



W. J. McCABE (DULUTH) CHAPTER
IZAAK WALTON LEAGUE OF AMERICA

P. O. Box 3063. • DULUTH, MN 55803

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Lisa Fay, EIS Project Manager
DNR Division of Ecological and Water Resources
Environmental Review Unit
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025
(NorthMetFEIS.dnr@state.mn.us)

Dear Lisa Fay,

The W. J. McCabe Chapter of the Izaak Walton League of America finds that the Final Environmental Impact Statement (FEIS) for the NorthMet Mining Project and Land Exchange, by PolyMet Mining, Inc. (PolyMet) fails to adequately respond to the below listed significant environmental impacts. Because of these serious defects, we call on the Governor and the Minnesota regulatory agencies to not approve this project. When choosing between metals and clean water, we feel that the public's right to clean water should take precedence, and the laws that are in place to protect clean water should be adhered to.

1. The unprecedented large-scale destruction of wetland and forest habitat on Superior National Forest lands that were acquired through the Weeks Act for the express purpose of protecting the St. Louis River watershed. This would be the single largest wetland loss ever permitted by the St. Paul District of the Corps of Engineers.
2. The inability to quantify the level of indirect impacts that will occur to over 7,000 acres of wetlands or to identify how or where those impacts would be mitigated.
3. The pollution of adjacent waters and wetlands from the extensive leakage and unpredictable direction of groundwater flow of contaminated waters seeping from the old LTV tailings basin. We are especially concerned about the likely release of large amounts of sulfates into the St. Louis River system that would increase the methylation of mercury in a system where fish consumption advisories for mercury already exist. We are also concerned about the revised hydrology modeling that now indicates some of this water will flow north into the Rainy River Watershed and the Boundary Waters.

4. The significant risk that this project will threaten the water quality of the St. Louis River basin for hundreds of years, without identifying the amount and type of financial assurance required to protect Minnesota taxpayers from anticipated clean-up costs.
5. The failure to provide a reasonable alternative (least environmentally damaging practicable alternative) to reduce impacts to an acceptable level.
6. The failure to follow Chapter 6132 of the Nonferrous Metallic Mineral Mining Law 6132.3200 - Closure and Post Closure Maintenance - Subpart 1 that requires, "The mining area shall be closed so that it is stable, free of hazards, minimizes hydrologic impacts, minimizes the release of substances that adversely impact other natural resources, and is maintenance free."
7. The failure to assess the cumulative impacts that would likely result from opening up Minnesota to the copper-nickel mining industry, once this precedent is established.
8. The concern and doubt raised by recent efforts of the mining industry and the Minnesota legislature to weaken water quality regulations, and the failure of Minnesota regulators to enforce water quality permits on existing taconite mines, where acid mine drainage and heavy metals pollution are much less of a problem. If our taconite mines are not meeting standards, how can we expect the law to be enforced with much more dangerous copper-nickel mines?

Following are additional discussion and details about the above list of concerns:

Water Quality

There is an appearance of inconsistency in the prioritization and treatment of waters across the State. Impairment issues in the agricultural part of Minnesota are rampant, where nearly all surface and ground waters are identified as impaired by agricultural runoff and are suffering from high levels of pesticides, phosphates, nitrates and sediment. This contrasts sharply with those waters of northeastern Minnesota, where the waters are largely identified as pristine or have only minor impairments, with the exceptions being waters impacted by taconite mines or heavy human development.

State administration has chosen to expand and improve the development of permanent vegetative buffers along waters in the agricultural portion of Minnesota, a step we fully support. At the same time the administration and the State agencies that regulate mining activities have long turned a blind eye to the impacts iron mining is currently having on the headwaters of the Lake Superior and Rainy River watersheds. There are issues associated with mercury in the St. Louis River, where fish consumption advisories have been in place for years, and where a Department of Health study showed unsafe levels of mercury in the blood of newborns. Now a new and far riskier type of mining is being examined, non-ferrous or "sulfide-mining", in rock deposits containing higher levels of sulfides.

Approval of the PolyMet project will aggravate water quality problems, certainly in the St. Louis River watershed, and potentially in the Rainy River watershed. Sitting at the top of both of these watersheds, PolyMet will add higher levels of sulfates to the downstream waters. Sulfates in the Partridge and Embarrass rivers, and in the St. Louis River downstream from them already greatly exceed normal background levels because of drainage from taconite mines to the north. Much additional sulfate will be added to these watersheds as a result of the PolyMet project. Higher levels of sulfates in downstream waters will allow microbes to convert more of the available mercury to methylmercury, which is the bioaccumulating formulation that contaminates our fish, and humans eating those fish, boosting already unsafe levels of methylmercury contamination in these waters.

The PolyMet project will also add more mercury to these river systems. Release of mercury sequestered in peat soils, increases in water level fluctuations, and airborne mercury released from the PolyMet mine and plant sites will all contribute to the already high levels of mercury in the system. The St. Louis River was listed for mercury impairment by the PCA in 1998. Since then little progress has been made to come up with a Total Maximum Daily Load (TMDL) plan to get the river delisted. By adding more mercury and sulfate to the river system, the PolyMet project will make it even more difficult to accomplish this challenging goal to make the fish safer for people to eat. The FEIS does not answer the question of how the Minnesota Department of Natural Resources (DNR) and Minnesota Pollution Control Agency (PCA) can meet the goal of cleaning up the water in the St. Louis River, while at the same time adding more mercury and sulfate pollution to it.

In addition, the sulfides will leach toxic heavy metals from newly exposed rock in and around the pit and at the tailings basin. The mining company proposal states that all this water will be collected and treated before being released into the environment. However, the designs and models used do not deal with the changing realities being forced upon us by climate change.

On Dec. 6th, 2015 meteorologist Paul Douglas posted on his website that Minnesota has experienced four 1000-year floods in the past eleven years. This is well beyond any predictive expectation. Duluth and surrounding areas experienced massive flooding in 2012. Since this and even lesser storms are not adequately modeled in the designs, one can only imagine the consequences of a 500 or 1000-year flood on the Iron Range. The collection and treatment facility would likely be overwhelmed, or dikes fail, releasing untreated toxic contaminants, including heavy metals, into the headwaters. The FEIS fails to model this changing climatic reality which increases the likelihood that mine runoff will expose the state's waters and citizens to unnecessary health risks into the distant future. Is this the kind of legacy that we want to leave to future generations?

There is an old axiom that reminds us that it is far cheaper and easier to protect the environment than it is to fix the damage we've caused. PCA Commissioner, John Linc Stine, was quoted Dec. 6th, 2015 in the Minneapolis Star Tribune article, *In Minnesota's Farm County, Clean Water is Costly*, as saying, "We can't spend our way out of this." The same can be said of comparable problems associated with the mining pollution on the Iron Range. Why should we risk the long-term environmental quality in the northeast, and threaten the St. Louis River system, where huge sums of money have already been spent on clean up, for a short-term mine operation that will require water monitoring and treatment nearly indefinitely?

While methylmercury and sulfide have direct human health implications, they are not the only impacts we are concerned about. The conversion of sulfate to sulfide in stream and lake sediments is toxic to other biota, including wild rice. Rice is an important plant culturally and spiritually to our native-American communities, but it's also a source of nutrition for many tribal and non-native Americans. Wild rice also provides food and habitat for our state's fish and wildlife populations and

was once common throughout much of the St. Louis River. Wild rice beds are a critical habitat component for northeastern Minnesota's duck population, which has been in decline. We have to examine the root causes, and realize that the loss of wild rice habitat in the St. Louis River, below the Partridge River, due to sulfide pollution from mining, is another nail in the coffin. Whether the challenges are pheasants or ducks, enforcing the laws that prevent pollution, and protecting existing habitat, is the first step in stemming the decline and the only way to turn the tide.

Unfortunately, for decades the DNR and PCA have failed to enforce the sulfate standard of 10mg/liter that was in the law. Wild rice stands downstream of the iron mines declined or disappeared over time, apparently as a result of the sulfate pollution from iron mines, and co-opted by the disregard or inability of regulatory agencies to enforce the sulfate standard. The twenty-plus years of regulatory failure by DNR and PCA to address the renewal of expired mining permits for a number of mines that are not meeting water pollution standards, leaves the public really wondering and concerned about the effectiveness of the regulatory process for the mining industry.

With PolyMet's FEIS, regulators appear to be ignoring yet another Minnesota law, Chapter 6132.3200 of the Nonferrous Metallic Mineral Mining Law - Closure and Post Closure Maintenance which states, "...the mining area shall be closed so that it ... is maintenance free". DNR appears ready to approve the FEIS mining plan knowing full well that it cannot meet the objective of this statute, that there is no ongoing maintenance once the mining operation is completed. The models knowingly referenced that ongoing water treatment would be necessary for hundreds of years after mining is completed. It appears to us that DNR would fail to uphold the letter of the law, and ignore their duty to protect the environment and safeguard the public's health by permitting the NorthMet mine with an indefinite maintenance time frame.

For too long we have watched our mining regulatory agencies ignore standards and defer the hard permitting decisions. There is no longer a trust that DNR and PCA have the political will to do what is best for the people and the environment when it comes to mining. There is grave concern by us and the general public about the ability of regulatory agencies to follow the law and fully enforce mining permits, or to judiciously monitor and take meaningful, timely and effective corrective actions (adaptive management) that would address the systemic pollution issues at this proposed mine site. Because the PolyMet project would operate in and expose a higher sulfide bedrock formation, located at the top of two watersheds where there is the capability of fouling the waters of the State for centuries, it's important that this project should be terminated until such time as industry can produce a responsible mining plan that demonstrates it can safely operate in a water-rich environment. This FEIS fails in that regard.

PolyMet's FEIS modeled the issue of where the runoff from the mining operation would flow. This is a foundation upon which this plan is built. We find it troubling that outside scientists from the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) have questioned the "modeling assumptions" provided by DNR and used by PolyMet's engineering firm, Barr Engineering, a firm that could gain substantial economic benefits by the mine's approval and construction. The GLIFWC results showed that most of the runoff would run into the St. Louis, but some could also flow into the Rainy River watershed, where it could impact the nearby Boundary Waters Canoe Area Wilderness and possibly even downstream to Voyageurs National Park.

It is our understanding that DNR rejected the request for an independent third party to review the findings, but has rerun the model and now concurs with the GLIFWC findings. The FEIS proposes to deal with this issue through adaptive management. But again, as described above, we are concerned about the ability of regulatory agencies to successfully enforce permit requirements or

of the mining industry to implement them, especially when significant costs are involved to fix the problem. Air and water quality violations, large fines, and costly fixes have been frequent and persistent with our modern taconite industry, yet pollution problems continue today.

The PolyMet FEIS in page 119 (sections 3.2.2.3.10 Engineered Water Controls) says, “The Plant Site would include water management features designed to control water potentially affected by sulfides and metal leachates from tailings and hydrometallurgical residue.” But in reading through the details of this plan there are critical assumptions we question, including that the company will successfully capture 90+% of the surface water and 100% of the groundwater (pg 154). These seem unrealistic. Because of this assumption, the plan does not recommend the use of a geo membrane to reduce infiltration, nor is there a double liner with monitoring and leachate collection between liners, a standard practice for modern landfills, which is what this essentially is. There is also an assumption that there is no water flow through the fragmented bedrock. Anyone familiar with the Canadian Shield certainly understands that the rock has fractures. And if it doesn’t have multiple fractures before mining begins, the initiation of mine blasting is likely to induce some fractures within the area. Actual empirical data on rock permeability are needed for scientific conclusions.

As mentioned elsewhere in our comments, unexpected climatic changes are leading to increased incidences of severe rainfall events. On page 120, the FEIS makes an assumption that, “An emergency overflow channel would be constructed as a backup means of controlling pond elevation, but discharge from the emergency overflow to the environment is not expected. The emergency overflow would be provided for protection of the dams in the rare event that freeboard within the Tailings Basin is not sufficient to contain all storm water.”

The fact that the overflow will be provided is important, but this should not be the sole protection in place to prevent a Mount Polley-type dam breach. With toxic heavy metal leachate in the tailings pond water and sediment, every effort to safeguard against a breach should be considered responsible management.

The Mount Polley disaster provides important new insight into this FEIS, since the technologies used at Mount Polley, and those planned by PolyMet are similar. One of the recommendations from the Mount Polley Review Commission was to utilize a dry stack system for tailings (see pg. 162, 3.2.3.5 Identification of New Alternatives). However, the FEIS states, “No reasonable alternatives were identified that would potentially offer substantial environmental benefits compared to the NorthMet Project Proposed Action.” We believe the FEIS has missed an opportunity to not only improve environmental protections, but also reduce long-term risks to the lives of people living near the tailings basins. PolyMet and the regulatory agencies should thoroughly study and consider implementing the dry stack technology.

Finally, we have grave concerns about the DNR solution in the FEIS to a number of unanswered, unresolved technical questions, that they will be solved through “adaptive management”. While it is possible some issues can be resolved by technological advances and innovation, it is also likely experts would encounter problems for which there is no practicable solution.

Then, what would the regulators do? It seems unlikely they would have the authority or political will to shut down the mine since this has not happened with the taconite mines across the Iron Range. And if a mine was forced to close due to non-compliance with environmental permits, it is likely that the Legislature would come to their aid by modifying the offending standard. This could potentially lead to unresolved, serious pollution problems that might go unabated for decades as

has happened with so many past mines. Rather than risk putting the State in such an awkward position, we should be proactive by rejecting the FEIS as inadequate and protect our citizens and the environment.

Because this is a low-grade ore deposit, the financial return to PolyMet will be marginal even with high metal prices. With low prices, like those we are currently experiencing, there will be a strong economic incentive to shave corners wherever possible. This could negatively affect environmental protections, mine safety and staffing levels, and lead to the familiar boom-bust cycle many mining operations and communities across the globe experience. When the State scrambles to help miners harmed by the iron/steel bust cycle, there is added incentive at the legislative and administrative levels to help the miners and company at the expense of the taxpayers and the environment. Marginal strategies are often employed to make the mining operation profitable again. Whether it's reducing royalty payments to the State, shifting electrical energy costs to the general public, allowing mines to operate with expired permits, exempting the mines from current standards, or changing pollution standards so that the mines can comply, it all becomes a race to the bottom. We need to break out of this cycle and embrace a more sustainable economy.

Wetlands Mitigation

A major issue for us is the lack of complete information in the FEIS regarding the ultimate wetlands impacts. They are not possible to determine, given the uncertainties as to exactly how the NorthMet mine will develop, in particular with regard to the indirect wetland impacts. Therefore the FEIS should include some estimate of indirect impacts and how they would be mitigated. To leave this significant issue as a completely open question is unacceptable.

There is also concern over where the wetland mitigation will take place, since most of the mitigation occurs outside the watershed. The FEIS places less than a third (508.2 acres) of the mitigation for direct impacts in the St. Louis River watershed, and the rest (1094.5 acres) in the Mississippi River watershed. And there will be almost no mitigation in the headwaters of the Embarrass and Partridge Rivers, where all the wetland impacts occur. Additionally, there is no mention in the FEIS of if, or where, the indirect impacts and mitigation efforts would occur on potentially several thousand acres (6,568.8 to 7,694.2 acres depending on the assessment method used). Even if only 10% of these wetlands are indirectly impacted, as much as 770 acres of mitigation will still need to be found. Because it is so difficult to find acceptable mitigation sites, it is highly likely that mitigation for any indirect impacts will also be done outside of the watershed.

This loss of wetland function will be a permanent impact to the St. Louis River watershed and no amount of mitigation elsewhere in the state will correct the problem. This impact also appears to be a violation of the federal Weeks Act, under which these lands were originally acquired by the federal government. The Weeks act was passed into law to protect the headwaters of our nation's navigable rivers.

The FEIS also fails to recognize that even though the Superior National Forest does not lose wetland acreage, as a result of the land exchange, statewide there will be at least 900 acres of high quality, natural wetlands lost, and possibly much more. Over 50% of these are forested and open bog wetlands, with functions on the landscape that are very difficult to replace and mitigate.

Loss of High Quality Wild Habitats

In our comments on the SDEIS, we raised concern over the permanent loss of 1,719 acres of habitat designated by DNR as having High Biological Diversity. These lands are within the 3,908.3 acres of forest and wetland area directly impacted by this project including some threatened plant communities, and endangered, threatened or, special concern plant and animal species. The FEIS document in addressing this issue only says that the land will be restored to a stable, vegetated condition after mining. This is equivalent to saying that a duck marsh can be restored by building a swimming pool. The two are not the same, and the environment and the future citizens of the state will be the poorer as a result. We think the FEIS has undervalued the long-term benefits these lands provide to the citizens of Minnesota when compared with the short-term benefits of a 20 year copper-nickel mine.

A major shortcoming of this FEIS process is that Minnesota has not taken the time to step back and assess the overall impacts that copper-nickel mining could have on our lands and water, or to identify those special places in Minnesota where the natural resource values are so significant that mining should never be considered there. The value of the ecosystem services provided by these lands should be part of the equation in deciding whether or not to mine them, what type of mining would best preserve these services, and whether or not a land exchange can replace them.

The people of Minnesota deserve a cumulative environmental impact assessment to determine the full environmental cost associated with existing mining and any future impacts from proposed or potential mining operations across northern Minnesota. With non-ferrous mining prospects in all three major watersheds in Minnesota, we could end up with each of them being impacted by acid mine drainage. The citizens of Minnesota have the right to expect a study to examine in detail mining plans that could forever change the landscape and the waters that flow from there.

Financial Assurance

This project carries with it financial baggage unlike anything ever proposed by the mining industry in the state. The plan modeled the need to monitor and treat runoff from the mine for 200 years and the tailings basin for 500 years. These time frames are unprecedented. It is unclear to us how the State can insure that its citizens are free of financial liability for such an extended period. After all, our State has only been in existence for 157 years and this cleanup effort could last for three times that long, or longer.

State Auditor, Rebecca Otto, astutely and bravely voted against this proposal, realizing the financial risks of the costs and benefits associated with the project. This folly is attempting to balance 200-300 jobs for 20-30 years, against the permanent value lost in timber productivity, wildlife habitat, wetland functions and water quality, plus the nearly perpetual costs associated with the requirement to monitor and treat acid mine drainage for an indefinite period. There is no financial methodology or institution that can assure the states citizens that at some point they won't be forced to assume the financial responsibility to monitor and clean up this project.

A significant deficiency of the PolyMet mine project is the need to provide a very large financial assurance package to protect Minnesota's taxpayers for such a long period of time. We believe that the State should acquire a cash bond in the neighborhood of \$1B, to monitor and remediate uncovered environmental damages. The State should invest this bond and allow it to grow to provide enough income to cover clean up costs for when the mining company goes out of business or defaults.

The State should also ensure that all corporate interests in this project are held equally accountable. Meaning, the use of a “shell corporation” should not be allowed in an effort to protect the parent company and its subsidiaries, partners, and investors. All of these should be held as responsible parties, with their assets used for any remediation, prior to the State using its financial assurance bond.

The fact that a financial assurance plan was not included in the FEIS is a glaring deficiency in our view. The public has the right to know what the financial assurance package entails, and the risk involved, before the project is permitted. This needs to be included in the FEIS which is supposed to include economic, as well as social and environmental impacts.

Also concerning is the retention of a law firm with strong ties to the mining industry. No matter how well intended, this decision has colored the perspective of the public and has cast doubt on whether the “blind eye of justice” will be served in this case. This lack of independence and transparency raises a question about the resolve of the State to adequately represent the best interest of its citizens and protect the environment.

Land Exchange

Under Theme LAN 04 – Para. 1, the Response says, “It is the position of the United State that the mineral rights leased by PolyMet do not include the right to open pit mine the National Forest System land. PolyMet disagrees with this position and argues that the mineral rights it seeks to utilize provide for access to the minerals by any mining method, including open pit or surface mining. The Land Exchange Proposed Action is being used by the U. S. Forest Service (USFS) to resolve this fundamental conflict, rather than possible litigation that has no certain outcome.” It is our position that the contention of the United States is correct in its assertion that the title and statute does not permit surface or open pit mining. If PolyMet wishes to challenge this through the court system, it is their right. But the USFS should not permit headwaters lands acquired under the Weeks Act, a law originally codified to protect the nation’s headwaters from pollution and destruction, including being forever altered by an open pit mine.

If the USFS is correct in their interpretation of the law, the mining company may not damage USFS surface rights. PolyMet could only proceed with an underground mine. If PolyMet finds this to be financially unattractive, then the plan to mine should be postponed until such time as the demand and value for the minerals is sufficiently high that it can be done without sacrificing the surface rights of the USFS. These minerals aren’t going anywhere, so waiting for increased demand, higher prices and new technologies to make this project successful is not too much to ask for the preservation of Minnesota’s environment.

We do not believe an exchange is in the best interest of the citizens, and it should not go forward. This would preserve the intended protections originally found in the Weeks Act, allows the USFS to continue to manage the surface estate for the benefits of the citizens, and still retains the option for suitable underground mining in the future.

Land Exchange: Questions on Aggregate and other Reserved Rights in Land Titles

We also have concerns and questions about the amount and value of aggregate material potentially found on the exchange parcels, who will own them after the land exchange is done, and whether or

not they could be mined. There also are questions about some “timber reservations” found in the abstracts. There doesn’t seem to be any discussion addressing these issues in the FEIS. We believe these are valid concerns that should be addressed in the FEIS.

Land Exchange: Acreage and Resource Protection

The land exchange proposed by the parties is much larger than the NorthMet Mine footprint, which seems larger than necessary. The FEIS states, “Under this alternative, the federal government would have conveyed only the federal land (that is 2,719 of the 3,015 acres) that would actually be used for the NorthMet Project Proposed Action.” There is no suitable explanation for this difference. Instead, the FEIS says, “Environmental assessment of the NorthMet Project Proposed Action identified the potential for air quality effects at the Mine Site boundary.” (i.e. Air quality regulations are enforced only at the property boundary.) “A larger land exchange area would mitigate potential air quality issues; consequently, this alternative was eliminated from further consideration because it would not provide an adequate buffer.” The fact that the FEIS rejects shrinking the land exchange to only the lands necessary for the project, and rejects saving 3 square miles of the “100 mile swamp” simply because, if PolyMet owns the land they don't have to address their own air pollution, and the pollution will be diluted by a bigger ownership, seems unacceptable to us. The State should not accept this as a suitable mitigation strategy for the impacts caused by the mine’s air quality issues, and should instead seek alternative mitigation strategies to control the air pollution, while at the same time preserving three square miles of wild, undeveloped land (See page 183, Section 3.3.3.3.4).

We thank you for the opportunity to provide comments on this controversial project. We are hopeful that you will consider protecting our clean water, public forest lands, and fish and wildlife habitat as a higher priority than extracting the minerals that lie beneath them.

Sincerely,

/Rich Staffon/

Rich Staffon, President
W. J. McCabe Chapter, Izaak Walton League of America
218-879-3186, rcstaffon@msn.com