



MEMBERSHIP MEETING SUMMARY
Thursday, November 17, 2022 (9:00 AM – 11:00 AM)
1003 Discovery Drive | Chisholm, MN 55719
And via Zoom

MEETING OBJECTIVE

VISION | Shaping evolving landscapes for future generations.

MISSION | A regional collaboration that invests in our diverse community by:

- Developing opportunities for dynamic minescapes,
- Preserving lands to sustain current and future mining, and
 - Providing resources and education

STRATEGIC DIRECTIONS

1. Optimizing Organization & Communications
2. Investing in Mineland Communities
3. Enhancing Stakeholder Partnerships
4. Educating Partners & the Public

Check out the updated website: www.mvpmn.org

MEETING SUMMARY

- Welcome & Introductions
- Treaty Rights in the 1854 Ceded Territory
- Non-Ferrous Project Updates
- Sulfate Reduction System
- US Steel Update

WELCOME & INTRODUCTIONS

Welcome & Introductions

Miriam Kero
Northspan

Miriam Kero, MVP Facilitator, gave attendees a few minutes to join online and began the meeting at 9:03 AM.

P R E S E N T A T I O N

Treaty Rights in the 1854 Ceded Territory

Darren Vogt, Resource Management Director, 1854 Treaty Authority

Treaties signed by Native Americans and the United States across history ceded land to the US for settlement and development, established reservations, and granted tribes the retention of rights to hunt, fish, and gather. Each reservation speaks for itself and is a sovereign nation that can enter into treaties with the US government, and tribal actions and opinions are not uniform. There are 11 reservations in Minnesota, and the 1854 treaty area includes Fond du Lac, Bois Forte, and Grand Portage bands.

The 1854 Treaty Authority manages off-reservation rights for Bois Forte and Grand Portage within this territory. It has four divisions: administration, enforcement, resource management, and education and outreach. It has about 15 FT staff and strives to preserve, protect, and enhance treaty rights in that territory. The enforcement division employs peace officers who enforce the Conservation Code of the Treaty Authority. Resource Management handles off-reservation harvest, wildlife, and other practices for or band members. Education works extensively with tribal youth on gun safety, ATV safety, and getting them outside, and it conducts outreach to school programs. The Treaty Authority recently worked with MNDoT through 10+ year process to put up signage noting treaty boundaries on highways. It monitors state and federal agencies for communication at appropriate levels regarding treaty rights, seeking “early and meaningful” input; it does not speak for the bands. Visit www.1854treatyauthority.org for more information.

P R E S E N T A T I O N

Non-Ferrous Panel

- Julie Lucas, Mining Minnesota
- Dean DeBeltz, Twin Metals
- Jessica Johnson, Talon Metals
- LaTisha Gietzen, Polymet Minerals
- Kate Lehmann, Vermillion Gold

Julie Lucas, Mining Minnesota

Lucas provided background on how she moved to the Iron Range and started doing water sampling at PolyMet 20 years ago. Now, with Mining Minnesota, she is advocating for mining in the state. Many people take the resource for granted and don't realize the global push for these minerals. The US is a leading producer of oil and gas, and we just assume that it's affordable. But as we transition from a fossil fuel economy to a minerals-based economy, we will need a smooth transition. Minnesota has the world's largest undeveloped resource. Recognition of indigenous neighbors is important and requires engagement by everyone, not just the companies. Mining advocates need to talk about social and economic and justice, and where we want our metals to come from; every part of the world has indigenous people, watersheds, and airsheds. Lucas would like to believe that, with our strong regulatory environment, we know what we're doing in Minnesota. Future needs for these minerals are staggering, and the math does not work to rely on recycling as the solution. We need to stop exporting our responsibilities and our conscience to other countries. Visit www.miningminnesota.com for more information.

Dean DeBeltz, Twin Metals

Twin Metals is committed to operating a modern underground mine that is safe for workers and the environment. It is aiming for net zero emissions, no acid rock drainage, and a small surface footprint. The project is a targeted underground mine with a 25-year mine life, with most mining occurring 1,500 feet down. Ely has been losing population and the project would create 750 jobs. In January, leases were canceled by the Biden Administration; Twin Metals sued the Department of the Interior in August. This has paused baseline work on the project and the focus is now on litigation. Twin Metals asks for a fair, science-based process and will answer the questions; they are in it for the long haul.

Jessica Johnson, Talon Metals

Talon Metals is the Tamarack nickel project in Aitkin County; it is the only high-grade nickel project in development in the US. Talon is seeking to support domestic vehicle supply chain and recently formed a partnership with Tesla to supply them. The US only has one operating mine of this type (Eagle Mine in Michigan), and the country is far behind the top producers, which include Russia and China. Talon is also trying to build a domestic supply chain, as the current process often travels three times around the world. The company is prioritizing early engagement and an open-door policy on site, plus public community information sessions, an internship program for students, and tours of the operating Eagle Mine. The environmental review process will formally start in February 2023, along with a baseline data website. Exploration drilling continues steadily using newer technology, with significant unexplored areas; new discoveries have been made on the deposit. Talon is making plans for a processing facility in North Dakota, which creates opportunity with coal fly ash tailings to buffer against environmental concerns, and received government funding to support it through infrastructure bill.

Bruce Richardson, PolyMet

PolyMet was the first mover in the Duluth Complex for copper-nickel mining and has received all its permits, though some are in litigation. Glencore is its principal partner, and PolyMet recently announced a joint venture with Teck Resources. It has been four years since all permits issued, and there have been 24 lawsuits since, some of which have been consolidated. Three permits (Permit to Mine, water discharge permit, wetlands permit) remain on hold, and there are two pending federal cases involving a land exchange. PolyMet has prevailed in all six cases that have reached final judgment. The joint venture with Teck will aim to develop NorthMet (the PolyMet project) and study further development of Teck's Mesaba asset on adjacent land. The company will become NewRange Copper, LLC when the joint venture is complete in Q1 2023. The shared resource will be significant in size. A significant copper supply-demand gap looms, inventories are the lowest they've been in years due to increased consumption, and recycling will not fill the gap.

Kate Lehmann, Vermillion Gold

Vermillion has been around since 2006 and is still the leading gold explorer in Minnesota. It entered an agreement with a Canadian company to fund exploration activity in 2020, though that company exited in August. There is significant gold activity in Ontario, some of which have been very productive. Vermillion is exploring three areas: the Virginia Horn between Virginia and Gilbert, with drilling and testing under way; and Linden Grove and Lost Lake further west, with till sampling occurring. Linden Grove is on the backburner relative to the other two. Vermillion is seeking new partners or to become part of the portfolio of a larger company, though these efforts are challenging at this time.

P R E S E N T A T I O N

Sulfate Reduction Systems

Jeff Hanson, Clearwater BioLogic

Work to develop the initial concept of a floating sulfate reducing bacteria (SRB) bioreactor began in 2011. The first efforts included field test on taconite mine pit lakes near Spring Mine Creek and on the Embarrass River. Sulfate in waters migrates into mud on bottoms of bodies of water and mixes with organic matter, where bacteria make sulfides. Mixing it with iron, however, creates a solid. The concept effectively uses large plastic bags floating in the lake with 26 acres of surface area on small fibers for SRB. The group that became Clearwater BioLogic ran the test for five years using solar power, and it worked even in winter under ice. NRRI published a report in 2017 that showed a 90%+ reduction in sulfates and up to 100% removal of sulfates. Mercury production was insignificant; there were irregular results in sulfate reduction, but the group has been able to correct for this since. Clearwater BioLogic then formed to continue research. Taconite pellets cannot provide the necessary iron, but DRI pellets can, as they are reactive with hydrogen sulfide and electrically conductive. Converting all sulfate to sulfide using passive bed system produced sulfide levels of less than one mg/L. They are now seeing how far it can go before it reaches saturation. Clearwater is also creating an active electrode system, making it conductive, and applying a low DC current to create an iron sulfide (pyrite) that settles into a nontoxic, pumpable and recoverable slurry with no added chemicals. Operating costs have been significantly reduced and byproducts may be able to cover most operating expenses. Clearwater is now seeking to identify a field demonstration site and monitor results with third party testing ad opportunities for visitors to understand and confirm the method's success.

P R E S E N T A T I O N

US Steel Update – Minnesota Ore Operation

Travis Kolari and Lukas Klemke

2021 was a record year for US Steel's two operations on the Iron Range, Minntac and Keetac. 2022 has brought some challenges related to supply chain challenges, inflationary costs, and workforce availability, including significant turnover in both hourly and salaried staff. US Steel is now taking creative steps on workforce availability focusing on legislative support for its efforts. Plant upgrades for a Gary, Indiana pig iron facility and at Keetac are on time and under budget. US Steel is taking steps on safety and safety leadership, hitting a series of major milestones and strengthening its track record. Numerous environmental projects are under way, including dust collector change-outs, basin modifications, water treatment testing, greenhouse gas reduction, and a substantial number of permitting processes to support all of them.

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- Meeting was adjourned at 11:13 AM.
 - Look for communications about the next MVP Partnership meeting to be scheduled first quarter 2023.

A d j o u r n e d

Mineland Vision Partnership thanks its financial contributors:



CLIFFS



U. S. Steel



**DEPARTMENT OF IRON RANGE
RESOURCES & REHABILITATION**