

Twin Metals Minnesota making progress on groundwater study

by Nick Wognum

Work is proceeding on a major groundwater study Twin Metals Minnesota will use as it formulates a mine plan of operation for a copper-nickel deposit near Ely.

Dean Debeltz and Cabin Totenhagen sat down last week to discuss the project at the Twin Metals offices located in the Ely Business Park.

"We are making progress. I think it's important people understand we have had a lot of work going on in the first quarter of this year," said Debeltz. "And it all supports environmental studies."

The hydrogeologic study is a massive undertaking that will enable the company to see how water moves underground along with characteristics of water found underground.

"We're working to build a hydrogeologic model for the area," said Debeltz.

The study involves drilling wells at various depths to examine the water below ground.

"All of this work supports our eventual submittal of a mine plan of operations which kicks us into the EIS (Environmental Impact Statement)," said Debeltz.

TMM has contracted with two drilling companies, Idea Drilling of Virginia and AK Drilling out of Montana.

The drilling for the hydrogeologic study started in November.

Idea Drilling has been conducting compliance work in sealing exploration bore holes with concrete. The holes can be temporarily sealed for 10 years but then the seal must be made per-

manent.

And while the regulations call for 250 feet of concrete, TMM has Idea fill the hole from bottom to top with concrete.

The hole sealing program will be ongoing for the next 10 years.

"It's a big program," said Debeltz.

A hydrogeologic study of this magnitude is something no government agency has done and already the state and federal government has asked to see information on it.

"We're expanding the overall hydrogeologic program every year. All to support an eventual EIS, We're always looking at what is the information, what is the data telling us," said Debeltz. "And how do we expand that to make it a more robust study."

Drilling wells and looking at ground water may not sound exciting, but it does have an economic impact for the Ely area.

"There was an increase in the local lodging tax recently. We had drilling around the clock for three months," said Debeltz.

Employees of drilling companies along with consultants need places to stay, places to eat and end up impacting the area's economy. In addition TMM continues to provide local people with full-time jobs.

"We do have in our office and have had for six years, six full-time employees who work out of this office. We all consider ourselves pretty lucky. These are good jobs," said Debeltz.

"The work is challeng-



HELPING explain a piece of testing equipment was TMM geologist Cabin Totenhagen. Echo file photo.

ing, it's rewarding in the fact you can't focus on the day to day disruptions, you have to focus on the long term goals and make sure that we're thinking positively about our future so we are here for the long run."

Study origination

Totenhagen said the field portion of the study dates back to 2014.

"We've been doing phased work since then. The whole idea is to collect data that helps us characterize the hydrogeology of the area," said Totenhagen.

"We're trying to identify the different zones and characteristics. We'll be starting the water quality component this year so that gets us into even more detail on what's the baseline chemistry of the water in each of the zones. And we'll track that over the course of years basically

to see what's the natural condition and that feeds in overall to the mine plan," said Totenhagen.

That data can be monitored over the life of the mine providing data that will help the company and regulators in the future to see what the impact is to groundwater.

The company is doing downhole testing in current drill holes the company already has in place.

"These tests tell us how water moves through the bedrock within those existing bore holes," said Totenhagen. "We do still have to have clean wells to do the water chemistry part of it."

TMM has 300 bore holes to work with and will have another 35 monitoring wells put in place by the end of this year. There are also studies being done to look at shallow water levels to look at rain



ELY native Dean Debeltz, Director of Operations for Twin Metals Minnesota. Echo file photo.

events and snow melt.

The monitoring wells run from 20 feet to 3,500 feet below ground.

Totenhagen said specialized contractors are brought in to do the work.

"The people who operate this equipment have to maintain the equipment, do calibration, they have to understand how to run the analysis. They have to be trained in this," said Totenhagen.

TMM is spending several hundred thousand dollars on looking at existing bore holes alone. The overall hydro program will cost over \$1 million in 2018.

"With more to come," said Debeltz.

Totenhagen said the Minnesota Department of Health tracks every single well hole in the state. However, up here there is a lack of data

available.

"A lot of wells are for residential use so there really isn't any information in the project area that's specifically focuses on ground water. That's why we have to go out and perform well installations and collect that type of information," said Totenhagen.

The company has a surface water study program going on as well, separate from the hydrogeologic study.

"There's a whole bunch of baseline environmental studies to help feed in to what will be a very extensive environmental study later on in the life of the project," said Totenhagen.

The hydrogeologic study will be ongoing, without a set end date for the underground mine project.

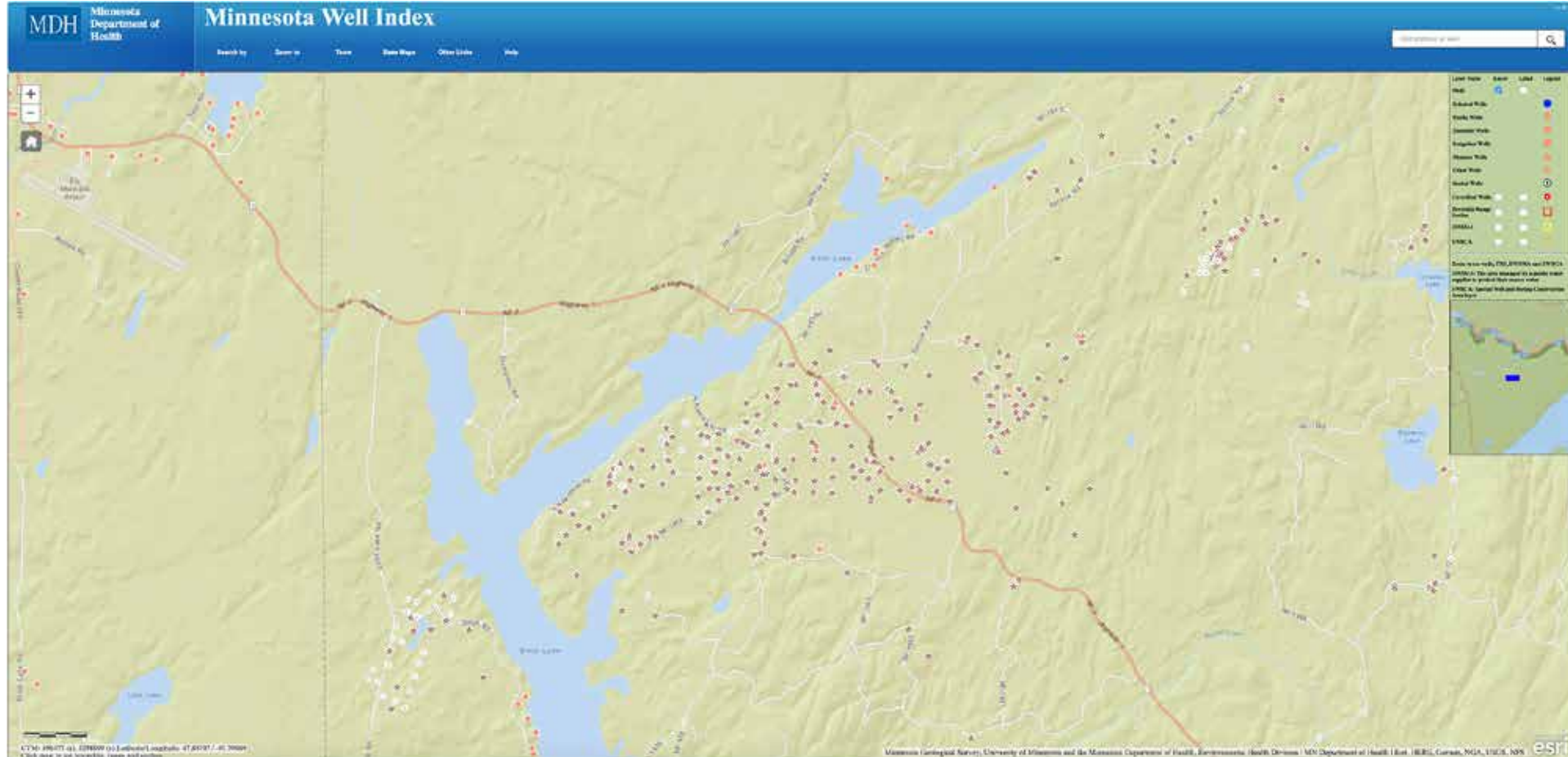
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TWIN METALS Ely employee Kevin Boerst explains how drilling is conducted for the project. Echo file photo.



ELY EMPLOYEES Dean Debeltz, Jordan Richards and James Devine hand out life jackets to Ely third grade students last year. Echo file photo.



STARRED LOCATION indicate many of the wells drilled by Twin Metals Minnesota as it explores the area for an underground copper-nickel mine.



NORTHEAST TITLE workers Shonna Kowarsch, Liz Hubbard and Angie Mikulich at the new location.

New location, permanent home for Northeast Title's Ely office

A business that started in Ely now has a permanent home here.

Northeast Title's Ely office has moved to 545 East Sheridan Street, located across the avenue from Boundary Waters Bank.

"We were looking for a permanent home and this building was perfect for us," said Angie Mikulich.

The company, which has an office in Virginia as well, did some remodeling to the building prior to moving in.

Two offices were added along with a kitchen area. The space includes a nice reception area and two rooms for real estate closings.

There are three full-time and one part-time employee working out of the Ely office.

Northeast Title has a total of 11 employees between

the two locations.

Northeast Title Company was started in 2002 in the Defenbaugh Law Office building.

Current owner JoDee Micheletti purchased the business in 2003. The Virginia location opened in 2005.

In 2015 Northeast Title's Ely office moved to a renovated space below the Ely Bowling Center.

"Going from one room at our first location to a bigger space meant we were able to hire more people. This new space did that as well," said Mikulich.

The new location appears to be a perfect fit.

"Heather Fitzgerald from Boundary Waters Bank remembered JoDee fell in love with this building so when they decided to sell it they gave us a call," said Mikulich.

Northeast Title Company's website states, "Our family-friendly, dedicated team works with buyers, sellers, developers, mortgage lenders and realtors to maximize communication and provide a smooth property transfer. We also have a Board Certified Attorney on staff to better serve your needs."

"Our employees always offer quality service at competitive prices, making us a true asset to surrounding communities. We will work with you and ensure you can enjoy your new home. Title insurance can allow you to rest assured you are completely covered."

Mikulich said the company specializes in real estate closing services in

northern Minnesota.

"We do closings and refinances but we're not the bank or the realtor. We also help people with contracts for deed or work with owners if they don't have a realtor," said Mikulich.

"Business is increasing each year. When the bottom fell out of the market in 2007 and 2008, no one let our clients know because we stayed busy."

The new location will have some additional minor remodeling this summer but has been open since Feb. 27.

"We do know we have the perfect location for the Fourth of July parade," said Mikulich. "We might have to have a party here on the Fourth."

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"All of this information feeds into a groundwater model. This model is also looked at to help us see where we are missing information in the model so we can pinpoint where we need more data," said Totenhagen.

Despite political interference the company is pushing ahead with a major study that will not only be used for a mine plan of operations, but be used by other scientists and government agencies to better understand groundwater in northeast Minnesota.

"We would much rather be doing a much larger program," said Debeltz.

"We had a big program in 2012-2013, an extensive hydrogeologic study and it was all going to be executed continuously until completion and due to restrictions placed on us that's where we had to cut the program into phases that we're doing throughout each year," said Totenhagen.

Even though the information will be released to the public down the road through the EIS, the company has already been asked to share what they have learned.

"We have been contacted by both the Forest Service and the DNR for data, reports and information because they would like to conduct their own studies of the area and they lack that information as well," said Totenhagen.

"It is a collaborative effort between Twin Metals and the agencies," said Debeltz.

The company continues to gather data as it gears up to release more information to the public and government agencies.

"We're going to start getting more information out to the public in 2018. We recognize that we have been quiet for a long time but there's been a lot of ongoing engineering to support the planning for the mine plan of operations," said Debeltz.

In addition to the hydrogeologic study, TMM has been busy with the following:

- Surface water monitoring
- Wild rice studies
- Air quality monitoring
- Wetlands studies
- Cultural surveys for historical and archeological sites of interest
- Threatened and endangered species surveys
- Non-native invasive species mitigation
- Soundscapes
- Visual studies

Twin Metals has also taken on a program to do imaging of each bore hole with a piece of equipment that sends out sound waves to detect fractures, voices or changes in diameter of the bore hole. It will also detect changes in rock type.

TMM has 10 staff members working out of St. Paul as well.

"There are 16 folks who are full time working on this project," said Debeltz. "And then the consultants, support people, local contractors - there's a lot of people involved."



TALKING SHOP - James Devine (left) of the Ely office talks with Bob McFarlin, the Government Affairs Advisor for Twin Metals Minnesota.



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