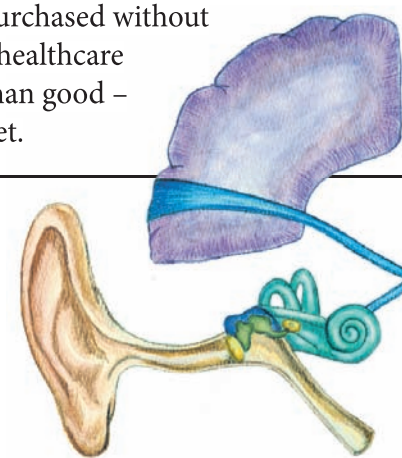


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## CONFRONTATION & COLLABORATION

# Range had its share of union strife; but now has more unity

## ‘Wake up all Wage Workers’

ANGIE RIEBE  
MESABI DAILY NEWS

*“The Miners of the Iron Range Knew there was something wrong They banded all together, yes, In One Big Union strong. The Steel Trust got the shivers. And the Mine Guards had some fits.*

*The Miners didn’t give a damn. But closed down all the pits.*

*“It’s a long way to monthly pay day.*

*It’s a long way to go  
It’s a long way to monthly pay day,  
For the Miners need the dough...*

*“... Wake up all Wage Workers,  
In One Big Union strong.  
If we all act unified together.  
We can right all things that’s wrong.”*

This song was reportedly written in jail by an anonymous miner in 1916. It tells the story of the second most notable Iron Range strike.

While at the time the miners did band together — with support from an organization known as the “One Big Union” — their efforts were not

immediately met with success.

Those early striking Iron Range miners would go back to work three months after the strike erupted under nearly the same conditions they had left.

But their fighting spirit to obtain such things as safer working conditions and better pay — and their battle cry of, “We’ve been robbed long enough!” — paved the road to righting those wrongs for future generations, and biting the hand that had robbed them of the products of their labor.

The Iron Range was far from immune to the labor unrest that escalated throughout the country during the first couple decades of the 20th century. The fight for labor rights that remains important to the area today began in 1907 with a legendary struggle for workers’ rights and fair wages.

Many Mesabi Range miners were European immigrants, recruited by companies including the Oliver Iron Mining Co., a subsidiary of United States Steel Corporation.

Their living and working conditions were poor, and mining com

SEE WORKERS, PAGE 44

## ‘I’ve seen that cooperation work really well’

ANGIE RIEBE  
MESABI DAILY NEWS

There will always be differences between unions and mining companies on the Iron Range. That’s inherent in the sometimes difficult, always interesting relationship.

But the current era is much more cooperation than confrontation, which wasn’t the case decades ago, when labor strife was more common and at times quite unruly.

The Iron Range Alliance, formed in February of this year, is reflective of what seems to be an understanding that labor and management need to work better together to benefit each other, especially in a global economy.

The alliance is a joint effort between the United Steelworkers and U.S. Steel. It has a mission of promoting the importance of the company’s iron ore business to the state.

Iron Range Resources & Rehabilitation Board Commissioner Tony Sertich, who was a state legislator for a decade, said the alliance is a good example of improved relations developed through more listening and

collaboration by mining companies and the unions.

“U.S. Steel is working with Steelworkers on a host of issues that the companies and union agree are important for the future of mining in Minnesota. They are working cohesively and working with elected officials on state, federal and local levels and on a unified level,” Sertich said.

Bob Bratulich, United Steelworkers District 11 director, is a big supporter of the alliance.

“The Iron Ore Alliance is focused on protecting existing jobs, creating new jobs in the years ahead, while being ever mindful of our responsibility to the environment,” he said at the launching of the initiative last February.

Bratulich and U.S. Steel General Manager of Governmental Affairs Chris Masciantonio joined with Gov. Mark Dayton at a news conference to announce the alliance.

“These are the type of good-paying, family-sustaining jobs so important to a healthy, vibrant economy,” he said at the event.

SEE COOPERATION, PAGE 44




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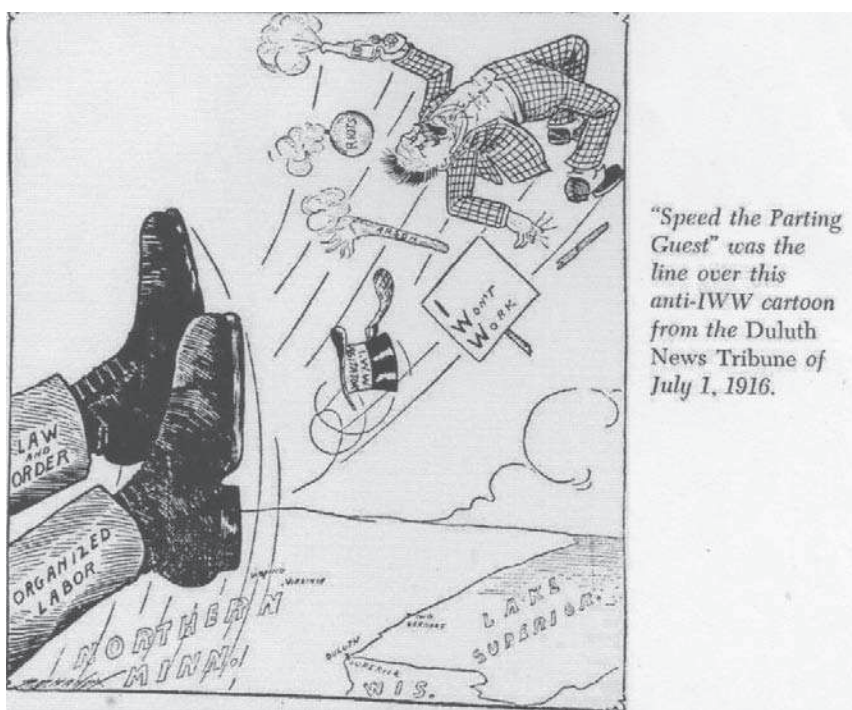
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"Speed the Parting Guest" was the line over this anti-IWW cartoon from the Duluth News Tribune of July 1, 1916.



"Somebody Has Got to Get Out of the Way!" From Solidarity, August 19, 1916

## WORKERS

FROM PAGE 43

panies often openly discriminated against immigrant miners by giving them the most dangerous and lowest paying jobs. Immigrants, who had little money, did not speak English, and were far away from their families were easily exploited.

Many, however, had come from Finland, where socialist and labor movements were well established. Thus, there had been a history of small, spontaneous strikes among Iron Range miners.

But by 1907 — some 15 years after iron mining began on the Range — workers had grown increasingly weary of ethnic discrimination and dangerous working conditions, low wages, and long work days, and the immigrant miners took part in their first major strike.

Virtually ignored by the American Federation of Labor, Iron Range workers employed the assistance of the Western Federation of Miners, which had been involved in labor relation strikes in western states.

In response to repeated requests by local Finnish socialists, the WFM sent its first organizers to Minnesota. The strike, however, happened sooner than WFM union leaders had hoped when on July 16, dock workers in Duluth and Superior, Wis., went on strike.

The dock strike tied up iron ore shipping, and miners on the Mesabi

Range had to act quickly or risk that their strike would be overshadowed. Three days later, on July 19, the miners presented their demands to the Oliver Iron Mining Co., including for safer working conditions, a minimum wage, and an eight-hour work day.

About 200 workers were fired immediately. The next day, July 20, the miners went on strike.

More than 10,000 miners participated — many of whom were Finnish. It would be their first experience with an organized strike.

The strike, ultimately, was considered peaceful, despite occasional violence. On Aug. 10, 19 miners were accused of rioting and imprisoned for a month. Local businesses additionally denied strikers credit. Strikers responded by organizing consumer cooperatives. However, the cooperatives were shut down when wholesalers, pressured by mining companies, stopped supplying them.

Minnesota Gov. John A. Johnson stayed impartial and did not use the state militia to suppress the strike. But the strike would turn to failure when few leaders emerged to rally effective support, and Oliver hired numerous strikebreakers — bringing them in from Europe.

By the end of the strike, the company had spent \$255,000 on special deputies and strikebreakers.

The strikers urged strikebreakers to join their cause, and a few hundred did, but it was not enough. Finnish strikers held out the longest, but they, too, would give in and return to work

by September.

After the strike, hundreds of workers, particularly Finns, were black-listed and blamed for the strike, even those who had not participated.

While the miners' demands were not met, their courageous strike launched a legacy of assertive labor activism on the Range.

As the 1910s progressed, Iron Range miners continued to struggle for recognition.

They were paid at the time by ore mined instead of hours worked and charged for such things as fuses, powder and blasting caps used in the extraction of ore. Living costs were high due to the need to import many basic supplies. According to some estimates, living expenses were more than 20 percent higher locally than in the Twin Cities.

Miners began rebelling.

U.S. Steel, however — known for its immobile anti-Labor stance — used a variety of anti-union techniques ranging from keeping an excess labor supply on the Range, to using an extensive network of spies and blacklists to ban Finns from working there.

But the unrest could not be tamed forever.

In June 1916, an Italian worker at the St. James underground mine in Aurora opened his pay envelope and became enraged over his meager earnings under the corrupt contract system. By the time other miners arrived at the St. James for the night

shift, production at the mine was halted. All pits in Aurora were soon shut down as the strikers proclaimed: "We've been robbed long enough. It's time to strike."

Forty striking workers from Aurora, along with their families, then marched through other mining communities on the Iron Range and discontent unfurled.

By the end of June, nearly 10,000 mine workers were out on strike.

Frustrated by previous experience with the Western Federation of Miners and having been ignored by the Minnesota State Federation of Labor, the disorganized strikers appealed to the Industrial Workers of the World for assistance.

"Wobbly" organizers — known for their "One Big Union" concept — arrived to help local strike leaders draw up a list of demands: An eight-hour working day timed from when workers entered the mine until they were outside; a pay scale based upon the day worked; pay days twice a month; immediate backpay for hours worked upon severance; abolition of the Saturday night shift; and abolition of the contract mining system.

With a majority of the strikers being non-English speaking European immigrants, IWW and local leaders conversed with the workers in their native languages — Polish, German, Croatian, Finnish and Italian.

Without asking for union recognition or IWW affiliation, the strikers closed the mines that had been ship

SEE WORKERS, PAGE 45

## COOPERATION

FROM PAGE 43

U.S. Steel employs 1,864 people at its Minntac and Keetac operations on the Range, with about 1,700 of them Steelworkers.

Some key issues being addressed by the alliance include permitting, transportation, workforce and education.

Frank Ongara, executive director of MiningMinnesota, an advocacy group for strategic metals development on the Iron Range, said more cooperative relations between labor and management in mining "was not a direct line result, but something that morphed."

The former director of the Iron Mining Association, who assumed his MiningMinnesota position in 2006, said he saw a change in relations gain momentum from 2000 to 2002, being forced in a big part by the troubling circumstances of a big downturn in

mining.

"We had the National Steel bankruptcy. EVTC shut its doors. And, of course, LTV closed permanently.

"It was preservation ... perhaps by default some of it happened. But we were united against foreign imports and dumping and that kind of helped establish the need for better relations," Ongara said.

The commissioner said the agency's Taconite Economic Development Fund also demonstrates a partnership of all parties — management, union and government — that helps everyone.

"In order to get the rebate and reinvest it back into the operation, there needs to be an agreement between the union and the company," Sertich said.

Since becoming commissioner, "I've

seen that cooperation work really well. There hasn't been any bumps in the road."

The IRRRB is fueled by production dollars paid by the mining companies in lieu of property taxes.

Here's a look at how the IRRRB program works and its financial impact for mines on the Range:

- In 1992, the Minnesota Legislature established the Taconite Economic Development Fund (TEDF) to encourage capital investments in northeast Minnesota taconite plants.
- From 1993 to 2011, IRRRB has reinvested a total of \$202,470,216 in the Minnesota taconite industry through the following programs: Taconite Economic Development Fund, Producer Grant Program, Taconite Assistance Program and special, one-time programs to stimulate environmentally unique reclamation projects for facility improvements.
- From 1993 to 2011, the TEDF

program has reinvested more the \$150 million back into northeast Minnesota taconite plants for workforce development and associated public facility improvement; for acquisition of plant, mining equipment, and support facilities for the producer, or for research and development in Minnesota on new mining, or taconite, iron, or steel production technology. These dollars leverage additional investments by the taconite producers.

• Taconite producers receive 30.1 cents for every ton of taconite they produce and must match it with a minimum of 7.35 cents per ton for an approved project. This rebate, commonly referred to as the investment tax credit, was made permanent by the 2001 Legislature. If the total annual production, from all producers, does not exceed 30 million tons, the rebate on pellet production is suspended for that year.

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From left, Chris Masciantonio, U.S. Steel's general manager of governmental affairs, Gov. Mark Dayton, and Bob Bratulich, director of United Steelworkers District 11, at the launch of the Iron Ore Alliance in February of this year.

**GUEST COLUMN**

**BOB  
BRATULICH  
CHRIS  
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**BOB BRATULICH  
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Earlier this summer, a clean energy think-tank ranked Minnesota among the 10 states leading the nation in clean energy and technology.

This national recognition bolsters the pride Minnesotans have in setting the standard for environmental stewardship. But even more satisfying is the day-to-day work being done by the taconite mining industry to continually improve itself in the communities where we live and work.

The people of the United Steelworkers and U.S. Steel are a case in point. The 1,864 employees of U.S. Steel's Minnesota Ore Operations — Minntac and Keetac — are well-known for producing an abundance of iron ore for the North American steel market. Less well-known are our many environmental projects and initiatives. In the past decade alone, U.S.

Steel has invested more than \$108 million in environmental improvements at Minntac and Keetac. And we plan to continue these investments to improve our operations and to lead the industry in environmental performance.

The momentum behind our continuous improvement effort starts with the collaboration of U.S. Steel and the United Steelworkers. We've come together to form the Iron Ore Alliance to share the story of how important the taconite industry is in Minnesota, because we want it to continue to invest in the state, employ Minnesotans, and find new ways to advance technology while continuing to protect the environment.

To that end, we believe it is the responsibility of everyone in our organizations to:

- Follow work practices and procedures to protect the environment.
- Prevent environmental incidents.
- Utilize energy efficiently and effectively.

• Properly handle materials throughout every process.

• Comply with regulations.

Those responsibilities may sound pretty basic, but the steady, everyday tasks are critical to keeping our environment safe. We have been operating in Minnesota for more than a century; we have raised our families here and care about the communities we call home. Equally important, we intend to be around for many generations to come — because steel will continue to be the backbone of our world. U.S. Steel's \$108 million investment into environmental stewardship includes a significant investment into low nitrous oxide (NOx) burners within our pellet-making operations, which have reduced our NOx emissions by more than 70 percent (depending on the fuel type used).

U.S. Steel led the development of this technology and is the only company in the United

States that is using it. U.S. Steel also installed the Sand River seep collection and return system which reduced the downstream sulfate concentrations about 60 percent. In addition, at Minntac and Keetac, we recycle about 95 percent of the water we use.

Above and beyond our operational technologies, Minnesota Ore Operations partnered with Minnesota Power to develop northeast Minnesota's first commercial wind center, which is located on U.S. Steel property, harnessing a renewable resource for power production. At our Keetac property, 10,500 acres are enrolled in a sustainable forest management program for large private landowners in Minnesota. And more than 4,500 acres in Aitkin County are being restored to wetlands.

These are just a few examples of how we continue to promote sustainable environmental practices and leadership in our operations.

**IRON ORE ALLIANCE**

- ❑ Joint initiative between the United Steelworkers and U.S. Steel.
- ❑ Launched in February 2013.
- ❑ Its mission is to promote how important the company's iron ore business is to the state.
- ❑ It is a voice for the 1,864 people who work for the company's Minnesota ore operations, which consists of Minntac in Mountain Iron and Keetac in Keewatin.
- ❑ It's the state's largest producer of iron ore pellets.
- ❑ The alliance also supports work done by U.S. Steel and the United Steelworkers to protect the environment.

**MINE II**

Collaborating as the Iron Ore Alliance builds on the legacy of what U.S. Steel and the United Steelworkers have been doing for the past 100 years. Minnesota is fortunate to have such an important natural resource. Through responsible use, iron ore mining has led to the creation of thousands of jobs, resulted in useful products for the entire

world, and the development of environmental innovations for the betterment of future generations.

Bob Bratulich, director of United Steelworkers District 11, and Chris Masciantonio, general manager of governmental affairs for U.S. Steel, are co-chairs of the Iron Ore Alliance.

**WORKERS**

FROM PAGE 44

ping iron ore to plants producing steel for the great European war. The threat to wartime launched an all-out attack against the striking workers, and U.S. Steel companies on the Range deputized 1,000 special mine guards and strike breakers to keep the picket lines open. Bloodshed would follow.

In Virginia, where the strike was headquartered, armed company thugs confronted a group of pickets holding signs of "One Big Union, One Big Enemy" and opened fire on them. A Slovenian striker, John Alar, died of gunshot wounds.

Despite city bans against mass

marches, several thousand mourning workers marched from Virginia to the fairgrounds in Hibbing, where speeches in many different languages urged strikers to continue the fight.

A number of IWW organizers were also jailed on trumped up charges, such as that they were accessories to murder, and it was claimed that their impassioned speeches against the bosses sparked chaos.

The mining companies refused to recognize the strikers' demands, and on Sept. 17, 1916, locals of the IWW voted to end the strike.

Though it seemed a defeat for the workers, their bold confrontation struck fear in the companies, which in mid-October granted a few of the strikers' primary demands. Two

months after the strike's end, large wage increases were introduced by all of the mining companies.

"Goodbye bosses' handouts,  
Farewell Hibbing Square.  
It's the wrong way to work by contract

You will find no Miners there.  
John Alar died of Mine Guards' guns

The Steel Trust had engaged.  
At Gilbert, wives and children  
Of the Miners were outraged

"And when they quit their lousy jobs

They must receive their pay.  
It's the wrong way to work, by contract

It's the wrong way to go.  
It's the wrong way to work by contract

For the Miners need the dough."

Less than 20 years after an unknown miner composed the words to the song about the 1916 strike, the Congress of Industrial Organizations formed the Steelworkers Union and set up locals in cities and towns throughout the Iron Range.

A few years later, in 1935, workers won their biggest victory. With the passage of the National Labor Relations or Wagner Act, laborers for the first time in American history could band together and bargain collectively.

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## MINNESOTA-INDIANA CONNECTION

# Magnetation pellet plant project hits home on Range

**KELLY GRINSTEINER**  
HIBBING DAILY TRIBUNE

REYNOLDS, Ind. — Derek Bostyancic has been spending a little more time than he likes in airports lately.

But it's his job. It's partially due to his company's role in Magnetation LLC's construction of a 3.0 million metric tonnes per year iron ore pellet plant in Reynolds, Ind.

"It's a very nice sized job for us," said Bostyancic, president of Grand Rapids-based Northern Industrial Erectors (NIE). "We've already moved a lot of equipment, some supervisors and key employees out there."

NIE was awarded the steel erection package for the pellet plant furnace. Erection of the induration building (which will house the furnace) at the discharge end began in mid-September and work continues toward the feed end, said Bostyancic.

The furnace steel erection package is by far the largest steel package of the entire \$350 million project, according to Magnetation officials.

And NIE is just one of several Iron Range contractors and companies that will have a direct hand in the out-of-state project.

The Reynolds, Ind., facility will process iron ore concentrate produced on the Iron Range by Magnetation concentrate plants to produce high-quality, fluxed iron ore pellets. These pellets will then serve as feedstock for Magnetation partner AK Steel's blast furnace operations in Middletown, Ohio, and Ashland, Ky. The plant is expected to be operational in the fourth quarter of 2014.

"The new pellet plant is creating a customer for ourselves, for our product," said Larry Lehtinen, chief executive officer (CEO) of Magnetation. "... If we hadn't, not only would we have difficulty surviving but we wouldn't have been growing at all."

Magnetation announced last November that it had selected Reynolds, Ind., as the site for its pellet plant. The Iron Range was one of three sites considered for its location. The company also considered locating the facility in Superior, Wis.

Magnetation chose Reynolds for several reasons, including its proximity to major railroads and highways. The site is at the intersection of two Class One railroads (TPW and CSX), which provides multiple inbound and outbound rail options to transport the iron ore concentrate and iron ore pellets.

The construction site in Indiana was purchased with existing infrastructure in place, according to Terry Nanti, general manager of the pellet plant. The site was originally owned

by Verasun and was to be developed into an ethanol plant.

"We purchased this land with existing rail, sewer and direct access to natural gas and electricity already in place," said Nanti. "This allowed savings on infrastructure and reduced the overall cost of the project."

The state's proximity to AK Steel's blast furnaces in Ohio and Kentucky was another advantage.

"Additionally, if we choose to expand the pellet capacity in Indiana, we are strategically located to reach potential customers on the Great Lakes, Atlantic Ocean and Gulf of Mexico," said Nanti.

"Constructing the pellet plant at the other locations we considered would have potentially made the transportation costs higher to reach these potential customers."

Timing was also a major concern — namely permitting and time to market.

"Finally, in order to construct and operate a pellet plant, environmental permits must be in place, and Indiana moves quicker to issue permits with the same environmental safeguards as compared to other sites we considered," said Nanti. "Any potential delays in this permitting process would have put the construction schedule and start-up date of the pellet plant at risk."

The extremely volatile iron ore market, combined with volatile and uncertain credit lending conditions, required Magnetation to select a site that could be permitted within a year and built less than two years after site selection, according to Matt Lehtinen, president and chief operating officer (COO).

For the company to finance the new pellet plant, the permits had to be in-hand and iron ore prices had to be strong, Lehtinen said.

"At the time of site selection in 2012, industry analysts predicted a sharp fall-off in iron ore prices by 2014," he added. "By company estimates, it would have taken two to three years to permit a pellet plant in Minnesota. Therefore, the Iron Range could not be considered as a viable location."

Why the long timeline in Minnesota?



Grand Rapids-based Northern Industrial Erectors (NIE) began erecting the induration building (which will house the furnace) at the discharge end in mid-September and will continue to work toward the feed end of Magnetation LLC's new pellet plant in Reynolds, Ind. NIE was also awarded other projects within the \$350 million project.

"Magnetation did not control a large enough land footprint to meet ambient air modeling standards, and Minnesota required a mandatory, lengthy environmental review process," said Lehtinen. "In order to start the permitting process, a large enough site must be controlled by the company. At the time of site selection, the company estimated that it could have taken as much as one to two years to come to terms with local land-owners to acquire the land needed for the permitting requirements."

The state of Minnesota would have also required an Environmental Impact Statement (EIS) state, which adds to the length and uncertainty of the permitting process.

Indiana offered certainty and timely permitting, said Lehtinen. "At the time of site selection, we estimated that this process would take 15 to 24 months. After selecting Reynolds as the site of the pellet plant, the company's concerns were verified regarding market concerns as they relate to permitting, because during October 2012, iron ore prices fell over 40 percent to nearly \$86 per tonne ... off of record highs less than a year earlier of \$190 per tonne," he explained. "It was imperative to the company's survival and ability to grow that we secure environmental permits in order to construct the pellet plant, which will lead to the creation of 160 new direct jobs in Northeastern Minnesota, plus the support and sustainability of the existing 281 families already

employed here."

Larry Lehtinen echoed his son's words, stressing that the certainty of permitting in Indiana was a large reason Magnetation went forward there.

"It's not just the duration of permitting in Minnesota, but we weren't sure that we'd ever get the permits here," he said. "Couple that with the big questions with the market, and we weren't sure in the end if we'd ever be successful or not."

The pellet plant in Reynolds will be subject to the same stringent federal standards.

One disadvantage of constructing in Indiana — contractors and companies there may not have much, if any, experience building, maintaining or servicing mining operations and facilities. So Magnetation turned to those with the expertise and experience here on the Iron Range.

"One of the reasons we opted to work with northern Minnesota contractors is because they have a specific skill set for manufacturing mining equipment and constructing major mining projects," said Nanti.

He cited NIE's experience, which includes the Essar concentrator and induration system along with the erection of the Essar balling building, as just one example. Magnetation just recently awarded NIE the erection of the balling building and its equipment and construction of the pollution control system. The two projects will begin in late October and January respectively, said Bostyancic.

Having established

relationships with these companies is another reason Magnetation is contracting locally, said Nanti.

"Each of the northern Minnesota companies performing work for us in Reynolds has previously done construction work on our concentrate plants in northern Minnesota, and have proven to be reliable in completing their scope of the projects," he said. "Also, iron ore processing is a very localized industry. This equates to a high concentration of local equipment suppliers, installers and expertise on the Range. Much of this equipment is only used in the iron industry and only fabricated on the Iron Range."

In addition to NIE, several other Iron Range companies and contractors are benefitting from the pellet plant construction project. They include Champion Steel, Kaman, RC Fabricators, Furin and Shea, Superior Industrial, Midwest Manufacturing and Mechanical, Northstar Filters and NORAMCO Engineering, among others.

NIE had about 26 employees in Reynolds, Ind., around mid-October, but numbers will eventually ramp upwards of 100 to 130 by January due to the balling building and pollution control system projects, said Bostyancic. His company's projects, he estimates, should be done around June 2014.

"We specialize in large-scale projects, industrial builds like this," said the second generation business owner.

Bostyancic noted that all of the projects had to

be bid. NIE was the sole bidder from Minnesota, but he faced competition with contractors from Indiana and Michigan. Experience and equipment came into play, he said.

"This is all the stuff I grew up doing, which played to my advantage," he said. "Magnetation is a well-respected company and wonderful to do business with. I also know personally that they are looking to benefit the communities in this area."

The pellet plant is scheduled to begin operations in the fourth quarter of 2014 and will employ the latest pelletizing technology and engineering used in global pellet production today. Once completed and fully operational, it will employ more than 100 people in the state of Indiana.

In order to feed the requirements of the pellet plant, Magnetation has to invest in additional production capacity here. The company plans to construct an additional concentrate plant on the Iron Range to supply the iron ore concentrate needed to reach the Indiana plant's annual capacity of 3.0 million metric tonnes of pellets.

This additional concentrate plant, Plant Four, will be approximately \$120 million investment and create approximately 160 new permanent jobs for Minnesota families, along with 150 to 250 construction jobs.

Plant Four will be constructed near Coleraine. Construction is expected to begin later this year, with operations commencing in 2015.



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MARK SAUER/MESABI DAILY NEWS

Amy Klobuchar during an interview at Mesabi Daily News.

**GUEST COLUMN**

**AMY KLOBUCHAR**

U.S. Senator

**‘Country was built on the backs of miners’**

WASHINGTON — Mining has always been a way of life for families on the Iron Range. Throughout our state’s history mining has not only brought jobs to the region, it has also built our country, from our roads, bridges, buildings and railways to the tanks and ships critical to our nation’s defense. Minnesota’s Iron Range boasts the largest concentration of iron ore in the world, and supplied most of the iron used in World War II.

My own family is part of this tradition. My grandpa worked in the mines in Ely for most of his life. He never graduated from high school but he saved money in a coffee can in the basement to send my dad to college. I learned the Iron Range values of hard work and perseverance from my parents and grandparents, and I carried them with me to the Senate.

The Iron Range is no stranger to tough times. Throughout its history there have been booms and busts. There is nothing harder on the workers than when a mine closes down. That’s what happened to my grandpa and so many other miners across the Range. But he never gave up, and neither have the people of northern Minnesota.

Right now Minnesota is first in the nation in the movement of iron ore, and in the last five years mining has grown almost 17 percent each year in Minnesota compared to just 2.3

percent nationally. That’s a trend we need to continue.

When it comes to the success of mining in northern Minnesota, it’s critical that companies are able to grow and expand. We need to make sure that projects can advance in a timely manner while meeting permitting requirements to ensure they operate safely and efficiently.

That’s why I recently pushed the Army Corps of Engineers to stop the delay on reviewing permit applications for businesses like Minntac, which is looking to extend the life of its Mountain Iron facility, and help ensure the government doesn’t create unnecessary burdens that stifle success. And that’s why I led the effort in the Senate to push the Environmental Protection Agency to ensure the taconite regional haze rule treats our mines fairly and doesn’t hurt jobs in our state.

To stay competitive we also need to pursue innovative technologies that will write a new chapter in the long history of mining in northern Minnesota. I visited Magnetation in Grand Rapids last year and saw the work the company is doing to develop technology to reclaim and recycle iron ore that was left behind from the original era of ore mining on the Range during the 1890s through the 1980s.

This is the type of innovation, along with the copper/nickel projects like

PolyMet and Twin Metals, that is bringing jobs back to the Range. Innovative projects will help reduce our reliance on foreign countries for critical resources, which often come from unstable parts of the world.

We also need to make sure the next generation of mines honors the commitment all Minnesotans share to preserve our natural resources for the next generation, something the companies involved in these projects are and must be committed to throughout the permitting process.

I also believe that strengthening our domestic manufacturing base is key to our national security and our ability to make products and export to the world. That’s why I pushed the Department of Defense to require armor steel plate to be melted in America, rather than by foreign competitors. In July of last year they restored the “Made in America” rule, which will help maintain demand for iron ore mined here in the United States. I also fought to include provisions in the 2012 Transportation Bill that boost Buy America provisions and give preference to homemade steel products for infrastructure projects.

For mining to expand in northern Minnesota, we also must make sure we have a strong transportation system and good programs to train our workers. Ports, rail, roads and bridges are all critical to allowing our mines

to transport their products efficiently and access markets across the country and around the globe. And to continue our mining operations in an increasingly complex world, we must invest in our workers through worker training and other mining programs like those at Hibbing Community College.

Finally, in order to move forward with any of these economic efforts, we need a strong and steady economy, which means ending the gridlock and brinkmanship in Washington. I believe we are on the cusp of great economic opportunity, and lurching from crisis to crisis and shutting our government down only serves to stall the progress we could be making. We need Democrats and Republicans to come together and focus on solutions that will help, rather than hinder, the country.

This country was built on the backs of miners like my grandpa and so many others who came to Minnesota looking for opportunity and a shot at the American Dream. Mining is an essential part of a “Made in America” economic agenda that will keep this country competitive and keep the Iron Range thriving for generations to come.



□

*Democrat Amy Klobuchar is the senior U.S. senator from Minnesota.*



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