PolyMet NPDES/SDS Permit - Response to Comments

"Water" Spreadsheet Response to Comments: Pages 1 - 167

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"Water" Spreadsheet Response to Comments

Sort ID	Commenter Name	Commenter Org	Comment Text	Combined Theme and Individual Responses	Contested case Hearing Response
1	Joshua Brand	Citizen	As a Minnesota resident and an annual visitor to the Biwabik area, I would like to state my support for the Polymet mine. The job generation opportunity is important to the area and should move forward as long as the project is in full compliance with all federal, state, and local laws and regulations. I firmly believe that a sound technical solution can be found to any environmental concerns about the project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
2	Chris Loudon	Citizen	NO NO NO NO NO! No sulfide mining near the BWCAW. This mine will fail as all sulfide mines in the past have. The wilderness will be irreparably harmed costing generations of jobs. The state will be on the hook for the cleanup costs as the mining company will have declared bankruptcy and moved on.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
3	Ronald Namchek	Citizen	Polymet mine is a good project for Minnesota workers. The mine and all the good workers will protect the water quality at this mine. This mine and the workers want clean water and have a good plan in place to protect the water quality. Please proceed with this mine so good people can get back to work.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
4	Kenneth Sansome	Citizen	There is absolutely no 100% guarantee that mining will not produce leaking and contamination of soil and groundwater. Likewise there is no guarantee that cleanp can be done to restore land and water to its current clean condition.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
5	Kenneth Sansome	Citizen	If liability occurs to a mining company, there is no guarantee that that firm will forego bankrupcy and avoid ongoing responsibility. Since the BWCAW is unique, prisitine, and irreplacable, no risks to it should be taken. No permit should be given for this mining.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

6	Jim Bambenek	Citizen	Dear Sir or Madam The Boundary Waters Canoe Area and the surrounding lake country is a national treasure. It deservers the most protection available to it. The earth and the thousands of people, from all over the world who visit here, deserve to have it protected ! The earth, and the worlds people need it protected. The PolyMet mine is not in anyone's best interest, nor the interests of the Boundary Waters Canoe Area. The mine company says they will protect the air and water at the proposed mine site. However mining's track record with mines is deplorable. The Rio Tinto is a river in Spain polluted by a copper sulfide mine. It runs red and dead, with a ph of 2. The Phoenicians, then the Romans, started to mine here 3000 years ago. Is this the possibility we want to see in Minnesota ? Please do not let this ill advised mine proceed. Please stop the PolyMet Mine !Regards Jim Bambenek	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
7	Kathleen Weflen	Citizen	Copper-nickel mining has never been done anywhere in the world without damaging the environment. Because of this, the assurances of the mining company and its parent corporation ring hollow. All the potential impacts on our lands and waters cannot be known. Therefore, the only way to truly protect our irreplaceable natural heritage in this region is to preserve it as is. Because of pressure from commercial and individual interests, this stewardship will be hard to maintain. But conservation for the common good can and should be done because it is the right thing to do.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
8	Robin Vora	Citizen	We own property on the St. Louis River south of Aurora and are concerned about water quality and flow, and the long-term safety of the proposed Polymet mining project, including waste storage dams. We enjoy the river and do not want to see the flow or water quality diminish. Reduced flows or pollution would also considerably devalue our property. Basically, we do not support any permitting that would reduce water flows in the St. Louis River or result in any pollution of that river.	The NPDES/SDS permit does not regulate the volume of water in waters downstream of the project – the DNR water appropriation permit addresses that issue. However, as described in the EIS, the project is designed to distribute the discharge from the facility to the receiving waters such that the flow in downstream waters is maintained within +/- 20% of the existing flow. Treatment of the discharge through the WWTS using membrane treatment technology (e.g., reverse osmosis) will minimize effects on downstream water quality, and enforceable operating limits for sulfate and various metals apply.	
9	Robin Vora	Citizen	I find it confusing to understand the overall situation given six different permit applications. It is difficult to ascertain if games are being played with the numbers.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
10	Robin Vora	Citizen	We understand Polymet plans to build the large tailings basin dam on top of old mine waste that may not be sufficiently stable for the large proposed dam. LTV did not design the original tailings basin for this purpose and size dam. Regardless of the strength and stability of the new dam, it's reliability also depends on the strength and stability of its foundation. A large earthen dam would obviously be a major safety and water pollution problem if it should fail, or be breached.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
11	Robin Vora	Citizen	We are concerned about who would maintain the dams adequately, or who would conduct associated monitoring, long after the 20-year period of mining operations. What happens if Polymet or a future owner declares bankruptcy and does not perform adequate maintenance? While dams are hopefully long-lived, they all have a finite life expectancy. Will these dams have to be maintained indefinitely? We could be leaving our children with a nightmare. A temporary earthen dam to store water mixed with toxic mine wastes forever is unacceptable.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
12	Robin Vora	Citizen	We urge Minnesota DNR to require Polymet to consider alternatives to constructing large dams to treat waste, some of it toxic. The rock and water within the tailings basin may not be as non-acidic as Polymet believes.	Comment noted. General comments related to impact minimization were considered during the environmental review process and the cross-media analysis. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
13	Robin Vora	Citizen	At the very least the acidity of the water needs to be monitored and Minnesota DNR maintain the authority to limit raising of the dam during the project, and suspend operations, if acidity limits are exceeded.	Monitoring for pH provides the same general information as monitoring for acidity; the lower the pH, the higher the acidity. Monitoring for pH is required of the influent and effluent of the WWTS, as well as at number of internal monitoring points (e.g., mine pit dewatering, stockpile drainage), in the groundwater and in surface water at the facility.	

14	Robin Vora	Citizen	Bonds need to be posted to cover a worst-case scenario. The variance Minntac is presently requesting for their tailings basin illustrates the problem with mining company promises and commitments. Polymet would especially need strongly enforced environmental protections to safeguard water quality. If approved, I highly suspect Polymet, like Minntac at present, will someday be pleading for relief to maintain jobs and will be supported by the same present politicians and local officials, or their successors, who today assure Polymet will never create an environmental problem. I question that Polyment will make sufficient real financial commitments (bonding) to pay any environment problem or catastrophe.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
15	Robin Vora	Citizen	This proposal is too risky to the environment given that the water in the mine waste will need to be contained forever, long after Polymet ceases to be a company held responsible for its actions. The permit should be denied.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
16	Robin Vora	Citizen	The taxpayer should be not be left holding the bill for the clean-up.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
17	Robin Vora	Citizen	Properties downstream could be ruined.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
18	Robin Vora	Citizen	Please continue to keep me informed if further opportunities to comment, decisions, and any opportunities to appeal decisions.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
19	Donald Namchek	Citizen	Polymet mine will be a awesome project. Good paying jobs with benefits will be good. Polymet is going to use high tech equipment to protect the water quality. This mine is needed so Americans can become mineral independent.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
20	Richard Masur	Citizen	I stand opposed to permitting Polymet because of environmental risks.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
21	Jason Etten	Citizen	Water is one of the key resources to sustain life. Water is a key resource for the state of Minnesota. Water is a key resource for the current and future economic health of northern Minnesota.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

22	Jason Etten	Citizen	The draft water permit for the Polymet mine does not protect water in three major ways. First, the draft permit does not properly account for the capture of polluted water from the mining process. Water not captured will pollute. Second, as part of the process for cleaning water it allows highly polluted water to naturally attenuate making the potential for underground water pollution very high. Finally, it allows the mine to hold polluted water in an earthen damn. This type of damn has failed with horrible consequences. This type of damn is not a proven safe way to prevent water pollution.	The seepage containment systems function on the principle of maintaining an inward hydraulic gradient across the barrier wall that is part of the system design. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the capture system. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. The Annual Comprehensive Performance Evaluation Report required by the permit will provide an assessment of the performance of the engineering controls, including liner systems, using permit-required monitoring results and internal operational data. See response to Comment 612 regarding the attenuation of seepage from the existing tailings basin. Dam safety issues are addressed in the DNR's Dam Safety Permit.	
23	Jason Etten	Citizen	These failures in the water permitting threaten the health of area communities both with the physical health of the residents and the loss of economic stability from tourism for decades or centuries.	Comment noted. This comment states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
24	Jason Etten	Citizen	This mine is a terrible idea for the future of Minnesota but the worst part is the proposed care of water resources.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
25	Jason Etten	Citizen	The DNR needs to hold Polymet mine to the highest standards.	Comment noted. This comment states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
26	Jason Etten	Citizen	This draft water permit is substandard and allows half measures to be taken that will endanger the future of our state.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
27	Julia McCormick	Citizen	I am livid, seething mad, that the impact study was negligently and drastically downscaled by the U.S. Forest Service. This area demands the most thorough level of environmental review of potential copper mining impacts. Copper mining is horrendously toxic and there are NO excuses for not recognizing that fact and putting this area into great danger!	Comment noted. This comment states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
28	Julia McCormick	Citizen	The BWCA is Minnesota's crown jewel! People from around the world come to enjoy it's priceless splendor. Minnesotan's and people from around the world pay money to experience this gem for the NATURAL, UNTAINTED PRISTINE, UNIQUE beauty that includes viewing and listening to wildlife and feel the spiritual quietness that is now almost non-existent in our state and in the world. I have relatives and friends who send their children to camp there, year after year after year because of the experience this area holds and the fact that it offers "once in a lifetime" memories like nowhere else! We make it a priority to spend time in and escape to the BWCA to let go of the trials and tribulations of life. To be able to breathe the fresh air, listen to the wind, the wolves howling, the loons and experience the real definition of wild nature and the positive rejuvenation, revitalization, relaxation, healing and the appreciation of natural beauty that you can never find in every day life!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

29	Julia McCormick	Citizen	How dare our precious treasure be exploited, ESPECIALLY by another country! The Environment-Killing Trump Administration has NO right to put these lands in great danger of guaranteed contamination. It's a known fact, that the company(s) behind this knows the dangerous risks involved yet continues to push it down our throats with the knowledge that their mines are completely irresponsible, short-sighted, regressive, self-serving, greed-based, exploitative and deadly to humans and nature! These companies could care less about the maiming of these areas, the people, wildlife, terrain, and water that are affected. This endeavor is greed-based! WE LIVE IN THE 21ST CENTURY! This is horrendous throw-back legislation! If Chilean Billionaires want to destroy and contaminate lands in pursuit of greed, then let them attempt to do it in their own country, NOT OURS! I find it outright criminal that this is being done by a Billionaire's family who rents property from the Kuschners! How convenient an arrangement is that? The nepotism and rabid, metastatic takeover of our pristine lands by the Trump Administration is rampant, sadistic, villainous, outrageous and monstrous! YOU WILL NOT TURN THE BWCA INTO A TOXIC WASTELAND FOR PERSONAL PROFIT! If money is the motivator, then preserving the BWCA and "using it" for ECO-TOURISM is where the long-term monetary gains lie, NOT IN THE DESTRUCTION OF IT! The fact that these copper-nickle mines are even up for debate and allowed in these areas all with the knowledge of the lethal-known risks and life-time lasting irreversible damage is CRIMINAL! Only greedy, self-serving morally bankrupt people pass this type of legislation!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
30	Jeanine Kelley	Citizen	I don't think the DNR and MPCA has done an adequate job of explaining how Polymet proposes to protect the area water.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
31	Jeanine Kelley	Citizen	I've heard that tailings will be held behind a dam wall and a liner will be used to prevent sulfuric acid tainted water from leaking. Other sulfide mines have had dam walls that have failed.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
32	Jeanine Kelley	Citizen	How will this one be different? How long will the liner last? What will prevent it from being punctured & leaking? If a leak occurs, can a clean up be done before long term damage occurs? How much money will it take to monitor this for 500 years after the mine closes? I have not heard clear answers to these questions.	See response to Comment 359. Financial assurance for liner systems is addressed by the DNR's Permit to Mine for the project.	
33	Jeanine Kelley	Citizen	Minnesota's clean water and wilderness should not be at risk for short term gain.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
34	Keith Hovland	Citizen	I fully support the well regulated Polymet project and look forward to seeing it operational in the very near future.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
35	Darryn Ochsner	Citizen	Hello, my name is Darryn and I am putting forth my comment of FULL support of the PolyMet/NorthMet Water Quality Permit! I as a former citizen of the metropolitan area in Princeton, MN, and now current resident of Buhl, MN as a iron ranger for the previous three years of my life completely support the acceptance of this Water Quality Permit.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
36	Darryn Ochsner	Citizen	Growing up near the Twin Cities and having seen life on the Iron Range has been a real eye opener on the importance of this mine coming to fruition. We currently rely on our precious metals we need for everyday life and security to come from other countries where there is no such thing as environmental protections or worker's health standards. We have those regulations and protections here in MN and are some of the strongest in the nation. I have never experienced such clean water and clean air as there is in northern MN, We have been mining here for almost the last 200 years and have some of the cleanest resources there are. This is proof that mining can be done responsibly without excessive harmful pollution. With the large scale mining projects that have existed like Minntac, Hibbing Taconite, Keetac, Minorca, and the Thunderbird Mine, and all the previous smaller mines that have opened and closed since, if pollution was certain as a result of mining companies, it would be here as we speak and as I write this comment. But it is not, We have some of the cleanest freshwater and air in the country and world.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

37	Darryn Ochsner	Citizen	Polymet has shown and proven they have a plan to responsibly finance, build and construct, and operate the Copper/Nickle mine without harm. Please approve this permit so we can continue to have great family supporting jobs in northern MN and fuel our nation independently with the resources we need. Please let this letter participate in the final decision of this Permit. Thank you Thank you,	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
38	Thomas Mcneil	Citizen	I oppose copper nickel mining in this area of our state. There are other locations in the country that pose fewer risks to the water systems. A corporation can leave a polluted mine for the state to clean up, and this can go on for many years and billions of dollars . It would make more sense for our state to invest in other types of business, especially small to medium types, that would help the economy of the region. I like our motto to stay " the land of ten thousand lakes", not the land of ten thousand mines.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
39	Mary Erickson	Citizen	Polymet Mining My family has been involved in mining on the Mesabi Range since it began - two great grandfathers, a grandfather, a father, a husband and myself have all worked in the mining industry. I have lived the boom and bust of iron ore and taconite mining and I understand the importance of good jobs. As I look at the permit process for Polymet I can tell that a lot of planning and thought has been done by the mining officials and the government as they both do due diligence with this project. However, this plan has two inherent flaws. And we are fooling ourselves if we don't face the deeprooted fundamental flaws to this mining site and the inconclusive long range environmental guarantee. The Site: This is a freshwater environment. The St. Louis River flows into Lake Superior which holds Ten Percent of the worlds surface freshwater. Add the water within The Superior National Forest and the Boundary Waters - and we have an important resource. With this type of mining we are putting our water resource at risk for centuries - for 25 years of mining.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
40	Mary Erickson	Citizen	The Guarantee: Who can guarantee that this site will be monitored for 200 or 500 years? Who can guarantee that the costs for possible catastrophic environmental damage will not fall on the backs of those people living here when those who have benefited are long gone. No matter how sincere and hopeful we are, things do go wrong. And an example of things going wrong can be found in the number of miners who have lost their mining pensions. After working 30 years at Eveleth Taconite, my husband believed that he had a guaranteed pension. But it was not to happen because the truth about mining companies is that they are often merged, bought out or go bankrupt. After the legacy costs were eliminated at Eveleth Taconite, Cliffs and the Chinese came in, and made enormouse amounts of money. I don't have any doubt that this can happen with these non ferrous companies as well. Especially among corporations which owe a duty first to their owners and stockholders. I wonder how an industry that faces fluctuations in metal prices, has a history of not fulfulling pension obligations, and is becoming more and more foreign owned, can guarantee that it will be responsible for a site, 175 years (at minimum) after they have left? Think about it. Mary Erickson Mountain Iron, MN Feb. 7, 2018	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
41	Steve Antolak	Citizen	I have studied Polymet for years. I believe that they have done everything correctly to open a successful and profitable mine.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
42	Steve Antolak	Citizen	They will provide jobs for many for years to come. I hope that Polymet gets approved by the Senate and the President. I am looking forward to great things from this company! Sincerely, Steve Antolak	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
43	Michael Hughes	Citizen	Northeastern Minnesota has some of the finest, cleanest and freshest water in the state.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

44	Michael Hughes	Citizen	This, in spite of the fact that mining has been part and parcel to the area for over a hundred years. The business of sulfide being part of the copper and nickel ore is not unique to those ores. Sulfide also is part of iron ore and even though iron has been mined in northeastern Minnesota for over a hundred years, it has not damaged the watersheds.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
45	Michael Hughes	Citizen	Mining for copper and nickel will be no different and for that reason, I support the application for Polymet to mine copper and nickel in the Arrowhead of Minnesota.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
46	Kristin Pursell	Citizen	Mining so near to a world-class national (and international!) treasure should be a crime. The permanent damage this sort of mining will certainly do to our state's natural resource gem should not be allowed.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
47	Kristin Pursell	Citizen	if this company shuts down and moves- it is the people if Minnesota who will have to clean up this mess for GENERATIONS (if it's even possible to clean up at all).	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
48	Kristin Pursell	Citizen	NO to PolyMet's permit to mine. Yes to clean water and the future of clean and pristine water in Minnesota.	This comment states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
49	Richard Nolan	U.S. House of Representatives, MN 8	Dear Commissioners Landwehr and Linc Stine, Today, I write in support of the NorthMet project's major draft permits under review, and urge DNR and MPCA to move forward with their issuance. As the elected Member of Congress representing the proposed NorthMet project site and its surrounding communities, I have a longstanding interest and involvement in its development and progress. I also wish to commend both of you and your agencies on the extensive work and open process that has led to the ongoing comment period and public meetings being held in northeastern Minnesota. As both of you are well aware, these draft permits follow a decade of extensive and thorough environmental review that successfully determined the NorthMet project could move forward to this next stage. Under public review and comment today is the "fine print" spanning thousands of pages outlining how PolyMet will comply with strict state and federal laws that protect and ensure the quality of our region's precious waters and air. Below are my specific views on these permits and why I believe they should be issued to help power the next generation of mining on the Iron Range.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
50	Richard Nolan	U.S. House of Representatives, MN 8	The Draft Permit to Mine (PTM) contains a comprehensive summary of the project, the mining and reclamation plan, environmental and natural resource management and protection, and PolyMet's proposed approach to financial assurance. It also describes in detail specific regulatory standards governing various aspects of the project and the basis of design and/or operational protocols that PolyMet will use to meet these requirements. The issuance of a PTM will bolster Minnesota's efforts to diversify its mineral economy through long-term support of mineral development, production, and commercialization as set forth in Minnesota Statutes. Additionally, consistent with the policies set forth in Minnesota Rules, the project will promote the orderly development of nonferrous metallic mineral mining by using mining and reclamation best practices to minimize and mitigate adverse environmental effects and to preserve and protect natural resources through each phase of the project.	Comment noted. This comments pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comments.	
51	Richard Nolan	U.S. House of Representatives, MN 8	The NorthMet Draft Air Permit (13700345-101) contains the specific parameters PolyMet will comply with to ensure operations from mining and processing comply with the Clean Air Act and additional state-specific air requirements. The draft permit demonstrates that adjacent National Parks and Wilderness Areas – which are subject to more stringent air quality requirements – will not be negatively affected by the operation of the project.	See air quality permit response to comments.	

52	Richard Nolan	U.S. House of Representatives, MN 8	The NorthMet Draft Water Quality Permit (MN0071013) is a draft National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit to construct and/or operate wastewater treatment facilities and to discharge into waters of the State of Minnesota. It contains the specific parameters PolyMet will comply with to reduce pollutant levels in point source discharges and protect water quality in accordance with the federal Clean Water Act (CWA), Minnesota statutes and rules, and additional federal laws and regulations. After years of modeling and engineering work, PolyMet has shown it will be able to utilize its Wastewater Treatment System to treat and release certain water back into the surrounding environment even cleaner than it was received by using a combination of membrane separation treatment technologies (such as reverse osmosis). This engineering technology is vital to protecting downstream water quality and the Great Lakes Basin.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
53	Richard Nolan	U.S. House of Representatives, MN 8	The NorthMet Draft 401 Certification (MVP-1999-05528-JKA) contains the conditions and monitoring regime PolyMet will comply with in accordance with Sec. 401 the Clean Water Act, which is closely interrelated with protecting wetlands under Sec. 404 of the CWA. To receive this certification, PolyMet has proposed to purchase wetland credits from the Superior Mitigation Bank, which is located in the St. Louis River watershed. PolyMet will also be required by the 401 Certification to monitor surrounding wetlands to determine whether indirect impacts will result from the Project. Collectively, the 401 Certification, individual NPDES, general NPDES, and other permits (including the CWA 404 permit) for the NorthMet project will ensure compliance with state and federal surface water pollution control statutes and regulations.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
54	Richard Nolan	U.S. House of Representatives, MN 8	In fact, these draft permits are proof that we have the brains, science and technology to create good paying jobs and protect the environment on the Iron Range for generations to come. Our Nation requires these strategic Minnesota minerals to strengthen our national security and economy, but perhaps one of their most critical uses will be to propel the next generation of "green" technologies in our society. For example, new hybrid cars contain more than 1 ton of iron, steel, copper, nickel, and nickel-based aluminum. Wind turbines contain hundreds of tons of steel and copper – and reduce our air pollution and dependency on fossil fuels. And practically every one of the appliances and devices that power our modern way of life rely on iron ore and precious metals. We have limited choices on how we get these strategic minerals. Though we can recycle a certain percentage, recycling will never be able to take the place of mining – not even by half. Therefore, we are left with two options. Either we can primarily import our strategic minerals from foreign countries with terrible environmental standards and worker protections. Or we can mine them right here at home, where we control the process, create good paying American jobs, and follow the toughest environmental rules and regulations in the world. In my judgement, the latter choice makes the most ethical, moral, and economic common sense. I therefore urge you to finalize these permits and continue the progress we have made to date. Thank you for your review and consideration of my views, and again, for all of your own individual work and that of your agencies on this project. Sincerely, Richard M. Nolan Member of Congress	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
55	Douglas Cook	Citizen	I am not in favor of issuing a water quality permit to an industry that has never proven that it cannot pollute both groundwater and watersheds. Either through leech water or berm failure, the results would be catastrophic to the pristine Rainy River watershed, including the BWCA.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
56	Kelly Dahl	Citizen	I object to the Draft Permit to Mine for the following reasons: 1) The refuse created by the mining and processing activities will produce acid run off that will be devastating to the surrounding area and watershed;	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
57	Kelly Dahl	Citizen	2) The proposed management methods for the inevitable contamination is inadequate; 3) The proposed technology to contain runoff is the same technology used by the Mount Polley mine in British Columbia;	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

58	Kelly Dahl	Citizen	4) The technology used at mount Polley failed causing irreparable damage to the entire watershed;	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
59	Kelly Dahl	Citizen	5) The calculations upon which it has been determined that the runoff containment is adequate are unreliable and insufficient	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
60	Kelly Dahl	Citizen	6) As climate change marches forward, historical rainfall totals and atmospheric conditions are unreliable and a much greater safety factor is necessary (Duluth has experience historic precipitation events in the recent past exceeding historical norms in amount and frequency).	Mine water sumps and ponds typically have normal operating capacity for the 100-year, 24 hour precipitation event (approximately 5.2 inches), and have additional capacity within the freeboard as a safety factor. In the case of a larger 500-year or 1000-year storm event, water can be transferred to the Equalization Basins if needed, where sufficient freeboard capacity is available to contain the aggregate volume of a 1000-year storm event (estimated at 7.0 inches of precipitation in 24 hours) without an overflow.	
61	Kelly Dahl	Citizen	7) The financial assurance calculations are woefully inadequate compared to the cost of attempting to restore the ecosystem to pre contamination levels. 8) The Mount Polley, Anaconda Copper mine and other sulfide mine sites show that the cost calculations and assumptions of the length of remediation efforts are woefully inadequate.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
62	Peggy Scott	Citizen	In the villages near Africa's biggest copper, you can smell and taste the pollution Aug. 2015. Workers drain away polluted water near the Zijin copper mine in Shanghang 2011. Bingham Canyon Mine one of the world's worst water-polluting copper mines. The track record of sulfide mining polluting the water speaks for itself.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
63	Peggy Scott	Citizen	We do not want the waters of northeastern Minnesota polluted by PolyMet. The groundwater in Minnesota is a protected public resource, it is not the property of any mining company. We know in advance that PolyMet would pollute our waters and Water treatment would be perpetual. Residents of Salt Lake valley had no choice: their water was undrinkable. We do have a choice. Not to choose perpetual pollution in the first place. Please do not give PolyMet the permit to do harm to our drinking water. Lake Superior is too important to our health. We do not want our children to inherit a toxic environment and be fighting years from now on who let this happen to the water rich environment of Duluth and surrounding area.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
64	Peggy Scott	Citizen	There is not not enough money to clean up from these mining disasters and PolyMet will be no different.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
65	Steven Schmidt	Citizen	I am concerned about the water discharged and if the birds and deer etc. can drink it and if not then there seems to be a better solution. I also am concerned that this could affect my drinking water and property value in Embarrass. I guess I'm scared of the situation. thanks, steve schmidt	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

66	Ellyn Wiens	Citizen	I still have not seen proof that the proposed system for containment will work. Why does the experiment have to take place in MN? at the hands of a foreign government? I fear for the BWCA and all surrounding waterways. The damage will outlast the lives of my grandchildren. Please don't let this happen!!!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
67	Elizabeth Miller	Citizen	I am a life long Minnesotan, born in Hibbing, and migrated to the cities. I am completely against this project as the economic benefits are extremely short term compared to the unknown ecological potentially catastrophic results that compromises the very essence of why we have this beautiful piece of land maintained the way it has been for so many years. This land is sacred and many generations before ours decided to treat it as such. Our future generations deserve to have this space kept safe from poachers trying to extract dollars from the earth with no real regard for the health and beauty of the land.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
68	Elizabeth Miller	Citizen	Northern MN can be a hard place to find a job as mining jobs have slowly gone away in the last 40 or so years, it is important that we do not keep repeating the pattern of digging more holes in the earth for quick money before another round of layoffs.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
69	Elizabeth Miller	Citizen	The damage will be irreversible as the studies are inconclusive and never ever has an enterprise interested in becoming filthy rich off the land ever left the land in the same condition or better. We as Minnesotans, North Americans really, need to protect our forests so that they can continue capturing pollutants and providing oxygen, maintaining a diverse ecology and a legacy to the future inhabitants. Please reject polymet, do not let them begin chipping away at the irreplaceable and priceless gift that is The Boundary Waters. Big business has no business there.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
70	Laura Gauger	Citizen	I am providing information from several different expert reports regarding water contamination at the now-closed Flambeau Mine near Ladysmith, Wisconsin. This is relevant to the present hearing because, in an effort to justify moving forward with the proposed PolyMet project, some have suggested that the Flambeau Mine, which was a copper-sulfide mine, operated “without polluting local waters.” In fact, the trade organization, Mining Minnesota, sent a letter and glossy brochure to Governor Dayton and all of Minnesota’s state and federal lawmakers several years ago in which they stated the reclaimed Flambeau Mine was “home to clean and healthy groundwater of the same quality as before mining took place.”	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
71	Laura Gauger	Citizen	1. The first expert report1 I am submitting into the record (Tab 1; electronic page 8 of my submittal) was authored in 2017 by Dr. Robert E. Moran, a hydrogeology consultant from Colorado with over 45 years of domestic and international experience in doing water quality work for the mining industry, private investors, tribal and citizens groups, NGO’s, law firms, and governmental agencies, at all levels (https://remwater.org/). Dr. Moran reviewed Flambeau Mining Company’s own water quality data on file with the Wisconsin Department of Natural Resources and concluded the following: “Roughly 20 years after the cessation of active mining, Flambeau Mine ground waters are contaminated by past Flambeau Mining Company (FMC) activities. FMC data confirm that, as a minimum, dissolved concentrations of the following constituents significantly exceed FMCs baseline concentrations (1987-88): copper, iron, manganese, zinc, sulfate, alkalinity, hardness, total dissolved solids, specific conductance.”	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

72	Laura Gauger	Citizen	2. But if you don't want to take Dr. Moran's word for it, the second report2 I submit into the record (Tab 2; electronic page 16 of my submittal) was issued by FMC in December 2015. In this report, the company itself documented 45 violations of Wisconsin water quality standards in 17 different wells at the Flambeau Mine site. The table showing all of the violations is buried deep within the FMC report. It's on electronic page 84 of my submittal. As Dr. Moran stated, "these waters would require expensive, active water treatment to be made suitable for most foreseeable uses. Historically, most such costs are paid by the taxpayers." In terms of water treatment activities at Flambeau, Dr. Moran also documented the failure of PASSIVE water treatment to control surface water pollution. He stated, "Contaminated discharges from the southeast corner of the FMC site have resulted in … [a tributary of the Flambeau River] being added to the Environmental Protection Agency (EPA) impaired waters list for exceedances of acute aquatic toxicity criteria for copper and zinc. Since 1998, FMC has instituted six different work plans to address this soil and water contamination issue. As of fall 2016, copper levels in the Flambeau River tributary still exceed the acute toxicity criterion, and FMC has not secured a mine reclamation Certificate of Completion (COC) for this portion of the mine site."	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
73	Laura Gauger	Citizen	3. The third expert report3 I submit into the record (Tab 3; electronic page 90 of my submittal), which also includes a number of instructive diagrams and tables, was authored in 2009 by Dr. David Chambers and Dr. Kendra Zamzow of the Center for Science in Public Participation in Bozeman, Montana ("http://www.csp2.org/). After an extensive review of FMC documents, the two researchers concluded the following: "Copper contamination in excess of Wisconsin water quality standards is reaching the Flambeau River from the Flambeau mine site and the Flambeau pit is leaching contaminants that exceed Wisconsin groundwater quality standards to beyond the slurry wall designed to separate pit water from the Flambeau River." Please note that the Flambeau pit was about 32 acres in size, compared to the PolyMet project that will have three open pits totaling 530 acres. In addition, all of the Flambeau ore was shipped to Canada for processing, so no tailings are stored at the project site. To see additional information on how the two projects compare, please see the attached chart (electronic page 7 of my submittal).	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
74	Laura Gauger	Citizen	In conclusion, I would like to leave you with a quote from Dr. Moran: "Flambeau ground and surface water quality is being and has been degraded—despite years of industry public relations statements touting the success of the FMC operation. Rio Tinto said in a 2013 public relations (PR) release regarding the Flambeau Mine: "Testing shows conclusively that ground water quality surrounding the site is as good as it was before mining." In efforts to encourage development of the other metal-sulfide deposits in northern Wisconsin and the Great Lakes region, the industry approach has been to simply repeat this false statement over and over, assuming that repetition will make it believed. Unfortunately, the FMC data show otherwise." I respectfully ask that you please consider the information provided by Dr. Moran, Dr. Chambers and Dr. Zamzow when making your decision about the draft permits for the proposed PolyMet mine.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
75	Shona Snater	Citizen	As a taxpayer on the state of Minnesota, I am thoroughly upset and disappointed to see the MPCA even considering the possibility of allowing the PolyMet mine to operate so close to a state and national treasure, the boundary waters. WATER, not metals, is our most valuable, precious resource. In a time of declining water quality AND scarcity, this is a foolish idea to even be entertaining. I ask that any further permitting by the MPCA not be allowed for this or any mine near the boundary waters.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
76	Shona Snater	Citizen	PolyMet has not even provided near enough money for the clean up once they are done. I am tired of seeing foreign entities come into our state and make money off of our resources. This is not worth the few jobs it will provide. We need to look more at sustainable sources for employment.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
77	Amy Berns	Citizen	The permit seems very comprehensive and will help Polymet to mine materials our society needs in an environmentally conscious manner. Reading through the permit, in section 6.16.52.c, "MSDS" (outdated term) should be corrected to "SDS" as it is listed in 6.16.52.b Great work. Amy Berns	Comment noted. The permit has been revised to correct the term "MSDS" to "SDS".	

78	J Lang	Citizen	The damage to this beautiful area cannot be allowed. Our environment needs to be protected from those who want to exploit it for profit. Safeguards will fail as they always do.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
79	J Lang	Citizen	The promise of "jobs" should not be a carrot to approve jeopardizing the environment and the tourist industry.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
80	Robert Stodola	Citizen	The DNR's draft permit would allow PolyMet to use the same wet slurry tailings storage method that resulted in a catastrophic collapse and devastating pollution at the Mount Polley mine in British Columbia, Canada, even though better and safer technologies are available. A tailings dam failure would threaten downstream populations, including Duluth, Cloquet & the Fond du Lac Reservation. The recent tailings basin disasters of Canada's Mount Polley dam in 2014 and Brazil's Fundao dam in 2015, whose toxic waste flowed over 400 miles downstream, demonstrate that large-scale mine dam failures are not only possible, but likely. Sulfates directly contribute to the methylation of mercury, with resulting fish consumption advisories. The old LTV taconite property purchased by PolyMet is already leaching sulfates and other metals into the watershed.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
81	Robert Stodola	Citizen	In addition to an acute potential for Acid Mine Drainage (AMD) and the discharge of heavy metals to the St. Louis River watershed, the PolyMet mine would discharge sulfates at a level that could decimate wild rice stands downstream. Wild rice holds critical importance for Minnesota's Native American tribes, and the St. Louis River watershed flows through tribal lands.	During the EIS process, PolyMet offered to resolve outstanding issues related to sulfate and wild rice by incorporating into the project design advanced wastewater treatment that is capable of achieving 10 mg/L sulfate, the current wild rice standard. The permit includes an operating limit of 10 mg/L sulfate for the effluent from the WWTS. This operating limit for sulfate is an enforceable permit limit; if it is exceeded, it will be a violation of the permit. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. Because the authorized discharge from the WWTS is limited to 10 mg/L and the required engineering controls will prevent unauthorized discharges, the project as designed will not harm wild rice.	
82	Paul Bultman	Citizen	This type of mining, in the entire history of the world, has never not polluted groundwater with toxic chemicals. Why would you think this mine will be any different? If you call yourselves scientists, history has provided the perfect scientific study with 100% conviction that this mine will damage precious water resources. Why would we knowingly and intentionally permit this to happen? What, for some temporary jobs that will end in the not distant future when the next recession occurs?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
83	Ben and Barry Wolfe	Citizen	Regarding "restoration" when the PolyMet DOES in the future contaminate and destroy the environment....remind yourself what is happening today...and supposedly the science at the time was "god!" BAD will only come from what may happen if the permits are allowed....and most important, there is NO guarantee after PolyMet or any simiilar company destroys the safety and quality of the water, they will EVER have the money to pay for it...LET ALONE IT MAY NOT BE FIXABLE!!!! WE OPPOSE ANY TYPE OF COPPER-SULFIDE MINING....	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	

84	Ben and Barry Wolfe	Citizen	Below is the article about the toxic problems trying to be paid for due to contamination by 3M...you know how bad it WILL be if PolyMet is allowed to mine, or any copper-sulfide mining company. This was in the Duluth News Tribune, Sunday, February 11, 2018 Minnesota vs. 3M: A guide to the $5B trial: State's biggest environmental lawsuit, over company's PFCs in groundwater, starts this month By Bob Shaw / St. Paul Pioneer Press on Feb 10, 2018 at 4:25 p.m. ST. PAUL — Call it the $5 billion Teflon trial — Minnesota's biggest environmental lawsuit ever. *Summary: The news article details the future lawsuit against 3M. The state says chemicals were made by 3M, dumped by 3M and consumed by 67,000 local water drinkers and have now spread around the world. The article provides viewpoints from both sides of the lawsuit. The article provides other examples of major environmental lawsuits, such as Deepwater Horizon and Exxon Valdez. The article discusses the chemicals used by 3M and their dumping of those chemicals. The article provides information about concentrations of chemicals and potential consequences to the environment and human health.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
85	Dominic DiVita	Citizen	To whom it may concern: Water quality in Minnesota is known to have been held to a higher standard than many other places, and for good reason. Minnesota contains the most visited recreational natural area in the United States, and one of the driving forces behind its popularity is the pristine lakes and rivers that keep people returning to the Boundary Waters Canoe Area Wilderness. Having connected personally with the land there and having my love of the outdoors and parks developed there makes it an extremely important place for me and many others. Because of this, any attack on this land that holds a special place in my heart feels like an attack on my soul.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
86	Dominic DiVita	Citizen	Copper-nickel mining has a terrible history, with not one of its sites being handled correctly for the environment. Runoff from these mines causes acid mine drainage, which, due to the location of the potential mine near the Kawishiwi river, threatens the Boundary Waters. This threat is not an isolated issue that would only affect water resources near the mine, since small waterways, groundwater, wetlands, and a host of other pristine bodies of water connect nearly every water system in the entire Northeastern region of Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
87	Dominic DiVita	Citizen	Even without considering the negative environmental effects that this mine would potentially cause on the water quality of the area, is job creation the only force at play? Sometimes money is never worth the potential risk that a project will cause. According the the PolyMet Fact sheet, the mine will directly disturb 900 acres of wetlands, which they claim they will replace. However, leaving these wetlands alone in the first place will be infinitely better for the area, allowing habitat to be maintained for hundreds of species, allowing water to flow the way it has been for millions of years, and keep carbon sequestered rather than release it into the atmosphere. Copper nickel mining has an awful history, and even with computer modeling, the results from the mine are highly uncertain (see attached Acid Mine Drainage Technical Document published by the EPA). I am passionate about this issue, and Minnesota will be greatly disappointed if the community sees the government put a few jobs above the well being of an entire ecosystem, even more recreational jobs generated by tourism to the boundary waters, and some of the most pristine water that still exists in the United States. The first attachment is an essay I wrote back in freshman year of high school, detailing the negative effects of this mine. Please read it closely. Think about your decisions carefully, and refuse to put business before the environment as governments have been doing for so many years. Sincerely, Dominic DiVita	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
88	Kathryn Stodola	Citizen	AGAINST PolyMet: the wrong mine in the wrong place. Deny the permits.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
89	Kathryn Stodola	Citizen	There are inadequate funds to be set to be aside regarding state financial assurance regulations. PolyMet's proposed $75M in cash for financial assurance was always a joke, and even with the DNR increase of several hundred million, this amount would not even begin to cover the inevitable environmental damage, including widespread air pollution.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	

90	Kathryn Stodola	Citizen	Further, much of the information in PolyMet's applications for permits is ten years old. Using incorrect information for such an important decision is misleading at best.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
91	Kathryn Stodola	Citizen	Take, for example, the assessment of directly impacted wetlands if permitting and construction proceed, most recently conducted by the Corps of Engineers. These results should be made available and should be public knowledge. However, the Corps is not allowing access to this information which almost certainly reveals that larger areas than originally estimated will be impacted.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
92	Kathryn Stodola	Citizen	It's time for meaningful reinvestment on the Range instead of allowing permits for PolyMet and other similar mines.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
93	Robin Raplinger	Citizen	I object the proposed system of liners for the hydrometallurgical residue facility. I see no evidence that the liners will last indefinitely as they must to contain the sulfide/sulfur concentrate indefinitely. Also the hydrometallurgical residue facility will have to be monitored and maintain indefinitely violating Minnesota Administrative rul 6132.3200 subpart 1 that requires the goal of a post closure mines to be "maintenance free."	The HRF liner system is designed to meet the long-term solid waste storage requirements for the HRF waste. This includes: a drainage collection system; a primary 100-mil HDPE liner; a leakage collection system; and a secondary 60-mil HDPE liner placed on top of a geosynthetic clay liner. This has been determined to be a robust liner system for the proposed waste. After operations at the facility cease, the drainage collection system will minimize head on the primary liner to reduce the possibility of seepage losses. If seepage through the primary liner occurs, the leakage collection system will serve as a means of detecting and collecting that seepage. HDPE has increasingly become the liner material of choice since the 1980s. As noted by the commenter, this restricts HDPE liner usage to approximately the last 40 years. Therefore, the actual life of HDPE membrane is unknown. Degradation of HDPE liners is contingent on multiple variables including factors such as temperature and exposed-vs.-covered applications. R.M. Koerner, et al1 predicts that "the half-life of covered HDPE geomembranes (formulated according to the current GRI-GM13 Specification) is estimated to be 449-years at 20°C." Limiting exposure to sunlight/UV and elevated temperatures will prolong the liner life. The primary liner of the HRF would be exposed to the elements for the first few years of its service life before residue levels rise and provide some protection. Further, the residue is expected to be discharged from the Hydrometallurgical Plant at temperatures in the range of 85-105°F (29-40°C); however, some degree of cooling would be expected in the HRF and these elevated temperatures would not be expected for the life of the system. As a result of these factors, during operations the primary liner would experience some exposure to the natural elements and to higher temperatures which will decrease – at an unknown rate – the predicted half-life of the primary liner from the predicted baseline. After operations cease, the primary liner would remain covered for the rest of its life. The secondary liner would be covered and protected for the entirety of its service life. Ultimately, there is no certainty that any waste liner system can reasonably be expected to function in perpetuity without degradation. However, under a dewatered scenario with little to no head on the covered liner system, MPCA believes that the proposed HRF liner system is appropriate for this type of waste at this specific site. 1Koerner, R.M., Hsuan, G.Y. & Koerner, G.R., GRI White Paper #6 "Geomembrane Lifetime Prediction: Unexposed and Exposed Conditions." Geosynthetics Institute. geosynthetic-institute.org/papers/paper6.pdf June 7, 2005. Updated: February 8, 2011.	
94	Robin Raplinger	Citizen	This same "maintenance free" objection and violation pertains to the reverse osmosis and nanofiltration (WWTS) proposals in the permit.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
95	Robin Raplinger	Citizen	How do you calculate the costs and therefore the amount of financial assureance to be required as part of this permit? The permit must be withheld until the issues are resolved protecting MN and US taxpaying citizens.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	

96	Robin Raplinger	Citizen	How do you calculate the costs, and therefore the amount of financial assurance to be required as part of this permit?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
97	Robin Raplinger	Citizen	The permit must be witheld until the issues are resolved protecting the MN and US taxpaying citizens.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
98	Mark Delver	Citizen	Allow Polymet to proceed as standards are met.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
99	Kathy Littler	Citizen	I support the Polymet mine project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
100	Cynthia Klaras	Citizen	I believe Polymet has gone above & beyond to prove that mining can go hand in hand with the environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
101	Barry Lesar	Citizen	The time has come to stop this nonsense and either approve or dissaprove the permits based on the science. To base a decision such as this on what might happen is ludicrous, if everyone based their activity on bad things that could or might happen, no one would do or manufacture anything. Let's move on and mine these materials here, where the mining will be monitored & the environment protected, not elsewhere where the environmental pollution will be far worse & more far reaching.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
102	Roxanne Wright	Citizen	Rain water is dirttier	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
103	Thomas Gentilini	Citizen	Polymet has and will meet all requirements that it should move forward.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
104	Tom Rukavina	Citizen	After 14 years, it is time to issue the necessary permits & let us move forward so we can safely provide the minerals that society demands. 134 of mining in NE MN proves we can do it correctly.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
105	Karl Littler	Citizen	I support the Polymet Mine Project	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

106	Ken Vogl	Citizen	Water is life, already, significant area's of this planet, and literally millions of it's inhabitants have no clean drinking water, or unpolluted air. Once begun man's greed for quick profits over peoples well being, will snowball, as it has in other (poor) communities all over this world.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
107	Ryan Fink	Citizen	I support the water quality permit.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
108	Don Guttormson	Pastor	I believe that a permit should be granted and that adequate monitoring take place. The impact of potential jobs is of great benefit. It will help address poverty on the Iron Range. National avg 12%, St Lois County 15.5%, Virginia, MD 20-25%. Drug addiction is epidemic - Jobs are critical to change this!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
109	Pierce	Citizen	You have done a great job.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
110	Robert Kohzmeter	Citizen	I attended 5 hearings on sulfide-ore mining both here in duluth and on the iron range. I heard many good comments both for and against. One comment stood out: a pro miner stated defiantly "we will mind." If I would have had the opportunity to respond, I would have said, "I'm ok with that but you will not polute out lake superior. We drink from that lake and it is not yours to pollute. You don't drink from it but we do!" If the permit to mine is issued, which I believe it will be, the DNR and Polymet is 100% responsible. Lake Superior cannot be permitted to be polluted. Thank you for protecting the water we drink.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
111	Virgil Sohm	Citizen	I am enrolled member of the Lake Superior Band of Ojibwe, Treaty of 1854, Bois Forte tribal member. Our lakes and streams of the Arrowhead region of the state of MN include our treaty rights to hunt, fish and gather. As a tribal member your proposed facility to mine copper endangers our water. Water is life.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
112	Jason Wall	Citizen	Water is essential to healthy living. We cannot compromise one of our greatest natural resources in Minnesota because we could potentially make some money and jobs available. The risk of long term harm is great and no amount of redundancy will safe guard our water against large scale mining. Water is worth more than transient copper and nickle.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
113	Kim Davis	Citizen	Sulfide mining will damage our water forever! We all need water to survive and can't live without clean water. Please do not approve this permit! Thank you!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
114	Paul Christensen	Citizen	The mine will damage the water quality irreparebly for hundreds of years. We need clean water. We can't live without clean water, we can live without copper and nickel. Please do not approve this permit!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

115	Wendy Salin	Citizen	I strongly oppose the polymet mine. I have serious concerns about the high risk to water, human health, and environment. I am appalled to hear that a health impact analysis has not been thoroughly conducted. I am appalled that we would prioritize a high-risk mining endeavor over precious and rare fresh water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
116	Wendy Salin	Citizen	I am not in favor of the liability this poses to MN's taxpayers. The risk is too great. The reward, too little.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
117	Tahera Mamdani	Citizen	Sulfide mining poses great danger to fish, other wildlife and humans.	This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
118	Tahera Mamdani	Citizen	The acid mine drainage and discharge of heavy metals could decimate wild rice stands downstream.	During the EIS process, PolyMet offered to resolve outstanding issues related to sulfate and wild rice by incorporating into the project design advanced wastewater treatment that is capable of achieving 10 mg/L sulfate, the current wild rice standard. The permit includes an operating limit of 10 mg/L sulfate for the effluent from the WWTS. This operating limit for sulfate is an enforceable permit limit; if it is exceeded, it will be a violation of the permit. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. Because the authorized discharge from the WWTS is limited to 10 mg/L and the required engineering controls will prevent unauthorized discharges, the project as designed will not harm wild rice.	
119	Joanne Isdahl	Citizen	Please deny all permits to Polymet. This mining has never been done successfully in a water rich environment. There are documented disasters with this type of mining. The effects of this could last 500 + years. Why would we risk our beloved northern MN when the stakes are so high?? The EPA itself has said sulfide mining is the most toxic industry. We need to protect our water & environment at all costs. Deny all Polymet permits.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
120	Rachel Schardenbey	Citizen	I request that the DNR reject any motion to issue a permit for the proposed polymet mine, until assurance of 0% contamination can be made. There has be no such assurance under normal conditions and are most certainly not assured in the event of a disaster.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
121	Sally Downing	Citizen	All mines pollute, there is no way we can undo the damage. No matter how much money Polymet says they will provide for clean up, history shows us it is never enough.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
122	Mary Klausen	Citizen	There is no way to safely mine this product. It's never been done without devastating & permanent damage to water, habitat & ecosystems. Don't do it. Shame on us for even considering this in this state of water & huge interconnected watersheds. MN is the giant sponge for water far south of us. Just say no.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

123	Eleonora Lesar	Citizen	I believe that mining & clean water can co-exist. Polymet has met all the particulars asked of them. I strongly support mining & Polymet	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
124	Barry Lesar	Citizen	Living downstream of the plant that Polymet will use, I firmly believe the science & technology exist to protect the water I drink. It is time to grant the permits & start mining & processing the Cu Ni deposits.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
125	Jeffrey LeDoux	Citizen	The information available to all who attended this event shows due diligence. I was particularly interested in all of the wells that have been drilled so you can effectively track and trend water quality. I am very impressed! Thank you!	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
126	Floyd Littler	Citizen	Support	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
127	Ronald Childs	Citizen	I support Polymet 100%	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
128	Donna Littler	Citizen	Support	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
129	Carrie Nicklow	Citizen	Hello, I am writing to share my deep concern and pposition to the draft permit for PolyMet. I do not feel that this process has adequately explored the potential ramifications of a mine such as this, nor has it met state requirements for environmental review, protection of groundwater (per state law) or protection of the watershed.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
130	Carrie Nicklow	Citizen	There are many unknowns in a project such as this, and of course no mine such as this has been undertaken in Minnesota yet. In fact, no mine such as this has been implemented ANYWHERE without causing grievous harm to the surrounding watershed, anywhere in the world. Northern Minnesota as a pristine location, and is not the place to skimp on environmental review, or fast-track industry requests just to create a few jobs (or make some company a profit at the taxpayers expense.) I understand that there has been taconite mining up there for years, which is fine, but PolyMet proposes an entirely new kind of mining with much more severe and essentially unavoidable catastrophic consequences.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
131	Carrie Nicklow	Citizen	I do not feel that the future cost of the all-but-inevitable leaking of the dam has been adequately assessed. Truly, anyone who says that they can account for the cost of managing this boondoggle for 500 years is either lying, ridiculously uninformed, or both. I think that the DNR and the MPCA stop this process if they cannot ensure that they can be ONE HUNDRED PERCENT confident that adequate protections exist for the watershed. Further, if approved, which I strongly disagree with, POLYMET SHOULD PAY IN ADVANCE for the cost of maintaining their mess for the next 500, 1000 years, whatever it is to deal with the fallout of this dam bursting forth its toxic sludge.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
132	Carrie Nicklow	Citizen	I've lived in Minnesota my entire life and have spent many seasons up north in many parts of Minnesota and my husband and I plan to retire near the area where this mine is proposed. I cannot express to you the depth of my concerns for the natural habitat of the area, the watershed, the tourist economy, and the preservation of the area for future generations. Please oppose this permit, as it's just not sufficient to protect the best interests of Minnesota. Thank you, Carrie Nicklow	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

133	Doris Malkmus	Citizen	I am not a scientist I am an elder in our community. When people speak with pride of Minnesota, they think of the lakes and their purity. The MPCA 401 certification should not be given when there is such a vast quantity of tailings to be maintained for so long when climate change may make projections of today unstable. Please act with caution not concern for the next very short 20 years.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
134	Doris Malkmus	Citizen	When it comes to a water quality permit what could be farther from quality of water than stirring up the earth sediments, mixing it with solvents and then letting it sit around for centuries. When I think of water quality I think of pristine. I don't need to go to the BWCA to feel the quality they confer on our state. It is our gift. My parents have a cabin that was one of only a dozen on a pristine lake Now the shore is lined with to huge house all meeting new requirements, but cumulatively the lake is now siltier, there are a small percentage of fish compared to fifty years ago. No one hoped for this, but it happened. The that intangible quality of pristine is just as fragile in the BWCA. Do not believe that water quality can be protected with major disruption in the watershed. Do not issue a NPDES/SDS water quality permit.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
135	Robert Kohlmeier	Citizen	My wife and I attended the Polymet hearing in Duluth on February 8 and I just have to say we Northern Minnesotans have never ever been more divided. We, and we alone, who amongst us are staunchly for, or against, copper nickel mining must work out our divisiveness between ourselves. It is clear to me that this foreign company Polymet stands between us. They are not bringing us together because they are unwilling to take the necessary preventative measures to eliminate the risk inherent in their mining venture that uses outdated technologies. They and they alone are dividing us, and it is wrong. This has become a political issue of jobs versus clean safe drinking water, which all of us deserve and must not be mutually exclusive to either goal. We heard State Senator Tom Bakk testify that there would be "some level of risk". No level of risk upon our citizens should be acceptable!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
136	Robert Kohlmeier	Citizen	So I wish to float a visionary idea of removing Polymet from the equation, and instead, bring Northern Minnesotans and our own DNR together and do the mining ourselves, using our own private and state funding on a more modern mining venture where we the people are in charge. All profits would be poured back into our own state economies instead of leaving the country. We would take responsibility for our own environmental concerns which would necessitate the strictest of requirements, not 40 year old technologies. If Minnesota can afford $500 million dollars for a modern Vikings stadium, we can afford this.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
137	Robert Kohlmeier	Citizen	I am confident we can do this mining safely, but only together. We need to reunite as we should. Why are we letting Polymet tear us apart? I mean it was like a police state at the hearing the other night, frisking etc. What have we become? Our common enemy is pollution and our common goal is safe risk free mining, for ourselves and for our environment. I am simply ncomfortable with Polymet "guarding" our back yard. They need to go, and we need to take over.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
138	Liv Mostad-Jensen	Citizen	I do not support Polymet mining for copper and nickel. I am an active user of the Boundary Waters and do not want to see it environmentally compromised.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
139	Liv Mostad-Jensen	Citizen	While I understand people's desire for good jobs, I do not believe the long-term risk is worth taking for a limited number of jobs in the short-term.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

140	Liv Mostad-Jensen	Citizen	Also, looking at the history of mining operations around the world, I do not trust Polymet to supply the funds needed for potential clean-up. They might promise the world, but it is another thing to actually come through with promises when the time comes.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
141	Candice Pierce	Citizen	Polymer intends to use the cheapest,least safe way to contain toxic tailings; wet tailings behind a 45+ yr old dam. They should be made to use the best, if more expensive, technology: dry tailings containment. Sincerely Candice Pierce.	Alternatives for tailings basin design were addressed in the EIS process, and the EIS was deemed adequate. Tailings dam design is addressed in the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
142	Anita Tillemans	Citizen	NorthMet Draft Water Quality Permit comment to MPCA at link survey.mn.gov/surveylanding/interviewer.asp: This permit proposes to monitor discharges in the Laurentian area from this project's copper-sulfide mining of low grade ore in an extremely waterdependent area of the world at the headwaters of the Great Lakes and the St Lawrence Seaway. Infrastructure including rails and roads will be required.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
143	Anita Tillemans	Citizen	Among the facilities referenced in this draft, the following: o A beneficiation plant o A hydrometallurgical plant o A flotation tailings basin (FTB) including Seepage Capture Systems o A hydrometallurgical residue facility (HRF) o A waste water treatment system (WWTS) – discharge of which will be routed through pipes to maintain flows in Trimble Creek, Second Creek, and Unnamed Creek, with some being recycled directly to FTB pond. o Other ancillary facilities (eg Colby Lake water pipeline): o Mine water filtration train o Tailings basin seepage treatment train o Wastewater treatment solids/byproducts: from the tailings basin seepage treatment train including waste from filters and membrane cleaning and concentrate, which will be routed to FTB pond and mine water chemical precipitation treatment train.	The NPDES permitting program nationwide is reliant on self-monitoring by the permittee. The permit includes specific requirements on the sampling, analysis and reporting of monitoring data. For example, the permit requires that all analyses must be conducted by a laboratory certified by the Minnesota Department of Health. The permit also states that knowingly making a false statement or certification is subject to criminal and civil penalties. The monitoring, assessment and reporting requirements of the permit are intended to identify potential problems before they impact water quality. For example, the permit requires the annual Groundwater Evaluation and Performance Evaluation reports to evaluate the monitoring data on a proactive, forward-looking basis such that adaptive management or mitigation can be implement before impacts occur.	
144	Anita Tillemans	Citizen	Can we rely on a for-profit corporation to monitor itself? The permittee, Polymet, is expected to report all data from the required monitoring stations, whether favorable or not. If reported accurately and standards are not met, then Polymet will be required to monitor again until standards are met. What worthy and worthwhile actions will be taken at the "end of the day?"	See response to Comment 143.	
145	Anita Tillemans	Citizen	If the unfathomable number of reports (essentially required just to monitor the discharge from this mining operation) are maintained accurately with regularity, consistency and competency, what truly effective actions can be taken when standards are exceeded? What of the monitoring stations that have no set standards as guidelines? What of those that are not enforceable? What actions are possible that will return the water to its base levels when the degradation becomes apparent to us all? What amount of money in the form of fees or financial guarantees can reclaim what is lost?	See response to Comment 143.	
146	Anita Tillemans	Citizen	In addition, there is little that anyone can do to prevent natural processes and disasters from occurring, or human error whether knowingly or not; and so, by any standard, this mine will degrade our water resources in Minnesota and beyond. Can any permit for such a mine adequately address these issues?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
147	Anita Tillemans	Citizen	Once copper mining has run its course in the Arrowhead by setting precedent with Polymet, the first of many to come, what will remain and what can truly be reclaimed? "Downstream,"the St Louis River estuary and Lake Superior, the largest body of fresh water in the world? "Downstream," the BWCA, and the Rainy River Watershed, the Superior National Forest and Voyageurs, the most pristine wilderness areas on the planet?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

148	Anita Tillemans	Citizen	Can we afford this mine? There are hundreds of pages listed in the water permit draft of essential equipment and gauges required just to monitor pollution on a continuing basis daily, monthly and/or annually through the life of this mine and beyond. This alone speaks for itself and cannot be reconciled with the safety of our greatest natural resource. I respectfully request that MPCA deny this permit to pollute our waters.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
149	Candice Pierce	Citizen	PolyMet intends to use cheaper, more dangerous wet tailings capture behind a 45+ yr old dam. Instead they should be made to use the safer, dry tailings containment option. After all, that is the best & safest technology. Sincerely, Candice Pierce	Alternatives for tailings basin design were addressed in the EIS process, and the EIS was deemed adequate. Tailings dam design is addressed in the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
150	Candice Pierce	Citizen	PolyMet intends to use old, outdated, unsafe technology in the form of a 45 yr old earthen dam keeping back millions of gallons of toxic slurry. They should be made to use industry best practices in the form of dry containment. Sincerely, Candice Pierce	Alternatives for tailings basin design were addressed in the EIS process, and the EIS was deemed adequate. Tailings dam design is addressed in the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
151	Jesse Coenen	Citizen	My name is Jesse Coenen of Duluth, MN. I am addressing the Water Quality permit. I am trained in molecular biology, and medicine. I am a family doctor. I live and work in Duluth, which lies downstream from the proposed Polymet mine area. It is my job to look after the health of the people in this community and the greater region. I feel the need to speak because, when considering effects on human health, sulfide copper nickel mining represents a very different situation than traditional iron ore mining. It has never been done in Minnesota before, and for this, we are fortunate!	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
152	Jesse Coenen	Citizen	The concern lies in the fact that the desirable minerals, such as copper, are connected to sulfur. And when these minerals are mined, they are exposed to air and water, and sulfuric acid is generated. This acid is released into the surrounding environment , and pulls heavy metals from the rocks. This is acid mine drainage.	Comment noted. This comment contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
153	Jesse Coenen	Citizen	Regarding human health, one particularly concerning metal is mercury. Mercury contamination of fish, which WE EAT, is already widespread in Minnesota. We must prevent additional mercury from entering the environment, as this is damaging to our brains, in particular, those of fetuses and children.	The permit includes enforceable Operating Limits for mercury (1.3 ng/L) and sulfate (10 mg/L) for the WWTS discharge that will minimize the potential for increased mercury methylation as a result of the project. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control the wastewater and runoff that may contain elevated mercury and direct it to the WWTS for treatment. The effectiveness of these controls was evaluated in the EIS and the water quality permit requires their installation/operation.	
154	Jesse Coenen	Citizen	I want to reiterate: We are fortunate that this type of mining has never been done before in Minnesota. Most of the currently operating copper sulfide mines in the country are located in the west and southwest places like New Mexico, Arizona, and Utah, where the climate is arid, and precipitation is limited, minimizing the amount of mercury that will end up inside of humans. There are claims that modern technology will prevent this pollution from happening, but they have not been proven in a water rich environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
155	Jesse Coenen	Citizen	I am not wiling to put the brains of our children on the line. The Land of 10,000 Lakes is definitely not the place for this type of mining. We must address this problem BEFORE it affects our children, because as we already know about mercury in our environment, there is no simple cure. As I ask for the denial of this permit for Polymet, I want to make the point: We must prevent that which we cannot cure.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
156	Abigail Nordstrom	Citizen	Please reject mining proposals in northeastern Minnesota. I'm not against mining; I'm against mining that is economically and environmentally unsound from the start, meaning that the odds of a cleanup in the future are even worse. This is one of the reasons people speak of the "resource curse," one aspect of which is that some people make money--but not the locals, who just get stuck with the Superfund site. For a grand total of 350 jobs, this one is a bad bargain from every angle.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	

157	Abigail Nordstrom	Citizen	If we are going to risk ruining the BWCA and sinking tourism around the Iron Range, why are we offering this to the least experienced, smallest company of its kind instead of the most experienced corporation with a track record of success in this type of mining? Polymet itself has no track record for this type of operation. The company has no earnings and is what's called a shell corporation. Its stock (PLM) trades for 95 cents per share and is priced not on current operations but on possible future projections, the most risky type. Companies like this go out of business every day which is why the stock is priced so low. Everyone including the Governor and Mr. Landwehr state there is some risk to this effort. So I'll ask again why are we placing this risk in the hands of a company that is inexperienced with no track record to demonstrate their ability to manage the risk we are placing in their hands? It's not in the interest of the state, to allow Polymet to use out-dated methods to extract the ore, and Yes, mining generates jobs, but they are ALWAYS temporary.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
158	Abigail Nordstrom	Citizen	They always put at risk the potentially permanent tourism jobs. Moreover, I personally believe clean water will be the "oil" of the next generation -- worth big $ and fought over. So please let's not put water -- our invaluable, irreplaceable, and to some degree uniquely Minnesota -- resource at risk for some temporary jobs.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
159	Abigail Nordstrom	Citizen	Why not find opportunity, and create jobs recycling the same metals they are going to extract? Copper and copper alloys have been recycled for thousands of years. Landfills, doing no good to our environment and human health, are a source we can utilize for metal materials. Also green energy. Minnesota has a dozen landfills, and with wise investment, each have an opportunity to be a source of recoverable materials, and energy if burned. Why not create jobs here? Minnesota would be making another strive in it's admirable green-energy economy AND taking care of the burden of human waste, already placed on the environment and our health. The ore has been and will continue to be in the ground and available forever. There is no demand for this ore that outweighs the risks. Leave it there until sometime in the future when it can be safely extracted and not create such a huge risk to us and the environment.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
160	Abigail Nordstrom	Citizen	During the mine's permitting phase, Eagle (copper-nickel mine in MI) pledged to use environmentally responsible bag-house filters to remove heavy metals, sulfide rock particles, exhaust from underground equipment and cancer-causing particulates ejected from the mine following blasting. The have since changed the design, revised the permit and removed all filters. Why are we being so shortsighted? Jobs are important. BUT once the natural world is polluted, there is no way back.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
161	Candice Pierce	Citizen	Theme: Reasons why PolyMet Mine Permit is a bad idea in its present form. 1) DNR draft permit allows PolyMet to use same wet tailings basin design that caused catastrophic collapse & devastating pollution at Mount Polley in 2014. After that disaster, the expert panel that investigated, said any risk of mine waste dam failure was unacceptable & new mines should stop storing waste mixed with water behind earthen dams. Dry waste containment is now industry best practice. PolyMet should be required to use best practice technology, even if more expensive, to prevent perpetual risk to downstream people & water.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
162	Candice Pierce	Citizen	2) DNR draft permit allows PolyMet to use 6.2 BILLION gal/ yr of water & drain the headwaters of the Partridge River. DNR draft permits don't protect surface water, ground water or the Lake Superior Basin.	Comment noted. This comment pertains to issues considered in the development of the DNR Water Appropriation permits. No changes were made to the draft permit in response to this comment.	
163	Candice Pierce	Citizen	3) DNR reasonably estimates mine closure & centuries of water treatment to cost more than $ 1 BILLION. But the DNR PolyMet's permit to mine to guarantee less than 10% of that amount upfront, with almost no insurance for spills or collapse.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.	

164	Candice Pierce	Citizen	4) The PolyMet draft permit does not implement all of the steps the State's own experts & engineerd recommended to protect MN taxpayers. The best practice is upfront cash. PolyMet's draft permit doesn't require this. After the initial$ 10 million, PolyMet is only required to put up $ 26 million after 9 yrs of mine operation to pay for a potential $ 1 BILLION cleanup. Instead of cash upfront, Poly Met's permit depends heavily on " surety bonds" & "letters of credit", despite the State's own experts stating it likely won't work.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
165	Candice Pierce	Citizen	5) DNR should, if PolyMet is permitted : a) Have outside experts annually review Poly Met's financial- assurance. This should be open & transparent to the public. b) DNR should have options other than mine closure should PolyMet fail to meet its financial- assurance obligations. Options such as prohibiting dividends to shareholders or bonuses or stock options to executives if PolyMet fails to meet its financial- assurance obligations. c) State of MN should have the ability to require full cash funding of all financial assurance obligations if the mine is sold.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
166	Candice Pierce	Citizen	6) DNR permit allows PolyMet to pollute many square miles of ground water in blatant violation of state law. The permit ignores promises made in the EIS to contain & collect at least 90% of ground water from the most polluted areas. The draft permit to mine doesn't protect public interest, puts people downstream at risk, & leaves the taxpayer unprotected. It is the job of the DNR to protect the public interest. Sincerely, Candice Pierce	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. See also response to comment 248.	
167	Candice Pierce	Citizen	Theme: The PolyMet mine permit is a bad idea in its present form. Content 1) Sulfuric acid produced could leach heavy metals & other pollutants into pristine waters downstream.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
168	Candice Pierce	Citizen	2) The PolyMet project is located in a particularly bad location for a sulfide mine: a) It is located at the headwaters of the St. Louis River; the largest tributary to Lake Superior. b) Is located by wetlands/peatlands & streams in the Lake Superior Basin. c) Located upstream of drinking water of Fond du Lac reservation & City of Duluth, & estuary where the St. Louis River meets Lake Superior.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
169	Candice Pierce	Citizen	3) Across the country there is NO example of a sulfide mine that has been operated& closed in a water- rich environment (like that in Northern MN) without polluting surface, and/or ground water with acid mine drainage, sulfuric acid, and/or toxic metals. This is a striking 100% FAILURE RATE in protecting clean water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
170	Candice Pierce	Citizen	4) There is an expected 2 BILLION gal/ yr of toxic tailings seepage.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
171	Candice Pierce	Citizen	5) PolyMet plans to use 6.2 BILLION gal/yr of MN water, paying MN taxpayers only $ 50,000/ yr for its use. Essentially this is unlimited free freshwater usage for the mine.	Comment noted. This comment pertains to issues considered in the development of the DNR Water Appropriation permits. No changes were made to the draft permit in response to this comment.	
172	Candice Pierce	Citizen	6) PolyMet touts the 300 jobs/ yr it will provide over 20 yrs. But Paul Renneisen warns that the rapid automation in the mining industry will soon replace Humans with Robots in MN mines as is happening in mines worldwide. PolyMet state permits have no contracts mandating HUMAN employment numbers.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

173	Candice Pierce	Citizen	7) We recycle 1/3 of copper globally. If permitted, PolyMet would only increase global copper production by 0.2%. Discarded iPhones are 40x richer in copper than the Northmet ore body. Their extraction is far less destructive & dangerous than the PolyMet proposal. Let's learn to recycle. Only 20% of e-waste waste was recycled in 2016. But a total of $ 65 BILLION worth of e-waste was generated in the USA in 2016. E-waste contains rich deposits of gold, silver & copper & more. We don't need more polluting mines... We need to learn to recycle.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
174	Candice Pierce	Citizen	8) We should not accept mining practices that outside experts from all over the world have repeatedly warned against. Remember the Mount Polley disaster. Sincerely, Candice Pierce	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
175	Susan Bembenek	Citizen	Hello. I am not in favor of granting any permits to Poly Met. At this time there is no safe way to mine without a serious threat to polluting Lake Superior or the BWCA.. Jobs are important, but the number and how long they will exist in not worth the possibility of polluting these great bodies of water.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
176	Susan Bembenek	Citizen	Recycling the metals from out digital gadgets is better than constantly starting with new minerals.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
177	Susan Bembenek	Citizen	If you live in an area that does not offer good jobs, one has to move. My relatives live in a small town and their children have had to move to earn a proper living. This is unfortunate, but reality. Tourism is a BIG industry in this area. How will pollution upset this industry?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
178	Susan Bembenek	Citizen	Too many goals are based on greed and short term return. That is the case here. How many environmental disasters have happened that were not supposed to? Stored sewage from fowl farms, invasive fish from fish farms, oil from pipelines, all leaked and polluted.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
179	Susan Bembenek	Citizen	Your job and mine as a citizen is to protect that which cannot speak for itself. I stand with mother nature on this one. From "Letters From Yellowstone". A telegram written by a park ranger about train property and protecting Yellowstone. "...Invited to dinner with Northern Pacific and Senator Jackson to discuss virtues of private enterprise. You must know I am not in agreement. ...The Park belongs to all Americans. Should be nurtured for generations to come. Not exploited for short term financial gains of few. Nation has but one Yellowstone Park. (my words - Lake Superior, BWCA) I intend to ensure it is protected... ."' "I am also happy to report that Captain Craighead has declared his own independence on behalf of the Nation and our National Park. He has steadfastly refused to entertain any additional railroad leases, in effect ending the history of monopolization of the public trust for the profits of a few."These words hold the heart of my feelings about Poly Met and our sacred trust to protect Lake Superior and the BWCA. Sue Bembenek 2-18-2018	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
180	Shannon Martin	Citizen	I formally request that the MPCA reject this mine proposal on the grounds that it will have extremely long-term deleterious effects to our state's water resources. According to PolyMet's own Environmental Impact Statement, water treatment at the plant site would be required for 500 years. Any project requiring that level of long-term maintenance to protect our water supply and resources is simply too dangerous to allow in Minnesota, let alone anywhere else. It is not in the long-term interest of this state to approve such a mine.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

181	Shannon Martin	Citizen	Short short income for rural communities should not be the tradeoff for such severe environmental damage. Additionally, since pollution would contaminate Hoyt Lakes' drinking water, the Embarrass, Partridge & St. Louis Rivers, kill downstream wild rice, and increase mercury contamination of fish, it is simply too big of a risk to take. Please reject this proposal for the health of the environment and the people of MN.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. See also response to comments 81 and 198.	
182	Sarah Nelson	Citizen	Issuing a permit for copper-sulfide mining in our water-rich north is absolute madness - from both an environmental and a public health standpoint. Allowing this dangerous industry to operate in MN - a landscape defined by the abundant presence of water - is the absolute opposite of protecting MN's water quality, and I am deeply disappointed in the DNR and MPCA's decision making. We know, without doubt, that the proposed mining will contaminate ground water. The company knows it; the state knows it. And no one has a plan or a way to prevent the problem. Copper-sulfide mining has been identified by the EPA as "America's most toxic industry." And water pollution problems result 100% of the time where these mines operate. Drinking water for adjacent and downstream communities will be negatively impacted and this is just an absolutely unacceptable risk. It's also a violation of state law. Polluted, highly dangerous water would need to be contained and treated for centuries to come - long after Polymet (and all of us) are gone.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
183	Sarah Nelson	Citizen	Besides the inevitability of pollution leaking into ground water and seeping downstream (considerable problems in themselves), the risk for accident is catastrophic. Accidents at similar mines (such as the Mount Polley mine in B.C.) have contaminated ground water and hundreds of miles of waterways - with devastating environmental, health, and financial costs to the public.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
184	Sarah Nelson	Citizen	Furthermore, we have a clear, moral obligation to protect and preserve our beautiful natural resources and our remaining wilderness areas. The Boundary Waters region is a national treasure and an area of unique beauty and biodiversity. It deserves our awe and our respect. When I was a girl my family canoed through a portion of the area; when we were thirsty, we drank straight from the lakes. We got a rare experience to coexist with nature and to experience the real Minnesota. For me, it was transformative.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
185	Sarah Nelson	Citizen	Those who are lucky enough to live in the far north certainly (like all of us) need jobs. But more than that, they need clean drinking water - now and generations from now. And that's really the only consideration for your agency. We rely on you at the MPCA to protect us from dangerous projects like the Polymet copper-sulfide mine. Please do your job and rethink and rescind this permit.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
186	Vince Trovato	Citizen	This is madness! How can we allow environmental super-villain Tony Hayward of BP oil disaster infamy to potentially poison the pristine boundary waters for a thousand years? The company Hayward is chairman of owns the vast majority of Polymet. He has already shown his true colors - total disregard for water quality and the environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
187	Vince Trovato	Citizen	We rely on the MPCA to protect our water quality! A permit to Polymet for copper-sulfide mining does the opposite - it sells off our precious water resources to what the EPA calls "America's most toxic industry." Water pollution problems result 100% of the time where these mines operate. Drinking water for adjacent and downstream communities is at risk. This is a terrible chance to take. It's also a violation of state law and antithetical to your agency's purpose. In addition to inevitable and widespread ground water pollution (a result your agency knows for sure is an outcome) the potential for catastrophic accidents is horrifying.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
188	Vince Trovato	Citizen	When the Mount Polley mine disaster occurred in B.C., hundreds of miles of waterways were contaminated - with devastating environmental, health, and financial costs to the public now and for decades to come. The proposed Polymet mine plans to use the same water containment systems as the B.C. mine. Again, total madness. This mine is an awful deal for Minnesota - ten or twenty years of jobs for a few, followed by centuries of danger or disaster. We would be fools to permit this exploitation.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

189	Linda Forcier	Citizen	Have you heard about 3M polluting ground water? Have you heard that metro waters are polluted with road salt? Have you heard that S. Africa is almost out of drinking water? You MUST not allow Polymet to pollute our waters! Just the fact that Polymet has been required to put up upfront cleanup monies proves that you believe there will be pollution. I am concerned about my grandchildren's lives without clean air and water. This is not an economic issue, it is an issue of human survival and I implore you to look at the long term and not cave in to greed for today. Thank you	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
190	Ellen Hawkins	Citizen	Dear Commissioner Stine, I live northwest of PolyMet's proposed mine site, in western Cook County. I ask you not to issue the water quality permit for NorthMet. Over the past several years, we've all learned so much about the critical necessity of protecting the wetlands in this headwaters region, and the inevitability that they would be polluted by this project. Downstream, wild rice, waterfowl habitat, healthy fish populations, and people who depend on these things would all suffer.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
191	Ellen Hawkins	Citizen	One of the many reasons NorthMet is a very bad idea is pretty well illustrated in recent news stories about Minntac's variance request. They want to continue to pollute to the degree to which they've become accustomed – over the decades – which state agencies have allowed. Minntac is in a different category of the mining industry than NorthMet, but it's a great example of the shameful behavior all these companies tend to engage in: This is a predatory delay - a strategic, deliberate dragging of the feet when it comes to meeting obligations, keeping promises, and following the law, with the sole purpose of maximizing profits for as long as possible – while preying on others who will have to foot the bills and clean up the mess – that is, us and our descendents.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
192	Ellen Hawkins	Citizen	There is a long and well-documented record of sulfide ore copper-nickel mining that predicts that we should expect the same behavior from PolyMet. I didn't find anything in the draft permit that convinced me otherwise. The state's failure to enforce sulfate standards is one example of unreliable or nonexistent enforcement that gives a clear warning that regulations on the books don't mean no pollution on the land and waters. It's discouraging when environmental standards in laws and permits aren't enforced – and when agencies that are meant to be about land stewardship enable a proposal like PolyMet's to get so far.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
193	Ellen Hawkins	Citizen	But the wildlife, the forests, the traditional land uses, the clean waters and fresh air and our descendents that would be hurt so badly by this kind of mining are so precious to us that we have to persevere, and ask that even at this late stage you thoughtfully consider the many unresolved problems with NorthMet, and deny this permit. Loss of wetlands. As I understand it, nearly 1000 acres of wetlands located within the NorthMet Project area would be permanently destroyed, including coniferous bog, shrub swamp, coniferous swamp, shallow marsh, deep marsh, sedge/wet meadow, hardwood swamp, and open bog. This represents a very rich mix of a multitude of plants and animals.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
194	Ellen Hawkins	Citizen	No mitigation can replicate the degree of biodiversity that would be lost – and what ineffective mitigation measures are planned are outside the St. Louis River drainage basin, so nothing would make up for the losses to that watershed.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

195	Ellen Hawkins	Citizen	Wetlands that would be harmed or destroyed by the PolyMet mine are part of the headwaters of Lake Superior, and recognized by many people and by the EPA as being water resources of national and international importance. Many more acres of a diversity of wetland types would be degraded to various degrees; some quite possibly to devastating degree, given that an unknown, yet surely huge amount of water will drain into the mine pit, thus drawing down surface waters and groundwater. Also, due to the vagaries of the water modeling, the degree of pollution suffered by wetlands further down the drainage can't be known. A larger total acreage of wetlands than this has been lost in Minnesota since it became a state, but never this much for a single operation. I don't believe the proposed project,which is expected to operate for only about 20 years, is worth this level of destruction of such a vital natural resource as our precious waters.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
196	Ellen Hawkins	Citizen	The draft permit would allow PolyMet to appropriate 6.175 billion gallons per year of water from the small the headwaters of the Partridge River. Water flow. The diversity of wetland types hints at the complexity of groundwater movement through and away from the project location. This is hugely important – all sides agree that this type of mining provides many ways for the environment to become polluted - so the ways the various toxic substances will travel is a key issue. The complex hydrologic system underlying and surrounding the operations sites doesn't appear to be understood by PolyMet, or by the DNR, based on what we see in the draft - even though this is key to a safe mining operation.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Water appropriations are addressed in the DNR's water appropriations permits. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
197	Ellen Hawkins	Citizen	Water pollution. NorthMet squats on the headwaters of the St. Louis River, the greatest river to flow into the Great Lakes on the US side. Its freshwater estuary is so important, ecologically and for recreation, that taxpayers have spent millions - maybe billions - of dollars over the past several decades to clean it up. PolyMet and the agencies have the responsibility to make sure that those efforts weren't wasted. Yet it appears that crafters of the permit have juggled factors so that the end result is "hey, no problem!"	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
198	Ellen Hawkins	Citizen	That includes discounting the importance of mercury pollution that would be generated by the project, even though here in the Great Lakes Basin every new source of mercury is significant. All waters potentially impacted by the PolyMet operation already exceed water quality standards for mercury; it would be morally reprehensible to choose to add to the problem. PolyMet and DNR apparently agree that mercury will leach from waste rock at more than four times the water quality standard. Sources of mercury leachate include mine pits, tailings, disturbed peat, and waste rock, and this project will generate massive tonnages of all of these. Some would enter both the Partridge and the Embarrass Rivers. Wetlands lost or degraded by the project will no longer function to bind up mercury as they do now; as far as I can tell you don't care about that. Increased sulfates and mercury will combine to further endanger the ecological health of the St Louis River Watershed, including its vital estuary.	The permit includes enforceable Operating Limits for mercury (1.3 ng/L) and sulfate (10 mg/L) for the WWTS discharge that will minimize the potential for increased mercury methylation as a result of the project. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control the wastewater and runoff that may contain elevated mercury and direct it to the WWTS for treatment. The effectiveness of these controls was evaluated in the EIS and the water quality permit requires their installation/operation. The EIS evaluated the project's potential for increasing mercury loading to downstream waters and determined that overall, the project would result in a very small net decrease in mercury loading.	
199	Ellen Hawkins	Citizen	Wild rice and fish, both essential tradition resources protected by and managed under the 1854 Authority as well as being important recreationally, are already severely degraded. The tailings pond that would be incorporated into the proposed operation is currently under court order to meet its permit standards, and that seems a good predictor of its success under PolyMet. Operations at the tailings pond are a crucial part of the plan to keep pollutants from getting out into the environment, yet they sound problematic. The idea that a barrier, of unspecified content, can be inserted through various types of soil, rock, peat and wetland to make a tight seal - or to "key" - with the uneven and cracked surfaces of ancient bedrock at varying depth, is not credible. Realistically, the barrier's effectiveness will vary along its miles-long length, water will move through bedrock to get past the barrier, precipitation amounts will vary across seasons and years, there will be catastrophic precipitation events, and all of these are out of human control. The pond and seepage collection systems will not function indefinitely. These problems will result in more sulfates and other pollution entering the Embarrass River and points downstream.	The effectiveness of the FTB seepage containment system, including the barrier component, was evaluated in the EIS. The permit has been revised to include the barrier design specifications (i.e., thickness, permeability) that were evaluated in the EIS. The permit also requires that the effectiveness of the seepage capture system be evaluated on an on-going basis.	
200	Ellen Hawkins	Citizen	Unforeseen problems. It doesn't look like you've planned for dealing with the kinds of failures and mishaps that routinely occur in mining operations. While this mine is still in operation, more than 6 million gallons of polluted water would need to be treated every day. Pipeline spills, accidental releases, failure of water collection and treatment infrastructure, and tailings basins failures will occur.	The permit has been revised to include "system redundancy" at key locations such as the FTB seepage containment system and equalization basins. This provision requires that redundant pumping capacity and spare parts be kept on site, or be available within 48 hours from a local source, to minimize downtime and prevent an unauthorized discharge. See response to Comment 60 regarding management of large precipitation events.	

201	Ellen Hawkins	Citizen	And because the provisions regarding financial assurance are so plainly inadequate, the possibility of responding to such failures looks unlikely.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
202	Ellen Hawkins	Citizen	The DNR's draft permit would allow PolyMet to use the same tailings basin design that caused the catastrophic collapse and devastating pollution at the Mount Polley mine in British Columbia. MPCA should demand truly state of the art designs and techniques.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
203	Ellen Hawkins	Citizen	Perpetual treatment. PolyMet acknowledges that the stream of pollution will continue indefinitely. Graphs illustrating water treatment of discharge show 0 decline for the presence of sulfate, lead and copper after a certain point. Every year for decades and centuries, millions of gallons of polluted water will seep and flow from the operations sites. Apparently you blithely ignore impacts to water quality, wildlife, and human health if the water treatment system ceases operations at some time during the 500+ years during which the polluted water is being discharged.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
204	Ellen Hawkins	Citizen	Financial assurances. Even now we don't have basic information as to the costs of various treatment, containment, abatement, and mitigation measures; or amounts of water that will leave the mine site; or how much contaminated water will have to be treated and/or contained - for perpetuity. This has huge implications for how much it will cost to maintain all the systems necessary to handle the contaminated water – for perpetuity. The PolyMet project would require perpetual tailings dam maintenance, hundreds of years of water quality treatment, and longterm containment of toxic tailings and processing wastes, which the DNR has estimated would cost more than $1 billon. Yet DNR proposes that PolyMet guarantee less than 10% of that amount up front, with most of that in letters of credit and other less than reliable substitutes for cash. I don't think anybody really believes PolyMet will be around to follow through on clean up, restoration, and to respond to failures of their various systems, do you?	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
205	Ellen Hawkins	Citizen	So it really seems that the only honest action for an agency charged with protecting Minnesota's water quality is to deny this permit. At the listening session at the DECC in Duluth earlier this month, speakers who are members of Fond du Lac Band as well as an employee of	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
206	Jim Seme	Citizen	The first thing, I'm not against mining, but I'm against mining that does it cause any problems with sulfides. I worked 42 years for the mine. I know all about the contamination that's presently taking place. I realize the three agencies have a tough time because of political pressure, mining pressure, and now they have got comments for good and bad from the public.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
207	Jim Seme	Citizen	I think that somebody should make a better decision scientifically what standard they can live with as far as mining companies. Right now, it's 10 milligrams per liter. If PolyMet does get their permitting in effect, I worked 42 years in that mine, I saw the contamination that's still taking place. It's flowing into Embarrass River, St. Louis and Lake Superior. The proposed area they are going to be in, there's contamination going into Partridge River right now. That's more than the 10 milligrams per liter. And PolyMet, if they get their permitting, will be responsible for all that cleanup. The Dunka River area, that's where they have precious metals also, they have two surface dumps between the north and south pit,& that contamination right now flows into Birch Lake through into Bob Bay. In the wintertime they monitor that once a month, and that will run as high as 2000 milligrams per liter for sulfides. In the summertime, when it's raining, it might go down to 1800 milligrams per liter. That has to be cleaned up.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
208	Jim Seme	Citizen	I don't know how they are going to take and harness this scientifically. I don't think there is any proven theory that can take and harness it. Mining companies, when they want to walk away, they walk away. And I'm a witness, because I worked 42 years for that mine that's going to be PolyMet.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

209	Jim Seme	Citizen	So I think the three agencies have to take and stand their ground and do what's right to protect our most precious resource, water. They have to take and come up with a standard. Right now, 1992 is the last water permit US Steel had, and they are flowing sulfides into the Dark River into Dark Lake and they are flowing it into Pike River into Lake Vermillion and it exceeds the 10 milligrams per liter. It's running around 200 right now. So I'm concerned about protecting our water and I hope they make the right decision, and it's in their court that they have to take and make that decision because that's what we have those agencies for. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
210	Dianne Rowse	Citizen	My name is Dianne Rowse. I live at 10704 Prescott Court, Burnsville, Minnesota. As a citizen of Minnesota and a professional interpretive naturalist with 33 years of experience, I advocate for the safekeeping of the Boundary Waters Canoe Area Wilderness for future generations. I've been canoeing with my family in the Boundary Waters since 1980. I value this wilderness for its clean water and air, its dark skies and quietude. The NorthMet mine proposed location is not compatible with its close proximity to this federal wilderness area. The State of Minnesota must protect this magnificent wilderness area by prohibiting copper-nickel mining within the surrounding watershed.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
211	Dianne Rowse	Citizen	Because the long-term integrity of tailing ponds in mines worldwide has proven to be inadequate, resulting in irreparable water pollution, the MPCA must deny the water quality permit. There is no failsafe technology to contain these mine waste products in perpetuity and protect Minnesota's water resources. Mining that results in sulfates in the water systems will damage or destroy wild rice production which will impact tribal people.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
212	Dianne Rowse	Citizen	For all these reasons, Minnesota must deny the four pending draft permits for PolyMet's proposed NorthMet mining project. Thank you for considering my comments.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
213	Robin Raplinger	Citizen	So my name is Robin Raplinger. I live in Virginia, Minnesota. I have concerns about the hydrometallurgical residue facility or HRF. I understand through discussions with EPA or MPCA representatives here at the open house that the HRF containing many remnants of toxic waste from the mining process will be stored with containment that is made up of one layer of 100-mil or one hundred-thousandths -- a mil is one-thousandth of an inch. So this is a 100-mil HDPE plastic barrier separated by permeable material and then an additional 60-mil HDPE barrier. The representatives from the MPCA could cite no long-term or longitudinal studies on the expected lifespan of HDPE. It was mentioned that HDPE has probably only been on the market some 40 years. I'm very concerned that this toxic waste is going to be contained by two relatively thin layers of a material, HDPE, that we do not have any longitudinal or lifespan studies or guaranties of. The threat to our water and the environment are depending on these two very thin layers of apparently not very well understood material.	See response to Comment 93.	
214	Robin Raplinger	Citizen	I think this part of this permit needs to be reviewed and more information about the longevity of any containment basin materials needs to be understood. Everybody is telling me that this is supposed to last hundreds of years, but nobody can tell me how long the containment vessel is going to last. I object to this part of the permit and hope you investigate and review this part of the permit. And I'm particularly referencing the draft water quality permit number MN0071013, section 6.10.92, page 51 of 103.	See response to Comment 93.	
215	Michael Pfau	Citizen	Thank you. That's spelled Michael Pfau, P-F-A-U. I appreciate the chance to speak to you tonight. The message that I'd like to take to you is that the risk is too great. Any risk is too great. I've been inspired by the example, in recent years, of the Water Protectors who have taught us that water is life, that you can live without oil, even though it would be tough, you can even live without a cell phone, even though my daughter probably couldn't, but you cannot live without fresh water, clean water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
216	Michael Pfau	Citizen	So I'd like to suggest to you today that we are truly lucky here. Duluth, we look to the south and the east and we see the greatest fresh-water sea in the world, with 10 percent of the nonfrozen fresh water on the planet. We look to the north and see a pristine wilderness of lakes, rivers, and streams. We are truly blessed, and if, as some serious thinkers say, that water, in the 21st Century, is the new oil, then we are the Saudi Arabia of the water, and we have a special duty to protect this resource. Now, if our water resources were to come under a threat from terrorists wielding chemical weapons, every single resource of our government would be levied against preventing that threat from coming to fruition. You know, if we can prove they were foreign terrorists, even the president might take an interest in protecting Lake Superior's water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

217	Michael Pfau	Citizen	But I want to suggest to you that Lake Superior is under a threat from a chemical weapon of even greater magnitude than could ever be wielded by any terrorist. The true chemical threat comes not from imagined foreign terrorists hungry for blood, but from foreign multinational corporations hungry for our minerals. There are more than 200 million tons of toxic acid and heavy metal-bearing waste generated by this mining proposal, and it's a ticking time bomb. And it's not a matter of if it will go off, but when this time bomb will go off, sending millions of tons of toxic cargo straight down the St. Louis River towards Lake Superior.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
218	Michael Pfau	Citizen	All parties agree, including the mining companies, on three things. First of all, hundreds of millions of tons of extremely toxic waste will be generated by the proposal. Second of all, it is so toxic that it must be permanently and totally contained. Third, it will be toxic for hundreds of years, perhaps, and any water even leaking from it has to be treated with a complex process. All parties agree to this, but where they disagree is, the mining companies believe that this toxic slurry can be contained for hundreds of years. Opponents believe, maybe not. The risk is there, and the risk is too great.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
219	Michael Pfau	Citizen	Now , we're told that this time it will be different, that all of the previous times when this mining has destroyed water ecosystems, after promises it wouldn't, are exceptions, that that's the past, that we have new technology, things are different now. Well, what is the new technology? As several speakers have noted, the new technology is a 40-year-old dam. That's right: The only thing separating us from 200 million tons of weapons-grade chemical materials is a 2 1/2 mile-long dam. Please, it's too risky. Water is life. I ask --	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
220	Ray Skip Sandman	Citizen	Ray Skip Sandman, S-A-N-D-M-A-N. I live right here in Duluth, downstream from PolyMet. Maintaining our clean water is necessary for our physical health and our economical health. It is our responsibility to fight for our children and the rights to have clean water to fish from and enjoy this beautiful Lake Superior that is in our backyard.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
221	Ray Skip Sandman	Citizen	PolyMet is the largest threat to our region's supply of fresh water. To mine copper sulfide ore, the metal needs to be separated and finely crushed, crushing sulfide-bearing rock. When exposed, the sulfide creates acid, which leaches into -- leaches several heavy metals, such as mercury and lead, from the remaining waste rock. These heavy metals need to be contained to prevent them from getting into our air and our water. When containment fails, and it will, they'll leak heavy metals, and then sulfates are released and converted into methylmercury in our rivers and in our bodies when we eat the fish from the contaminated rivers.	See response to Comment 198.	
222	Ray Skip Sandman	Citizen	1 in 10 newborns in Lake Superior Basin already have unsafe levels of mercury in their blood. This simply cannot add -- the risk cannot be adding more mercury to our environment.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
223	Ray Skip Sandman	Citizen	PolyMet plans to place a 250 -- tall earthen dam on top of the existing LTV tailings pond to contain the toxin this produces. They believe that containment pond will last hundreds of years. Over those hundreds of years, it will nearly be impossible to prevent catastrophic failure of the contaminant, and the pollution would work its way down the St. Louis River and into Lake Superior. Additionally, any environmental safeguards will be expensive to maintain and will be abandoned, eventually, by PolyMet when they close the mine. It should be crystal clear to all of us that we will be left to deal with the mess. We cannot trust these companies to simply do the right thing.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
224	Ray Skip Sandman	Citizen	Plus, our current political power in Washington, D.C. and St. Paul is bent on eliminating environmental regulation and handcuffing our enforcement agents. Therefore, it would be in everybody's best interest to approach, wouldn't it, with -- our best approach would be to let -- never let PolyMet begin mining in the first place. PolyMet has been preying upon our desperate workforce by offering them exclusive jobs like a carrot on a stick. So let's understand fully: They are only mainly there for profit. Thank you.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
225	Virgil Sohm	Member, Lake Superior Band of Ojibwe	Hello. My name is Virgil Sohm, V-I-R-G-I-L, S-O-H-M, and I'm from Tower, Minnesota. I'm here to represent seven generations of our people. I am an enrolled member of the Lake Superior Band of Ojibwe, and I have great concern for all of our grandchildren. I want to thank you, commissioners, representatives, people here with open hearts that are listening. We need to hear the truth. We need to get away from scientists that are leading us down a scorched path.When I go up to Lake Vermillion, when I go up to our land at Net Lake, which is a prime ricing lake, I know that our grandfathers are continuing to watch over us, and they will continue to be here with us. We do not need a toxic environment. We need good wild rice, we need to be able to hunt moose, our wolves need land to live on.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

226	Virgil Sohm	Member, Lake Superior Band of Ojibwe	I've driven by your PolyMet site many times, and I know the area. I know the way that the rivers flow through there and the creeks, and you do not have permission to have that water to flush out some crud that's in the ore and throw away 99 percent of it. Miigwech.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
227	Rachel Burroughs	Citizen	Hello. I'm Rachel Burroughs from Duluth. I'm here tonight as a Duluth resident to speak for the protection of the water, to speak out against corporations and colonialism, even when I've benefited from it. In the land of 10,000 lakes, we do not often think about water scarcity, but I think about seven generations and beyond, and the world that we will leave believe for them.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
228	Rachel Burroughs	Citizen	We can't drink poisoned water. Those future generations won't be able to drink poisoned water, and they should not have to pay corporations in order to have access to this life-sustaining resource.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
229	Rachel Burroughs	Citizen	This corporation wants you to believe that this project is about jobs. This company, with foreign interests, will close up shop and leave its mess behind for generations and few jobs. It's time to say no. I speak for the water. Water is life. The water sustains us. Mni Wiconi.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
230	Beth Blick	Citizen	Yeah, hi. My name is Beth Blick. It's B-E-T-H, and Blick is B-L-I-C-K. I'm from Oak Park Heights in the Twin Cities, and I urge this commission to put a damper on not -- on not putting a license on -- out for -- for -- you know, for this company, because, you know, water is life.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
231	Beth Blick	Citizen	And we need better alternatives for jobs, and I think, you know, what's going on, you know, is a copout, and we just can't have it. There are much better things.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
232	Beth Blick	Citizen	And I keep thinking too much about what took place in -- out in Detroit, Michigan -- well, not in Detroit, but in Flint, Michigan, when all the water went poisonous, and people cannot live on poisonous water. That is not good. That just isn't good, and we need better than that.People don't deserve this. Again, water is life.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
233	Cindy Whiting	Citizen	My name is Cindy Whiting, and I'm here to do what I can to protect our clean water. I would like all of you to think for a moment where any of us would be, jobs or not, without our clean water. I would -- and that goes to the risk, Representative Tom Bakk. Where would you be without clean water? And if there's any further question on that, any of us could ask Cape Town, South Africa.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

234	Cindy Whiting	Citizen	I've been at this for a while and I would like, and encourage everyone, to go online and Google some of the destruction that has happened by sulfide mining in Canada. You will be astounded. Please, please do not allow this permitting to go forward. Clean water. I defer the rest of my time to Kevin Lee.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
235	Alan Anderson	Citizen	Hello, I'm Al Anderson from Hermantown, Minnesota. I'm not much of a speaker, but I've got to say what I need to say. I'm Alan Anderson from Hermantown, Minnesota. I hunt and fish in this area. I'm grateful for the miners for what you did in the past for making steel and everything for the wars we went through, but this is a different animal, this is sulfide mining.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
236	Alan Anderson	Citizen	Sulfide mining, you've got to make the dams, whatever, last 500 years, whatever. I talked to these people out here and they said, "Oh, there's going to be a 255 berm? I didn't know that." They're DNR people. Am I supposed to trust these people? I'm not sure.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
237	Alan Anderson	Citizen	I went through the -- what, the school, trust land thing back about four or five weeks ago. And I said, "Is this land going to be for mining or anything?" Well, yes, it was. They didn't tell me that. They were dishonest with me. Don't trust them. Because I found out a couple weeks later, Twins Metals had interest in it. Did I know that? Were they honest with me? No, they put up a facade on. I don't trust the DNR. I used to, not no more.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
238	Alan Anderson	Citizen	Now, my thing is, water is precious. When I grew up population in the United States was 225 million, now it's 325 million. So, water is a more precious resource in the long-term, more people, very precious. We need water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
239	Alan Anderson	Citizen	We're downstream living in the Duluth area, the St. Louis River, it's going to be polluted, heavy metals. We have more rains. We have heavy rains. I think 1970s we had a ten-inch rain. Back a few years ago we had a ten-inch rain. Those dams can hold? I think not. I'm pretty good at stats. And you can crunch the numbers. Is these dams going to hold for 500 years, 200 years? I rather doubt it.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
240	Alan Anderson	Citizen	In Dubuque, Montana, they got that mine up there. It's a hazardous waste, it's a Super Fund. They tried to clean it. In Canada, British Columbia, the dam break up there, more pollution. Can we fix? No. Once it gets deep in aquifers, we can't clean it. How can you do that? Minnesota is going to be stuck with a Super Fund site eventually. What can we do about it?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
241	Alan Anderson	Citizen	The taxpayers will be held holding the bag. These corporations, if they got too much -- sue too much, they'll go bankrupt. Who's holding the bag then? We've seen that happen many times.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
242	Alan Anderson	Citizen	I don't know what to do. I'm just putting my word out here. I'm not much of a public speaker, like I say, but I know what's wrong and what's right. But I'm grateful for the miners and what they did in the past, but this is a different animal, as I said. Thank you.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
243	Paul Renneisen	Citizen	Dear interested parties, The exhibits at the Aurora and Duluth Polymet Mining Hearings did not show any evidence of stress testing the permits as crafted by the mine sponsoring organizations. The first precaution should be a DNR certified water sample from all wells in the watersheds that could be impacted by mining operations or the disposal of mining by products. This would be a public notice period where residents through out the Minnesota Arrowhead would be able to provide well water samples for testing to be documented PRIOR to mining operations. This establishes a control data base for future comparisons. The program would be voluntary. Residents would have to comply with certain measures to meet a control standard for certification PRIOR to mining operations.	There is no provision in state or federal permitting rules that requires watershed-wide monitoring of residential wells prior to permitting. Furthermore, such a monitoring a program is beyond the scope of the NPDES/SDS permit. However, residential monitoring wells downgradient of the tailings basin were monitored on a one-time basis as part of the EIS process.	

244	Paul Renneisen	Citizen	Second, the "stress test" of all permits should be accomplished using Monte Carlo Simulation where variables, probabilities, and the costs in extreme events would show the likelihood of a disaster in the mining operations. This information is likely in use by the environmental insurance underwriters. These insurance measures were available at the exhibit hall. However, no stress test evidence was present. Also, the insurance underwriters were unwilling to insure the project for the extremes and probabilities of a Monte Carlo Simulation.	There is no provision in state or federal permitting rules that requires a “stress test” for predicting the likelihood of a disaster prior to permitting. Furthermore, such a stress test is beyond the scope of the NPDES/SDS permit. However, the EIS did evaluate a range of possible outcomes using a probabilistic Monte Carlo approach.	
245	Paul Renneisen	Citizen	That is because the likelihood of a mining disaster, from which no recovery is possible to achieve the pre-disaster level of environment, could occur. In summary, residents would have premining data certification of their well water for post mining comparisons. A voluntary program. Monte Carlo Simulation would show, in understandable probabilities, the likelihood of a mining failure. This stress test shows due diligence rather than untested acceptance of a insufficiently bonded mining operation. Paul F. Renneisen 954-812-2674	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
246	Patricia Renneisen	Citizen	Hello! Thank you for reading my comments. I believe that water is going to be, if not already, our most precious resource. Only 3% of the water on Earth is considered fresh water. Lake Superior makes up 10% of that amount.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
247	Patricia Renneisen	Citizen	Once the tailing pond fails, as I believe they all will eventually, rivers, streams, and ground water will all be contaminated, Lake Superior included. On this basis alone, I would ask that the water permit be denied.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
248	Duane Gustafson	Citizen	To Whom It Concerns: Groundwater belongs to the public even when it is located on private property, just like surface water. The problem with the Polymet Permits is that they are written to allow contamination up to the sites boundary line. This is not allowed in Minnesota law and demonstrates a very poor public policy.	The permit includes provisions intended to prevent the groundwater from being polluted. See response to Comment 510. The permit ensures that groundwater outside the seepage capture system will not become polluted.	
249	Duane Gustafson	Citizen	The permits do not mandate that an underground barrier be totally effective to prevent underground and surface water pollution, There are also no fines applied if the system fails - the mining company should cover all expenses..	See response to Comment 560. In the event of noncompliance with the permit, the assessment of penalties is determined through the MPCA’s enforcement process. As with any NPDES/SDS permit in Minnesota, penalties are not “pre-established” as a term of the permit. MPCA enforcement actions include corrective actions to be taken by the regulated party.	
250	Duane Gustafson	Citizen	Permitting a tailings basin with toxic waste in liquid form behind a dam is a very dangerous act that could threaten the safety of our clean waters for generations to come. Thank you for your attention.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
251	John Novak	Citizen	I know there is probably little that I can say at this point that can change the mind of our state experts. We all know the chemistry and the water flow. The process has been followed and the proposal has been found "adequate," but the PolyMet project is wrong for the state of Minnesota.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
252	John Novak	Citizen	Copper-Sulfide mining is wrong for a state where we boast proudly "Land of 10,000 lakes." It is our water that makes Minnesota unique. It is what people from other parts of the union comment on when I meet them at a state park. "So much water here. Nothing like my state." We are the guardians of three watersheds and a drop of water falling on Minnesota could end up in the Mississippi, the Great Lakes, or even Hudson Bay. It is a job Minnesota should not take lightly and it worries me that the plan is found adequate by antiquated standards. My issue is sulfide mining and water do not mix. In the land of 10,000 lakes, the waste will meet water. With available water, the sulfide waste creates sulfuric acid waste that needs to be contained forever. Any chemist knows that atoms are forever - not just 100 years like the proposal implies.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

253	John Novak	Citizen	In addition, the methods proposed involves mechanical methods yet to be proven. The simple fact that PolyMet has to clean the water for 100 years should cause even the casual observer to take notice and pause. What happens in year 101? Sure, the water "should" flow towards Duluth, but does that make it any better to know that it will run towards Lake Superior? Sulfide mining works in Arizona or Montana, but they are not know for their lakes and water resources. A state that is wet like Minnesota is a terrible place to put this type of mine.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
254	John Novak	Citizen	Second, once you deem PolyMet's proposal satisfactory, you have given the green light for the Twin Metals project which IS in the BWCA watershed and a much larger project in years and size. Pollution will happen, and the water will flow to the Rainy River watershed. The line drawn 40 years ago when the BWCA wilderness was established will not prevent the water from flowing into it. It saddens me that it is the 40th anniversary of that landmark ruling.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
255	John Novak	Citizen	Finally, gone is gone for good. It does not matter how much money you have to clean up the mess left behind, the land will never be the same even if everything goes right, and there is no recovering what was lost if this go poorly. Northern Minnesota is a delicate landscape when it comes to acidic waters. I grew up in the 80's during the acid rain years. As a kid I wondered why the north latitudes were affected more than the south.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
256	John Novak	Citizen	As a chemistry major, and educator, I now understand the idea of buffers. Calcium carbonate in the south acts as a buffer, but the granite lined lakes in Northern Minnesota have no buffer capacity. Gone will be gone for good. I know the project has checked all the boxes. They have promised all the right things, and proven on paper they have good intentions, but profit, not protection, drives their decisions. PolyMet will only do the bare minimum forced on them and nothing more. There are no policies that will make this a good idea.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
257	John Novak	Citizen	If an accident happens, or there is a bankruptcy - tax payers will ultimately pay for the damage and at the end of the day the one thing that makes Minnesota unique will he irreparably damaged. We have fought wars over land and oil. It will not be long before we start to fight over clean water. Water is what makes us Minnesota. When my grandkids ask me about what happen in 2018, I hope I will be able to tell them that the good people of MInnesota put their future above our present.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
258	Nell Wegmann	Citizen	I appreciate all the DNR and MPCA has done to make this an open responsive process. I attended the hearing in Duluth and found it very informative. Based on what I heard there, learned from the state's technical experts, & my own readings, I oppose the certification of the PolyMet mine Project permits for the following reasons.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
259	Nell Wegmann	Citizen	If the Mission of the MPCA, is to protect and improve the environment and enhance human health, the PolyMet mine should not be allowed anywhere near our state. The risks are great (99% waste rock & potential toxic tailings) and the rewards (1% copper /nickel) are minimal. Those are not odds worth betting on. I love me cell phone (which needs copper), but if I have to choose between copper needed for my phone and Guaranteed clean water for future generations, I'll let my cell phone go. No contest.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

260	Nell Wegmann	Citizen	If it weren't for 350+- jobs over the next 20 years, no one would want to take on the risks of introducing toxins to our air, wetlands & water. MN spend millions / billions to clean up our air, our water and restore out wetlands. Why would we go backwards and bring in great risks to all three? This project is backward thinking, not forward thinking.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
261	Nell Wegmann	Citizen	MN CO2 emissions are already cause for great concern and I understand the PolyMet mine will increase that. Please don't deliberately add to the CO2 emissions in the state. There is only so much we can do to remediate (mass transit, organic composting, biking, ride sharing, using more solar & wind energy). Everyone is trying to do their part to remediate the destructive impact of chemicals on our planet, so please don't make this even more of an uphill battle.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
262	Nell Wegmann	Citizen	The risk of mercury contamination to our waterways and fish is already out of control and that threatens us all. There is more mercury risk from the PolyMet mine. MN is already over the mercury TMDL (Total Maximum Daily Load). Again don't set us back even further.	See response to Comment 198.	
263	Nell Wegmann	Citizen	We've lost precious wetlands that filter our water and MN is trying to restore them, as they are a vital part of the overall ecosystem. Why would we take wetlands, precious to the state, and the native people and jeopardize them by putting a discarded mine tailings dump on them? The kind of mine PolyMet is proposing has never been done successfully before in a water sensitive place like the NorthMet Deposits in northeastern MN. This is not a gamble we should take. It jeopardizes our fish, tourism and overall water quality.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
264	Nell Wegmann	Citizen	Sometimes you need to take risks with our environment because something like copper is scarce, but it isn't. There is plenty of copper and recycling copper would be far more appropriate and less risky. But if we were going to risk our precious natural resources, we would need to have a trusting partner. Glencore / PolyMet is not really local and will not be around to suffer the consequences of any environmental impact. Glencore, the major financial backer is based in Switzerland, and has no vested interest in our state. In addition, they (or at least Marc Rich) do not have a good track record with the environment or with unions. PolyMet is not who we want to partner with when there is so much at stake. The amount of monitoring that the MPCA requires in order to certify these permits is extensive & expensive. Monitoring requires judgment and interpretation and organizations like Glencore, who have a history of fraud and a focus on financial gain may well put their profits before long term environmental safety. Will they even be around in 500 years when the tailings are still posing a risk to our state? Think Mount Polly in British Columbia.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
265	Nell Wegmann	Citizen	A cautionary tale from Houston TX, where I lived & raised my family. Because of the petro-chemical industry, there are MANY Superfund sites. They were contained and supposedly not damaging the surrounding environment until Hurricane Harvey hit last August. No one could have predicted that Houston would receive over 50 inches of rain in 24 hours. They did and the superfund sites were flooded spilling toxins into surrounding neighborhoods, wetlands and the Gulf of MX. People broke out in rashes from touching the flooded material. No one knows the long-term effect of detected chemical releases into the air, ground water and on health. There are known risks from PolyMet mentioned above, but there are also unknown risks that come from disturbing the environment. Climate change is real and we have to be cautious about what we expose ourselves too. Keeping the sulfide in the rock is safe. Mining it is not; Keep it in the ground.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
266	Nell Wegmann	Citizen	This is a deal with the devil to get jobs, any jobs, at any costs. At any cost, to the very people who are already hurting because they don't have good jobs. They are the ones who will live near the toxic tailings, whose water may be tainted & whose families may be sickened. And the rest of us live "downstream" of those risks.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
267	Nell Wegmann	Citizen	I've heard that the Democrats (Gov Dayton & Amy Klobachur) have sold out on their environmental concerns for political gains. They want more DFL seats and they think PolyMet is one way to get them. This puts more pressure on the DNR & MPCA to be a-political and put the stewardship of the state's natural resources before political interests.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

268	Nell Wegmann	Citizen	Bottom line: We can live without copper, we can't live without water. MN is steward of some of the best water in the world and we need to protect that at all costs. Water is the new oil and any forward looking state is going to invest & protect their water from potential contamination. Ask the people in Capetown, South Africa.; They'd love to have our water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
269	Ken Steil	Citizen	To think that polluted water from this mine will be cleaned for the next five hundred or thousand years through this permit is ludicrous. That alone should stop this mine. Nor is enough money being set aside to do this and not enough administration is being identified for a thousand years (or whatever number of years).	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
270	Ken Steil	Citizen	We cannot eat the fish from the St Louis River now. For all these years the DNR has failed to get the iron mines to not pollute or to meet water quality standards. Are we now supposed this Polymet thing will be different. All the water from Polymet cannot be treated because it cannot be contained. Inevitably polluted will get into other waters both above and below.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
271	Ken Steil	Citizen	The DNR talks about shutting down the mine but there are no clear lines, that, if crossed, will automatically result in the shutdown of the mine.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
272	Ken Steil	Citizen	The only safe way for this mine is that all the leftover rock and material, including the tailings basin be dumped back into the mine and covered to prevent the release of sulfide. Once the ground water is polluted nothing can be done. Sure you can pump out and treat the polluted water but for a thousand years? I certainly do not think that will happen which makes a farce of the current permitting process. Ken Steil	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
273	Adam Swanson	Citizen	I am writing in opposition to the Polymet Mine in northern Minnesota.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
274	Adam Swanson	Citizen	I was fortunate to attend arecent City Council meeting where a group from Canada was speaking to share their true story of a failed copper nickel mine in Canada, the Mount Polley Mine disaster in 2014. The exact reality and future concerns for us is why the businesses of the Downstream Business Coalition joined more than 2 years ago. The communities near Mount Polley bring a warning of the negative impacts the likely contamination will bring to the region. No Copper Nickel mine has ever been done without polluting! This is a fact.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

275	Adam Swanson	Citizen	I am a member of the Downstream Business Coalition. We are a united group of 100 small businesses. We employ more than 1200 people who in one way or another rely on the environment which includes, most importantly, clean water. Combined statement at the DBC website and see the list of businesses here. Duluth and the region in the 1970's and 80's was in the bust cycle of a boom and bust economy typical of extraction industries. There was a famous billboard in the 1980's in Duluth that said… "Will the last one leaving Duluth please turn out the light". And as the Duluth News Tribune wrote, it spoke to "yet another notch in the deteriorating industrial Rust Belt in tough economic times." Small Home Grown Independent Business is the engine of growth in this country. We continue to be incubators for innovation with both economic and employment growth. Even massive companies started small and in the so called "garage"…….Microsoft, Apple, Amazon, Google to name a few. All the businesses I am speaking for today did that too. Some facts on Small Businesses in Minnesota can be seen here: MN.gov: https://mn.gov/deed/newscenter/infographics/smbiz-infographics/impactinfographic. 783,400 jobs are in small business. They create $28.7 Billion in wages According to a study by Key-Log Economics in a 2017 analysis, in the Northern Arrowhead region alone: There are 22,000 jobs related to the environment Annual visitors there for the wildness of the place spend $288 million. This generated $31 million in state and local taxes annually. With $181 million in income and business to business transactions. It's all growing but, it's all in jeopardy of going away when Copper Nickel Mining pollutes our unique resource.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
276	Adam Swanson	Citizen	This Polymet project is primarily touted as creating jobs. 650 temporary jobs with 300 FT jobs for 20 years. These estimated numbers have also been reduced over the past 10 years and with manufacturing automation will continue to be reduced. Many of the FT jobs will not be filled by folks already living on the range. So one can conclude that when these jobs end in 20 years they will be followed by unemployment and lost tax revenue. This will cause fiscal problems in state and local governments and the communities affected and most importantly, families and individuals. This is a cycle we all know very well in this region. So it's really about a tradeoff. Are we willing to trade the existing long term employment, economy, our water and environment for a short term gain over 20 years? Is this our gift to the future generations? "Here, watch over this contaminated water and make sure it doesn't spill…..for 500 years!" How about giving the gift of long term jobs and clean water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
277	Adam Swanson	Citizen	This is a cycle we all know very well in this region. So it's really about a tradeoff. Are we willing to trade the existing long term employment, economy, our water and environment for a short term gain over 20 years? Is this our gift to the future generations? "Here, watch over this contaminated water and make sure it doesn't spill…..for 500 years!" How about giving the gift of long term jobs and clean water. Water is a far greater resource for Minnesota and the world and its value is increasing every day. Its value will continue to create businesses and jobs as it already does. Invest instead in long term sustainable small businesses in Minnesota. The DBC businesses that I stand with today are proof that it works. We are not in a bust economy any longer. Sustainable business practices are the new norm. A clean environment creates jobs and a strong economy. If I erected a billboard today in Duluth, it would say: "Now that the new economy is going strong, Please don't turn out the light." Please follow the lead of the Carlton City Council and publicly take a stand to protect the St. Louis River and Duluth.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
278	Mark Gustafson	Citizen	I am totally opposed to issuing a permit for this mine to go forward. I have heard there is a dam that would contain the polluted water. It is totally unrealistic to think that this dam will be sound and able to contain the water for the up to 500 years that water would have to be treated. I have heard in the news that the sulfide contaminated water would need treatment for 500 years and perhaps more time.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
279	Mark Gustafson	Citizen	The idea that any company will be around to continue treatment or even that any state agency will be around to continue this treatment and monitoring 500 years from now is pure fantasy at best. Even if some amount of money is set aside now to cover 500 years of treatment, again this is a fantasy that the money would still be available 500 years from now. The costs of treatment and remediating any number of major illegal releases of polluted water would likely deplete the funds in the first 50 years.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
280	Mark Gustafson	Citizen	Anyone who thinks this is a sound idea should consider whether any business contracts or commitments that were made in the year 1500 are still being honored today. I live right next to the Arden Hills Army Ammunition Plant site, and I understand treatment of polluted aquifers underneath that site and Arden Hills and other communities has been going on for over 40 years with no end in sight.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

281	Mark Gustafson	Citizen	This is a disaster waiting to happen, and no way is it worth the risk to our environment and livelihood in Minnesota to take this risk for only 300 jobs. We have had "promises of jobs" from Delta Airlines and other mining companies in the iron range that have not panned out. The mining company is presenting the most optimistic picture possible, and the potential disasters far outweigh the benefits!	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
282	Diana Schansberg	Citizen	I strongly object to PolyMet Copper sulfide mining. It is very toxic to land, water and air. Minnesota is rich in our water resources which would make this pollution even more devastating to our state. Why would this type of mining even be considered when the negative effects would cause so much damage that will be with us forever? PolyMet will do the damage and leave Minnesota to deal with the consequences.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
283	Paul Perkal	Citizen	There is no way that Polymet can fulfill the requirement of maintaining the area long enough to make sure that there are no serious pollution incidents.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
284	George Bentley	Citizen	For many very valid reasons the water quality surrounding this proposed mine cannot be guaranteed, and indeed the plan for holding waste and tailings is especially troubling in it's a lack of comprehensive protection. With the future in mind and protection of all the extremely valuable surface waters in the boundary waters area, this mine should not be permitted.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
285	Anne Johnson	Citizen	I urge you to deny Polymet a permit to mine. Mining companies have been exploring for copper-nickel in sulfide matrix across Northeastern Minnesota for years. This includes on federal lands adjacent to and draining into the Boundary Waters and Lake Superior. Sulfide ore mining has never been done in our state.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
286	Anne Johnson	Citizen	Acid mine drainage has polluted water in every water-rich location across the world where it has been allowed. Minnesota waters must be protected from this threat.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
287	Anne Johnson	Citizen	The recently released draft permits would allow PolyMet to cause centuries of toxic pollution from mine pits, tailings piles and waste rock.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
288	Anne Johnson	Citizen	The DNR would allow PolyMet to use the cheapest and riskiest method of tailings disposal, with a threat of catastrophic dam failure as well as continuous pollution. The DNR's Draft Permit to Mine fails to hold PolyMet accountable for any of its promises to control toxic seepage.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
289	Brian Guimond	Citizen	This seems like money is in control, I understand this company has said they will not ruin anything but time and time again where ever they have done this everything is ruined but it is not going to happen this time. How many times does somebody do something they say they will not before it becomes apparent that there is no way to do it without ruining the land and water. Do not let the almighty dollar win with our land.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
290	Jeff Ballenthin	Citizen	I first want to acknowledge the fact that I am not an expert in mining or environmental protection. I am an expert in real estate and accounting. I believe that when one owns a class A real estate asset, they should work hard to encourage development around that asset that enhances the value. For example, when the green line light rail project was built, the Met Council went to great lengths to ensure that development near the light rail enhanced the value of the public asset. Likewise, the state of MN should go to great lengths to ensure development near the Boundary Waters enhances the value of this exceptional public asset.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

291	Jeff Ballenthin	Citizen	I also want to acknowledge that I have not read the draft permit. I looked for it briefly but it was not readily available on your website. Regardless, I hope and trust that the conditions in the permit sufficiently protect the public assets of our land, air, water and the Boundary Waters.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
292	Jeff Ballenthin	Citizen	I want to suggest that the best way to ensure protection is with thoughtful conditions in the permits and strict, long lasting financial liability for the breach of any condition. To me thoughtful conditions do not mean a compromise or negotiation that gets the best result possible while still making the mine financially feasible. Thoughtful conditions means identifying what is best for the people of the state, country and world.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
293	Jeff Ballenthin	Citizen	I liken the boundary waters to central park in New York City. Nobody believes that a garbage dump or mine should be put next to central park regardless of the amount of Jobs and money provided. The quality of life provided to the citizens of New York because of that park is worth more than a few more jobs and a little more money. If you put the wrong conditions in the permits, it will be like building a nuclear power plant next to Central Park.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
294	Jeff Ballenthin	Citizen	When it comes to real estate development, the value of land surrounding great public assets has the highest value. Please recognize the value of this land in the big picture.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
295	Jeff Ballenthin	Citizen	It only now occurred to me that the name of your agency is "Polution Control." I can only hope that you view yourself as the "Pollution Prevention Agency." When you analyze the conditions of the permits, ask yourself if you want to control pollution or prevent it. Thank you for your service to the state and your consideration to this difficult task.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
296	Connie Grundhofer	Citizen	Water is important to all living things. Please make sure that we have clean water for our future. Once the water and area has been damaged it will take billions of dollars to fix. The persons who damaged it will not take the responsibility to fix the area or the surrounding areas that are effected to it's original state. Water is far more important to every living thing than money. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
297	Scott Stowell	Citizen	At some point in the future humans will have mined the final speck of precious metals from the Earth and none will be left to extract. Then what? The short-term mining and supplemental jobs will be permanently gone and PolyMet profits will be nowhere in sight. By comparison, these few benefits are minuscule to the long-term jobs, prosperity and welfare of the region. Then what?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
298	Scott Stowell	Citizen	If a toxic disaster should occur from failure of the protections assumed to ensure safety, as it did in British Columbia on August 4, 2014, not only will mining be gone, but so will the precious environment it permanently destroyed. Industries like tourism will be gone forever. Then what? Are you good with leaving that to future generations?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
299	Scott Stowell	Citizen	New mining regulations are continually added to those already in place because the former have been found to be inadequate. Is that a chance worth taking or are you confident that the current regulations have finally covered it all? Think about this.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

300	Scott Stowell	Citizen	The final environmental impact statement for the NorthMet Project in northeastern Minnesota offers indications of inadequacy and that PolyMet Mining, Inc. is attempting to circumvent environmental regulations and water quality standards in order to legalize their pollution. As an example, PolyMet's proposed land swap with the U.S. Forest Service would transfer federal land that is currently part of the Superior National Forest to the private ownership of PolyMet. The Minnesota Pollution Control Agency cannot enforce groundwater quality standards until contaminated water departs from private land and flows into public property.	See response to Comment 248.
301	Scott Stowell	Citizen	Unfortunately, water doesn't know where to stop; it doesn't recognize boundaries. PolyMet's computer modeling shows that the levels of pollutants in their water will be many times greater than Minnesota's water-quality standards. Therefore, according to the law, PolyMet is free to pollute within their boundaries. But that same water will flow into the Embarrass, Partridge and Dunka rivers, and eventually the Boundary Waters and Rainy River watersheds, and the St. Louis River which drains into Lake Superior. As a result, Minnesota's highly touted water-quality regulations are actually a sham. Individual people will determine the issuance of mining permits to PolyMet. People, not agencies, are in a position to prevent such a legal loophole from being egregiously misused. Those people must scrutinize PolyMet's FEIS in minute detail. Otherwise, they'll go to their graves knowing they could have made responsible decisions, but chose to ignore them. That's what. Scott Stowell	See response to Comment 248.
302	DyAnne Korda	Citizen	The final environmental impact statement for the NorthMet Project in northeastern Minnesota indicates inadequacy. Polymet Mining Inc. is attempting to circumvent environmental regulations and water quality standards in order to legalize their pollution.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
303	DyAnne Korda	Citizen	The Minnesota Pollution Control Agency cannot enforce groundwater quality standards until contaminated water departs from private land and flows into public property. Unfortunately, water doesn't recognize boundaries. PolyMet's computer modeling shows that levels of pollutants in their water will be many times greater than Minnesota's water-quality standards. Therefore, according to the law, PolyMet can freely pollute within their boundaries. But that same water will flow eventually into the Boundary Waters and Rainy River watersheds, and the St. Louis River, which drains into Lake Superior.	See response to Comment 248.
304	DyAnne Korda	Citizen	I am employed at a basecamp school that has been a leading provider of wilderness expeditions in the US for over 50 years. It is located at the edge of the Boundary Waters, the largest wilderness east of the Rockies and north of Florida's Everglades. Students range from middle school to adults, and include specialized groups for struggling teenagers and veterans. While immersed in the wilderness, they learn technical skills, develop greater self-confidence and accomplish more than they ever thought possible. The school could not function if the outdoors, its main "classroom," was tainted. This is one small example of probable loss due to the mining.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
305	DyAnne Korda	Citizen	People, not agencies, are in a position to prevent legal loopholes by scrutinizing PolyMet's FEIS further to the most minute detail. Otherwise those individuals will carry the memory of dismissing one of the most responsible decisions of their lifetimes. DyAnne Korda	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
306	Donald Daher	Citizen	Why we would even consider another boom and bust mine is hard to understand given the dangers to water and the amount of time our kids and grandkids will have to live with this toxic waste and poison. In the land of sky blue waters why even consider this plan. When our wells are poisoned where do we go? What if a tornado gets into this pond of poison or if we get 10 inches of rain? When these companies can take their garbage to their home let them come.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
307	Donald Daher	Citizen	We humans are mostly water and current science suggests that water has memory and will reflect back on us what we do with it. Northern Minnesota has some of the purest water in the world. We have been blessed with a resource so profound it is worshiped in other areas of the world. In parts of our country it is being fought over. With the new technology being used by Scientist Masaru Emoto, described in his books, The Secret Messages in Water and The Secret Life of Water, we are now coming to understand aspects of water that reveal its sacredness.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

308	Donald Daher	Citizen	His research and books have become a global sensation. He reveals how human thought and emotion can affect the formation of crystals when water is frozen. This becomes important because we, as human beings, are on average 70% water. He has shown that negative thought and emotions dramatically affects water and the crystals that it forms. What his work reveals is that water has memory and can reflect how people feel and think about it. Water has a form of consciousness we are only now coming into contact with on a scientific basis. For those who might think this is pie in the sky or mumbo jumbo I suggest you read the books and then decide. His evidence indicates that polluted water forms little or no crystals and that water prayed over or thought positively about generates beautiful crystal shapes, none of which are the same.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
309	Donald Daher	Citizen	It is hard to imagine giving up clean and healthy water for an eternal polluted garbage pit just so some minerals can be taken out over a twenty year period and then leave the waste for future generations to deal with. It is unconscionable.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
310	Donald Daher	Citizen	This boom and bust philosophy has to go. Yes we need the jobs, but If that's the case let's think long term and permanent jobs.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
311	Donald Daher	Citizen	The gold mine of Minnesota is its beauty and water, not nickel and copper. Anyone who has a well knows without doubt how important clean and healthy water is. Recent articles in the StarTribune reveal that two thirds of the state's water is questionable and the clean water is in the northern third.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
312	Donald Daher	Citizen	How about the 3,000 geese who landed in the copper waste pit in Montana and died? How about the 10 inches of rain that fell this past summer in Minnesota? Will that garbage pit survive? No one really knows. Even the mighty Mississippi is only clean in Northern Minnesota. Is it worth it? We are water and what we do to water we do to ourselves. Another important scientific book on water worth reading is Water Pure and Simple by Paolo Consigli, M.D.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
313	Tom Wojahn	Citizen	To whom it may concern: It concerns me that we would even contemplate taking a chance of any kind of risk close to the boundaries water's. Once it is contaminated polluted or destroyed we will be left to try to re-create a pristine wilderness. A priceless area that can't be re-created once destroyed. Tom Wojahn	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
314	Jon Clark	Citizen	I understand that the proposed PolyMet mine can potentially provide several hundred jobs for residents of the Iron Range over the next several decades. This area certainly needs more permanent jobs. But there are simply too many significant, long range environmental risks associated with PolyMet's current mining proposal for this plan to go ahead.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
315	Jon Clark	Citizen	And these risks could very potentially downgrade the quality of life in this area, and other areas in Minnesota. Here are some of these risks : 1. Mining copper and nickel in a wetland and watershed area is an extremely poor choice of location. And that's especially the case with the current PolyMet proposal, since the long range potential for the highly acidic mining tailings to pollute groundwater and nearby water sources, such as Lake Superior, which is the largest freshwater resource in the world, is very high. Recent studies have also shown that water quality in the BWCA watershed area could also be severly compromised.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
316	Jon Clark	Citizen	2. The earthen dike tailings basin that has been proposed by PolyMet is nearly identical to the design that was used in the Mount Polley dam in British Columbia, a dam that catastrophically collapsed. Safer basin designs are out there, and they need to be pursued.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

317	Jon Clark	Citizen	3. The potential for water pollution from the acidic tailings is also going to be greatly accelerated by climate change, especially over the next decades and beyond. Climatologists predict that the incidence of severe mega rain storms is only going to increase, which means that the risk of PolyMet's proposed weak tailings basin collapsing and failing will also increase significantly.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
318	Jon Clark	Citizen	4. Rare metals such as copper and nickel will certainly continue to be necessary commodities. But in the future, clean water will, by far, be one of the most rare, precious and sought after resources on the globe. Minnesota is already being asked to supply water to other areas in need of clean water. The bottom line here is, there should be no compromises when it comes to protecting our water resources.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
319	Jon Clark	Citizen	If future generations could have a say in this issue now, I'm certain they would say that the high risks and high costs of environmental cleanup, that could very potentially be passed on to them, is totally unacceptable.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
320	Jon Clark	Citizen	The mission of the DNR, I read, "is to provide for commercial uses of natural resources in a way that creates a sustainable quality of life". If the DNR wants to meet this objective, I believe PolyMet's existing proposal should be scrapped, and a more robust tailings basin can be proposed and reviewed.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
321	N/A	N/A	No Comment provided- survey was submitted blank		
322	Rich and Carol Staffon	Citizen	PolyMet Permit to Mine Comments Submitted 3-6-2018 by Rich and Carol Staffon, 1405 Lawrence Road, Cloquet, MN. 218-879-3186, mailto:rcstaffon@msn.com. I am a retired MN DNR area wildlife supervisor and am currently president of the Duluth Chapter of the Izaak Walton League. These comments represent our personal concerns about these permits, coming from people who live near the St. Louis River and downstream from the proposed PolyMet mine.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
323	Rich and Carol Staffon	Citizen	1. I remember when the lower St. Louis River in Duluth was an industrial wasteland. It was not fishable, swimmable or drinkable. Thanks to the Clean Water Act and after spending nearly half a billion dollars, the river has been restored to the point that it is now an economic asset, rather than a liability for Duluth. Is it not inconsistent polity to spend so much money to clean up the lower river, and then issue permits to create an industrial wasteland in the headwaters?	The NPDES permit's purposes are to restrict discharges to the waters of the State of Minnesota so that water quality standards and other state and federal clean water requirements will be met.	
324	Rich and Carol Staffon	Citizen	2. Copper and other minerals are valuable for our economy and society. But they are not more valuable than water. Water is life and essential to everything we do. Protecting watersheds is how we safeguard our water. Both the DNR and PCA promote the importance of watershed protection. The land where PolyMet wants to build their mine was purchased with the Weeks Act for the very purpose of protecting the headwaters of the St. Louis River and the watershed. It defies common sense that we can sustain this watershed, while building a huge toxic mine in the midst of the headwaters. Again, this is an inconsistent policy for natural resource agencies.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
325	Rich and Carol Staffon	Citizen	3. This is a forested, swampy, stream laden landscape. It is an ill-suited place for Minnesota to experiment with the risky business of coppernickel mining. If it is so important that we mine these minerals, the permit should at least require PolyMet to use the best available technology, such as dry stacking their tailings, rather than storing them in a flooded tailings basin that we know will leak into our surface and ground waters, and if the dikes fail, send a slurry of contaminated water right into the river. Why are you not demanding that the best available technology be used?	See response to Comment 720-E, which addresses consideration of alternatives.	
326	Rich and Carol Staffon	Citizen	4. Unfortunately, one of the duties of the DNR is to promote the mining of our state's minerals. Because of this bias to support mining, we ask that a contested case hearing be held as a check on the DNR, to make sure the facts around copper-nickel mining are complete and accurate. We must get this decision right and a contested case hearing would provide another opportunity to vet and validate the facts about this proposed mine project.	This comment presents a general request for a contested case hearing. Without a specific material issue of fact in dispute, a contested case hearing is not appropriate. The comment does not raise a specific issue regarding the NPDES permit.	
327	Rich and Carol Staffon	Citizen	5. And, as a check on the safety of the mine itself, we ask that the permit require all employees who mine, transport and process the ore, be regularly monitored for the uptake of pollutants. They are the "canaries" in this mine and monitoring their health would be the best way to determine if standards are being enforced and are actually protecting the workers and our environment. In addition, a Health Impact Assessment should be required.	This comment requests monitoring of employee health, which is beyond the jurisdiction of the MPCA commissioner. The need for a health impact assessment was addressed as part of the environmental review process. No changes were made to the draft permit in response to these comments.	

328	Rich and Carol Staffon	Citizen	6. Finally, we are especially concerned about the way industry and our state legislature has been able to thwart the enforcement of existing water quality regulations. What good are these permits if they will not be enforced?	See response to Comment 753.
329	Rich and Carol Staffon	Citizen	7. We recommend that before mining, Minnesota should consider requiring the recycling of copper as a better way to meet our needs for this metal. There is no shortage of copper today. So, we believe it would be prudent to not issue a mine permit at this time. Let's leave these minerals in the ground and wait until mining technology has advanced so that we can mine them safely. It is time for somebody to stand up and just say no! It would be irresponsible to leave this legacy of pollution of future generations to clean up. Thank you! Sincerely, Rich and Carol Staffon	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
330	Henry Mott, PhD, PE	Citizen	In comments submitted relative to the Supplemental Draft and Final Environmental Impact Statements, I discussed, in detail, shortcomings of the reclamation plan for PolyMet's NorthMet mining proposal. I will not revisit those comments in detail here, but will offer some brief, tothe-point background.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
331	Henry Mott, PhD, PE	Citizen	The literature is rife with accounts of environmental devastation left behind by mining companies who've unearthed sulfide bearing ore to extract valuable metals. Standard operating practice has been to dig up ore and overlying rock, process the ore creating tailings and other toxic wastes, leave waste rock in piles on the Earth's surface, deposit processing wastes in dammed surface ponds, leave exposed reactive rock open to air and water, and leave pits open to fill with toxic water. Sumi and Gestring (Earthworks, May 2013) summarize metals mining legacy – 57 mines in 15 US states are already producing or are destined to produce perpetual toxic discharges, requiring many, many billions of dollars, mostly from taxpayers, simply to keep, if even possible, environmental devastation at bay. PolyMet's NorthMet mine proposal is listed separately in that document as a potential future mine which, if developed as currently planned, will swell the list to 58 mines producing perpetual toxic discharges.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
332	Henry Mott, PhD, PE	Citizen	PolyMet's closure plan goes little beyond standard historical practice – waste rock is to be left on the Earth's surface, tailings and hydrometallurgical wastes are to be left in open dammed ponds and a pit is to be left open to fill with toxic water. Plastic covers over waste rock piles will retard leachate formation for perhaps 30 years – just long enough for PolyMet to argue for early return of bond money. Subaqueous isolation of tailings must be maintained in perpetuity to adequately protect local water resources. Subaqueous disposal of category 2-4 waste rock is a small step in the correct direction. Unfortunately, few details are provided regarding the precise methods to be implemented to really isolate this reactive waste rock to control formation of toxic acidic discharges. Great dependence on future active water treatment and allusions to future development of "passive" treatment for collected toxic drainage are cornerstones of the reclamation plan.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
333	Henry Mott, PhD, PE	Citizen	There's not much published documenting successful passive treatment of toxic mine drainage – I believe the plan for passive treatment amounts to wishful thinking at best – active treatment will be necessary in perpetuity. The proposed closure plan will leave a nasty scar that will be an environmental ill in perpetuity.	NPDES permits have a five-year term, but the issue the comment raises might occur at some time after facility closure. The MPCA has added language to the permit to require construction of the WWTS component as proposed in the application. The permit does not authorize a discharge from a passive treatment system.
334	Henry Mott, PhD, PE	Citizen	To its credit MNDNR is requiring a substantial bond - ~$1Billion at the height of mining, backed by cash and other securities, and ~$½Billion, all cash, at the completion of mining. The toxics formation processes are biogeochemical in nature and likely will come to their ugly fruition many years down the road. Leachate production from waste rock will be delayed until plastic covers deteriorate. The west pit is projected to take ~35 years to fill. Who knows what the character of that water will be – I'm betting heavily on a toxic result. Based on its humidity cell tests, PolyMet claims west pit water will not be acidic. However, typical humidity cell tests arenot at all representative of the long-term leaching/equilibration process that will be active in the pit, if left to fill. West pit overflow, leachate from the waste rock pile and leachate from the tailings impoundment will need to be collected and actively treated in perpetuity. NorthMet tailings placed with those from historical taconite operations and the hydrometallurgical wastes placed in a separate pond will be there, on the Earth's surface, awaiting whatever extreme weather/hydrologic event might occur. Toxics may take many, many years to show up in wells downgradient from the plant and mine sites or in springs feeding the local rivers.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
335	Henry Mott, PhD, PE	Citizen	Minnesota should plan on holding PolyMet's half-billion-dollar bond in near perpetuity and will need to resist all requests for its release for generations to come.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.

336	Henry Mott, PhD, PE	Citizen	A large divide exists among Minnesota's population. Iron Range residents want revitalizing economic development now and are drawn to the immediacy of the good jobs promised by the NorthMet project. Organized groups concerned for Minnesota's environment and for wellbeing of several generations of posterity are adamantly opposed to the PolyMet project as planned. I, also, am adamantly opposed to the project as planned.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
337	Henry Mott, PhD, PE	Citizen	However, as an environmental engineer, working at the interface between society and the environment, I see an option that satisfies both sides of the issue. Let's require that all potentially harmful wastes be securely isolated in a subsurface repository.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
338	Henry Mott, PhD, PE	Citizen	A conceptual design for such a repository is attached to these comments. I see this approach as a six-win scenario: 1) Minnesota wins: new iron-range jobs are created, both for mining and reclamation 2) Minnesota wins: economic development is spurred from products and related jobs 3) Minnesota wins: environmental security is assured at the culmination of mining 4) Minnesota wins: recreational resources are enhanced, a prime fishery is created 5) Minnesota wins: future mining efforts can be collaborative among diverse interests 6) PolyMet wins: a sizable portion of its environmental bond is recovered promptly, more than offsetting repository costs and greatly lessening investor uncertainty.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
339	Henry Mott, PhD, PE	Citizen	What should PolyMet's NorthMet mine legacy be: A scar on the land with toxic discharges demanding societal resources in perpetuity? A new lake that, in the end, enhances Minnesota's recreational resources? I'm for the second result and would be interested in discussing these comments or any other aspects of the NorthMet mine proposal with the MNDNR, MPCA and any other organizations responsible for action regarding the issuance or enforcement of this controversial permit.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
340	Dan Nelson	Citizen	Regarding the Water Quality at the Polymet mine. since this is the first mine of it's kind in Minnesota we have to have the most stringent standards we can have. Especially as water pollution is the main problem with this kind of mining.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
341	Dan Nelson	Citizen	I have several concerns besides the financial assurances which I feel are not adequate.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
342	Dan Nelson	Citizen	The reliance of using water pressure to keep the water contained and routing out the bottom of the containment structure for treatment should not rely on rain and melt. What I mean is the mechanical means should never be allowed to be turned off when conditions are wet. It is not controlled enough.	The MPCA has removed the "temporary conditions" language and has revised the language of the permit in light of the comment to state that if an inward gradient is not reestablished within 14 days of detection, it is a violation of the permit. The permit also requires monitoring of the Category 1 stockpile paired wells/piezometers weekly following a 100-year storm event to ensure that monitoring and any necessary preventative maintenance occur promptly.	
343	Dan Nelson	Citizen	Also, dry stacking should be studied further as it is easier to not pollute the water in the first place, rather than trying to treat it for 500 years. I am not a scientist and I do not know the minute details of the plant but I do not see a state-of-the-art mine when I am shown the plan.	See response to Comment 720-E, which addresses consideration of alternatives.	
344	Dan Nelson	Citizen	Let's get it right or, even better, deny what is sure to be a polluting mind like all the others before this. I also worry as this is this the first mine the company has operated and since they have just done the minimum needed through this process, they have not impressed. Please deny the permit.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

345	Tonia Kittelson	Friends of the Boundary Waters Wilderness	Dear MPCA, Please deny the PolyMet I strongly urge you to reject the PolyMet NorthMet water quality permit application. It is immoral for us as a society to create a contaminated site that will last for centuries when we cannot know that our current economic and regulatory systems will be there as long as needed to take care of it.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
346	Tonia Kittelson	Friends of the Boundary Waters Wilderness	New content or unresolved issues that still need to be addressed include but are not limited to the following: " Given that acid mine drainage from the Mt. Polley dam collapse traveled 400 miles downstream, please determine how far out into Lake Superior the PolyMet pollution will go. For reference, both dam failures at the Mt. Polley Mine, British Columbia, Canada, in 2014 - which was touted as the "Gold Star" of sulfide mining operations for best engineering design and safety - and the Samarco, Brazil dam failure in 2015, sent billions of gallons of toxic waste downstream. The pollution traveled over 400 miles from the mine sites.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
347	Tonia Kittelson	Friends of the Boundary Waters Wilderness	If PolyMet's pollution could travel 400 miles in Northern Minnesota when the tailings basin dam fails, that means that contamination will travel almost 200 miles from PolyMet site down the St. Louis River to the Lift Bridge between Duluth, MN, and Superior, WI. Pollution will continue to flow another 200+ miles out into Lake Superior - beyond the Lift Bridge. That is unacceptable. Citizens deserve to know the reach of contamination before a decision is made; " Decades of work has been done in the St. Louis River Estuary to clean up Legacy pollution from past industries.	This comment pertains to issues considered in the development of the DNR Dam Safety permit. Regarding potential contamination from the discharge from the WWTS, the discharge is required to meet Operating Limits for sulfate, copper, arsenic, cobalt, lead, nickel and mercury at the point of discharge at the project site. The permit also states that the discharge must not violate water quality standards; again, this would be at the point of discharge. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility to prevent the pollution of downgradient water. Consequently, impacts to the St. Louis River and Lake Superior will not be discernable.	
348	Tonia Kittelson	Friends of the Boundary Waters Wilderness	Do not allow PolyMet to add new toxic pollution to this Federally designated Area of Concern; " Require PM to prove it can capture and collect 90% of its wastewater before you make a decision. No other metal mine has ever collected 90%, let alone suggested that they could. Mines usually promise high, and perform low. Meaning, they promise 60-80% collection rates, but fall short of their promises by 25-30%. PolyMet plans to use the same technology that other mines have used, nothing new, nothing better, yet claims it will achieve what has never been achieved before. Reject the permit application and require proven technology be used to capture and collect 90% of wastewater.	The containment systems function on the principle of maintaining an inward hydraulic gradient across the barrier wall that is part of the system design. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the capture system. The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. The comment questions the efficacy of controls of the seepage capture systems required in the NPDES permit at the Mine Site and Plant Site. The same issues were raised in the EIS and DNR, in consultation with MPCA, considered those issues. The comment does not raise any new facts for MPCA to consider at the permitting stage, it merely disagrees with MPCA's conclusion.	
349	Tonia Kittelson	Friends of the Boundary Waters Wilderness	10% of billions of gallons of waste is bad enough - it is too much pollution to allow into our public waterways. Please do not allow more than that; " Conduct a Health Impact Assessment - even Alaska does these for proposed sulfide-ore mines. Human health is at great risk with this proposal. PolyMet's contaminated waters will be carrying 6 of the top 10 worst pollutants for humans, according to the World Health Organization. Surely, people living downstream and near Lake Superior deserve to know what health risks will be placed upon them.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

350	Tonia Kittelson	Friends of the Boundary Waters Wilderness	" Require PolyMet to conduct a Reverse Osmosis test using acid mine waste produced from sulfide-ore mining operations. Do not accept the mining company's current test of Reverse Osmosis using taconite iron ore mine rock. The waste is not the same and the test result from iron ore should not be accepted for this proposed sulfide ore mine operation;	To demonstrate that membrane treatment technologies were capable of meeting treatment targets, the company conducted a 6-month pilot testing program using seepage water from the existing tailings basin. For a portion of the test, additional metals were added to the test influent to more closely simulate projected effluent quality (i.e., wastewater that would be expected from the mining of sulfide-bearing ore). Results of the pilot testing were used in the MPCA's reasonable potential analysis and in MPCA's engineering review of the treatment system design, and MPCA again determined the proposed design is capable of meeting the Operating Limits in the draft permit. In addition, the modeling and pilot testing demonstrated that concentrations of other parameters in the effluent would be far below the water quality standards when the sulfate Operating Limit is met. To ensure that is the case, Operating limits for arsenic, cobalt, lead, nickel and mercury have been added to the draft permit.	
351	Tonia Kittelson	Friends of the Boundary Waters Wilderness	I have paddled the Partridge River, as have many others have. It's quite beautiful. This river lies directly downstream of PolyMet's proposed mine site is a publically accessible waterway. The water that PolyMet plans to pollute belongs to the public. And, during the course of these many years of public hearings, over 100,000 citizens have commented to agencies that we do not want PolyMet's pollution. I hope you listen to the people and deny the PolyMet Permit To Mine application. Respectfully, Tonia Kittelson	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
352	D. Gary LaFave	Citizen	Hello, My name is Gary LaFave and I am a journeyman pipefitter. My wife Cathy and I are life-long residents of northern Minnesota and we are both in favor of the Polymet NorthMet Project. Polymet has proven its' commitment to northern Minnesota by complying with every one of Minnesota's strict environmental standards and are doing more than what is expected by addressing the current water quality issues created by legacy mining.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
353	D. Gary LaFave	Citizen	Their water quality will generate a net decrease in mercury and sulfate that may reach the St. Louis River and Lake Superior. All water on the NorthMet Project site will have low concentrations of mercury. All water discharges will comply with the Great Lakes Initiative standard of 1.3 nanograms per liter of mercury. Because of this treatment process, all discharged water will be about 8-9 times cleaner than the rainwater that falls on the site and will also be 2-3 times cleaner than the natural runoff within the watershed.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
354	D. Gary LaFave	Citizen	Polymet is also protecting the environment by using an existing basin that has been stable for over 40 years. They will also replace every acre of wetlands distributed by the project at a greater than one-to-one ratio. No other country in the world has stricter environmental standards than those here in the United States, and if we cannot produce the raw materials needed manufacturing electronics, etc. in this country we'll be forced to get them from countries who could care less about the environment or the air we breathe.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
355	D. Gary LaFave	Citizen	Polymet's NorthMet Project will create up to 1,000 very much needed jobs in this region of our state. These jobs will play an important role in sustaining the viability of the Iron Range, not to mention the $515 million boost to St. Louis county annually.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
356	D. Gary LaFave	Citizen	Polymet is a solid company that is wholly committed to doing the right thing for our environment and the people of Minnesota. That is why I am in favor of Polymet's NorthMet Project. D. Gary	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

357	Suzanne Sorkin	Citizen	Please deny all PolyMet pollution permits. I am very concerned about contamination of the Lake Superior watershed. Sulfide mining has a 100% track record of polluting and in this case the pollution of Lake Superior watershed and Boundary Waters pristine wilderness can never be recovered from. Boundary Waters Canoe Area is the most-visited wilderness area in the country! Please, I urge you to deny all pollution permits for PolyMet.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
358	Kathryn Sitter	Citizen	I attended the public hearing in Duluth on February 8 and viewed the information boards that were displayed by the DNR and the PCA regarding the PolyMet mining permit process. I am no expert in this type of information, so the research you presented seemed thorough, BASED ON WHAT IS KNOWN BY TODAY'S STANDARDS. Therefore, I cannot address the science of your research, but I would like to comment on my concerns for our shortsighted "long range vision" of this project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
359	Kathryn Sitter	Citizen	1.Research has been presented for the storage of wastes using best practices and current knowledge for tanks and liners, but we don't know how our planet will change and perhaps alter the effectiveness of storage procedure. 2.If the storage is compromised, how far will the contamination flow and leech into our soils and water sources? 3.PolyMet states it will monitor the storage membranes and the PCA/DNR will also be monitoring the project. It is admirable that PolyMet says they will monitor, but to me, that is like the fox guarding the hen house. Also, in today's political climate and actions, we cannot be assured that environmental standards will be strict enough to protect the human, wildlife, and plant populations, or that the monitoring process will even be funded in the future.	The project includes engineering controls such as stockpile liner systems, seepage capture systems and wastewater storage and conveyance systems that are designed to limit and manage impacted water from the facility so that it does not impact groundwater or surface water. The effectiveness of these controls was evaluated in the EIS and the water quality permit requires their installation/operation. The permit has been revised to be more prescriptive on the design components of the engineering controls (i.e., seepage capture systems, liner systems, WWTS, etc). It also includes required monitoring and provisions that are intended to assess the monitoring and performance data in a proactive manner so as to identify the potential for impact to occur such that adaptive management or mitigation can be applied to prevent the impact from occurring.	
360	Kathryn Sitter	Citizen	4.I am not convinced that the promised money for long range protection will be enough if a catastrophe occurs or if PolyMet leaves; it seems that Minnesota taxpayers and those downstream of the mining site would be left to deal with a literal toxic situation.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
361	Kathryn Sitter	Citizen	5.Many Minnesotans live in the state to enjoy an environment that is light, noise, water, and air pollution free (or relatively low). A large operation of this type goes against that desired habitat.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
362	Kathryn Sitter	Citizen	6.Obviously, the promise of jobs is a personal and political incentive. As I look at the big picture, 650 construction jobs for only 2 years, and 350 mining related jobs for 20 years is certainly valuable, but I believe not entirely a valid promise. Where is it guaranteed that all those jobs will employ Minnesota residents or in the future, even continue to be human vs. robotic jobs? I have seen local projects claim to bring in jobs and yet the trucks bringing in workers are from out of state, or even out of country. So, unfortunately the "job card" is an emotional political motivator to gain project acceptance, in my opinion.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
363	Kathryn Sitter	Citizen	After hearing and reading information presented about this critical decision, my opinion is that this project is too high of a risk to allow the permit process to proceed. If there really is that much mineral waiting to be extracted, why are we impatient to get it now as opposed to developing new extraction technologies (and jobs for the future) that could potentially be safer for both humans and the land? As I said, I don't have the science background to refute your research, but I do know why I value living in this state. This is not the right project at this time and I hope you will consider the "gut" feeling of mine and other residents holding similar perspectives. This project is too high of a risk for the future welfare of our state.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
364	Anna Weyers	Citizen	For as long as I can remember my family has taken yearly trips up to the boundary waters. Growing up in central Illinois it was about a 13 hour drive to get to the public boat ramp. The long car ride was worth it when you got to the lake. To me it is about spending time with family. Not just my immediate family, but days spent with my grandma, cousins, aunts and uncles making memories. It's a chance to unplug for a week. To listen to the loons, catch some small mouth bass, make s'mores sitting around a campfire, and watch the sunset while trying to take in all of the beauty. I hope to someday bring my future children canoeing up in the boundary waters. I hope they will get a chance to see a family of common mergansers and watch bald eagles fly over. It truly is a unremarkable place. Tourism, especially fishing is HUGE for Minnesota. I know I have purchased out of state fishing licenses many many years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

365	Anna Weyers	Citizen	I read the yearly rule and regulations publication and I pay attention to the fish consumption advisories. Pollution and public health is important to me. Please think about recreational use and how important the boundary waters and the other public land in Minnesota are important to not just Minnesotans, but to the rest of the American people.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
366	Mark Moehlenbrock	Citizen	A quote from Minnesota Administrative Rules: "6132.3200 CLOSURE AND POSTCLOSURE MAINTENANCE. Subpart 1. Goal. 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." The mining plan calls for continued water treatment for an unspecified period of years after mine closure in order to meet water quality standards. Since this is not maintenance free, it is in violation of the law. For this reason, the mine should not be granted a water quality permit. Thank you. -Mark Moehlenbrock	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). Minnesota Rule 6132 is administered by MDNR and was considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
367	Glenn Merrick	Citizen	I am submitting comments in opposition to Polymet's development of a copper-nickel mine in northeastern Minnesota. The immediate and long terms risks associated with this project are unacceptable to me as a lifelong resident of northeastern Minnesota.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
368	Glenn Merrick	Citizen	Excellent water quality forms the foundation for the high quality of life that my family has enjoyed as residents of this unique area. We are not willing to risk endeavors under the leadership of a company without a mining resume and a parent company that has a track record notably marked by serious environmental and economic problems it has left behind.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
369	Glenn Merrick	Citizen	Specific reasons for my opposition include; 1. the recently developed and continuing to unfold understanding that sulfide generated by sulfate reduction is central in controlling the occurrence of wild rice (Zizania palustris) in shallow aquatic ecosystems. My family consumes naturally occurring wild rice regularly every year and hunts ducks nearly exclusively on bodies of water what support wild rice.	See response to Comments 81 and 718 through 718-B.	
370	Glenn Merrick	Citizen	2. the direct causation of elevated methylmercury in aquatic systems as a consequence of elevated sulfate reduction to sulfide. Contributing to increases, rather than reductions, in bioavailable mercury contamination is morally unacceptable in a region where fetal development is already being impacted by it.	See response to Comment 81. The control of sulfate in the discharge to less than 10 mg/L will minimize the potential for increased methylation of mercury.	
371	Glenn Merrick	Citizen	3. the reality that methods for affordable and scaleable treatment of sulfate are in their infancy, but do show some progress. Development of advanced sulfate removal processes in Minnesota should be a goal that will not only protect Minnesota's water quality, but also diversify our economy with a technology needed worldwide.	The MPCA does not disagree that further development of sulfate treatment processes is a desirable goal. However, in the context of the NPDES/SDS permit for the proposed project, MPCA has reviewed the proposed WWTS and determined that it is capable of achieving the required effluent quality.	
372	Glenn Merrick	Citizen	4. the enormous risk of mining and postmining maintenance in a such a complex environment . Enormous pits will slowly fill with contaminated water which will travel toward the Partridge River after mining ceases with the quality of the water and the rate of flow marked by uncertainty. Underground barriers and water collection systems will need to be maintained and continually operated for centuries as will the storage of tailings behind a dam. Structural failure, poor management, and accidents all pose realistic threats to water quality that are unacceptable under current and currently foreseeable conditions.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
373	Glenn Merrick	Citizen	It is an observable truth that the value of ecosystems and their services, as well as the value of minerals, grow with time. Investing in ecological understanding of sulfate, sulfate removal technologies, and how to create diversified, sustainable economies in northeastern Minnesota should be the current focus of our efforts. In the short and long term the present risks to water quality associated with this mining exceed the value they promise to all residents of northeastern Minnesota. There may be a time in the future if we apply ourselves to solving these risks when this type of mining will become safe enough that it can proceed, but it is most clearly not now. Sincerely, Glenn Merrick Glenn Merrick 1219 105th Ave. W. Duluth, MN 55808 Glenn Merrick	The MPCA does not disagree that further development of sulfate treatment processes is a desirable goal. However, in the context of the NPDES/SDS permit for the proposed project, MPCA has reviewed the proposed WWTS and determined that it is capable of achieving the required effluent quality. General comments related to water quality and flow were considered during the environmental review process.	
374	Cynthia Ellingson	Citizen	We need clean air to breathe. We need clean water to drink. You know that PolyMet will poison our water and air, and our children and grandchildren. Do NOT give our children's future to this filthy corporate monster. Our health should not be for sale. I will not vote for the people who support PolyMet. I will not accept a global corporation's greedy destruction. Sulfide mining equals death for the land and people of Minnesota. NO! NO! NO!	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
375	Doretta Reisenweber	Citizen	See "Multiple Comments" 434 through 461 (commenter ID Multiple-170) and for full delineated comments.	See responses to comments Multiple-434 through Multiple-461.	

376	Doretta Reisenweber	Citizen	See "Multiple Comments" 434 through 461 (commenter ID Multiple-169) for full delineated comments.	See responses to comments Multiple-434 through Multiple-461.	
377	Doretta Reisenweber	Citizen	Commissioner Landwehr: Water is life - for you, me -- all of life. You of all must enforce proper stewardship of water for the future. Thank you! Borie R.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
378	Carly Anderson	Citizen	Dear MPCA, Here is a photo of my brother Scott of Scandia fishing in the St. Louis River. Below is a photo taken by Jim Brandenberg of the BWCA and goons, own totally cool state bird... None will be the same after sulfuric acid and mercury contamination from copper mines. Please do not allow the permit for PolyMet. Listen to the pleas and warnings of those whose waters have been ruined. Thank you, Carly Anderson.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
379	Nancy Haarmeyer	Citizen	Hello: Polluted watershed including the BWCAW, Lake Superior and Beyond, Loss of drinkable water, death of aquatic life, death of forest and other ecosystems, pollution of air (smelter operation), cancer, loss of tourism based industry jobs, plummeting property values due to unhealthy water, and more. The damage this will cause can not be reversed.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
380	Nancy Haarmeyer	Citizen	Is all that "worth" the possibility of perhaps 300 Jobs? Our environment needs strong protection. Polymet can make no guarantees that this project will do no harm. And past mining of this type has always been great environmental disaster and destruction of the environment, which damages are not possible to fix or reverse.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
381	Nancy Haarmeyer	Citizen	If Jobs are the goal, imagine all that will be lost. No fishing, reduced hunting, tourism decline. Toxic environmental dangers due to sulfides. This risk of damage is too high! Please consider my commands and stop this polymet permit process. Save our water, ecosystems, plant and animal life and quality of human life. Thank you!	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
382	David F. Reisenweber	Citizen	I urge you to deny the PolyMet draft permits.I've worked with dirt and water all my life and have learned some undisputable facts. Water always seeks the lowest level and turns dirt into mud, which then slips out of the way. Subsurface water also moves to the lowest level. It just takes longer. It is laughable for PolyMet to say they will plug cracks in the bedrock with cement.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
383	David F. Reisenweber	Citizen	About the only manmade things that last "forever" are nuclear waste, some types of garbage and acid mine drainage. As Richard Feynman is credited with saying: "For a successful technology, reality must take precedence over public relations, for Nature cannot be fooled." Copper-nickel mining in water-rich northeast Minnesota would end up the biggest ever disaster in Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

384	Linda M. Goude	Citizen	Commandments are an index to 613 Statutes found in Genesis to Deuteronomy. Rest is required in God's Government ... Not only in the daily cycle, weekly cycle and holidays ... But in freedom from worry/stress ... This type of mining causes worry ... It causes stress ... It causes pollution ... ! am concerned ... Minnesota is the epitome of outdoor rest and relaxation ... We all need places go to get away from stress and to hear God's quiet voice ... And that in these outdoor areas the WATER AND AIR MUST STAY PURE AND LAND UNTOUCHED. These things represent what God is doing in our lives, making us pure and holy and we need untouched outdoor areas to communicate with God and to hear His quiet voice. You did not consult God, our Creator about whether it is good to pollute the earth. You do not have a right to give away what is not yours to give. The various agencies involved in this process are only stewards of God's resources. God is the owner. When God created the earth He did it in 6 days and it only takes two chapters to tell about it (Genesis 1-2). This has taken thousands of pages and wasted our public servant's time and the time of hard working people. TRUTH is for the purpose of freeing us from sin. God's word is truth (John 17:17). Jesus is the word (John 1:1). He created and redeemed us from sin. He is coming soon to take us to His Father's house, heaven (John 14:1-3). Because of Jesus blood I am free to choose God with all my heart, mind, soul, body, spirit, and strength. God's law shows love. God's 10 Commandments (Exodus 20) are an index to 613 Statutes. These are the law of heaven (Revelation 11:19) God instituted rest in the daily cycle as well as in the weekly cycle and in holidays that He set up. The sign of God's dominion is the Sabbath-Friday sundown to Saturday sundown (Genesis 1,2; Revelation 11:19) He commands us to spend time with Him to enjoy relationship ... The CONSEQUENCES of ADDING to the truth, plagues ... of TAKING AWAY from the truth, your name will be removed from the Book of Life (Revelation 22:17-18). God communicates in a still small voice (1 Kings 19:11-12) .... I need rest and quiet to hear God myself, and also for my family and for my community to hear God. Please deny the requests for DNR/MPCA permits. Linda M Goude	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
385	Carol Rasmussen Hering	Citizen	The PolyMet public comment period runs through March 6, 2018 with public meetings Feb. 7 in Aurora and Feb. 8 in Duluth. It seems that possible acceptance of this operation is drawing closer. Supporters are touting the hundreds of jobs it would create and the many assurances by the company of its environmental safety.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
386	Carol Rasmussen Hering	Citizen	I feel that this mine and a proposed Twin Metals mine near Ely would cause long term (as in forever) devastating consequences. Edward Lotterman wrote in his column Jan. 21, 2018 in the Pioneer Press that "Nearly all mining pollutes ground and surface water while it is going on, particularly in relatively high rainfall areas like Minnesota. But in some cases damages end when extraction ends. Sulfide ores for copper and other non-ferrous metals are an exception. When these are exposed to oxygen and then water, sulfuric acid is formed. This itself contaminates water. More importantly, the acidic water can leach other harmful substances out of whatever material though which it flows. This is not rare. It is in fact nearly the rule."	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
387	Carol Rasmussen Hering	Citizen	We need minerals, why not from PolyMet? Because Minnesota i not just any state. The Weatherguide facts in the Pioneer Press provided by the Freshwater Society on Jan. 26, 2018 state that Lake Superior holds half of the freshwater in the Great Lake and 1/5 of the world ' fresh water supply! We cannot risk losing the purity of that precious water in exchange for a temporary (the mine would close in 20 years) mining operation in which the benefits would end and the consequences would be forever. In light of the current anti-regulation and anti-environmental views held by many of our politicians, we need to be even more vigilant in our protection of our natural resources. For these reasons I strongly oppose the PolyMet mine and the proposed Twin Metals mine near Ely, Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
388	Sharon Zoff	Citizen	I am writing to comment on the possibility of giving a permit to PolyMet. I want to clearly state my opposition to this permit being granted.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

389	Sharon Zoff	Citizen	As the Pollution Control Agency, I hope you take the science into account on the potential risks involved in permitting on the scale being requested. The potential for our water and soil disruption to the point of public health safety and environmental damage is too great and unknown and very possible.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
390	Sharon Zoff	Citizen	If you must give a permit I suggest giving it on a much smaller scale, such as a test plot for 20 years on 100 acres, to see how safely done it really is and to do adequate monitoring so there is more facts behind the decision. Thank you for your time, Sharon Zoff	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
391	Nancy Norr	Board Chair, Jobs for Minnesotans	To the Minnesota Department of Natural Resources and the Minnesota Pollution Control Agency: On behalf of the coalition Jobs for Minnesotans, which represents business, labor and communities across the state, I'm submitting a formal comment related to the draft Permit to Mine, draft water quality permit, draft 401 Certification and draft air emission permit for the PolyMet NorthMet Project. We are confident the state has been thorough in its permitting processes, and the conditions the state has included in the draft Permit to Mine and air and water permits are prudent and reasonable. The permit conditions, which were informed by the comprehensive environmental review process, spell out the monitoring, operating, reporting and inspection requirements for the mine during construction, operation and closure. Together, they provide a framework for mining and environmental protection to co-exist.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
392	Nancy Norr	Board Chair, Jobs for Minnesotans	We trust the science and the findings of the state's experts, which show the Poly Met NorthMet Project will protect human health and the environment and that taxpayers will be protected under the financial assurance provisions. Mines across the country post bonds and letters of credit as the primary means of meeting their financial obligations. That is the same high standard the state of Minnesota requires. Furthermore, Minnesota has some of the strictest environmental standards of any state, and PolyMet has demonstrated through the environmental review and permitting process that it can meet those standards.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
393	Nancy Norr	Board Chair, Jobs for Minnesotans	Poly Met has committed to full compliance with the conditions of the state's air, water, and mining permits, and we are also confident the state can adequately enforce compliance with the conditions it is imposing on the company. Poly Met is setting the standard for how responsible copper-nickel mining can and should be done in the state.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
394	Nancy Norr	Board Chair, Jobs for Minnesotans	The project should be allowed to move forward with its promise of jobs and significant economic benefits for the region, including the opportunity to di\ersify the Iron Range's economy and create hundreds of middle-class jobs in an area of the state that really needs them. A study by the Laboliitz School of Business and Economics at the University of Minnesota Duluth estimates the Poly Met project will generate $515 million in economic benefits annually for St. Louis County alone. This adds up to $1.4 million per day or $10.3 billion over the 20-year permit. It is time to move past the debate about jobs and the environment and focus on the positive effect the project will have on local infrastructure, schools, commerce and other areas. Toe economic benefits the project will generate will have a profound positive effect on the daily life of local communities - even for people who may never work at or be associated directly or indirectly with the mine.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
395	Nancy Norr	Board Chair, Jobs for Minnesotans	There is no better time or place to build a mine. Toe NorthMet ore body is part of a world-class resource located in the middle of a mining zone with a knowledgeable, skilled and trained workforce that has more than 135 years of responsible mining experience. This region has existing roads, rail, piping, power, tailings dam and other mining infrastructures already in place and, by using existing infrastructure on the former L 1V site, the NorthMet project would be one of the largest recycling projects in the state. We urge the state's timely consideration of public comments and finalization and issuance of the Permit to Mine and other permits. It's time for the state to allow this project to mo-.e forward. Toe people, businesses and communities of Northeastern Minnesota can't wait any longer; they′re ready to get to work.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

396	Joan Nichols	Citizen	I urge you to deny the "Permit to Mine" for the proposed PolyMet sulfide mine, which would pollute Minnesota waters for hundreds of years, endanger the health and well-being of Minnesota residents, and directly threaten the watershed of Lake Superior.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
397	Joan Nichols	Citizen	At present, I am in training as a Master Water Steward and have become increasingly aware of the challenges that we face to maintain water quality through the various activities of individuals, communities, and corporations. No matter the efforts that individuals and groups make to protect the integrity of our water resources, government entities have a greater capacity to more broadly and significantly impact the quality of those resources into the future. As a consequence, denial of the "Permit to Mine" will go much further than any action a citizen or group of citizens can take to protect our natural environment and water resources. Please accept this responsibility.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
398	Joan Nichols	Citizen	The risk of the proposed PolyMet sulfide mine to Minnesota's communities is too great to permit. Short-term economic gains do not justify the long-term consequences to the environment for which future generations will have to pay. This type of mining has a 100% track record of pollution, and a tailings dam breech could be catastrophic for downstream communities. The mine's toxic wastewater would have to be treated for five hundred years. This is an unacceptable legacy to leave for current and future generations of Minnesotans.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
399	Joan Nichols	Citizen	The PolyMet mine would set a dangerous precedent for Northeast Minnesota, opening the door to an industrial acid mining corridor that threatens the Arrowhead region and Boundary Waters Wilderness. Having kayaked, canoed, and hiked in this area, I value the recreational and spiritual benefits that this part of the state provides for individuals and families all over the state and region. Please protect it.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
400	Joan Nichols	Citizen	Minnesota's legacy hangs in the balance. If you allow the permit, you will be remembered as instrumental in the degradation of water resources and animal habitat, the long-term denouement of Minnesota's north-eastern towns, and the destruction of that environment which serves us through carbon sequestration and aquifer recharging. I urge you to deny the "Permit to Mine" for PolyMet.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
401	Elizabeth Kieckhafer	Citizen	Please decline this permit. It is too risky the sulfuric acid from this mine will be there on the site & watersheds (3), for 500 years. No one will want to live here. We must think of our future generations & our clean water resources.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

402	Dave Walter	Citizen	Dear Commissioner Stine, I'm writing to you concerning the proposed PolyMet mine near Hoyt Lakes. For all the research I've done and the people I've talked with about the PolyMet mine proposal, I'm uncertain where the proposal is at in the review process, or who is responsible for the next decision. But, I understand that the Minnesota Pollution Control Agency is part of the decision-making process, so I'm writing to you to express my sincere and profound dismay at the possibility of this mine coming to fruition.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
403	Dave Walter	Citizen	The thought of the Partridge and the St. Louis rivers, and Lake Superior, becoming polluted with sulfuric acid is heart-rending. Minnesota's incredible natural resources, including its rivers and lakes, are precious. This mine would push Minnesota backwards for hundreds of years.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
404	Dave Walter	Citizen	I have a background in biology and have just a smattering of understanding about how sulfuric acid affects the organisms of a river's ecosystem. I think it would be a travesty to see such damage occur from leakage from tailing basins from the proposed mine. I know I don't need to tell you this, you know much more than I do about this issue. But I sincerely hope this mine proposal is denied, for the better of all Minnesotans. I so believe in the quality of this state, and don't want to see us go backwards. Thank you, Commissioner Stine.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
405	Dave Walter	Citizen	I'm writing to you concerning the Polynet mine proposal near Hoyt Lakes. The thought of a sulfide mine operating in Minnesota in heart-rending. The pristine natural resources of our state are precious, and sulfuric acid leakage from mine tailing basins likely. Our state would be home to a long-term natural travesty, like so many mines in western states. Once sulfuric acid pollutes our rivers and lakes, no amount of money or apologies or drained can remediate the damage; our whole state will be changed for the worse. I sincerely hope this mine is not allowed to proceed. Thank you, Deputy Commissioner Beeman.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
406	Linda Vukson	Citizen	Researching and studying the Polymet proposal to open a copper sulfide mine in northern Minnesota and attending the Polymet hearing in Duluth necessitates me to contact the Minnesota DNR and PCA. These are the reasons I oppose the Polymet project: •The International Copper Study Group projects an abundant copper surplus and even Glencore, the largest shareholder in Polymet, has idled copper mines because of low prices of copper. Reserves of copper are greater than demand. Instead of mining copper we should be recycling copper which is cheaper and more sustainable. The Ely Timberjay August 23, 2017 editorial stated "…the way to advance a truly green economy - not consuming huge amounts of carbon-based energy to extract and process low-grade ore from a highly sensitive environment that will require pollution mitigation for centuries."	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
407	Linda Vukson	Citizen	•Copper mining is too dangerous in our water-rich Minnesota. Polymet proposes an above ground, open pit of wet tailings with a dam wall that requires water treatment for centuries. Because this type of dam fails at alarming rates and ALL US sulfide dams have had spills, experts recommend that copper sulfide mining in areas with abundant water-rich environments have dry closures with dry covers for mining waste. The Mount Polley dam failure in 2014 was caused by the dam being altered beyond original engineering. That's reason enough not to allow Polymet to use the LTV tailings basin.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

408	Linda Vukson	Citizen	•The Duluth News Tribune on February 13, 2018 states that Polymet's "...earthen dam will reach 252 feet high when finished, holding back millions of gallons of water mixed within a slurry with finely ground rock left over after crushing and processing...the basin will cover 21/2 square miles with 10 million cubic yards of mine waste pumped in each year for 20 years." Certainly that is a recipe for disaster and an unacceptable risk to Minnesota.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
409	Linda Vukson	Citizen	•A catastrophic spill would harm not only northern Minnesota but the St. Louis watershed and Lake Superior. No one can guarantee that won't happen. Senator Tom Bakke suggested at the February 8 meeting that we should all accept risk. But he doesn't live downstream of Polynet so that is an easy thing for him to say! The acceptability of risk should be with the public whose health, lives and livelihoods would be at risk if the wet tailings dam is breached. Not to do so is a complete failure in the entire permit process.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
410	Linda Vukson	Citizen	•The draft dam permit for perpetual water treatment violates MN Administrative Rule 6132.3200, Subpart 1 in which abandoned mines must be maintenance free upon closure. Also the MPCA has failed to reprimand all six Minnesota taconite mines that are operating now with expired permits or variances and not meeting environmental standards. Why should we now trust the MPCA to enforce all Polymet permits?	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
411	Linda Vukson	Citizen	•Polymet proposes to have a meager $544 million to cover catastrophes while the mine is in operation. The Minneapolis Star-Tribune reports that experts say that it should be $1 billion during peak mining years to cover potential cleanup that could last for centuries.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
412	Linda Vukson	Citizen	•Native American treaty rights, as usual for the US government, are being ignored when considering this project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
413	Linda Vukson	Citizen	I would also like to make a comment about the public hearing held in Duluth on February 8. This meeting was for the public to express their views on the proposed mine. I object to any elected official speaking at these public hearings. Elected leaders have plenty of venues at which to speak and express their views. This hearing was not intended for them.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
414	Linda Vukson	Citizen	This proposed tailings basin of Polymet reminds me of the 1970s when I had to haul water from the firehall in Lakeside because of asbestos from taconite tailings being dumped into Lake Superior by North Shore Mining at Silver Bay. Only a lengthy court case and Judge Miles Lord put an end to that. I do not trust that any mining company's top priority is the stewardship of our environment. And now Lake Superior and its watershed is under threat again. Corporation profits and temporary jobs are not worth ruining Lake Superior forever.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
415	Lea Foushee	Environmental Justice Director, North American Water Office	It is with greatest concern that I write this letter. All Minnesotans depend on clean air and clean water, the Water Cycle. We need Water for Life...without clean water we die. Many Minnesotans rely on our game, fish, and our wild rice resources for way-of-life and economic survival. Indigenous Peoples, in particular, rely on game, fish, wild rice, and other plants that comprise a diet, which enables their social structure and culture to flourish in Minnesota and surrounding Great Lakes States. Indigenous Peoples have a right to a modest living (Attachment A).	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

416	Lea Foushee	Environmental Justice Director, North American Water Office	Resorts, cabins and other forms of hunting and fishing tourism income is critical to Minnesota, and will be severely affected by publicity in affected metals extraction regions.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
417	Lea Foushee	Environmental Justice Director, North American Water Office	Mining precious metals and associated minerals is a one-time harvest. The results of a one-time harvest of metals and minerals will damage, if not prohibit the continuing harvest of Minnesota's wild survival foods. For some, this destruction of wild foods is the equivalent of genocide. This is a choice between short-term financial gain, mostly corporate earnings and some worker wages on one hand, and generations of visitors to Minnesota, Indigenous and other Minnesota citizens living in a healthy and protected environment. This is a challenging choice for any governor to make.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
418	Lea Foushee	Environmental Justice Director, North American Water Office	There are already thirty existing mine site permits in the three-county Arrowhead region of Minnesota according to the Minnesota Pollution Control Agency. NAWO requested a mapping of these thirty mine sites permit applications with wild rice waters identified (Attachment B). These three counties rich with wild rice waters are included in the 1854 and 1837 Treaty Ceded Territories harvest boundaries. These Anishinaabeg (Ojibwe) Treaties have been litigated up to the United States Supreme Court level and have been affirmed and remain in full force and effect. Our Department of Natural Resources has an in depth discussion of the litigation on their website.1	Comment noted. This comment raises a general concern about wild rice waters in Minnesota and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
419	Lea Foushee	Environmental Justice Director, North American Water Office	Media coverage of the pending PolyMet decision identifies your concern for doing a mining project where the corporation applies a rigorous set of clean up standards. This is laudable. However, descriptions of the acreage to be disturbed totals over two thousand acres and hundreds of square miles in the drainage area are in harms way.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
420	Lea Foushee	Environmental Justice Director, North American Water Office	The Partridge and Embarrass Rivers are wild rice production waters (Attachment C). These two rivers will be affected by the PolyMet proposal. The Embarrass River drains to the Boundary Waters Wilderness, and the Partridge River drains to Lake Superior. Sulfide mine waste water discharge would damage if not destroy these waters as food sources. The reclamation process of sulfide-mined lands and impacted waters has been described as one that requires hundreds if not thousands of years to return to a pre-mined condition.	During the EIS process, PolyMet offered to resolve outstanding issues related to sulfate and wild rice by incorporating into the project design advanced wastewater treatment that is capable of achieving 10 mg/L sulfate, the current wild rice standard. The permit includes an operating limit of 10 mg/L sulfate for the effluent from the WWTS. This operating limit for sulfate is an enforceable permit limit; if it is exceeded, it will be a violation of the permit. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. Because the authorized discharge from the WWTS is limited to 10 mg/L and the required engineering controls will prevent unauthorized discharges, the project as designed will not harm wild rice.	
421	Lea Foushee	Environmental Justice Director, North American Water Office	Yes, this is the decision by which your Governorship will be remembered. You cannot have both choices. We either have sulfide mining for a few corporations' bottom lines and their employees, or we have clean water, abundant wild rice, tourism, safe fish and healthy forests. NAWO hopes that, in your wisdom as our Governor that you will choose the long-term values and not the one-time-harvest opportunity. NAWO petitions to be included in the citizen group you are creating. We thank you for your concern.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
422	Karin Krueger	Citizen	I feel that if PolyMet has met all the state of MN requirements then the company should be allowed to move forward and mine.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
423	Doretta Reisenweber	Citizen	I'm sending my public comments regarding the PolyMet Draft permits to you, because I know you cannot have analyzed the thousands of pages -- nor have I --. Still I have followed closely the project. We are both of a generation raised to "do the job right" & to "leave the place as good or better than" we found it. Those permits rein counter to our upbringing. Please read the litany of faults. We must protect the environment for future generations. I urge you to summon the courage to deny the PolyMet permits. Thank you for listening. Yours for a better future, Doretta (Dorie) Reisenweber	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

424	Doretta Reisenweber	Citizen	I urge the DNR to deny PolyMet's NorthMet Dam Safety Permit for the numerous reasons provided below. The comments focus on dam failure and catastrophic collapse. Despite PolyMet having absolutely NO experience mining---not so much as a gravel pit, the DNR and MPCA contemplate granting PolyMet permits to permanently store on-site hydrometallurgical residue from metals processing. Can the DNR and MPCA claim that this highly toxic waste is not hazardous? Neither agency has even required PolyMet to disclose the level of pollutants in these concentrated wastes. That is irresponsible. "Who is in charge? PolyMet or the DNR and MPCA? Who is writing these permits? PolyMet, the permittee? Or the grantors, the DNR and MPCA? I remind you that the landowner writes the contracts, not the renters. The same should apply here. The people of Minnesota are actually the landowners---and the owners of the water---not the foreign mining companies, PolyMet and by extension Glencore with its own sordid record of mining abuses throughout the world. The DNR has failed to require studies of the effects of a PolyMet dam failure on downstream property owners, the rivers and streams, and yes, northeastern Minnesota's drinking water. The DNR and the MPCA should place the people's interest---life-giving water above any company's bottom-line. Deny the permits.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). Waste from the hydrometallurical process was tested during the environmental review process and found to not meet the regulatory definition of a hazardous waste. No changes were made to the draft permit in response to these comments.	
425	Doretta Reisenweber	Citizen	For the record, an environmental review of documents indicates that the hydrometallurigical waste facility's sulfate concentrations would be higher than 7,300 mg/L. That is 700 times more than Minnesota's wild rice standard. Factoring in twenty years of mining, that would be 3,280 pounds of toxic mercury which is usually controlled in billionths of a gram. If the DNR and MPCA allow such concentrations, a pandora's box of methyl-mercury related ailments would be expected, not to mention the health horrors unleashed by the heavy metals released into the waters. Already, the sulfate concentrations in northeastern MN waters has led to 1 in 10 babies having higher than normal levels of mercury. How do sulfides and sulfates relate to methyl-mercury? Ask Fond du Lac's water quality director. She can clarify that for even lay people to understand. Although our governor has not asked for one, please require a health impact study as 30,000 medical professionals have requested. First do no harm is their adage. Water is life-----healthy life, IF it is not contaminated. Deny the dam permits.	See response to comment 198. This comment poses questions or contains statements about issues, including a health impact assessment, previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
426	Doretta Reisenweber	Citizen	Contrary to DNR and MPCA conclusions, the Mt. Polley dam which suffered a catastrophic collapse in 2014 and the PolyMet dam do indeed have dangerous similarities, which should be considered before rubberstamping copper-nickel sulfide mining permits. On August 4, 2014, the tailings dam at Mt. Polley copper mine failed in the wee hours of the morning. It released around 6.3 billion gallons of contaminated slurry and polluted water downstream into Hazeltine Creek and on into Lake Quesnel, a once pristine and clear lake prior to the 2014 disaster. On February 12 and 13, I heard former miner & Luck ,BC, resident Doug Watts speak in Duluth about the disaster from his own experience living downstream from the Mt. Polley mine. He had actually worked in that mine for 5 years and previously at other mines. Mr. Watts reported that government agencies were negligent in developing protections and stringent standards and in monitoring. Despite early promises to help the citizens, Canadian agencies and leaders were generally unresponsive to people's concerns following the disaster. Contrary to the help the people had been told to expect, the Mt. Polley mine was granted all kinds of permission to forge ahead purportedly to make money for clean-up costs. The DNR and MPCA must look at reality and consider, if sulfide mines can even be cleaned up. Please bear in mind that closed sulfide mines top the EPA's SuperFund list. With EPA funds and staffing slashed the current EPA won't come to Minnesota's rescue. The DNR and MPCA must stand up for and must protect northeastern Minnesota's wate;, Consider who would pay for clean-up were it even possible? The taxpayers of Minnesota would pay, while the downstream citizens would also suffer the aftermath. Deny the permits. Leave the ore in the ground until and IF it can ever be done without polluting the water throughout twenty years of mining and another twenty years of closure. These ores are found throughout the earth. There is no need to pollute Minnesota's richest resource water. The world is running short of drinkable water. The Pentagon predicts water wars by 2025. That is seven short years from now. Deny the dam permits.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	

427	Doretta Reisenweber	Citizen	Consider that the DNR draft permits as written would grant PolyMet the same choices which lead to Mt. Polley's catastrophic tailings dam failure. Just like Mt. Polley, PolyMet's cheap and risky plans include an upstream style dam against which internal and outside engineers have warned repeatedly. Tailings dams failure rate is almost ten times higher than that of a water supply dam, and when they break, they leave more than a path of destruction, they leave toxic devastation. While the PolyMet tailings waste storage is called a "tailings basin." It is not really a "basin." According to the PolyMet FEIS and the PolyMet permit the plan is to pile wet tailings waste up to 252 feet (over two hundred fifty feet) on top of the existing, LEAKING 40-year-old LTV taconite tailings piles, tailings slimes and wetlands. I remember a song from childhood about "The wise man built his house upon the rock .... " House, dam, sawmill, tailings waste basin---a firm foundation should be part of permit requirements. Deny the dam permits. Furthermore, upstream-type dam construction,as proposed by PolyMet is the type at the highest risk for static, as well as seismic failure. On top of that, the hydromeallurgical waste facility would be built on wetlands and slimes---an unstable foundation. Also not a good idea. However, the agency draft permits do not even insist on excavating the unstable foundation, nor do they require concentrated wastes to be shipped to a safer, dedicated waste storage facility. Who is in charge? It does not sound like the agencies are taking responsibility. It is the agencies whose responsibility is not only to develop natural resources, but also to protect them and the people. Furthermore, like Mt. Polley ,tailings would be kept in a wet slurry--- again contrary to the advice of engineers who advise dry stacking of tailings. Deny the dam permits.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment. The NPDES/SDS permit includes requirements for investigating and addressing concerns related to foundation stability for the HRF.	
428	Doretta Reisenweber	Citizen	I know the DNR and the MPCA are supposed to study the permits, but that scope is too narrow for the global society in which we live. The agencies need to know that the UN Environmental Programme issued a 70-page report on November 13, 2017, urging governments and industry to act to stop these deadly and damaging mining spills worldwide. It calls for stronger regulations internally. The report tells of more than 40 mining waste failures over the past 10 (ten) years, seven of which made international headlines since 2014. Seven headline-making dam failures since 2014. Seven in four years! Since 2008, 341 human beings have been killed and hundreds of kilometers of waterways have been damaged. Those dam failures have affected drinking water sources and jeopardized the very livelihoods of downstream communities. If those experiencies were applied to a potential PolyMet disaster, the affected watershed would include the communities of Fond du Lac, Cloquet, Carlton and Duluth. In view of that threat the Carlton City Council passed a mining moratorium last week. The public awareness and concern is growing. Deny the dam permits.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit and did not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). The draft permits were developed according to current state and federal law. No changes were made to the draft permit in response to this comment.	
429	Doretta Reisenweber	Citizen	The UNEP further reports that "The inclusion of number and size of tailings dams around the world magnifies the potential environmental, social and economic cost of catastrophic failure's impact and the risks and costs of perpetual management. " Maybe PolyMet has done a cost/benefit analysis, but I'll bet it was more like how much the NorthMet mine would cost PolyMet vs. how much the North Met mine would benefit PolyMet and its stakeholders. Has the DNR or MPCA required a study of the environmental impacts? The social impacts? The true economic costs of perpetual toxic seepage from the proposed PolyMet copper-nickel sulfide mine, much less the colossal harms from a dam failure? Are the downstream communities prepared to deal with the likelihood? Have the agencies asked the public for input on an emergency preparedness strategy in case of a dam collapse? No, they have not. That might stir up controversy even among the "converted." Mining supporters might soon oppose coppernickel sulfide mines, when they realize just how seriously their water is threatened. Deny the dam permits.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
430	Doretta Reisenweber	Citizen	Continuing from the UNEP report: "These risks present a challenge for this generation, and if not addressed now, a debt we will leave to future generations." Part of that debt would include not only the money expended to try to clean up the toxic water, but significant health problems, and, gosh, yes, jobs----What would industry look like up here? Employment at some sort of giant SuperFund sites, and top-level mining executives trying to figure out from afar just where and how to transport whatever toxic soup they can scrounge up? Oh, yes, and lots of medical personnel to care for the mounting health problems. On second thought, patients would be sent away for care in a cleaner environment.That is not the dystopian future I want for future generations---your children and grandchildren on down. Deny the dam permits.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

431	Doretta Reisenweber	Citizen	Among the recommended best practices from the UNEP report are: 1. "Avoid dam construction methods known to be high risk" (such as Mt Polley's disastrously failed and Polymet's own planned upstream dam) and 2. "require detailed and ongoing evaluations of potential failure models, residual risks and perpetual management costs of tailings storage facilities." Make the monitoring realtime and send it not only to PolyMet employees in charge, but also to knowledgeable DNR and MPCA staff people tasked with the same. Why wait for a monthly or yearly report? Demand an on-going, upto-the-minute reporting system---real-time is the modern term. Insist on more monitors being placed in areas where seepage and leaks can be expected.	The permit includes monitoring and reporting requirements with monthly reporting of the monitoring data to the MPCA. This is standard practice for NPDES/SDS permits nationwide, takes into account the time required for sample collection and analysis, and provides a sufficient timeframe of notice to the MPCA. Although reporting to the MPCA is monthly or annually, the actual operation of the facilities will utilize daily or continuous monitoring systems. For example, internal flow streams and/or the discharge from the WWTS will be continuously monitored for specific conductance to provide real-time feedback on treatment performance. Furthermore, the permit has been revised to specifically require the completion of an operation and maintenance manual for each of the key engineering controls (WWTS, liner systems, seepage capture systems) which will describe day to day operations. Monitoring data considered in the development of the draft permit and required by the draft permit documents are publically available. No changes were made to the draft permit in response to these comments.	
432	Doretta Reisenweber	Citizen	Better yet, deny the permits to mine until such mining is ever proven to operate safely for twenty years and also be shown not to pollute for another twenty years after closure. Perpetual pollution is a long time compared to forty years. Again, please, deny the permits. Yours in the interest of clean water for future generations, Doretta (Dorie) Reisenweber	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
433	William Straub	Citizen	Dear folks at the Minnesota Pollution Control Agency: I have concluded that it is overall best to deny the permit for the PolyMet sulfide mine project that would be located near Hoyt Lakes. Yes, our state needs jobs, but not at the potential risk of polluting the water supply. I am specifically concerned about this project accidentally contaminating the St. Louis River, which is said to be the largest tributary to Lake Superior.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
434	William Straub	Citizen	Even a cursory reading of a variety of peer-reviewed scholarly scientific journal articles from academic databases clearly shows that scientists agree that sulfide mining poses grave threats to the environment. A few articles show that possibly the effects of acid mine drainage (AMD) can be mitigated using economically feasible eggshell powder, algae, or other naturally occurring substances. But such approaches are based on recent, very limited studies, and have not-fully tested in large scale production mining environments. A potential breakthrough scientific study of a promising new technique that has been approved for Swedish sulfide mining only eliminates on average a little over 50% of the contaminates, and perhaps only 67% of the mostly highly toxic substances. This would leave approximately 1/3 of contaminates uncontrolled. Minnesota should not face the risk of unproven or only partially effective poison abatement techniques.	The permit does not authorize a discharge from an unproven or innovative treatment system. MPCA has reviewed the proposed WWTS technology and determined that it is capable of achieving the required effluent quality. The MPCA has added language to the permit to require construction of the WWTS component as proposed in the application.	
435	William Straub	Citizen	As the Corp of Engineers vastly underestimated the water flow from the Hurricane Katrina that caused devastating flooding in New Orleans a decade ago, I question whether the Corp is really looking out for the best interests of most of the citizens of Minnesota. As even the right-leaning Cato Institute think tank asserts: "...many of projects [of the Army Corp of Engineers] have been economically or environmentally dubious ... [and they have] ... often subsidized private interests at the expense of federal taxpayers."	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
436	William Straub	Citizen	I therefore question whether the risks are worth the possibility of centuries of AMD pollution and therefore I respectfully request that you deny the 401 permit and halt the PolyMet mine project. A handful of jobs is not worth destroying the Minnesota environment that will provide more tourism dollars and jobs in the long run for the greater good.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	

437	David Gilsvik	Citizen	Hello MPCA, My name is David Gilsvik and I am an ordinary citizen and life long resident of Minnesota. At sixty years old I feel I have some perspective on the past and future, but what I have in abundance is a love and concern for the BWCA, northern Minnesota, and most of all my grandson and his generations future. I hear that proposed permits will not have limits on contaminates leaking into ground water or water sheds. This is unacceptable. Any commercial venture in Minnesota should be held to the strictest environmental standards. Good science needs to lead these proceedings. My understanding is that Minnesota and its citizens have little to gain and much to loose from sulfide and other heavy metal mining.. Over 18 million people around the nation have joined in "save the boundary waters" efforts. Our clean water is a resource that someday may be priceless to the world as a whole. Nothing is worth risking this legacy.	The permit restricts leakage to groundwater through engineered controls. Engineering controls include stockpile liner systems, seepage capture systems and wastewater storage and conveyance systems that are designed to minimize leakage and minimize impact to groundwater and surface waters. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. The Annual Comprehensive Performance Evaluation Report required by the permit will provide an assessment of the performance of the engineering controls, including liner systems, using permit-required monitoring results and internal operational data to ensure that management of wastewaters generated at the facility is adequate.	
438	Doretta Reisenweber	Citizen	Commissioner Stine: Water is the great commons of the earth. Clean water is in diminishing supply. You can make a difference in Minnesota. Please.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
439	Doretta Reisenweber	Citizen	See Multiple-168 for the remainder of the delineation of this comment	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
440	Roslyn B. Hjermstad	Citizen	I am writing in opposition to the copper-nickel mining proposals to mine in the BWCAW and St. Louis/Lake Superior watersheds by PolyMet and Twin Metals companies.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
441	Roslyn B. Hjermstad	Citizen	Earthworks studied the issue and found that all modern U.S. copper mines that had operated for five years or more polluted water. The World Health Organization said that copper mining releases at least six toxins that cause numerous harmful health effects including cancer. Why are we even considering this type of mining in Minnesota?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
442	James Reinke	Citizen	Many claims about rights and needs have been made during this polymet process. In reality much of what has been said about employment and garnering important natural resources has been about wants. But truly key rights in this situation include: First, the upholding of the human dignity of every person involved in some way with the mining is nonnegotiable. Second, human beings are stewards of the environment, not dominators and exploiters. We have an obligation to pay to our home planet, God's creation. Third, the principle of solidarity requires the interconnection of people locally, globally, and inter-generationally. Fourth, the common good requires an outcome that promotes the human flourishing of all. These are the key rights that override this whole process. I am not a scientist or engineer. I am a very concerned citizen living downstream in Duluth.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

443	James Reinke	Citizen	My comments apply specifically to the role that your agency has been commissioned to play. In this regard your agency plays a key custodial role. You have an obligation to humanity, future generations, our home planet, and the common good of all-- environment, ecosystem, and waterways included. You have been set up as the guardians of the common good and official assessors of the polymet mining plan. Essentially, you are in the position of either guaranteeing the plan and accompanying science or of identifying where obstacles to success still remain.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
444	James Reinke	Citizen	This mining will expose sulfates to air and water leading to toxic acidification. This is an uncontested point. The proposed mine site is an incredibly water rich ecosystem. There can be no doubts left as to the plan and the accompanying science if it is okay-d. Assessing the environmental impact of this Polymet venture demands transparent political processes, characterized by a farsighted statecraft that prioritizes the long-term common good, and a decision-making process that is interdisciplinary, transparent, and free of all economic and political pressure. This process should be geared to facilitating consensus among all stakeholders. The potential negative outcomes require that decisions be made based on a comparison of the risks and benefits foreseen for the various possible alternatives.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
445	James Reinke	Citizen	Also, some considerations such as water must have a higher priority since it is an indispensable resource and a fundamental right. Pope Francis writes: "This indisputable fact overrides any other assessment of environmental impact on a region." Additionally, when comparing the risks and benefits of the venture remains inconclusive, the Precautionary Principle defined in the Rio Declaration of 1992 demands that those supporting the mine prove it will not cause uncontrolled environmental damage, versus the typical expectation required to prove or demonstrate that it will.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
446	James Reinke	Citizen	Your final choice must show itself as stemming from a balanced, transparent process that is manifestly free from every dominating special interest, ideology, power, and financial consideration. You have been assigned the task of assessing whether the many obvious difficulties can be managed with the proposed remedies. You have the major voice in determining whether this project goes forward. For the sake of the common good, this process has to be determined by current science and engineering, and not by loudness, money, numbers, or power. This is not a team sport. Either we, all the generations after us, and the earth are winners, or we are all losers. Our fate is in your hands. The question you are guaranteeing with your acceptance of this plan is that polymet will manage the toxic acidity both in the short run and, potentially, the next 500 years. If any doubts remain, the precautionary principle must come into play.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
447	James Reinke	Citizen	Science and engineering must have the last word as to the likelihood/ necessity of this plan working for all. Water is a nonnegotiable right and priority. Exposing sulfate rock to water and air will lead to acidification. You have been given the job of accurately assessing and guaranteeing that this plan submitted by polymet will work-- that is, that they will be able to manage both in the short run and the long this toxic pollution. They propose to mine in a water rich environment	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
448	James Reinke	Citizen	Are you sure that this plan will work? The Precautionary Principle says that when doubts remain about both the plan and the available technical ability to accomplish it, that the proposal should not go forward. Therefore, the question you are guaranteeing with your acceptance of this plan is that polymet will manage the toxic acidity both in the short run and, potentially, the next 500 years. Are you ready to give such a guarantee to this plan? Do you stand behind this plan 100%? Or, do you still have some doubts? If you still have doubts, you can only serve the common good by rejecting the plan.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
449	Blane Tetreault	Citizen	To Whom It May Concern, When analyzing projects which have potential environmental impacts, we must prioritize the risks to the environment over the potential economic benefits. If risks exist that could alter and/or damage the environment, then those projects should not be pursued. No amount of money could return an altered/damaged watershed to its native state.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
450	Blane Tetreault	Citizen	The proposed copper nickel mine should NOT be allowed because it is too risky. Not only does it have the potential to pollute the area near the proposed site, but also an entire watershed, including Lake Superior. Thousands of people get their water from these sources.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

451	Blane Tetreault	Citizen	I sympathize with the economic issues of those people who would like to build this mine. However, this mine is not for the common good. We must pursue other, less environmentally risky, economic investments in that area. Let's reinvigorate those local economies through cottage industries and other sustainable locally-owned businesses. That is how you build communities that are more resilient and self-sustaining. The bottom line is we need to do what is right and best for the common good. The right and best thing to do is not build this mine.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
452	Philip Romanek	Citizen	I am 100% opposed to the Polymet mine. To allow a company to pollute for perpetuity for a few years of employment for a few people is plain wrong. No company will ever set aside enough money to manage the area for polluted runoff and any unforeseen issue that was supposedly thought of and addressed.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
453	Chris Engel	Citizen	We have been following and closely watching and researching the entire Polymet project almost from day 1 and have been very impressed with the care and diligence the company has shown throughout the entire process including "over the top" scientific data showing how the company intends to protect the natural resources of Minnesota. We feel they have achieved all the necessary requirements to be granted ALL the proper permits to begin this project and also believe the MNDNR and MNPCA have done their due diligence necessary to not only protect the environment of Minnesota but also the citizens of Minnesota. We firmly support the Polymet project for Minnesota and feel all permit requests should be granted. Chris and Debbie Engel	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
454	John Dorival	Citizen	This permit is stands against everything the state of Minnesota says it is. It is no clean air, no clean water, no legacy for our children and grandchildren. Please stop this madness while you still can.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
455	John Dorival	Citizen	The number of promised jobs will be lost to robotics and automation. This permit goes against the will of the people of Minnesota. John Dorival	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
456	Rachel Nelson	Citizen	PolyMet Water Quality Permit Feedback March 14, 2018 DEAR MN PCA: I quote from your own website: "Water is one of Minnesota's most abundant and precious resources. The Minnesota Pollution Control Agency helps protect our water by monitoring its quality, setting standards and controlling what may go into it." Indeed. Protecting our water quality is how we are kind to the earth and to the generations of humans, plants, and animals to follow us here. Given that, I can only presume that the PCA has been influenced and bought on this PolyMet project issue.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
457	Rachel Nelson	Citizen	There was never a question as to whether there would be a spill affecting our water. That is a given. It will happen, sooner or later. The only question you asked and demanded answer from PolyMet was "How will you clean up spills when they happen? Prove to us that you have the funds in reserve to do this." There are no sufficient funds to clean up after such a spill. For how many years would that money provide reverse osmosis treatment to all drinking water for Minnesotans drinking the contaminated water? For how many generations?	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
458	Rachel Nelson	Citizen	HAS IT OCCURRED TO ANY OF YOU that MN is a co-guardian, with Canada and Wisconsin, of the largest freshwater sink in North America? That PolyMet's proposed aquifer would drain into that precious water? That WATER will be here, and already is in many parts of the world, THE SINGLE MOST ESSENTIAL AND THREATENED HUMAN RESOURCE ON THE PLANET? Given these facts, and placing them next to MN MPCA'a vowed mission is water protection, I must conclude that there has been collusion and illegal influence on MN MPCA in this matter. It is not too late to avoid investigation. Listen to the comments of your constituents who understand water and its current overriding value today. Deny the water quality permit draft to PolyMet. Rachel Nelson Two Harbors, MN	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

459	Ann Martin	Citizen	As a taxpayer and a concerned citizen, parent, and grandparent, I object strongly to the Polymer Mine project. The company has a poor record for using best practices, and they are not planning to do so. The storage of the tailings from the mine are not going to be stored properly which is what caused the catastrophic Canadian spill. We do not want the same experience.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
460	Ann Martin	Citizen	So far, there is no way to guarantee that the Boundary Waters won't suffer from this poorly planned excavation, and the jobs that will result will be for a brief duration who'll any damage will affect our precious waters for centuries. The descendants of the miners who chose a 20 year job over their water supply will not thank them. This mining project should be stopped.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
461	Ann Martin	Citizen	Failing that, the most stringent regulations for following best practices and for putting money up front for covering the future damage that will ensue must be part of the permitting process.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
462	Nancy Wiens	Citizen	I believe we are facing grave damage to our water quality in northern Minnesota if the proposed mining plan goes through. A recent letter from Senator John Marty in the Minneapolis Star Tribune stated that a consultant for the DNR, Don Sutton of Spectrum Engineering, raised concerns about the long-term instability of the waste rock "tailings" pond banks from erosion, and calls the risk of long-term failure of the dam an "almost certainty". Really? We are risking our lakes, streams and wetlands to an "almost certainty" of dam failure and subsequent release of toxic waste into our environment? This is a shortsighted and irresponsible plan and should be rejected. Let us learn from other mine failures. If PolyMet refuses to fund "best practices" such as dry storage and independent monitoring that lower the risk of failure, they should be sent packing. The risk is too great because the risk is forever.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
463	Chris Martin	Citizen	How can you allow - why do you have - such high limits for mercury on the SD001 discharge (1000 ng/L monthly average and 2000 ng/L daily max)? The EPA limits for NPDES wastewater dischargers are 1.3 ng/L for Great lakes watershed and 6.9 ng/L for non-Great Lakes watershed. And what about the other metals limits listed for that point discharge - are they "relaxed" as well?.	See response to Comment 604 and Comment 503.	
464	Anita Tillemans	Citizen	Comment to the MPCA on NorthMet Water Quality Permit -comments due March 16, 2018 PolyMet draft water quality permit comment Minnesota Pollution Control Agency 520 Lafayette Road St. Paul, MN 55155 Creative expression is an essential ingredient in all of our lives and it stems from a love of beauty in all its forms. Without this where are we? Is artistic expression something we do when other "more important" things are accomplished? Or is it, like the song of a sparrow, the rush of a spring, essential to our survival? Sigurd Olson remarked that everyone needs to find their "spot of blue". Over the years, his reference developed from a "spot of blue" in his search for water on a portage in northeastern Minnesota in the BWCAW and in the Quetico of Ontario, the sense of adventure and discovery on that quest, to a metaphor encompassing a search for knowledge and spiritual meaning. Humans have evolved into super predators through the use of tools and weapons. Once our dominance over the animal and plant kingdoms was assured we turned these weapons on ourselves. As a consequence, it becomes even more essential that we find our "spot of blue" and a place where we can meditate on our existence and the paths each one of us needs to take for the sake of our species and life on earth. When there is no wilderness, places where we can find solitude, no respite from the drum of so-called progress, nothing but the steady beat of production at all costs and money our god, what then? Where will we find the space and the time to appreciate the beauty and find our spot of blue? Our survival as a human species may depend upon it.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
465	Anita Tillemans	Citizen	This permit proposes to monitor discharges in the Laurentian area from this project's copper-sulfide mining of low grade ore in an extremely water dependent area of the world at the headwaters of the Great Lakes and the St Lawrence Seaway.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

466	Anita Tillemans	Citizen	Infrastructure including rails and roads will be required. Among the facilities referenced in this draft, the following: A beneficiation plant A hydrometallurgical plant A flotation tailings basin (FTB) including Seepage Capture Systems A hydrometallurgical residue facility (HRF) A waste water treatment system (WWTS) – discharge of which will be routed through pipes to maintain flows in Trimble Creek, Second Creek, and Unnamed Creek, with some being recycled directly to FTB pond. Other ancillary facilities (eg Colby Lake water pipeline) including: Mine water filtration train Tailings basin seepage treatment train Wastewater treatment of solids/byproducts: from the tailings basin seepage treatment train including waste from filters and membrane cleaning and concentrate, which will be routed to FTB pond and mine water chemical precipitation treatment train.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
467	Anita Tillemans	Citizen	Can we rely on a for-profit corporation to monitor itself? The permittee, Polymet, is expected to report all data from the required monitoring stations, whether favorable or not. If reported accurately and standards are not met, then Polymet will be required to monitor again until standards are met. What worthy and worthwhile actions will be taken at the "end of the day?" If the unfathomable number of reports (essentially required just to monitor the discharge from this mining operation) are maintained accurately with regularity, consistency and competency, what truly effective actions can be taken when standards are exceeded? What of the monitoring stations that have no set standards as guidelines? What of those that are not enforceable? What actions are possible that will return the water to its base levels when the degradation becomes apparent to us all?	See response to Comment 144.	
468	Anita Tillemans	Citizen	What amount of money in the form of fees or financial guarantees can reclaim what is lost?	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
469	Anita Tillemans	Citizen	In addition, there is little that anyone can do to prevent natural processes and disasters from occurring, or human error whether knowingly or not; and so, by any standard, this mine will degrade our water resources in Minnesota and beyond. Can any permit for such a mine adequately address these issues? Once copper mining has run its course in the Arrowhead by setting precedent with Polymet, the first of many to come, what will remain and what can truly be reclaimed? "Downstream," the St Louis River estuary and Lake Superior, the largest body of fresh water in the world? "Downstream," the BWCA, and the Rainy River Watershed, the Superior National Forest and Voyageurs, the most pristine wilderness areas on the planet? Can we afford this mine?	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
470	Anita Tillemans	Citizen	There are hundreds of pages listed (in this water permit draft and other permits) of essential equipment and gauges required just to monitor pollution from the proposed NorthMet Project (copper mine) on a continuing basis daily, monthly and/or annually through the life of this mine and beyond. This alone speaks for itself and cannot be reconciled with the safety of our greatest natural resource.	Comment noted. Monitoring data considered in the development of the draft permit and required by the draft permit documents are publically available. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
471	Anita Tillemans	Citizen	I respectfully request that MPCA deny this permit to pollute and mine the waters of the St Louis River watershed in a land that has no equal on earth in a water dependent ecosystem at the headwaters of the Great lakes and the St Lawrence Seaway. How long will such priceless resources last in a copper mining scenario?	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
472	Adam Sealock	Citizen	My personal interest in the draft water quality permit for NorthMet comes from my role as a Minnesota resident, Minnesota tax payer, and professional environmental scientist. Below are the changes I believe should be made to the draft water quality permit and the reasons supporting my position. Ultimately, I hope the MPCA will NOT issue a water quality permit for PolyMet's NorthMet project. I oppose issuing a water quality permit for this project because the legacy of sulfide mining is very clear, we will be creating a super fund site in northern Minnesota, just south of Babbitt if a permit is issued.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

473	Adam Sealock	Citizen	Look no further than the western United States to find many examples of former copper mines which are now super fund sites. Another good example comes from the Talvivaara nickel mine in Finland, which has experience several pond leaks in the last eight years resulting in great environmental damage. After the jobs are gone the long and costly process of environmental remediation and long term monitoring begins. Cleaning up the site will certainly create jobs but the cost to taxpayers and the environment will be enormous! Given the unknown clean up and long term site monitoring costs, it appears cheaper to pay the wages on this project and never build NorthMet. In current terms: 360 Jobs (PolyMet website) x an average wage of $60,000 x 20 years of employment (PolyMet website) = $432 million dollars $432 million in current terms appears to be a bargain compared to the unknown costs to remediate and monitor long term the NorthMet site which is approximately 30 contiguous square miles.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
474	Adam Sealock	Citizen	Suggested Changes to the Permit Requirements Section: Page 41, 6.10.28 PolyMet should provide documentation of their ability to maintain an inward hydraulic gradient across the FTB Seepage Containment System and other parts of the FTB Seepage Capture Systems, where appropriate during extreme rain, snowmelt, and equipment failure events. Documentation should address system redundancies and/or mine operational changes required to maintain the desired gradient. This change in the permit will help ensure nondegradation of groundwater.	The MPCA has removed the temporary exception language from the permit. The permit requires monitoring of groundwater levels on either side of the barrier wall to ensure that an inward gradient is maintained. The permit also requires redundant pumping capabilities be available to prevent an unauthorized discharge.	
475	Adam Sealock	Citizen	Page 46, 6.10.69 subpart e. MPCA or a reputable expert should evaluate the potential for a north flow path in the bedrock or surficial aquifer north of PolyMet's property at the mine site before mining begins and/or a water quality permit is issued. This change in the permit is necessary to provide information from an expert second party concerning the potential for groundwater contamination via a north flow path. The MPCA can use this evaluation to ensure the proper protocols are in place for groundwater monitoring, sampling and protection during mine construction, operation, and post operation phases to adequately protect groundwater. Additionally, MPCA can use the evaluation as a reference when reviewing PolyMet's Annual Groundwater Evaluation Report where PolyMet will assess the potential for a north flow path.	The potential for a north flow path in the groundwater from the mine site was evaluated in the EIS. The EIS stated that such flow was not likely but could not be conclusively ruled out and recommended that the issue of north flow be further addressed during permitting. The NPDES/SDS permit requires the monitoring of water levels from 11 bedrock wells and 8 surficial aquifer wells. These water level data, plus information collected during installation of the monitoring wells, will be used to assess for the future potential of north flow. It should be noted that north flow, were it to occur, would not take place until many years after mine closure when NorthMet mine pits refill with water, so sufficient time is available to assess the potential and implement mitigation, if needed, to prevent the north flow from occurring.	
476	Adam Sealock	Citizen	Page 48, 6.10.80 The annual inspections and/or assessments of HRF engineering controls, operational data, and water quality data at the HRF to evaluate the effectiveness of the liner and Leakage Collection System shall be conducted by a licensed professional engineer with the appropriate expertise. The engineer shall certify to MPCA that the HRF dam, HRF liner system, and HRF Leakage Collection System maintain structural integrity, complete containment, and compliance with performance standards. This change to the permit should be made to ensure a qualified engineer can certify to MPCA on an annual basis that the HRF and its associated components can be expected to continue to perform as designed to protect groundwater resources at the site. This change is similar to the requirements in parts 6.12.24 to 6.12.26.	In light of the comment, the permit has been revised to require a professional engineer, licensed in the State of Minnesota, to conduct the annual assessment required for the HRF.	
477	Adam Sealock	Citizen	Page 48, 6.10.81 The monthly inspections of the HRF system, including: Pond, Leakage Collection System, Dam, and Liner System to ensure the HRF and all engineering controls are operating effectively shall be conducted by a licensed professional engineer with the appropriate expertise. The engineer shall certify to MPCA that the Pond, Leakage Collection System, Dam, and Liner System maintain structural integrity, complete containment, and compliance with performance standards. This change to the permit should be made to ensure a qualified engineer can certify to MPCA on a monthly basis that the HRF and its associated components can be expected to continue to perform as designed to protect groundwater resources at the site. This change is similar to the requirements in parts 6.12.24 to 6.12.26.	In light of the comment, the permit has been revised to require a professional engineer, licensed in the State of Minnesota, to conduct the monthly assessment of the HRF pond and HRF Leakage Collection System.	

478	Adam Sealock	Citizen	Page 51, 6.10.92, i. to ii. I urge MPCA to consider the following questions concerning the proposed design and/or operation of the HRF before issuing a water quality permit. If the design and/or operation of the HRF can not sufficiently address the questions below a water quality permit should not be issued because the state's nondegradation policy for groundwater and surfacewater can not be reasonably guaranteed. Is the HRF liner system the best available technology for preventing groundwater contamination from stored HRF wastes? In case of a major failure in the HRF liner system can the damaged area be isolated and repaired in a reasonable amount of time? If the HRF liner system can be repaired, would the repaired area of the HRF liner be expected to perform equally to non-repaired areas? What is the life expectancy of the proposed HRF liner system? Is this life expectancy of the proposed HRF liner system compatible with the expected clean up time required after the mine is not operating? Does PolyMet have contingency plans for dealing with a HRF Dam, HRF Liner System, or Leakage Collection System failure for both the liquid and solid materials stored in the HRF? How will PolyMet's contingency plans for HRF Dam, HRF Liner System, or Leakage Collection System failure change over time given the anticipated increase in HRF solid and liquid volumes? For required maintenance, monitoring and repair of the critically important HRF Leakage Collection System will the sump, pumps, and associated piping be accessible after construction? If critical parts of the HRF Leakage Collection System will not be accessible for maintenance, monitoring, and repair after construction, then, what redundancies in equipment should PolyMet be required to implement in the HRF Leakage Collection System design?	See response to Comment 93.
479	Adam Sealock	Citizen	Page 51, 6.10.92, iii. Multiple monitoring devices, (eg. lysimeters and/or other suitable monitoring devices) should be installed under the HRF sump and northwest of and proximal to the HRF within the FTB seepage containment system to assess groundwater quality. This change to the permit should be made to provide redundancy in the critically important ground water monitoring system and to provide more data to increase the statistical validity of the groundwater monitoring data collected.	The MPCA evaluated the monitoring required at the HRF during permit development and determined that the currently proposed monitoring for the proposed HRF is sufficient until further information on the proposal is available. In light of the comment, a provision has been added to the permit that requires the HRF Liner Plan to include a specific analysis of the suitability of the proposed monitoring to detect leakage from the HRF.
480	Adam Sealock	Citizen	Page 51, 6.10.92, iv. Multiple strain gauges at relevant locations or a comparable strain monitoring system should be installed to thoroughly monitor both liners in the HRF. This change to the permit should be made to provide redundancy in the critically important liner monitoring system and to provide more data to increase the statistical validity of the strain monitoring data collected.	The HRF Liner Plan required by the permit includes a provision that the liner system design must include strain gauge(s) to provide assurance that the liner system is not subject to excessive strain. The details of the strain monitoring system will be subject to MPCA review and approval.
481	Adam Sealock	Citizen	Page 54, 6.12.10 If PolyMet installs an underdrain system, MPCA should provide a list of all the parameters the permittee should monitor quarterly in the discharges from the drain system. This change to the permit will make the monitoring requirements for PolyMet and MPCA unambiguous and will allow for a more accurate estimate of loading to the environment if underdrain discharge is contaminated.	In light of the comment, the permit has been revised to specify the required parameters to be monitored in the EQ basin underdrains; these now include total chloride, total sulfate, total dissolved solids and specific conductance.
482	Adam Sealock	Citizen	Page 56, 6.14.3 The land application of biosolids does not seem to be throughly explained or planned for by the Permittee. Part 6.14.3 should be deleted from the permit unless PolyMet has a biosolids land application plan, with sufficient monitoring of pH and metals in biosolids, that will satisfy all applicable local, state, and federal regulations	MPCA considered the comment, but determined that the identified permit requirement should not be removed from the permit. The language for domestic wastewater operator certification, including references to land application of biosolids, is standard permit language for operators with a Type IV certification. (Type IV certification specifically addresses land application of biosolids). In addition, biosolids removal is not expected to occur at this site during this permit term.
483	Adam Sealock	Citizen	Page 57, 6.14.8 PolyMet should be required to report to MPCA the concentration of metals, pH and other parameters of interest in the sludge from the sewage stabilization ponds. A detailed plan of sewage sludge management during and after operation of the mine should also be provided by PolyMet. This plan should include testing and disposal of the sewage sludge. This change to the permit should be made to ensure a sewage sludge disposal plan has been made and the disposal and management of stabilization pond solids will be in accordance with local, state, and federal requirements.	MPCA considered the comment, but determined that the existing language in the permit is appropriate. This language is standard permit language for domestic sewage ponds statewide and nothing about this proposed system warrants the additional monitoring. In addition, the removal of biosolids is not expected to occur at this site during this permit term. Oversight of biosolids removal will be regulated as described in Minnesota Rules 7041.

484	Adam Sealock	Citizen	Page 57, 6.14.13 If unauthorized releases occur from the sewage stabilization ponds the additional parameters of interest, (eg. metals and other parameters of interest) that should be tested for should be listed in the permit. This change to the permit will make the monitoring requirements for PolyMet and MPCA unambiguous and will allow for a more accurate estimate of loading to the environment if an unauthorized release occurs.	MPCA considered the comment but determined that the existing language in the permit is appropriate. This language specifies that any unauthorized release be monitored for permitted effluent parameters, which include CBOD5, TSS, pH and fecal coliform. This language is standard permit language for domestic sewage ponds statewide and nothing about this proposed system warrants the additional monitoring parameters.	
485	Adam Sealock	Citizen	Page 64, 6.16.45 PolyMet should be required to report to MPCA the concentrations of metals, pH, and other parameters of interests in solid wastes disposed of at on-site and off-site locations. Information that will be helpful in estimating the yearly loadings of NorthMet waste to on-site and off-site locations should also be reported to MPCA. PolyMet should be required to sample their solid wastes at frequencies that are appropriate to provide the MPCA with a good characterization of the solid wastes and their variability over time. This change to the permit should be made to ensure solid wastes are disposed of in accordance with local, state, and federal requirements.This change will allow MPCA and others to more accurately estimate solid waste loading rates to on-site and off-site locations to inform clean up, waste inventory, and mass balance efforts.	MPCA considered the comment, but determined that the existing language in the permit is appropriate. This language is standard permit language for all NPDES/SDS permits statewide and are appropriate for this facility.	
486	Adam Sealock	Citizen	Page 70, 8.1.1 The following parameters in surface water discharge from the WWTS should be monitored daily using a 24-hour composite sample: arsenic, cadmium, calcium, copper, hardness, lead, magnesium, mercury, nickel, pH, specific conductance, total suspended solids, zinc, and flow. This change to the permit should be made to ensure a statistically valid characterization of the effluent discharged from the WWTS on a daily basis given the random variables that can potentially impact WWTS effluent quality from day to day (eg. mine production, weather, equipment performance ect.). Daily monitoring of effluent from the WWTS will be similar to the requirements of the many publicly owned treatment works throughout the state. Sulfate should be added to the list of parameters in 8.1.1 surface water discharge monitoring. Sulfate should be monitored daily using a 24-hour composite sample. This change in the permit will help MPCA and others accurately estimate the sulfate loading from the WWTS into receiving waters.	MPCA considered the comment but determined that the existing monitoring requirements, including monitoring parameters and type and frequency of monitoring is sufficient. Given that the direct source of wastewater to the WWTS has been “equalized” in the FTB seepage containment system and the nature of the treatment technology provided (membrane treatment), the variability of the effluent is expected to be small and weekly 24-hour composite sampling is appropriate.	
487	Adam Sealock	Citizen	Table 8.1.1 should communicate, where appropriate, if the surface water discharge monitoring parameters listed are to be analyzed on a total and/or soluble basis. This change in the permit will ensure proper analysis of the parameters of interest for MPCA and PolyMet.	In light of the comment, the monitoring requirements of the permit have been revised to specify “total” or “dissolved” as appropriate.	
488	Adam Sealock	Citizen	Page 84 8.2.5 PolyMet should be required to monitor pH in addition to the parameters listed in the Category 1 stockpile groundwater containment system. This change to the permit will enhance the ability to detect groundwater contamination and help protect groundwater resources. Monitoring pH is a proposed requirement for other groundwater monitoring locations, see 8.2.6 and 8.2.7.	Water levels at the paired wells and piezometers at both the FTB Seepage Containment System and the Category 1 Stockpile Groundwater Containment system are monitored monthly and chemistry at the paired wells is monitored quarterly. The required parameters for this monitoring (chloride, sulfate, total dissolved solids and specific conductance) were selected based on their ability to provide the earliest detection of potential pass-through of impacted water. The addition of pH to the parameter list will not provide additional useful information beyond what is provided by the other required parameters.	
489	Jaci Christenson	Citizen	POLYMET MPCA WATER QUALITY PERMIT Jaci Christenson 2/8/2018 In Minnesota, water is what defines us. No other resource should take precedence over water. Around the world that value is realized as far away as Cape Town South Africa, with just a few months supply of water remaining, to water wars and degradation in our own backyard of Lake Superior/Great Lakes. Clean drinking water must be a birthright for all and PolyMet takes us down a dangerous path in the opposite direction.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
490	Jaci Christenson	Citizen	Lest we be ignorant, in Minnesota we have already impaired 40% of our water. Decision makers, the PolyMet Permit to Mine is an absurd risk to the watersheds of the remaining 60%! I strongly oppose the PolyMet Permit for Water Appropriations, as it fails to include the economic impacts of pollution to the St Louis River Watershed, PolyMet is getting a ridiculous deal on our most pristine water, there is no assurance for when the mine fails and there are better ways to provide jobs and precious metals to Minnesotans.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

491	Jaci Christenson	Citizen	ST LOUIS RIVER WATERSHED St Louis River Watershed is the largest U.S. tributary to Lake Superior. PolyMet Permit to Mine fails to comply with Great Lakes Agreements "to restore and protect the waters of the Great Lakes." With 100% failure rate of sulfide ore copper mining in water rich environments, where is your commitment to the St Louis River Restoration Project, headed by our own Minnesota Department of Natural resources (DNR)?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
492	Jaci Christenson	Citizen	There are more than 10,000 jobs in St Louis County that rely on clean water in areas of entertainment, recreation, accommodations and food service (US Census Bureau 2013). PolyMet risks 10,000 long term jobs for 300 potential mining jobs, few of which are local and remain only as long as the mine is active. This makes no sense!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
493	Jaci Christenson	Citizen	We must uphold the inherent rights of the first people to hunt, fish and gather in the St Louis River Watershed, as promised in the 1854 Treaty. The PolyMet permit fails to address environmental Injustice to our Native communities! Why aren't we relying on Native wisdom and fact in this incredible area that has been deemed of High Biological Diversity by Minnesota DNR? Additionally, the study by Earth Economics commissioned by Fond du Lac 2015 found that a clean St Louis River Watershed is at least a $14 billion benefit, providing ecosystem services of flood reduction, recreation, food, carbon sequestration, habitat spawning and nursery, and water quality. The Value must be included in the permit!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
494	Jaci Christenson	Citizen	WATER APPROPRIATIONS OF PERMIT TO MINE PolyMet is requesting 6,175 million gallons of our clean water per year. By comparison, that is 85% of entire water use of Duluth Water Utility per year. PolyMet is paying $8 per million gallons water, while Duluth area residents are paying 612 times more than PolyMet for water (http://www.comfortsystemsduluth.com/about-my-bill/rate-sheet/). Why does PolyMet get a super deal on our pristine, most valuable water?	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Water Appropriation Permit and Permit to Mine. No changes were made to the draft permit in response to these comments.	
495	Jaci Christenson	Citizen	And when PolyMet, a foreign corporation, is done with our water it will be returned to us polluted. PolyMet admits that more than 5 million gallons of contaminated waste water from the mine site and over 10 million gallons from tailings site would be released untreated into Minnesota's groundwater (see In the Matter of the Final Environmental Impact Statement for the PolyMet Mining, Inc., NorthMet Mining Project and Land Exchange, MN DNR Record of Decision ("DNR FEIS ROD"), March 3, 2016). This just from everyday operations, before considering the mine failure. MINE FAILURE, REAL COSTS, JOBS AND RECYCLING With 100% failure rate, fellow taxpayers, this will be ours to deal with for more than 500 years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
496	Jaci Christenson	Citizen	PolyMet has not proven that it can meet the financial assurances to reclaim the site and pay for long term water treatment. The DNR estimates costs greater than $1 billion to close the mine and treat the water for centuries. Why, then, is PolyMet able to obtain a permit to mine by providing less than 10% of that up front with little insurance for spills and dam collapse? This permit must include REAL costs of this mine, rather than the externalized costs that PolyMet are off loading onto Minnesotans. An example is carbon dioxide costs, as PolyMet would generate more than the equivalent of ¼ of all of Duluth's total carbon footprint (Duluth Greenhouse Gas Emissions Inventory and Forecast, March 2011). We can do better!	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
497	Jaci Christenson	Citizen	Copper recycling (currently far too much copper ends up in landfills) uses 85-90% less energy than mining, would create far more jobs and minimize environmental impacts.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
498	Jaci Christenson	Citizen	IN CLOSING, THIS PERMIT TO MINE IS REPREHENSIBLE FOR ANYONE WHO DRINKS WATER! THAT MEANS ALL OF US! There were 58,000 public comments submitted on second draft of PolyMet environmental review. The largest number of public comments on DNR project in MN history, with 98% opposed to the mine proposal, yet here we are today commenting on PolyMet Permit to Mine. If this process is truly fair and just, you must take into account the voice of Minnesota, present and future and deny the PolyMet Permit to Mine!	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
499	Lori Olinger	Citizen	The mission of the Minnesota Department of Natural Resources (DNR) is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life. The DNR is going against its mission by moving forward with Polymet permits.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

500	Lori Olinger	Citizen	Polymet mining will set in motion an environmental disaster that will not be fixable. From the Flambeau mine in Wisconsin to the Berkeley Pit in Butte Montana, every copper mine pollutes and once started, there is no way to stop the chemical reaction and acid drainage that follows. This will be a disaster in water rich northern Minnesota. Glencore has many health and environmental violations in its mining operations.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
501	Lori Olinger	Citizen	The DNR should not assume that Glencore will do any more than is required by law under the permits and, given its history, probably will not comply with the permits. That it is why it is critical for the DNR to set exact requirements and to have actions that will occur if/when there are permit violations. The DNR should do the following to protect the State of Minnesota from the inevitable problems that will occur: 1) The DNR should require that mining operation stop if there are any permit violations and not begin again until the problem is resolved. Polymet must have some immediate financial repercussions that are strong enough to result in a change in operating processes. Polymet will see fines as just another cost of doing business. 2) Polymet should not be solely responsible for monitoring. The DNR should appoint an independent group to do additional spot check monitoring on a regular basis to ensure the accuracy of what is submitted by Polymet.	The NPDES permitting program nationwide is reliant on self-monitoring by the permittee. The permit includes specific requirements on the sampling, analysis and reporting of monitoring data. For example, the permit requires that all analyses must be conducted by a laboratory certified by the Minnesota Department of Health. The permit also states that knowingly making a false statement or certification is subject to criminal and civil penalties. The permit includes a provision that states the MPCA may revoke without reissuance the permit pursuant to Minn. R. 7001.0180 under certain situations of noncompliance.	
502	Lori Olinger	Citizen	3) The monitoring results should be public. Many Minnesotans are very concerned about environmental problems and this information should be available within a reasonable period of time and on a regular basis (ex. Within 30 days of the DNR confirming results) 4) Secitons 8.1.4 through 8.3.8. Of the 24 tables listing monitoring requirements, one refers to flow, two show actual limits and twenty-one show the limits as “monitor only”. This seems totally inadequate. If there are no limits set, Polymet can monitor and have no consequences. These sections should be changed to set exact limits.	All monitoring data is reported to the MPCA on monthly Discharge Monitoring Reports (DMRs) which are posted online on the MPCA website (available at https://www.pca.state.mn.us/quick-links/eda-surface-water-data). Monitoring data and report submittals are also available by request to the agency.	
503	Lori Olinger	Citizen	3) The monitoring results should be public. Many Minnesotans are very concerned about environmental problems and this information should be available within a reasonable period of time and on a regular basis (ex. Within 30 days of the DNR confirming results) 4) Secitons 8.1.4 through 8.3.8. Of the 24 tables listing monitoring requirements, one refers to flow, two show actual limits and twenty-one show the limits as “monitor only”. This seems totally inadequate. If there are no limits set, Polymet can monitor and have no consequences. These sections should be changed to set exact limits.	See response to Comment 718-A, which describes the reasonable potential analysis.	
504	Lori Olinger	Citizen	6) 6.16.30 (Subject to Enforcement Action and Penalties. Noncompliance with a term or condition of this permit subjects the Permittee to penalties provided by federal and state law set forth in section 309 of the Clean Water Act.) It is one thing to say that a permit violation is subject to the Clean Water Act, but in reality, when sulfide pollution begins there are expensive options such as reverse osmosis that can be used to mitigate but there is really nothing that can be done to reverse the acid drainage that will occur. This is going to be a problem the State of Minnesota will have to contend with forever, just as Butte, Montana is doing to control, at great expense, the problem with the Berkeley Pit. One day the mining will end, jobs will be gone, and Minnesota will have the environmental disaster forever. The DNR should not approve this permit.	The permit focuses on preventing the impacts from occurring in the first place. The permit has been revised to be more prescriptive on the design components of the engineering controls (i.e., seepage capture systems, liner systems, WWTS, etc). It also includes provisions that are intended to assess monitoring and performance data in a proactive manner so as to identify the potential for impact to occur such that adaptive management or mitigation can be applied to prevent the impact from occurring.	
505	Mary Kirsling	Citizen	I am a Registered Nurse, a labor activist, and environmentalist. This issue has been extremely challenging for me. I wish to protect our water first and foremost, but recognize the need for metals in our modern world and the fact that much of what is mined currently comes from countries that have no regulations and those practices pollute. I also hear from my labor friends the need for jobs.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
506	Mary Kirsling	Citizen	Up to this point, I was in favor of Polymet and was hopeful we could mine safely. I no longer believe we can. Some of the safeguards have already been walked back and we currently have political conditions that have weakened, and will continue to weaken, regulations and oversight.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
507	Mary Kirsling	Citizen	Secondly, the financial safeguards for cleanup should an event take place, are inadequate, leaving future taxpayer responsibility the default.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
508	Mary Kirsling	Citizen	This water rich environment is simply too vulnerable for this type of mining. Water scarcity is going to be a huge problem in the future in many regions of the country and the world. We should not jeopardize our precious resource. Mary Kirsling	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

509	Jami Burbidge	Minnesota Academy of Family Physicians	Dear Commissioner Linc Stine, The Minnesota Academy of Family Physicians (MAFP), representing 3100 family physicians from throughout the state, would like to express concern regarding the lack of health impact assessment included in the final environmental impact statement (FEIS) for the PolyMet project. While the FEIS was deemed "adequate" by the Minnesota Department of Natural Resources (DNR) there was minimal information provided regarding the effects on human health from the impacts of the copper-nickel sulfide mine project.	The comment related to a health impact assessment was addressed as part of the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
510	Jami Burbidge	Minnesota Academy of Family Physicians	Furthermore, the MPCA draft water pollution permit provides no control over contaminated wastewater that is collected in the tailings basin or waste rock pile, then seeps from ground water into wetland and streams. This leads to concern regarding the potential seepage of sulfates and toxic metals into both ground water and connected surface water.	The project includes engineering controls such as stockpile liner systems, seepage capture systems and wastewater storage and conveyance systems that are designed to limit and manage impacted water from the facility so that it does not impact groundwater or surface water. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. The Annual Comprehensive Performance Evaluation Report required by the permit will provide an assessment of the performance of the engineering controls, including liner systems, using permit-required monitoring results and internal operational data to ensure that pollution of groundwater and surface water does not occur. See also response to Comment 22.	
511	Jami Burbidge	Minnesota Academy of Family Physicians	Since the PolyMet FEIS, the DNR has allowed changes which would eliminate the wastewater treatment facility at the mine site, seemingly making the project more of a risk to water quality and human health.	The proposed treatment components of the reconfigured WWTS are the same as originally proposed. Anticipated flow volumes from the Mine Site to the reconfigured WWTS will remain the same as originally proposed. The location of the proposed mine site treatment system is the only thing that has changed.	
512	Jami Burbidge	Minnesota Academy of Family Physicians	As physicians, we play a vital role in the health of our patients and communities. Because of this responsibility, we would like to share our concerns regarding the unknown health impact of the PolyMet project and oppose the draft permit and certifications currently proposed by the Minnesota Department of Natural Resources and Minnesota Pollution Control Agency for the PolyMet copper-nickel mine project. Thank you for your consideration.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
513	Richard Staffon	Citizen	I am asking the MPCA to deny the water pollution permits for the PolyMet copper-nickel mine project because the PolyMet plan will fail to control polluted seepage into the groundwater and surface water from the tailings basin, waste rock piles and mine pits. The permits do not set limits for this polluted seepage and rely on assumptions, exclusions and poor information to claim that the mine will not pollute our waters.	See response to Comment 510.	
514	Richard Staffon	Citizen	Also, the state should request that a health impact assessment be completed before this project is permitted to evaluate the human health impacts of the project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). A health impact assessment was addressed as part of the environmental review process. No changes were made to the draft permit in response to these comments.	
515	Bruce Anderson	Citizen	Dear MPCA Permit Administrators. I am requesting that MPCA deny water pollution permits as currently proposed for the PolyMet copper-nickel mine project because of the probable significant environmental impacts.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
516	Bruce Anderson	Citizen	The PolyMet plan fails to control polluted seepage into the groundwater and surface water from the tailings basin, waste rock piles and mine pits. The permits do not set limits for this polluted seepage and rely on assumptions, exclusions and poor information to claim that the mine will not pollute our waters.	See response to Comment 510.	

517	Bruce Anderson	Citizen	Gov. Mark Dayton has stated that we can have mining and protect the environment, as long as we use best practices for mining and provide "safeguards" to prevent damage. Jon Cherry, the CEO of PolyMet, has committed to "meet or exceed regulatory standards and industry best practices." However the draft DNR permit as written does not meet best management practices. DNR mining consultant, Don Sutton of Spectrum Engineering, said: "I am surprised that the Minnesota Statutes allow a temporary [tailings] impoundment structure to be permitted permanently. This wouldn't be allowed in other jurisdictions." Sutton also brought up concerns about the long-term instability of the waste rock "tailings" pond banks from erosion, and calls the risk of long-term failure of the dam an "almost certainty." He explained that because of this erosion, "at some point the entire mass will unravel."	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
518	Bruce Anderson	Citizen	This is important considering a similar mining operation in British Columbia (Mount Polley) had a devastating dam failure in 2014 that released a toxic slurry of waste rock in one of the worst environmental disasters in Canadian history. After that Mount Polley incident, a comprehensive review called for dry storage of mine tailings as a best practice, along with a requirement for an independent review to monitor the projects.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
519	Bruce Anderson	Citizen	Using these best practices would prevent the catastrophic harm caused by a dam collapse. The DNR mining consultant wrote that "if the tailings were placed in a dry, compacted state, I wouldn't be so concerned." When a good solution like this exists, why doesn't the PolyMet plan look at dry storage of the waste? Sutton added that "PolyMet is proposing to build the tailings disposal system that has the lowest initial cost, but has more long-term risks than other tailings disposal methods." He says that the state should "consider the consequences of a failure and estimate the cost of cleaning up the failure, and then add the cost of operating the repaired facility forever."	Comment noted. General comments related to alternatives and impact minimization were considered during the environmental review process and the cross-media analysis. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
520	Bruce Anderson	Citizen	PolyMet acknowledges that once it begins mining, the state will have no leverage to force it to pay for the mine cleanup. In years to come, taxpayers more than likely will have to finance any cleanup. The state must address the concerns raised by the mine engineers and financial consultants the DNR hired. Subsequently I recommend that MPCA deny a permit until effective best management practices including dry storage of mine tailings are outlined in the permit. Sincerely, Bruce D. Anderson Chisago City, MN 55013 Bdandersons1953@outlook.com	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
521	David Reisenweber	Citizen	No health study has been done and permits to add more toxins to our air and water should be denied. The water treatment system is based on estimates from models. So how does that work in the real world? Saying something does not make it happen, so how is MPCA going to make safeguards work?	Membrane treatment, including reverse osmosis, is a well understood technology that has been utilized for many years in a number situations, including for mining projects. The ability for the technology to work for the PolyMet project was demonstrated in the 6 month pilot test conducted during the EIS process. The design modeling referenced in the comment was used to further the detailed design of the full-scale treatment to meet the needs of the project. The MPCA has reviewed the design and has concluded it is capable of providing the required level of treatment. The issue related to a health study was addressed as part of the EIS process.	
522	David Reisenweber	Citizen	Can you rely on slow self reporting to be accurate? I have found yearly and monthly reporting requirements to the state, but have not found continuous site monitoring by MPCA or DNR. Most commodity businesses have monitoring equipment in place to forewarn of problems. This is true on most farms today. At the very least the state should have personal on site to ensure compliance and honesty.	The permit includes monitoring and reporting requirements with monthly reporting of the monitoring data to the MPCA. This is standard practice for NPDES/SDS permits nationwide, takes into account the time required for sample collection and analysis, and provides a sufficient timeframe of notice to the MPCA. Although reporting to the MPCA is monthly or annually, the actual operation of the facilities will utilize daily or continuous monitoring systems. For example, internal flow streams and/or the discharge from the WWTS will be continuously monitored for specific conductance to provide real-time feedback on treatment performance. Furthermore, the permit has been revised to specifically require the completion of an operation and maintenance manual for each of the key engineering controls (WWTS, liner systems, seepage capture systems) which will describe day to day operations. Monitoring data considered in the development of the draft permit and required by the draft permit documents are publically available. See also response to comment 144.	

523	David Reisenweber	Citizen	Page 87 of the Permit Program Fact Sheet says that water quality degradation cannot be avoided but will be minimized. That's 6.2 billion gallons per year to keep from polluting surrounding waters all the way thru Duluth-Superior and all the Great Lakes. A lot of adaptive management is mentioned, whatever that might be. The latest best dam and management practices are not in the proposed permit.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
524	David Reisenweber	Citizen	I am pro-science, but what you are asked to permit is a pile of assumptions, guesses, theories, possibly some fraud, and mostly wishful thinking. The earth and too many people stand to lose too much for this project to be permitted. I urge you to reject the permit application and do a lot air and water toxicity studies before considering another permit. David Reisenweber	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
525	Eric Sve	Citizen	I'm opposed to the Poly Met mine. My businesses (a resort and Commercial fisherman) are dependent on Lake Superior. I'm concerned about down stream and ground water contamination and possible depletion of aquifers that I depend on for well water to supply my home and businesses.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
526	Eric Sve	Citizen	Another concern is the treatment of the waste water that I understand could last for centuries. Much has been done to replenish fish stocks and I fear this type of mining could put that in jeopardy.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
527	David Gangeness	Citizen	Born at Ft Benning Georgia and a 65 year old lifelong resident of Minnesota with 2 degrees from the University of Minnesota and a resident of Duluth for 36 years, I have something to say about this PolyMet project. From a family of farmers in Minnesota, my family of grain farmers have fed NE Minnesota miners for 4 generations. Did I say FOUR generations? Some tout their FOUR generation mining families. Nice. They did not eat iron. We fed them. WE have a say. And we drink this water in Duluth, it is not theoretical.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
528	David Gangeness	Citizen	Deny the water pollution permits for the PolyMet copper-nickel mine project because the PolyMet plan will fail to control polluted seepage into the groundwater and surface water from the tailings basin, waste rock piles and mine pits. The permits do not set limits for this polluted seepage and rely on assumptions, exclusions and poor information to claim that the mine will not pollute our waters.	See response to Comment 510.	
529	David Gangeness	Citizen	Also, the state should request that a health impact assessment be completed before this project is permitted to evaluate the human health impacts of the project. Do this right. No shortcuts. No Russian buy offs. Just honest oversight of the safety of current citizens and future workers's families and citizens. david gangeness duluth, minnesota	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. The issue related to a health study was addressed as part of the environmental review process.	
530	William Durbin	Citizen	I believe you should have a plan to mandate surface water quality testing to be done on a ongoing basis by an objective party.	See response to Comment 144.	
531	William Durbin	Citizen	And there should be limits on ground water seepage. Copper-Nickel mining is far too risky a proposition, considering the short life-cycle of mines and the potential for long-term pollution.	See response to Comment 510.	
532	Tracy Kugler	Citizen	Dear Commissioner Stine, As a Minnesota citizen who believes that our 10,000 lakes, along with rivers, streams, and wetlands, are intrinsic to the identity of our state and should be highly valued in their own right, I strongly urge the MPCA to take seriously its mission to protect Minnesota's precious waters and deny the NPDES/SDS water pollution permit and the Section 401 certification for the PolyMet copper nickel mine project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
533	Tracy Kugler	Citizen	The proposed 401 certification asserts that the project satisfies antidegradation standards, and the NPDES/SDS permit states that the project, "does not have reasonable potential to cause or contribute to any violations of any applicable water quality standards in waters of the state." Given the hydrogeologic nature of the project site and the extensive disturbance the project will entail, I find these assertions hard to believe, particularly in the long term.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

534	Tracy Kugler	Citizen	The location of the proposed PolyMet mine is entirely unsuitable for a project of this nature. The extensive, complex, and fragile waters of this region are highly susceptible to contamination, and they are far too valuable in their own right to allow such contamination to occur. * The project site is located near the headlands of the Partridge and Embarrass Rivers, which are, in turn, in the upper reaches of the St. Louis River watershed. Any contamination flowing from the project site therefore has the potential to affect waterways downstream throughout all of these watersheds.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
535	Tracy Kugler	Citizen	* The hydrogeologic setting of the project is highly susceptible to contamination. The thin layer of glacial till lying atop fractured bedrock provide innumerable flow pathways. Saturated conditions and a shallow depth to groundwater indicate that water permeates this area. These conditions make it virtually impossible to hydrologically isolate any part of the area and mean that contaminants that may be released would spread easily throughout a large region. *	See response to Comment Multiple-543-EJ. The EIS included an assessment on fractured bedrock. While bedrock fractures are known to exist at the project site, existing information suggests that they are predominately relatively shallow and discontinuous in nature. Project engineering controls such as liner systems and seepage containment systems have been designed to minimize the potential for impact to groundwater including the shallow surficial aquifer and within the fractured bedrock.	
536	Tracy Kugler	Citizen	Many waterways and water bodies in the region are already listed as impaired due to mercury in fish tissue and/or mercury in the water column. Contamination with methylmercury is a key concern for this type of mining, as sulfide ore is exposed to air and water, generating sulfuric acid, which leads to heavy metal leaching, the release of sulfate, and mercury methylation. The Partridge River, which winds directly around the proposed mine site was proposed for listing as an impaired water in 2016 as a result of mercury in both fish tissue and in the water column. In addition, Colby and Whitewater Lakes, downstream of the mine site are already listed as impaired due to mercury in fish tissue. In the Embarrass River watershed, downstream of the tailings basin, Sabin, Wynne, Embarrass, and Esquagama Lakes and the Embarrass River downstream of Embarrass Lake are already listed with mercury-related impairments. Given these existing impairments, it is paramount that no additional potential for mercury contamination be allowed in these watersheds. *	See response to Comments 198 and 722.	
537	Tracy Kugler	Citizen	The wetlands, lakes, rivers, and streams in the region are valuable for far more than the low-quality ore that may be beneath them - as habitat, for the livelihood of Native Americans, as headlands for drinking water sources, and simply as natural areas with their own intrinsic value. These values have been recognized in the classification of all waters in the area as Outstanding International Resource Waters. Furthermore, the project lies within the St. Louis River Area of Concern, which has been the focus of at least $30 million of Great Lakes Restoration Initiative funding to remediate and restore the watershed from previous damages. Significant progress has been made over the past 25 years as a result of these efforts, including restoration of recreational access at Grassy Point, resumed natural reproduction of Lake Sturgeon, and the removal of a beneficial use impairment for aesthetics. Allowing the Poly Met project to go forward would seriously undermine all of these efforts.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
538	Tracy Kugler	Citizen	The PolyMet project will involve extensive disturbance to the environment of the region. The project proposes to remove ore from open pit mines over 500 acres in area and hundreds of feet deep, more than 90% of which will be considered waste rock and simply dumped into massive waste piles. It will process the sulfide- and heavy metal-laden ore, and store millions of gallons of contaminated water in a tailings basin, contained simply by an earthen dam. Within this complex, messy, and toxic process, the massive scale of the operation, and the long time frame over which the waste rock piles and tailings basin would persist, there are simply too many opportunities for failure. Such failures may be catastrophic, such as occurred at Mount Polley when the tailings basin dam, similar to the one proposed by PolyMet, failed. Or they may occur more gradually as containment systems break down over the life of the project and after the mining operation has ceased, as has occurred in every other instance in which sulfide mining has occurred in a water-rich environment.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.	
539	Tracy Kugler	Citizen	Having worked in the Permits Division of the Office of Water for the U.S. EPA, I realize that the narrow regulatory definition of point sources can cause challenges for regulating projects such as this that do not fit the standard model of a contained facility with defined outfall locations under the NPDES/SDS program. Given the engineering design specified and the five-year timeframe of the permit, it may be true that the possibility of contamination from the defined outflow locations is quite low. However, I urge you to at least thoroughly examine all of the assumptions used by PolyMet in justifying this claim, and be creative in applying any and all available regulatory mechanisms. (After all, PolyMet would hardly submit an application that concluded otherwise.) Most effective, of course, would be to deny the permit entirely. It seems clear that adequate justification of such a denial could be made.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

540	Tracy Kugler	Citizen	The nature of the natural and human communities at stake and the evidence of the value placed on them by existing classifications and restoration efforts justify the need to protect them. The nature and extent of the disturbance justify the need to prevent it from starting. Unlike a factory, which could be shut down if excessive contamination were discovered and emissions would stop, once a mine is dug, waste rock piles are accumulated, and a tailings basin is filled, there is no going back. Contamination resulting from these disturbances would continue indefinitely, and no amount of money would ever be able to restore the damaged communities. I therefore strongly urge you to deny the NPDES/SDS water pollution permit for the PolyMet copper-nickel mine project. Sincerely, Dr. Tracy Kugler	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
541	Karen Hulstrand	Citizen	The proposed mining plan for PolyMet gives me great concern about public health issues and water quality. Currently the MN Department of Health already notes that one out of ten infants in the Lake Superior region have unsafe levels of mercury in their blood. 30,000 health professionals have requested a health impact statement and it is unconscionable that this has not been done. I am a family practice physician and am very concerned about the potential heavy metal exposure that this mine will expose the downstream population to.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. The issue related to a health study was addressed as part of the environmental review process. See also response to comment 198.	
542	Karen Hulstrand	Citizen	To get at the copper, which is only 0.28% of the rock, the exposure of sulfide to oxygen and water will release heavy metals such as arsenic, cadmium, lead mercury, manganese etc. There are many very serious health consequences to exposure to these heavy metals. Arsenic – increases cancers including bladder, lung and hematologic cancers. Increased risk of gout and diabetes. Cadmium - osteoporosis, spinal fractures and renal failure. Half-life in the bones 16 years. Will take five half-lives to clear from the bones – 80 years. Lead – Neurotoxin. Lowers IQ in children, ADHD, ALS and kidney issues. There is no safe level of lead. Mercury – Neurotoxin, brain damage, psychiatric issues. Teratogen, causing birth defects. Manganes - Neurotoxin. Causes Parkinson like neurological disease. Has half-life in bone of 8-9 years. These effects are noted in exposure to each compound in isolation. There is insufficient knowledge of the interaction of these heavy metals in conjunction with each other.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
543	Karen Hulstrand	Citizen	I understand that copper and other minerals are of great value. However, there is no greater value than our public health and clean water. Clean water is becoming scarcer. We need to protect the water, not foreign companies profits. Please deny this permit.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
544	Mike Wenholz	Citizen	Thank you for the opportunity to comment on the draft MPCA NPDES/SDS water quality permit for the proposed PolyMet NorthMet Mining Project (proposed project). As a trained and formerly practiced aquatic toxicologist I have several concerns and recommendations regarding the draft permit. First, I want to thank you for the public meeting you co-hosted with Minnesota DNR on February 8, 2018, regarding this and other permits related to the proposed project. It was well laid out, and the inclusion of the staff who drafted the permits was excellent. I had many questions answered through them, and found them to be informative and easy to talk to. I would, however, ask and suggest that you make a significant change to future public meetings, in regards to the Public Comment Forum. I strongly suggest it is stated clearly from the beginning that the meeting and the Public Comment Forum is for statements directly relevant to the purpose of the meeting, and other types of comments will be cut-off. Further, if anyone starts down a path of comments not related to the purpose, they be cut-off and their comment period be ended. In the case of the PolyMet Forum, there should have been comments only directly related to the draft permits. As it was, over the first hour of comments my best guess is that 85- 90% of the comments had nothing to do with the draft permits, and thus were irrelevant, and thus a waste of people's time that understood what the meeting was for. Most appallingly is that all five of the elected officials that spoke barely had a thing to say about the draft permits – as in maybe 2-3 sentences among all of them combined. Again, please change this in future public meetings. As one who has worked in rule-making in the past, I know this can be done.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). The draft permits were developed according to current state and federal law. No changes were made to the draft permit in response to these comments.	

545	Mike Wenholz	Citizen	In regards to the draft NPDES/SDS water quality permit, I have the following questions, comments, and/or recommendations: Section 6.2.1 and 6.4.1 and 6.5.1 Why is the permittee allowed 21 days to submit a DMR? It seems in today's world submitting a DMR should not take 21 days. It is my understanding from talking to staff at the public meeting that the 21 days is not a requirement in law, and was chosen by the permit drafters. If there are any exceedances or low flow rates, you may not know about them for up to 21 days. This seems antiquated, and inappropriate given the scope of this project and location adjacent to sensitive natural resources. I recommend a time no longer than 7 days to submit the monthly DMR.	The MPCA considered the comment but did not revise the permit to shorten the timeframe to submit DMRs. The 21-day reporting window is a standard requirement for all permits statewide to allow time for laboratory analysis of the samples, QA/QC of sample results, and for the verified sample results to be submitted.	
546	Mike Wenholz	Citizen	Section 6.3.2 Why does the permit not include WET limits? The permit does not explain why. Given the scope of this proposed project, and the nature of copper-sulfide mining this appears a great oversight. At a minimum I recommend a WET limit for copper and nickel, and for sulfate if available.	In light of the comment, the permit has been revised to include an effluent limit of 1.0 TUc for Chronic Whole Effluent Toxicity (WET).	
547	Mike Wenholz	Citizen	Section 6.3.2 – 6.3.7 Why are toxicity tests only required quarterly for one year, and then annually after that (for presumably 20 years given the stated projected project length)? It is my understanding from talking to staff at the public meeting that 1) this is standard for MPCA NPDES/SDS permits and 2) that there is not an absolute stated in rule. This is not simply a standard project, and should get more than a standard toxicity testing protocol, again especially given the nature of copper-sulfide mining and the location adjacent to sensitive natural resources. Toxicity testing is the one level of testing and monitoring that directly ties the discharge to biological effects, and is certainly warranted more often that annually for 19 years. I strongly recommend a toxicity testing timeline of quarterly for the entire time of mining and processing. Given the scope and the general profitability mentioned related to this proposed project, it would not be an unreasonable or unnecessary burden to do so.	In light of the comment, the permit has been revised to require quarterly WET testing following commencement of the discharge.	
548	Mike Wenholz	Citizen	Section 6.3.11 Only two species are being required for toxicity testing: Pimephales promelas and Ceriodaphnia dubia. Given that copper is highly toxic to plants, and that a good amount of the discharge is to wetlands, why is a wetland and/or freshwater plant species not being included as a requirement for toxicity testing? It is my understanding from talking to staff at the public meeting that it is not standard for MPCA NPDES/SDS permits to include a plant species for toxicity testing. This is not simply a standard project, and should get more than a standard toxicity testing protocol, again especially given the nature of copper-sulfide mining and the location adjacent to sensitive natural resources. I strongly recommend including a wetland and/or freshwater plant species in addition to Pimephales promelas and Ceriodaphnia dubia as a requirement for toxicity testing. Additionally, I strongly recommend the plant species meet a toxicity testing timeline of quarterly for the entire time of mining and processing, as recommended above. Given the scope and the general profitability mentioned related to this proposed project, it would not be an unreasonable or unnecessary burden to do so.	The MPCA considered the comment but determined that the required test species for WET testing are sufficient and inclusion of a plant species is not needed. The WET testing requirements for this permit include the same test species that are required for other major dischargers statewide. In addition, protocols for the testing of plant species are not as fully developed for regulatory use and the availability of laboratories capable of conducting the testing are more limited than for the standard test species.	
549	Mike Wenholz	Citizen	Section 6.3.18 Why is the permittee allowed 45 days to reconduct toxicity testing following a positive (failed) test? It should not take 45 days to retest. It is my understanding from talking to staff at the public meeting that the 45 days is not a requirement in law, and was chosen by the permit drafters. We should not need to wait up to 45 days to learn if discharges are continuing to be toxic, following a positive (failed) test. This is especially problematic if the testing frequency is not increased from quarterly for one year and annually afterward. This seems antiquated, and inappropriate given the scope of this project and location adjacent to sensitive natural resources. I recommend a time no longer than 14 days to commence reconducting toxicity testing or 21 days to complete reconducted toxicity testing.	The MPCA considered the comment and determined that the existing language in the permit is appropriate. The 45 day period for retesting takes into account the reasonable logistics related to collecting samples, performing the tests, conducting QA/QC and reporting the results, and is the same as required for other permits requiring WET testing.	
550	Mike Wenholz	Citizen	Section 6.10.48 Why does the permittee have up to 14 days to notify the MPCA of the cessation of operation of the pump-back system? This seems antiquated, and inappropriate given the scope of this project and location adjacent to sensitive natural resources. I recommend a time no longer than 3 days to notify the MPCA. Section 6.10.49 Why does the permittee not have to begin sampling/monitoring waters downstream of the plant site until 18 months after the initiation of the wastewater treatment system? This seems very inappropriate given the scope of this project and location adjacent to sensitive natural resources. I recommend beginning sampling/monitoring waters downstream of the plant site within 1 month after the initiation of the wastewater treatment system.	The MPCA has modified the permit to require notification that operation of the pump-back system has ceased within 7 days instead of 14 days. The notification time for cessation of the pumpback system has been revised from 14 days to 7 days.	

551	Mike Wenholz	Citizen	Why is “dry stacking” not required, while a wet slurry process is allowed? Dry stacking is noted to be a more protective approach. I recommend “dry stacking” be required rather than using a wet slurry process. Why is a liner system not required under the holding pits? I strongly recommend requiring liners to be installed under the holding pits. Additionally, I strongly recommend a treatment capture system be installed below the holding pits, if this feature is not already required. It was unclear if this is currently required. Thank you for the opportunity to provide comments regarding the draft MPCA NPDES/SDS water quality permit for the proposed PolyMet NorthMet Mining Project. Please contact me if you have any questions regarding these comments. Please also provide me with responses to my questions and recommendations. Mike Wenholz 5324 Tioga Street, Duluth, MN 55804 wenholzstuff@yahoo.com	Alternatives for tailings basin design were addressed in the EIS, and the EIS was deemed adequate. Because the FTB seepage containment system is designed and will be operated to maintain an inward hydraulic gradient which will prevent the outward migration of pollutants, a liner under the containment system is not warranted. (The NPDES/SDS permit has been revised to include a specific requirement that the FTB seepage containment system shall be constructed and operated to maintain an inward hydraulic gradient across its cutoff wall.
552	Margaret Watkins	Grand Portage Band of Chippewa	Dear MPCA: Please find attached Grand Portage comments regarding the PolyMet draft NPDES SDS permit MN0071013. Sincerely, Margaret Watkins Grand Portage Water Quality Specialist	Background statement for comments to follow. No response needed.
553	Margaret Watkins	Grand Portage Band of Chippewa	Comments related to operation of NPDES permit are attached. The comments from the Grand Portage Water Quality Specialist, Margaret Watkins, requests MPCA requires strict effluent limitations and carefully regulate PolyMet.	See Responses to Comments 799 through 829.
554	Frederick Campbell	Citizen	These comments pertain to the MPCA’s proposed Polymet water quality permit. Figure 4 - Mine Site Layout. The figure shows that there is an insufficient number of compliance and indicator monitoring wells in bedrock and surgical aquifers in the area downgradient (south) of the equalization basin area.	The MPCA assessed the location of each individual well as dictated by the purpose of each well and how each well fit into the overall monitoring well network. This approach was coupled with the incorporation of existing monitoring wells (with a record of baseline water quality) and practical considerations such as access and potential disturbance to wetlands. The monitoring well network in the permit was developed to meet multiple goals, which includes monitoring the performance of engineering infrastructure; serving as indicators for the early detection of potential project impacts; and determining compliance at downgradient locations closer to the property boundary. The monitoring well network required by the draft permit is robust and includes 78 wells/piezometers at the mine site and 40 monitoring wells/piezometers at the plant site. The wells monitoring the mine site near the OSLA and EQ Basin are adequate for determining potential project impacts and determining compliance at downgradient locations. The MPCA has considered this comment and in addition to the wells identified in the draft permit, the MPCA will be requiring an additional bedrock well to be located downgradient of the tailings basin. In addition, the draft permit requires an annual assessment of the suitability of the monitoring network, and requires the proposal of additional/alternative monitoring locations in the event the original network is not sufficient, based on the ongoing collection of data (including flow direction and groundwater quality). If the MPCA determines in the future that the monitoring well network is insufficient, the agency has authority under Minnesota Rule part 7001.0170 to modify the permit, and authority under part 7001.0150 to require sufficient monitoring to determine compliance.
555	Frederick Campbell	Citizen	In addition, the proposed groundwater containment system does not adequately cover the southern portion of the mine site area, especially the east pit and category 2 and 3 stockpile areas. Figure 6 - Plant Site Layout (including Tailings Basin Layout).	The Category 1 stockpile Containment System is not intended to cover the area of the Category 2/3 stockpile or the East Pit. The temporary Category 2/3 stockpile (as well as the temporary Category 4 stockpile and Ore Surge Pile will be constructed with robust liner systems and leachate/runoff collection systems negating the need for a separate groundwater containment system at that location.

556	Frederick Campbell	Citizen	The Final EIS and the proposed permit should include a contingency design and plan for a groundwater containment system at the Plant Site, with an emphasis and focus on the Tailings Basin area. Reasonable Potential Analysis (pages 31 -) The Final EIS and this analysis did not consider any contingency plans for catastrophic events such as flooding, dike failure and collapses of various types. This analysis also failed to consider the possibility that the proposed wastewater treatment system (WWTS) may not adequately control or capture discharges or releases from source areas (mine pits, tailings basin, waste rock stockpiles , etc.).	The permit has been revised to include specific requirements for "system redundancy" at the FTB seepage containment system in the form of redundant, or quickly accessible (within 48 hours), pumping capacity, spare piping and other spare parts necessary to prevent an overflow/unauthorized discharge. See Permit at 5.175.73 and 5.178.143. The project includes engineering controls such as stockpile liner systems, seepage capture systems and wastewater storage and conveyance systems that are designed to control wastewater and runoff from the mine site so that it can be conveyed to the WWTS for treatment. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. The Annual Comprehensive Performance Evaluation Report required by the permit will provide an assessment of the performance of the engineering controls, including liner systems, using permit-required monitoring results and internal operational data to ensure that management of wastewaters generated at the mine site is adequate.	
557	Frederick Campbell	Citizen	As a result the proposed groundwater and surface water monitoring systems designs are inadequate to protect the environment from potential releases. In addition, the pilot test results are biased because of the failure to consider these other factors. The proposal for only one internal performance monitoring point (WS074) is insufficient to adequately ensure that the WWTS is operating as designed.	See response to Comment 554. The MPCA considered the comment but disagrees with its conclusion. The MPCA considers the 6 month pilot test as reasonable evidence that the treatment technology can work for the volume and composition of the wastewater expected. Although the pilot test focused primarily on sulfate removal from wastewater with expected sulfate concentrations, for a portion of the test the influent to the pilot system was seeded with metals to more closely approximate expected metal concentrations. The internal monitoring station WS074 is the primary point for monitoring the final effluent from the WWTS. Contrary to what is implied by the comment, the permit also requires monitoring of the intermediate effluents from the mine water chemical precipitation (WS072) and mine water membrane treatment (WS073) components of the WWTS.	
558	Frederick Campbell	Citizen	Metals and other parameters of concern. The lists of parameters in Groups A, and C are inadequate to protect the environment from potential releases at the Mine Site and the Plant Site areas. The parameters listed in Groups A, B, and C are limited to the most obvious metals and related ions, such as sulfate. The lists of potential parameters of concern should include a number of organic compounds, such as petroleum (DRO, GRO), total organic carbon (TOC), and other organic s and inorganic that are related to blasting agents and other process-related chemicals (Plant Site). As a result, Tables 11 and 12 should include plans and schedules for regular monitoring of groundwater and surface water for these other potential parameters of concern. I hereby submit these comments as a citizen of Minnesota. However, because of my previous work experience at the Minnamax Babbitt copper- nickel deposit and my previous work experience at the MPCA (1988-2017), I feel these comments have technical validity. Thank you for considering these comments.	The MPCA has considered this comment and determined that monitoring for organic compounds in the various wastewaters and in groundwater is not warranted. Monitoring of other indicator parameters (such as chloride, sulfate and/or specific conductance) will sufficiently identify the potential presence of impacted water at these locations. Although not directly related to the comment (which primarily addressed groundwater and surface water monitoring), the permit does require nitrogen /phosphorus monitoring of the WWTS effluent, and the monitoring required for permit reissuance does include DRO and GRO.	
559	Mae Gackstetter	Citizen	My name is Mae Gackstetter and I am a concerned citizen living and using water in the downstream community of Duluth, MN. The MPCA does not exist simply to enforce minimum standards, but to be a steward of our lands, environment, natural resources and to act in the best interest of all Minnesotans. The MPCA is not here simply to ensure that Polymet and other mining groups fill out the paperwork, check the boxes and dot ever i or cross every t, but to determine if the projects they propose are really good for the state of Minnesota and its people. It is with this in mind that I encourage the MPCA to deny the Polymet water quality permit as it currently stands.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

560	Mae Gackstetter	Citizen	The EPA records a 100% failure rate of this type of mining to control pollution. This type of copper sulfide nickel mining is especially dangerous in a water-rich environment where no successful mine of this type has ever been operated. The EPA further estimates a 93% probability of failure with regard to water collection and treatment during operation of the Polymet mine and a certainty of failure if the mine is abandoned. Polymet promises that less than 1% of contaminated waste water from the tailings basin and less than 5% of contaminated water from the mine site would escape untreated into the ground water. However, the MPCA permit imposes no conditions that Polymet demonstrate it has upheld this promise and proposes no way of monitoring for waste water contamination.	The comment is correct that the permit does not specify a required seepage capture efficiency. Instead, it relies on the maintenance, and verification, of an inward hydraulic across the barrier component of the system. The containment systems function on the principle of maintaining an inward hydraulic gradient across the barrier wall that is part of the system design. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the capture system. The permit has been revised to specify the required design components of the seepage containment systems and stipulates that the containment systems must be constructed and operated to maintain an inward hydraulic gradient across the cutoff wall. The permit requires monitoring of water levels on both sides of the cutoff wall to verify the presence of an inward gradient. If an inward gradient is not maintained, the Permittee is required to take corrective actions immediately to restore the inward gradient. The MPCA has removed the "temporary conditions" language from the draft permit and has revised the language to state that if an inward gradient is not reestablished within 14 days of detection, it is a violation of the permit.	
561	Mae Gackstetter	Citizen	The proposed tailings basin and earthen dam are far from 'state of the art'. The current most safe standard, especially in water-rich environment, is to dry mine waste and store it in dry form. But this is more expensive and Polymet shows no interest in doing this, even though it is the best available technology. The proposed tailings basin and earthen dam are very similar to the set-up that failed catastrophically at Mt. Poly in Canada in 2014. The dam breach there caused massive flooding and water contamination, turning nearby Lake Quinault into a permanently contaminated body of water that has effectively become the tailings basin for the mine site and severely impacting local businesses. Residents and mine workers affected by the Mt. Poly disaster describe a harrowing situation with no emergency response plan for local or downstream communities. Emergency responders heard about the disaster via Facebook and phone calls from family and friends working at the mine. There is no reason to believe that a dam failure at the proposed Polymet site would be any different, with no emergency response plan stipulated in the permit.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
562	Mae Gackstetter	Citizen	A dam breach could result in significant flooding, along with both surface and ground water contamination from the mine site all the way to Duluth and Lake Superior. Such a disaster would have a large negative impact on local small businesses, tourism and the local economy with no guarantees from Polymet regarding clean-up or compensation, other than hugely inadequate insurance. Citizens who lived through the Mt. Poly disaster in Canada and continue to be affected by it, are so worried about the prospect of a dam breach happening at the proposed Polymet site, that an Amnesty International delegation from Mt. Poly recently visited Duluth to meet with government officials and educate the public about their experience with the Mt. Poly disaster and how similar it is to the Polymet proposed set-up. With no emergency response plan for the immediate area, yet alone downstream communities and inadequate consultation with downstream communities, it is not hard to imagine a disaster like Mt. Poly devasting everything from Hoyt Lakes to Duluth and beyond.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
563	Mae Gackstetter	Citizen	The draft MPCA wastewater permit fails to control or even monitor the effects of potential polluted seepage on adjacent wetlands and stream, in clear violation of the Clean Water Act requiring the protection of surface water from pollution released through connected groundwater.	See response to Comment 510.	
564	Mae Gackstetter	Citizen	In addition, Minnesota rules state that copper-nickel mine tailings basins must be drained within 3 years of the start of mine closure and reintegrated into the natural watershed. So why does the MPCA permit allow Polymet to maintain a perpetual tailing pond and very long term isolation of the mine's toxic hydrometallurgic waste? Why is it acceptable for Polymet to permit and Glencore to operate a mine that will require perpetual water treatment, in clear violation of MN laws stating that these facilities should be maintenance-free after closure.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.	

565	Mae Gackstetter	Citizen	Not only do the MPCA permits bend the rules for Polymet when it comes to mine waste management, but it also gives Polymet special permissions with regard to water usage. Even though the Polymet mine would use more that 5 million gallons of water per day, the MPCA has not allowed other Great Lakes States or Canada to review the Polymet plan under the Great Lakes Compact, a flagrant violation of this agreement.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
566	Mae Gackstetter	Citizen	In addition, the DNR draft appropriations permit would allow 10x as much water to be removed from the Partridge River as claimed by Polymet's final environmental impact statement. The impact of removing this much water from the local environment on streams, lakes and groundwater reserves has not been adequately studied and is likely to significantly impact the local watershed. Additionally, the draft water appropriations permit would allow Polymet 6.175 billion gallons of water per year, 85% of the public water usage of Duluth, Proctor and Hermantown combined. It is naïve to think that this level of water usage will not have a significant impact on water stores.	Comment noted. This comment pertains to issues considered in the development of the DNR Water Appropriation permits. No changes were made to the draft permit in response to this comment.	
567	Mae Gackstetter	Citizen	None of the MPCA or Polymet permit documents or EIS documents calculate the value of Lake Superior Basin ground water that could be affected through appropriation or pollution. Instead, Polymet would pay only $8 million for the water used.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
568	Mae Gackstetter	Citizen	Furthermore, the Polymet mine project is located in and impacts resources in the 1854 Treaty Ceded Territories and upstream of Fond du Lac reservation, which would negatively impact aquatic habitats for wild rice and fishing that are already under threat from previous pollution. Polymet's own EIS concedes that in cannot maintain water sulfide level acceptable for the cultivation of wild rice, another flagrant violation of the treaty.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
569	Mae Gackstetter	Citizen	Also, there is a high risk of methyl mercury contamination in fish that are an important source of food and culture for tribal and low income communities, not to mention a beloved treat for local anglers and tourist, who come to enjoy the area and support local businesses. But the Polymet project stand to have a disproportionate burden on tribal and low income communities that rely on local rice, plant, water and fish resources, especially infants and children in these communities who are more susceptible to toxic pollutants, like mercury in fish and arsenic or manganese in drinking water. Yet, in review and drafting permits, the DNR has failed to heed the recommendations of tribal governments nor the scientific evidence produced on their behalf.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment. The control of sulfate in the discharge to less than 10 mg/L will minimize the potential for increased methylation of mercury.	
570	Mae Gackstetter	Citizen	Consultation has meant agency staff receive information from the tribes, but seem to disregard it in decision making. Why are the conclusions of scientists working for Polymet held above those of scientists working on behalf of affected communities or as independent agents? Tribes with treaty reserved rights to hunt, fish and gather near the Polymet mine site have not consented to destruction and pollution or resources needed to exercise these rights. This does not seem in the best interest of ALL Minnesotans.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
571	Mae Gackstetter	Citizen	Additionally, the MPCA refuses to independently evaluate the potential impacts of the project on human health using an open and public health assessment process (HIA) despite the fact that 30,000 MN healthcare professionals requested an HIA to assess risks of pollution on workers, infants, childres and everyone living around and downstream from the project. Several area physicians and healthcare professionals continue to passionately voice their concerns. Instead, the MPCA has allowed Polyment to control all studies and choose certain assumptions to deny health risks. PolyMet claims that pollution will meet "evaluation criteria," but its criteria won't protect human health. For example, PolyMet has set a criterion of 1506 micrograms per liter for manganese at the tailings pile. This is 15 times higher than the health risk limit set by the Minnesota Department of Health to prevent brain damage in infants, children, and adults. Even with all of its optimistic predictions, the PolyMet project would increase arsenic near the tailings pile by up to 417% - and increase arsenic in Colby Lake drinking water by 38.5%. This would increase the risk of cancer for Hoyt Lake residents above the level of concern in Minnesota's cancer risk rule. The PolyMet project would degrade Minnesota surface water quality, violating Minnesota water quality standards for toxic pollution in the wetlands near both the mine and the tailings pile.	The issue related to a health impact assessment was addressed as part of the EIS process. The derivation of the evaluation criteria for manganese in groundwater was described in the EIS; it was based on existing background conditions. As concluded in the EIS, the project is not predicted to increase existing manganese levels in the groundwater. Likewise, the EIS concluded that the engineering controls to be used at the Mine Site (and required by the NPDES/SDS permit) will not cause an exceedance of the water quality standard for arsenic in Colby Lake.	

572	Mae Gackstetter	Citizen	This extreme use of water resources, destruction of wetlands, violation of treaty rights and huge risk to downstream communities with inadequate fail-safes, has all been touted as 'safe' and 'worth the risk' for a project that will be 99% waste and increase global copper by only 0.2%. The rock mined by Polymet is a limited low-grade ore body, which carries a huge climate change and environmental impact that would result in a few 100 jobs for 20 years at best. Despite this huge carbon footprint of the Polymet project, along with the fact that copper recycling uses 85-90% less energy, while providing long-term sustainable jobs, the MPCA's permitting and environmental review process fails to consider this potential to meet employment and market needs for non-ferrous metals, instead of allowing for a risky open-pit mine with minimal impact on the global copper market or even domestic copper resources. We have other options than just pulling metals out of the ground and, for a sustainable future, we need to start utilizing them. Let's start using alternatives before it is too late and we have destroyed the beautiful environment that we are lucky enough to call home. Don't continue the cycle of environmental destruction and unsustainable, short-term economic opportunities. Deny the Polymet Water Quality Permit and do better.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
573	Jacob Crawford	Water Legacy	March 16, 2018 Minnesota Pollution Control Agency PolyMet Draft Permit Comments — 4th Floor 520 Lafayette Road North St. Paul MN 55155-4194 RE: Draft PolyMet NPDES/SDS Permit and Section 401 Certification Citizen Comments Dear Commissioner Stine, Attached and delivered to you today please find 584 comments submitted to us online by citizens asking the Minnesota Pollution Control Agency to deny the PolyMet NorthMet Project a water pollution (NPDES/SDS) permit and Clean Water Act section 401 certification. These comments have been collected via our website since early March. The names and identifying information for each commenter follows each comment's text. Of the 584 comments submitted, 563 contain the following language verbatim:	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
574	Jacob Crawford	Water Legacy	Dear Commissioner Stine, I strongly urge the MPCA to deny water pollution (NPDES/SDS) permit and deny the Section 401 certification for the PolyMet copper-nickel mine project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
575	Jacob Crawford	Water Legacy	The proposed NPDES/SDS permit is weak and fails to control the biggest threat from sulfide mining – the seepage of contaminated wastes to groundwater and then to drinking water and surface water from mine pits, waste rock stockpiles, tailings basins and other sulfide mine waste storage facilities.	See response to Comment 510.	
576	Jacob Crawford	Water Legacy	The Section 401 certification relies on PolyMet's assumptions, exclusions and misleading information to claim that the PolyMet sulfide mine would not violate water quality standards, degrade water quality, and endanger the environment and human health.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
577	Jacob Crawford	Water Legacy	The PolyMet draft NPDES/SDs permit and draft 401 certification would conflict with federal and state laws and would jeopardize Minnesota water quality, natural resources, health and finances.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
578	Jacob Crawford	Water Legacy	The MPCA draft water pollution permit for the PolyMet sulfide mine wouldn't set limits on polluted seepage through groundwater to drinking water or surface water. *The MPCA draft water pollution permit for the PolyMet wouldn't even provide appropriate monitoring; PolyMet's pollution seeping from groundwater and welling up in wetlands and streams in violation of the Clean Water Act could go completely undetected.	See response to Comments 510 and M-475-A.	
579	Jacob Crawford	Water Legacy	The MPCA draft section 401certification would ignore the deficiencies in the water pollution permit and erroneously claims that the PolyMet sulfide mine project would not violate water quality standards or degrade Minnesota water quality.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
580	Jacob Crawford	Water Legacy	The MPCA, along with other State agencies refused to evaluate impacts on human health from the PolyMet mine project through an open and public health impact assessment (HIA) process, even though groups representing 30,000 Minnesota medical and health professionals asked for an HIA to assess threats including brain damage to fetuses, infants and children from mercury contamination of fish.	The issue related to a health impact assessment was addressed as part of the EIS process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
581	Jacob Crawford	Water Legacy	Now, the MPCA draft section 401certification would accept PolyMet's exclusions, assumptions and junk science to erroneously claim that the PolyMet sulfide mine project would not endanger the environment and human health.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	

582	Jacob Crawford	Water Legacy	Please accept your Agency's mission as a protector of Minnesota waters, fish, wild rice, wildlife, wetlands and human health not the protector of foreign mining companies seeking profit at our expense. I ask you to reject and deny the draft water pollution (NPDES/SDS) permit and the draft 401 certification for the PolyMet copper-nickel sulfide mine project.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
583	Jacob Crawford	Water Legacy	The remaining 21 comments oppose the PolyMet permit and certification, but amend the above text to provide specific comments from the commenter. These comments gathered online are submitted with a Declaration verifying the accuracy of commenter information and the comment collection process. Thank you for considering the views of these citizens across the State of Minnesota who want to have their voices heard regarding the PolyMet permitting process. Please feel free to contact me at 443-500-2952 if you have any questions about the submitted comments. Respectfully yours, s/Jacob Crawford Jacob Crawford WaterLegacy Communications Coordinator	The 21 amended comment letters are addressed in comments 583-A through 583-U below.	
583-A	Andrea Sande	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.	
583-B	Dale Stewart	Water Legacy	I'm out in Nevada and Arizona on vacation, but I am a lifelong MN resident. This area I'm visiting is starting to ration water. They also have precious metal mining here and because there is little water it does not pose the problem that it does to Minnesota. Let them do these kinds of mines in this area, and please realize the precious commodity water is and will become in the future. Polymet is not right for Minnesota.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
583-C	Rena Nordlund	Water Legacy	Please accept your Agency's mission as a protector of Minnesota waters, fish, wild rice, wildlife, wetlands and human health not the protector of foreign mining companies seeking profit at our expense. I ask you to reject and deny the draft water pollution (NPDES/SDS) permit and the draft 401 certification for the PolyMet copper-nickel sulfide mine project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
583-D	Nancy Giguerre	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.	
583-E	Debra Johnson	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.	
583-F	John Sundstrom	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.	
583-G	Heather Nord	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.	
583-HA	Gary Boelhower	Water Legacy	Amended Water Legacy form letter. I live in Duluth, downstream from the proposed Polymet mine. It is clear that possible negative health impacts and negative economic impacts from the degradation of our waters have NOT been adequately studied. The MPCA has a responsibility to protect the citizens of Minnesota and to demand further study of the health impacts of the Polymet project.	See responses to comments 573 through 582.	
583-HB	Gary Boelhower	Water Legacy	Amended Water Legacy form letter. A clear plan for regular and comprehensive monitoring of seepage and ground water and well water must be in place.	See responses to comments 573 through 582. The permit includes detailed monitoring requirements for the discharge, internal waste streams, the groundwater and surface water.	
583-HC	Gary Boelhower	Water Legacy	Amended Water Legacy form letter. The continuing filtration system must be a triple fail-safe system; nothing less is to put our environment and the health of our citizens at risk. The system should be an independent and closed system, using solar, wind or geo-thermal energy so as to reduce carbon emissions.	See responses to comments 573 through 582. Membrane treatment, including reverse osmosis, is a well understood technology that has been utilized for many years in a number situations, including for mining projects. The ability for the technology to work for the PolyMet project was demonstrated in the 6 month pilot test conducted during the EIS process. The MPCA has reviewed the design and has concluded it is capable of providing the required level of treatment. The source of energy to power the WWTS is not within the jurisdiction of the MPCA or NPDES/SDS permit.	

583-HD	Gary Boelhower	Water Legacy	Amended Water Legacy form letter. A quick review of similar mining projects shows how disastrous similar copper/precious metals mining projects have been across the USA and the world. What I keep hearing is that we can do it better in Minnesota. Perhaps we can, but it will require that we demand that actual systems be built and actual plans are in place to ensure that environmental degradation does not occur or is checked immediately and effectively in the event of failure. Polymet in too many aspects of their proposal simply promises to figure things out as they go along (see the number of reference to adaptive water management process, and adaptive engineering controls). That's not good enough in Minnesota, that's not good enough in the Lake Superior watershed.	See responses to comments 573 through 582. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
583-HE	Gary Boelhower	Water Legacy	Amended Water Legacy form letter. The PTM itself says " Additionally, consistent with the policies set forth in Minnesota Rules, part6132.0200, the Project will promote the orderly development of nonferrous metallic mineral mining by using mining and reclamation best practices to minimize and mitigate adverse environmental effects and to preserve and protect natural resources through each phase of the Project..." In fact, the best practices for copper mining are NOT being proposed. Filtration systems would have fail-safe redundancy. Waste rock would be dry stacked. An old already-seeping tailings basin would not be allowed as the foundation for the NorthMet Flotation Tailings impoundment. Carbon emissions would be reduced. Dam structure would be upgraded. Clear, comprehensive, continual third-party monitoring of environmental impacts would be systemic. All of these aspects and more will have a direct impact on the environmental impact of the operation. would be much more stringent. Requirements for This isn't good enough for Minnesota. I strongly urge the MPCA to deny water pollution (NPDES/SDS) permit and deny the Section 401 certification for the PolyMet copper-nickel mine project.	See responses to comments 573 through 582. This comment pertains to issues considered in the development of the DNR Permit to Mine. It also pertains to issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
583-I	Thomas Swedberg	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-J	Allan Van Thomme	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-KA	Amelia Kroeger	Water Legacy	Amended Water Legacy form letter. MPCA's draft water pollution permit misses on setting contamination limits on PolyMet waste facilities seepage to wetlands and streams and doesn't even require monitoring for the quality of surface water, thus violating the Clean Water Act.	See responses to comments 573 through 582. The permit does include monitoring of surface water at 15 locations. See also response to comment 510.
583-KB	Amelia Kroeger	Water Legacy	Amended Water Legacy form letter. MPCA is allowing PolyMet to skew forms allowing them to deny any threats to water quality including wetlands, wild rice, mercury in fish, and threats to the health of people. There is something dreadfully wrong when a company can be allowed, gratis, to contaminate our water. The MPCA needs to protect our waters from sulfide mine pollution!	See responses to comments 573 through 582. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
583-L	Elizabeth Dahl	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-M	Libby Bent	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-N	Jane Thimke	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-OA	Duane Gustafson	Water Legacy	Amended Water Legacy form letter. The MPCA's draft water pollution permit not only fails to set limits for contamination that would seep from PolyMet waste facilities to wetlands and streams; the MPCA wouldn't even require monitoring of surface water quality in the places closest to the PolyMet tailings basin or concentrated waste storage facilities. Without surface water monitoring, even if PolyMet pollution violates the Clean Water Act, it could be decades before the contamination of our waters is detected.	See responses to comments 573 through 582. The permit does include monitoring of surface water at 4 locations immediately downgradient of the FTB. See also response to comment 510.
583-OB	Duane Gustafson	Water Legacy	Amended Water Legacy form letter. As with so much wrong with the PolyMet project, the MPCA has allowed PolyMet to artificially constrain and misrepresent modeling so that the company can deny the threat to water quality, wetlands, wild rice, mercury contamination of fish, and human health posed by its sulfide mine project.	See responses to comments 573 through 582. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
583-P	Steven Voiles	Water Legacy	Amended Water Legacy form letter. While the state is now asking for much more detailed and forward thinking financial assurance as a condition of permitting, there is another fact that should be folded into the discussion. Once the industry is operating, even when issues arise the stage is set for continued operation based on the preservation of job. This is how they divide the community pitting jobs against the environment. and when people's livelihoods are being used as bargaining chips the environment usually loses for political reasons. Polymet should be required to provide a financial assurance fund specifically to pay employees when and if if the mine is closed due to environmental issues. The fund would continue to pay workers during the correction period or up until the mine decides to close permanently due to unresolvable feasibility issues. This is the only way we can prevent the pitting of jobs against environment which is every bit as important as the projected reclamation costs that are now being calculated.	See responses to comments 573 through 582. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.

583-Q	Dan Shirley	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-R	JT Haines	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-S	John Almhi	Water Legacy	Amended Water Legacy form letter. Our water is more important than profits for some corporation and a few jobs! Who do you represent, Minnesotans or PolyMet? The latest technologies still have serious problems. Here are some examples: Summitville Gold Mine, CO; Zortman-Landusky Mine, MT; Red Dog Mine, AK; Pinto Valley Mine, AZ; Chino Mine, NM; Gilt Edge Mine, SD; Grouse Creek Mine, ID; Flambeau Mine, WI.	See responses to comments 573 through 582. This comment generally poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
583-T	Florence Hedeen	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
583-U	Colleen Krebs	Water Legacy	Amended Water Legacy form letter (without substantive new/different information).	See responses to comments 573 through 582.
584	Jacob Crawford	Water Legacy	The comment submission included four attachments.	Comment noted.
585	Mark Vesley	Citizen	The MPCA must not grant the permits to allow the construction of PolyMet's proposed "hydrometallurgical residue facility". The company's plan to contain liquid mine waste behind a collapse-prone dam indefinitely is absurd. Duluth recently witnessed a "thousand-year" flood event. When the next catastrophic rainfall comes to northern Minnesota, as it surely will, and the PolyMet dam fails and releases acidic heavy-metal slurry into the St. Louis River watershed and then Lake Superior, what will the MPCA say? "We're sorry?" "We didn't think this would happen?" "Oh, well?" Sulfide-ore mining is simply unacceptable in a water-rich environment.	The permit requires a geotechnical investigation of the proposed location of the HRF for site suitability/stability before it can be constructed. As currently proposed, the HRF will be constructed in several lifts, each of which will be timed to ensure the usable capacity of the HRF is not exceeded. The final design of the HRF, which is subject to MPCA review and approval, will be expected to address management of storm events.
586	Darren Vogt	1854 Treaty Authority	Dear Minnesota Pollution Control Agency, The purpose of this letter is to provide comments on the Draft National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit-MN0071013 and 401 Certification. The 1854 Treaty Authority is an inter-tribal natural resource management agency governed by the Bois Forte Band of Chippewa and Grand Portage Band of Lake Superior Chippewa, both federally recognized tribes. The organization is charged to preserve and protect treaty rights and related resources within the 1854 Ceded Territory. The 1854 Treaty Authority would like to highlight concerns related to the proposed project that we feel are not adequately addressed in the NPDES/SDS Permit and 401 Certification. Please note that these comments are submitted by 1854 Treaty Authority staff with the understanding that member reservations may submit comments from their own perspective.	Background statement for comments to follow. No response needed.
587	Darren Vogt	1854 Treaty Authority	NPDES/SDS Permit Responsibility to Legacy Water Quality Issues We have concern over language in the Permit to Mine (PTM) Appendix 15: Financial Assurance, Attachment 0: Memorandum from MPCA to DNR on Legacy (Memo) and how it pertains to the NPDES/SDS permit. On page 2 of the Memo, it states "It is important to note that operation of the proposed NorthMet project resolves any legacy water quality issues at the ferrous Basin" in both the Question and MPCA Response sections. This statement appears to absolve PolyMet of its obligation to mitigate water quality issues at the former LTVSMC tailings basin once operation commences. This assumes operation of the Flotation Tailings Basin (FTB) seepage capture and collection system and wastewater treatment system (WWTS) will effectively capture and treat the contaminated discharge that is already occurring and all the proposed discharge. This is a substantial assumption and we want to ensure that operation of the proposed NorthMet project does properly address PolyMet's obligation to legacy water quality issues at the LTVSMC tailings basin. Resolution should be based on actual results for as long as operation of the FTB seepage capture and collections system and WWTS are necessary (perhaps perpetuity). We are also concerned over language in the Memo that suggests PolyMet will not be required to treat or mitigate legacy pollution at the LTVSMC tailings basin if they are permitted but do not become operational. The Memo concludes that if the NorthMet project never becomes operational after PTM approval and the state becomes responsible for closure of the tailings basin (scenario II), "No treatment/mitigation for alkalinity, hardness, total dissolved solids (I'DS), specific conductance, sulfate, and mercury should be required." This cannot be allowed as it would violate the Clean Water Act. This issue needs to be clarified and addressed before final permit decisions are made.	The existing NPDES permit controlling legacy water quality issues will remain in place, as will the associated consent decree. As discussed in response to Comment 725-B, the Legacy Memo addresses a specific scenario in which the state becomes responsible for actions to mitigate legacy pollution.

588-A	Darren Vogt	1854 Treaty Authority	Water Treatment and Seepage Collection Effectiveness of the proposed water treatment and seepage collection methods are vital to the project meeting water quality standards. Analysis and design detail are lacking in the NPDES/SDS permit. There still seems to be uncertainty in the method of water treatment and we are concerned that proper testing of treatment technologies is lacking for the project at full scale. Adding to this uncertainty is the additional mine site process water being treated at the WWTS due to the elimination of the wastewater treatment facility (WWTF) at the mine site, which was not evaluated in the Final Environmental Impact Statement (FEIS).	The permit has been revised to include greater detail regarding required facility design of the FTB Seepage Containment Systems, Category 1 Waste Rock Stockpile Groundwater Containment System, and the Wastewater Treatment System. As described in response to Comment 707-C, The MPCA has revised the permit to require construction of the seepage collection to meet the standards in the application. Issues raised in this comment regarding efficacy of the WWTS were thoroughly addressed in the EIS. The GoldSim modeling conducted for the EIS considered a range of influent flows and concentrations. If flows are higher than expected, the WWTS could be expanded to handle higher flow or provide additional treatment. The flows are anticipated to increase over time, and there is sufficient expansion capacity available to handle these higher flow rates if they were to occur. To demonstrate that membrane treatment technologies were capable of meeting treatment targets, the company conducted a 6-month pilot testing program using seepage water from the existing tailings basin. For a portion of the test, additional metals were added to the test influent to more closely simulate projected effluent quality. Results of the pilot testing were used in the MPCA's reasonable potential analysis, and MPCA again determined the proposed design is capable of meeting the Operating Limits in the draft permit. In addition, the modeling and pilot testing demonstrated that concentrations of other parameters in the effluent would be far below the water quality standards when the sulfate Operating Limit is met. The proposed treatment components of the reconfigured WWTS are the same as originally proposed. Anticipated flow volumes from the Mine Site to the reconfigured WWTS will remain the same as originally proposed. The location of the proposed mine site treatment system is the only thing that has changed.	
588-B	Darren Vogt	1854 Treaty Authority	The seepage collection system around the tailings basin is modeled to have a capture efficiency of 99% (100% of shallow surface seepage and greater than 90 percent of groundwater seepage) along the northern, northwestern, and western portions and 100% along the eastern and southern portions. Description is needed on how this efficiency rate was determined. We question if such a high capture efficiency can be achieved, especially since the current seepage management system on the southern portion of the LTVSMC tailings basin has been far less effective. We also question whether PolyMet will be required to achieve 99% capture efficiency in this or any other pe1mit. We also question whether PolyMet will be required to achieve 99% capture efficiency in this or any other pe1mit. In the NPDES/SDS permit (page 41), it states "The Permittee shall maintain an inward hydraulic gradient across the FTB Seepage Containment System as determined from water level measurements from the paired monitoring wells and piezometers, taking into account temporary conditions that may result from short-term precipitation or snowmelt events." It is not clear how maintaining an inward hydraulic gradient (if feasible) will ensure 99% capture efficiency and it is not stated anywhere in the NPDES/SDS permit if/how a capture efficiency would be estimated. Achieving 99% capture efficiency (as proposed) should be a permit requirement since it is what the FEIS, NPDES/SDS permit and other permits are based on and vital for the project meeting environmental requirements	The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. The draft permit requires that 13 pairs of groundwater monitoring devices (wells and piezometers) at each of the systems be monitored on a monthly basis to ensure that the necessary inward gradient is being maintained. The system consists of one of the pair located just inward of the hydraulic barrier and one just outward of the barrier. The primary purpose of the paired devices is to monitor for the presence and maintenance of an inward hydraulic gradient across the barrier which is accomplished by simultaneous measuring of the water table elevation of the two devices. If there is an inward hydraulic gradient, flow will not move out through the barrier. The draft permit further requires that the performance of the capture/containment systems and the adequacy of the monitoring network be assessed on an annual basis. If an inward gradient is not maintained, the Permittee is required to take corrective actions immediately to restore the inward gradient. If the inward gradient is not restored within 14 days, it is considered a violation of the permit.	

589	Darren Vogt	1854 Treaty Authority	Groundwater Flow to the North Significant uncertainties exist with groundwater flows and related contaminated water transport that were not adequately addressed in the FEIS and persist in the NPDES/SDS permit. In particular, the potential for groundwater to flow north from the proposed Mine Site to the existing Northshore Mine, ultimately to the Rainy River Watershed and Boundary Waters Canoe Area Wilderness (BWCAW), has been largely ignored. Little detail is given in the FEIS or NPDES/SDS permit on the potential impacts that would occur if groundwater flows north after mining operations cease and how those impacts could be avoided/mitigated. Given that a northward flow path currently cannot be ruled out, an impacts analysis needs to be conducted to better inform the NPDES/SDS permit and other permits (including 401 Certification conditions). There should also be inclusion of additional analyses performed by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), that was provided to the Co-lead Agencies, that details how a northward flow path could/will occur since their results have not been refuted.	Regarding the adequacy of monitoring to predict a north flow path, see response to Comment Multiple-543-BN. The monitoring in the permit will allow evaluation of the potential for a north flow path now and in the future.	
590	Darren Vogt	1854 Treaty Authority	Of the potential contingency mitigation options provided in the FEIS to inform the NPDES/SDS and other permits (grouting, pit lake depression, ground water extraction wells, and artificial recharge), none of which have supporting literature and/or examples provided to support their potential use nor any detail about the potential cost for implementation and how that would affect financial assurance for the project as a whole. What is clear is that the existence of a northward flow path and the feasibility of using any mitigation option would not be determined until the project is up and running. On page 46 of the NPDES/SDS permit, it states "The Permittee shall provide an assessment on the potential for a north flow path in the bedrock or surficial aquifer north of PolyMet 's property boundary at the Mine Site. The assessment must provide discussion on whether or not a potential for a north flow path exists and the logic for that determination. If the potential for a north flow path exists, the Permittee must include a plan and schedule for MPCA review and approval for adaptive management or mitigation to prevent northward groundwater flow." This is a major concern and inadequacy of the project. Not knowing if there will be groundwater flow to the north (impacting the Rainy River Watershed, an entirely different watershed than what is described in the PTM or supporting documents) and the feasibility of the proposed mitigation options until operations have commenced is unacceptable. If a northward flow path is determined while in operation, it is likely that impacts will have already occurred and mitigation (not avoidance) will be the only option. There should also be an explanation of what will happen if, while in operation, a northward flow path occurs and it is determined that none of the proposed mitigation options are feasible. As the project is currently proposed, this is a possibility and it needs to be addressed.	Regarding the possibility of a north flow path, see response to Comment 589. Similar to the approach around the tailings basin and Category 1 stockpile described in response to Comments 711 & 711-A, the purpose of the north flow path wells is to monitor the hydrogeologic conditions such that it can be confidently predicted whether a north flow path may develop in the future. This can be accomplished by monitoring current and future groundwater elevations along the potential north flow paths; monitoring of groundwater quality is not needed to accomplish this purpose.	
591-A	Darren Vogt	1854 Treaty Authority	Unauthorized Discharges On page 62 of the NPDES/SDS permit, it states "Unauthorized Releases of Wastewater Prohibited. Except for discharges from outfalls specifically authorized by this permit, overflows, discharges, spills, or other releases of wastewater or materials to the environment, whether intentional or not, are prohibited. However, the MPCA will consider the Permittee's compliance with permit requirements, frequency of release, quantity, type, location, and other relevant factors when determining appropriate action. [33 USC§ 1342 and Minn. R. 7001.0030.]". We are concerned about how unauthorized discharges from the NorthMet project will be handled. Our understanding is that the purpose of the required monitoring sites in the NPDES/SDS permit are to detect the potential for an unauthorized discharge before it occurs so it can be prevented. Detection of an unauthorized discharge after operation commences can either lead to PolyMet needing to eliminate the discharge or the location may become a permitted discharge. If it becomes a permitted discharge location, PolyMet must then comply with effluent limits for ce1tain parameters that would be included/amended to the NPDES/SDS pe1mit for that location. If/when this occurs, it is unclear in the NPDES/SDS permit what process would be used to bring PolyMet into compliance with the new permitted discharge effluent limits. A schedule of compliance seems likely and we are concerned how much contaminated discharge may occur before it is eliminated, mitigated and/or treated. In some instances, mining facilities have been allowed to be under a schedule of compliance for years, perhaps decades, while only being required to study the problem without actually complying with applicable water quality standards. Many locations of the proposed NorthMet project, especially at the Mine Site (e.g. mine pits, waste rock stockpiles, liners), along the Mine to Plant Pipeline and FTB seepage capture and collections system seem likely to have an unauthorized discharge(s) occur. We suggest including a more detailed process and required actions in the NPDES/SDS permit to address potential unauthorized discharges from the NorthMet project.	See response to Comment 753. The MPCA has added the following language to the permit: "The discharge of treated wastewater from the WWTS must not violate state water quality standards." The requirements of the permit are sufficient to address the potential for unauthorized discharges from the facility. The Annual Comprehensive Performance Report required by the draft permit specifically requires that the effectiveness of each of the major engineering controls (i.e., seepage containment systems, stockpile liner systems, equalization basins) be evaluated based on all relevant monitoring and performance data. NPDES permits do not define the authorities or processes for taking enforcement action. The MPCA's authority to take enforcement is grounded in state statute. The process used to take enforcement is determined by agency judgment based on the facts of the particular case.	

591-B	Darren Vogt	1854 Treaty Authority	During consultation with the MPCA on 3/1/2018, it was unclear if the NPDES/SDS permit implies that any unauthorized discharges from the NorthMet project would have to comply with applicable water quality standards. Although it may be implied in the permit that an unauthorized discharge must comply with applicable water quality standards, it seems to leave the state vulnerable when it comes to enforcement. Currently, language in the NPDES/SDS permit (page 62) only specifies unauthorized discharges being prohibited with no mention of those discharges having to comply with applicable water quality standards We have seen instances with other facilities where an unauthorized discharge(s) exceeding applicable water quality standards was not found to be a NPDES/SDS permit violation since there were not any effluent limits in the pe1mit for the location(s). We suggest including additional language in the permit to address this issue. Please append this (or similar) language to the NPDES/SDS permit: "Any exceedance of Clean Water Act or Minnesota water quality standards is a violation of the NPDES/SDS permit'. In addition to strengthening language in the NPDES/SDS permit, we suggest adding effluent limits to all authorized discharge locations (including SD002-SD011) and all monitoring locations to make it clear that PolyMet is required to comply with applicable water quality standards for any/all discharges and to ensure the state has the ability to take enforcement actions for non-compliance.	Station SD001 is where the final effluent leaves the WWTS and is the "splitter box" where the effluent is distributed to outfalls SD002-SD011. Water quality samples collected at SD001 are entirely representative of the quality of water discharged at SD002-SD011. Limits apply at SD001 as well as the internal monitoring station, WS074, where the operating limits apply. The MPCA has added language to the permit stating the discharge of treated wastewater from the WWTS must not violate state water quality standards. Other discharges are not authorized by the permit.	
592	Darren Vogt	1854 Treaty Authority	Wild Rice We are concerned about current and future impacts to wild rice in downstream waters. The MPCA needs to recognize Second Creek as a wild rice water in the NPDES/SDS permit and other relevant permits. There is currently a surface water discharge from the LTVSMC tailings basin south seepage management system to Second Creek at SD026, linked to legacy water quality issues PolyMet is now responsible for, that would not be an authorized discharge location in the NPDES/SDS permit and far exceeds the 10 mg/L wild rice sulfate standard. There has been little detail provided on how the south seepage management system will be improved to reach 100% capture efficiency as proposed and eliminate this discharge, which is a concern since the current design has been far less effective. Design details to improve the south seepage management system have been deferred until after the PTM is issued, so we question if 100% capture efficiency is even possible. If this discharge continues under the proposed NorthMet project, it needs to be treated as an unauthorized discharge and appropriate actions need to be taken to eliminate/mitigate/treat the discharge and meet applicable water quality standards including the wild rice sulfate standard of 10 mg/L.	An NPDES permitting action is not the appropriate procedure to revise water quality standards under the Clean Water Act. See 40 C.F.R. § 131.20. Regarding the south seepage capture, see response to comment Multiple-543-AM. All water from the SD026 location must be collected by the South Seepage Management System and pumped to the WWTS for treatment and discharge via SD002-SD011 or directed back to the FTB for reuse. The MPCA revised the language of the permit in light of the comment to state that a direct discharge from the south seepage management system to former SD026 is prohibited. See permit at 5.175.52. The permit contains an Operating Limit of 10 mg/L sulfate for the discharge from the WWTS to Second Creek. In addition, the MPCA has added the following requirements to the permit to address concerns regarding requirement for constructing/upgrading the South Seepage Management System: "The Permittee shall construct the FTB South Seepage Management System as an upgrade or replacement of the existing temporary surface seepage pumpback system located upstream of former Cliffs Erie outfall SD026. The South Seepage Management System shall be designed and constructed to collect seepage from the FTB in this area such that there will be no direct discharge of seepage to surface waters." Regarding the applicability to existing legacy discharges, see response to Comment Multiple-543-CI. Legacy discharges from the basin are authorized by a different NPDES permit. Regarding the enforceability of the operating limit, see response to comment Water-718-B. Regarding efficacy of the south seepage capture system, see response to Comment 588-B.	
592-A	Darren Vogt	1854 Treaty Authority	Wild rice exists upstream in the Embarrass River from the draft MPCA staff recommended definitions of water used for production of wild rice (compliance points) that were provided in the FEIS to info1m the NPDES/SDS permit and other relevant permits. In the Partridge River, the 2009 survey identified rice near SW-004b, also upstream of the proposed compliance point. Currently, the wild rice water quality standard is not being met in po1tions of the Embanass and Partridge river systems. The FEIS states that the wild rice sulfate standard would be met for the Embanass River, assuming the seepage capture and collection system would capture seepage presently going to the Embairnss tributaries. However, the Partridge River will exceed the standard during low-flow conditions. We question how this will be handled in the NPDES/SDS permit when monitoring at/near these locations indicates exceedance of the wild rice sulfate standard.	Poly Met has incorporated into the Project a design of the WWTS that will meet a 10 mg/L concentration for sulfate at the point of discharge into the Project's receiving waters. The MPCA has included an operating limit of 10 mg/L for sulfate in the permit and thus will not cause or contribute to an exceedance of the wild rice sulfate standard in the Partridge River. The sulfate operating limit is an enforceable limit and an exceedance of this limit is a violation of the permit. In addition, all water from the SD026 location will be collected by the South Seepage Management System and pumped to the WWTS for treatment and discharge via SD002-SD011 or directed back to the FTB for reuse. A direct discharge without treatment at SD026 is prohibited. The permit contains an Operating Limit of 10 mg/L sulfate for the discharge from the WWTS to Second Creek. To further address concerns raised in the comment, the MPCA added a requirement prohibiting direct discharge from the South Seepage Management System to SD026.	

592-B	Darren Vogt	1854 Treaty Authority	We also remain concerned about enforcement of the existing wild rice standard of 10 mg/L for this project. It is our understanding that PolyMet plans to meet this approved standard, and it is an enforceable limit in the permit. However, legislative pressures have limited the MPCA enforcement of this approved standard in the state (perhaps a violation of the Clean Water Act), and we question if this could impact permitting for this project. Any formal and approved changes to the wild rice standard may also impact future permitting.	See response to Comment 592-A. In addition, the MPCA notes that the permit includes an operating limit of 10 mg/L for sulfate in the permit. The operating limit is an enforceable limit and if the operating limit is exceeded, it will be a violation of the permit.	
593	Darren Vogt	1854 Treaty Authority	Sulfate Limit at WS074 At the waste stream monitoring location WS074, the proposed sulfate limit of 10 mg/Lis to be rep01ted as an annual average instead of a monthly average like copper. This is a concern as it may allow for periodic (perhaps seasonal) discharges of elevated sulfate concentrations (greater than 10 mg/L) from WS074 out through the WWTS at SD00l, which does not have an effluent limit or required monitoring for sulfate. To date, there has not been evidence to support periodic/seasonal discharges of elevated sulfate having a lesser effect on wild rice as long as the annual average sulfate concentration of 10 mg/L is maintained. We suggest the sulfate limit of 10 mg/L be reported based on a monthly average concentration instead of the proposed annual average to lessen/eliminate the potential for periodic/seasonally elevated discharges of sulfate.	The operating limit for sulfate applies to the rolling average annual sulfate concentration at WS074, calculated as the rolling average of the most recent 12 calendar monthly average sulfate values. The annual average was used because recent research showed wild rice did not respond to shorter-term fluctuations in sulfate concentrations. The operating target of 9.0 mg/L as a monthly average is intended to trigger adaptive management to prevent the discharge from exceeding 10 mg/L.	
594	Darren Vogt	1854 Treaty Authority	Hydrometallurgical Residue Facility (HRF) On page 10 of the NPDES/SDS permit, it states "The HRF is designed as a closed system: no water from the HRF will be released to the environment through overflow or outlet structures. The HRF is designed with a double liner with a Leakage Collection System between the two liners to prevent leakage to groundwater." We are concerned whether it is a safe presumption to operate the HRF without having any leakage or discharge. According to findings from Emmons & Oliver Resources (EOR), engineering consultants hired by the MNDNR to review HRF dam safety, there is serious potential for HRF dam failure due to an inadequate foundation beneath the proposed HRF (soft ground consisting of slimes, peat and tailings concentrate) and the risk of liner deformation from inadequate foundation support of added material. This suggests that a discharge from the HRF is likely and there does not appear to be a comprehensive monitoring plan proposed to detect a potential discharge. Currently, development of a monitoring plan consisting of only one monitoring well location for the HRF is proposed. This does not seem sufficient to detect potential leakage/discharge from the HRF or associated liner/collection systems to surface or ground water, especially given the concern for dam failure by EOR. We suggest the HRF monitoring plan include more surface and ground water monitoring locations in proximity of the HRF and Hydrometallurgical Plant, since they are to operate as a closed loop system with no discharge to the environment or the FTB seepage capture and collection system and WWTS, so early detection of any leakage/discharges is more feasible.	The design components of the HRF were raised in the EIS and DNR, in consultation with MPCA, considered those issues. The issue of foundation stability was considered in the EIS and requirements for a detailed process of investigation, design and MPCA approvals are included in the permit to address that issue. The MPCA and DNR worked with a third-party consultant to evaluate the stability of the HRF foundation and construction methods. The MPCA added language in part 5.181.234 of the draft permit in light of the comment to state that if the MPCA determines that site conditions at the proposed HRF location preclude the construction and operation of the HRF in compliance with applicable water quality standards, construction of the HRF at that location is prohibited. The permit requires monthly monitoring of the HRF pond water at WS004 and any leachate collected by the HRF Leakage Collection System at WS005. Direct discharges from the HRF Pond and/or the HRF Leakage Collection system are prohibited. The HRF will operate as a closed-loop system with no discharge to the ground or surface waters or to the FTB/WWTS system. The MPCA has evaluated the groundwater monitoring at the Plant Site and has determined additional wells to capture any effects from the HRF are not required. Any potential leachate bypassing the HRF Seepage Capture System would be captured by the FTB Seepage Capture System and treated prior to discharge.	
595	Darren Vogt	1854 Treaty Authority	Mercury Limits at SDOOl In the PTM Appendix 15 Memo (page 5), it states "The applicable mercury standard is 1.3 ng/L" when referring to surface water quality monitoring for the NorthMet project. Proposed effluent limits for mercury at SDO0l (discharge from the WWTS) are 1,000 ng/L (monthly average) and 2,000 ng/L (daily max). No rationale is provided in the NPDES/SDS permit to support using these values over the applicable standard of 1.3 ng/L in Lake Superior basin waters. Therefore, we suggest revising the effluent limit at SD001 to 1.3 ng/L, as this should be the applicable water quality standard for mercury for the NorthMet project.	See response to Comment Multiple-543-CB. The MPCA has revised the permit to include an operating limit for mercury of 1.3 ng/L. See also responses to comments 722 through 722-B regarding applicability of legal requirements to impose a mercury limit. For additional rationale, see response to Comment Multiple-543-BX, escribing why the MPCA concluded that the WWTS would be able to meet the mercury operating limit.	
596	Darren Vogt	1854 Treaty Authority	This letter provides comments specific to the 401 certification. Refer to the 401 Certification section for the delineation of those comments.	Background statement for comments to follow. No response needed.	

597	Darren Vogt	1854 Treaty Authority	Conclusion Finally, we would like to highlight a general but important concern over the permitting approach. The NPDES/SDS permit and 401 Certification suggest commitment to project components vital to environmental protection such as effective seep capture, waste water treatment, long-term or perpetual water treatment, adaptive management, etc. The facility must be held to these commitments and requirements once operational. A pattern exists at other facilities for regulation and enforcement to be lax, rules ignored, and political pressures. It is important that permitting and regulation be implemented effectively to ensure protection of the resources of northeastern Minnesota and guaranteed by treaty with the United States. Thank you for the consideration of our comments.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
598	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	Boozhoo (Greetings) from the Red Cliff Band of Lake Superior Chippewa (Red Cliff). Please accept the following comments in regards to the NorthMet draft air quality permit, draft water quality permit (NPDES/SDS), and draft 401 Certification. Although Red Cliff is not located in the state of Minnesota, we retain hunting, fishing, and gathering rights among other usufructuary rights in the Lake Superior basin. Red Cliff is located at the top of the Bayfield Peninsula in northern Wisconsin and is enclosed by 22 miles of Lake Superior shoreline. In the ceded territory, Red Cliff has a legal and cultural interest in protecting treaty resources for the next seven generations. We, as with other Tribes and Nations, have lived in the Lake Superior basin for hundreds of years, and have relied on Lake Superior, its tributaries, and ecosystems for subsistence and cultural uses. Red Cliff is submitting the following comments.	Background statement for comments to follow. No response needed.
599	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	Draft Air Quality Permit I.Fugitive emissions control plan The fugitive emissions control plan as described in Appendix B of the draft air quality permit does not include the use of fence line or near roadside monitors to aid in determining fugitive emissions concentrations. Although the permit states that a trained observer will monitor site and road dust levels and take appropriate action, PM10 and PM2.5 levels can easily exceed National Ambient Air Quality Standards (NAAQS). This fact coupled with any potential high wind activity, can distribute these emissions over a wide range. Red Cliff requests that the permit includes use of mobile and personal monitors to correctly identify true sources of excess emissions and consequently determine appropriate action.	See air quality permit response to comment 180.
600	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	2.Section F: Receptors (RE Pathway) According to MPCA Modeling Practices, Table 11, there is a discrepancy in the meter spacing listed in the manual and the meter spacing described in the permit. We request that this discrepancy be remedied or an explanation provided as to why this is allowable for PolyMet.	See air quality permit response to comment 181.
601	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	3.Section J· Nearby Sources In this section, it is stated that some nearby sources were omitted from particulate modeling. We would like to know why these items were omitted and what protocols were used. Please provide information on the policy for removing nearby sources, which permitting actions support this decision.	See air quality permit response to comment 182.
602	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	4.Plant Site Class I Modeling Protocol There are several instances where spacing of receptors around property boundaries, within 1 km of the boundary, and from 1-5 km out differs widely from the MPCA' s Air Dispersion Modeling Practices Manual. There is no justification for these extreme exceptions to be made. Please explain this discrepancy.	See air quality permit response to comment 183.

603	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	Draft Water Quality Permit 1.Unsupported and unenforceable inward.fl.ow claims The modeling in the EIS assumes that PolyMet will maintain an inward hydraulic gradient of contaminated groundwater at the flotation tailings basin and at the waste rock stockpiles. The effectiveness of this proposed containment system is defined by this assumption and also by the assumption that if a breach in a containment wall were to occur, the contaminated water would flow into the basin rather than the surrounding environment. Red Cliff is concerned that these claims of PolyMet to maintain a constant inward gradient are both unsupported and unenforceable. This unrealistic assumption does not model the consequences of scenarios in which the gradient may be reversed, such weather events like heavy rainfall or snowmelt, nor does the permit provide detailed language regarding such scenarios. For example , page 41 of the NPDES/SDS permit states that this system (in regards to the Category 1 Waste Rock Stockpile) will take into account " tempo rary conditions that may result from short-term precipitation or snowmelt events." However, this language is not specific enough to gain our confidence that a constant inward flow gradient will be maintained and that contaminated groundwater will not flow in the reverse direction into surficial aquifers and groundwater. Therefore, this permit cannot be based solely on the assumption of this system operating without failure, and these claims cannot be supported without more specific language to support the assumptions and enforce any violations of such claims.	See response to Comment 588-B (regarding rationale for wells) and 711 (regarding purpose and function of wells). The MPCA has removed the "temporary conditions" language and has revised the language of the permit in light of the comment to state that if an inward gradient is not reestablished within 14 days of detection, it is a violation of the permit. The permit also requires monitoring of the Category 1 stockpile weekly following a 100-year storm event to ensure that monitoring and any necessary preventative maintenance occur promptly.	
604	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	2.Great Lakes Initiative and Minnesota mercury standard The proposed PolyMet project area is located in the Lake Superior Basin, and therefore any water discharges from the project area must meet the protective Great Lakes Initiative and Minnesota mercury standard of 1.3 nanograms per liter (ng/L). Attachment 1 under the Wastewater Treatment System (WWTS) section of the NPDES/SDS draft permit document states that the daily maximum limit will be 2,000 ng/L and calendar monthly average limit will be 1,000 ng/L. These limits are 1,000 times more than the Great Lakes Initiative and Minnesota mercury standard of 1.3 ng/L. Red Cliff must ensure protection of treaty resources and requests MPCA to review this monitoring requirement and rewrite to comply with Great Lakes Initiative and Minnesota mercury standards.	See response to Comment 595. The MPCA included the TBELs cited in the comment as required by 40 C.F.R. part 440. In addition to TBELs, the MPCA added an Operating Limit of 1.3 ng/L for mercury. The Operating Limits and TBELs in the permit are enforceable and an exceedance of either the TBEL and/or Operating Limit is a violation of the permit. To address the concerns of this comment, the MPCA also added language to the permit stating the discharge of treated wastewater from the WWTS must violate state water quality standards.	
605	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	3.Bedrock Monitoring Wells The Draft NPDES/SDS Fact Sheet outlines the summary of all Mine Site Groundwater Monitoring. In regards to the Bedrock Monitoring Wells, Red Cliff is concerned about the proposed frequency in which the samples would be taken. As listed in Table 11 on page 53, Group B wells are monitored quarterly and Group C wells are monitored annually. We are concerned that this frequency would not accurately capture potential contamination if the bedrock is breached or fissured due to seismic activity from blasting. Therefore we request that the frequency of this monitoring be increased during all blasting phases to adequately capture any seepages of contaminated waste that may infiltrate groundwater and drinking water.	A total of 10 bedrock water quality monitoring wells will be installed at the Mine Site. The bedrock monitoring wells will monitor groundwater downgradient of various Mine Site features and are located along similar flow paths as the surficial aquifer wells. The bedrock aquifer monitoring wells will be monitored quarterly for Group B parameters and annually for Group C parameters. The parameters and frequency of monitoring for each category of monitoring device depends on the location and specific purpose of the monitoring. In general, monitoring parameters and frequency utilize a tiered approach with more frequent monitoring of key indicator parameters in conjunction with less frequent monitoring of a wider range of parameters. Key indicator parameters with quarterly monitoring includes, at most locations, arsenic, bicarbonate, calcium, chloride, copper, hardness, magnesium, manganese, nickel, pH, specific conductance, sulfate, total dissolved solids, and water levels. The wider list of parameters to be monitored annually at most locations includes relevant metals and inorganic constituents. The quarterly and annual monitoring frequencies for water quality sampling are sufficient due to the very slow flow velocities of groundwater at the site (on the order of a few to tens of feet per year) and will be sufficient to adequately monitor potential impacts from blasting and other site activities.	

606	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	4.Annual Groundwater Evaluation Report and Annual Comprehensive Performance Monitoring Evaluation Report Red Cliff requests that all annual reports be accessible to the public. This includes the Annual Groundwater Evaluation Report as well as the Annual Comprehensive Performance Monitoring Evaluation Report. As stated in the NPDES/SDS Permit Fact Sheet on page 69, the purpose of these reports is to utilize all available data to fully evaluate the performance of the facility and to assess the potential for or existence of any unauthorized discharge to surface waters. Red Cliff disagrees with the claim that this annual evaluation will provide early identification of potential impacts so that adaptive management or mitigation can take place. This ' early' identification of potential impacts requires the addition of continuous flow monitoring and increased frequency of water quality monitoring (see below comments). However, we still request that the annual reports to be made available to the public. This would include any needed changes to the monitoring network, evaluation of compliance with groundwater standards, monitoring data, assessment of spatial distribution of groundwater quality, and the current assessment on the potential for a north flow path in the bedrock or surficial aquifer north of the Partridge River. It is a concern that a north flow path in the bedrock is a likely possibility , underscoring the need for all information and analyses regarding such an outcome to be made accessible.	The MPCA expects that reports submitted to the agency will be available to the public, as are all reports. The content required by the permit is designed to allow for predictions regarding potential effects, which provides the early detection. The DNR's water appropriation permits (see Permit 2016-1363: East Pit Dewatering) require the installation of a new continuous flow monitor at SW002 in the Partridge River headwaters area upstream of the Mine Site, use of the existing continuous flow monitor at SW003 where the Partridge River crosses the Dunka Road and installation of a new continuous flow monitor at SW004a in the Partridge River downstream of the Mine Site. These are each continuous flow monitors with data loggers and are not event-based.	
607	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	Draft 401 Certification I.Inadequate water quality monitoring and response time Red Cliff is concerned that the proposed monitoring strategy is inadequate and will not allow for detection of discharges, depositions, or impacts to water quality with enough time to allow for adaptive mitigation as planned. The Section 401 Draft Water Quality Certification states that if surface water conditions exhibit deviations from baseline conditions that are attributable to Project factors, then adaptive management may be required. Continuous flow monitoring is necessary and should be required in order to detect these changes in real time. If monitoring data indicate that the Project has caused or contributed to a violation of water quality standards in Minn. R. chs. 7050 and 7052, the permittee must report as follows: a violation endangering the human health or environment must be reported within 24 hours; and other violations must be reported within 30 days and an adaptive management plan must subsequently be submitted within 30 days. These monitoring and reporting timelines do not adequately protect the impacted adjacent wetlands and downstream waterbodies from discharge violations. If a violation occurs that jeopardizes the water quality standards, despite the 24 hour reporting requirement, and the samples are only taken monthly or quarterly, then it is highly likely that the impact was occurring for a longer period of time. In order to accurately monitor and prevent detrimental impacts to water quality, there must be continuous flow monitoring as well as increased frequency of water quality monitoring. If not, the claims that adaptive mitigation can take place in time are not validated.	Comment noted. This comment pertains to the 401 certification, not the NPDES permit. No changes were made to the draft NPDES permit in response to this comment.	
608	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	2. Accuracy of wetland delineation The Draft 401 Certification includes details about PolyMet's plan for mitigation of wetland impacts. In regards to impacted wetlands, the wetland report completed by Barr Engineering (Barr) for the EIS does not indicate that Lidar data was one of the sources used to map the wetland areas. However, in 2011, detailed Lidar derived elevation data was collected and was utilized by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) to identify further areas inside the project boundary that may be wetlands not identified by Barr Engineering. GLIFWC's analysis identified 12% more wetland areas within the mine site project boundary and 12% more wetland areas within the direct impact footprint. Assuming that all areas identified originally by Barr and subsequently by GLIFWC are wetlands, then the wetland area may be 28% more than what is listed. Upon receipt of a Technical Memorandum describing GLIFWS's findings in August 2017, the United States Army Corps of Engineers had instructed PolyMet to reevaluate the wetland area estimation with the tools utilized by GLIFWC. However, Barr has yet to submit this report. If the number of wetlands is indeed different, a highly likely scenario, then mitigation plans must be adapted. Given this evidence, these permits cannot be approved without first checking the accuracy of the current wetland delineation. Red Cliff requests these discrepancies be reviewed to most accurately account for impacted wetlands, and mitigation plans adjusted accordingly.	Comment noted. This comment pertains to the 401 certification, not the NPDES permit. No changes were made to the draft NPDES permit in response to this comment.	

609	Allissa Stutte	Red Cliff Band of Lake Superior Chippewa Indians	We appreciate the opportunity to comment and thank you for reviewing and considering the above comments.	Conclusion statement for previous comments. No response needed.
610	Lisa Fitzpatrick	Citizen	Dear MPCA folks, Please protect Minnesota from sulfide mine pollution! Protect our drinking water and beautiful St Louis River & L Superior from Polymet's toxic, long term pollution.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
611	Lisa Fitzpatrick	Citizen	The current MPCA draft water pollution permit does not set limits for Polymet's contaminated seepage from waste facilities to streams.	See response to Comment 510.
612	Lisa Fitzpatrick	Citizen	Currently, the MPCA wouldn't require surface water quality monitoring by the proposed Polymet tailings mud basin. So, if Polymet pollution violates the Clean Water Act, it could be decades before our waters' contamination is detected. Additionally, the Clean Water Act and EPA and Seagrant agencies are all under attack, so it is important to make strong draft standards to protect our waters. Sincerely, Lisa Fitzpatrick	The permit requires PolyMet to monitor the streams downstream of the tailings basin beginning 18 months after the WWTS begins operation. The 18 months accounts for the period of time that it will take the existing seepage water (that is not the result of the NorthMet project) to fully flow past the monitoring points and exit the watersheds. After 18 months, the stream monitoring required by the permit will monitor the impacts of the NorthMet project. It should be noted, that during this 18 month period, monitoring of the streams will still be required by the Consent Decree that is associated with the former Cliffs Erie tailings basin permit.
613	Mark Fitzpatrick	Citizen	Dear MPCA folks, I urge you to please protect Minnesota from sulfide mine pollution. The MPCA can be the Protecter of our drinking water and beautiful St Louis River & L Superior from Polymet's toxic, long term pollution.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
614	Mark Fitzpatrick	Citizen	The current MPCA draft water pollution permit does not set limits for Polymet's contaminated seepage from waste facilities to streams.	See response to Comment 510.
615	Mark Fitzpatrick	Citizen	Currently, the MPCA wouldn't require surface water quality monitoring by the proposed Polymet tailings mud basin. So, if Polymet pollution violates the Clean Water Act, it could be decades before our waters' contamination is detected. MPCA--be superheroes! Protect our waters! Sincerely, Mark Fitzpatrick	See response to Comment 612.
616	Marty Rye	Superior National Forest	Dear Mr. Stine I am writing to offer our comments on the Minnesota Pollution Control Agency (MPCA) Draft NPDES I SDS Permit and 401 Certification for the PolyMet NorthMet project. 1.The installation of an additional surface water monitoring site should be strongly considered (retention of SW003) to assist in the evaluation of flow paths and impacts to the Partridge River at closure.	The primary purpose of the surface water monitoring requirements in the draft permit is to assess the overall effect that the project may have on downstream water quality and to ensure that unacceptable impacts are not occurring or will be likely to occur. Surface water monitoring stations are generally located upstream and downstream of the two main project areas (i.e., Mine Site and Plant Site) and downstream of WWTS discharge points. The MPCA has determined during development of the draft permit that the proposed surface water monitoring locations are adequate to evaluate effects from the mine site and that monitoring of SW003 is not necessary.
617	Marty Rye	Superior National Forest	2.It appears the MPCA has determined that none of the monitoring points, except SD00I and WS074, have a reasonable potential because these are the only two points that include water-quality based effluent limits (WQBELs). The remainder of the monitoring locations require "monitor-only". It is unclear how the State will manage the site if required monitoring reveals exceedance of State water quality standards. Historically, mining activity that results in the exceedance of State standards that are not tied to a WQBEL have not been addressed at the permit expiration date to eliminate the exceedance. In order to address measured exceedances in a timely manner the MPCA should include an explicit clause to re-open the permit if an exceedance is measured. Section 6.3.3 of the EPA NPDES Permit Writers' Manual (2010) states: "The permit writer might also include a clause in the permit that would allow the permitting authority to reopen the permit and impose an effluent limitation if the required monitoring establishes that there is reasonable potential that the discharge will cause or contribute to an excursion above a water quality criterion."	In light of the comment, MPCA has added a specific “reopener clause” (in addition to the more general one already in the permit) that states that the MPCA may modify the permit, require corrective actions, or take other actions if it determines that the discharge is causing or contributing to a violation of water quality standards. See Permit at 5.119.2.

618	Marty Rye	Superior National Forest	3.The MPCA NPDES/SDS Permit requires raw data, analyses, and multiple reports. This submitted information is directly tied to the assumed project effects estimated in the Final Environmental Impact Statement (FEIS). It is unclear how this information will be conveyed to the public beyond either (1) publication when the considered change is large enough to justify a modification to the permit or (2) by individual request through the Minnesota Government Data Practices Act. The MPCA provides the information or data when queried, but the public does not necessarily know when the information is submitted and how it is incorporated into the management of the project effects to protect the public interest. Based upon these considerations, the State of Minnesota, and specifically the MPCA should develop an explicit communication plan and portal for the public and other resource managers to access data, reports, and analysis results through the life of the PolyMet NorthMet project.	All monitoring data is reported to the MPCA on monthly Discharge Monitoring Reports (DMRs) which are posted online on the MPCA website (available at https://www.pca.state.mn.us/quick-links/eda-surface-water-data). Annual report submittals are also available by request to the agency. Program-wide, the MPCA does not maintain websites to post report submittals from permitted facilities.	
619	Marty Rye	Superior National Forest	4.Data collection appears to be solely calendar-based. In order to gain additional insight, the Monitoring Plan should also include efforts to ensure sampling occurs during a variety of hydrologic conditions such as baseflow, spring melt, rainfall events, overbank events and these should be analyzed accordingly.	MPCA considered the comment but did not change the permit. Monthly monitoring of surface water stations is sufficient to capture variable hydrologic conditions over the life of the permit.	
620	Marty Rye	Superior National Forest	5.A photograph of the Partridge River at the time of surface water sampling (upstream and downstream) is helpful in discerning the local hydraulic condition at the time of sampling (ice cover, overbank, debris, etc.) and should be considered to be included in the data submittal to the MPCA.	MPCA considered the comment but did not change the permit. Nothing in rule requires a photograph of the sample site and photo documentation of sample sites is not required in permits program-wide.	
621	Laura Gauger	Deer Tail Scientific	In February 2018 I submitted written comments to the Minnesota Pollution Control Agency and Minnesota Department of Natural Resources regarding draft permits for the proposed PolyMet Mine. As a result of speaking to MPCA's Stephanie Handeland and Richard Clark at the February 2018 public hearing in Duluth, there are several additional documents that I would like to submit into the record, along with observations regarding those documents made by Dr. Robert E. Moran (Golden, CO). Please see the attached report that constitutes the comments I hereby submit to MPCA on behalf of Deer Tail Scientific (Duluth, MN).	Background statement for comments to follow. No response needed.	
622	Laura Gauger	Deer Tail Scientific	The comment included an attachment of a report on the Flambeau Mine.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
623	Rory Carlson	Duluth Chapter o f the Izaak Walto n League	Dear Sir/Madame, I believe the state of MN is making a grave mistake in allowing sulfide mining in MN. The risk/reward ratio does not make this a win for the people of MN as well as for future generations. A few jobs for 20 to 30 years does not risk polluting out watershed for generations.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
624	Rory Carlson	Duluth Chapter o f the Izaak Walto n League	If this mining is allowed, Polymet should be required to put 25% of the profits into a fund to mitigate potential future problems. After 100 (or 500?) years if the mining poses no future risk, the funds should be distributed to all Minnesotans. Thank you for your time, Rory	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
625	Bruce Johnson	Citizen	These comments are in response to the Minnesota Pollution Control Agency (MPCA)'s PolyMet NorthMet Draft NPDES/SDS permit announcement for comments January 31, 2018. The mine site is still not owned by the project proponent. The project proponent still has no legal right to construct facilities at mine site. The mine site is subject to legal decisions that put proposer's access to the surface for the purpose of mining at risk. If this risk results in no access for PolyMet's mining, this MPCA action for public comment would be a waste of time, money and resources, and so also would any further action by state agencies on permits. The same is true from the beginning of the project. If PolyMet does not obtain access to the surface of the mine property, this EIS has been a waste. Minnesota Department of Natural Resources (MDNR) should have seen this in February 2005 and stopped the project when the proposer laid the environmental assessment worksheet (EAW) information in its lap, and MPCA should also have seen this when it received its first completed Air Emissions Risk Assessment from PolyMet in February 2005 (PolyMet submitted its first AERA to MPCA in February 2005 as a part of the air permit process according to PolyMet's Technical Report on the NorthMet Project, submitted to Securities Exchange Commission, Oct. 2006.)	Subsequent to the comment being submitted, the land exchange process has been completed. PolyMet now owns the property rendering the comment moot.	

626	Bruce Johnson	Citizen	Nonetheless, under the provisions of the Minnesota Environmental Rights Act (Minn. Stat. Ch. 116B), we also make these comments to protect Minnesota's air, water, land, and other natural resources from pollution and destruction. We comment here on the MPCA NPDES/SDS permit to inform and notice MPCA, MDNR and responsible federal agencies of our identification of numerous illegalities identified in the Final Environmental Impact Statement (FEIS) that is the lawful basis for the NPDES/SDS Permit.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
627	Bruce Johnson	Citizen	The state agencies, the Responsible Government Unit MDNR and MPCA, use the FEIS to inform "permitting and approval processes and describes mitigation measures that may be available";...	Background statement for comments to follow. No response needed.	
628	Bruce Johnson	Citizen	...federal agencies U.S. Army Corps of Engineers (USACE) and the US Forest Service (USFS) use the FEIS to evaluate "the potential to significantly affect the quality of the human environment" for their subsequent major federal action permitting and approval processes (FEIS, p. ES-3). The U.S. Environmental Protection Agency (USEPA) and the Minnesota Department of Health (MDH) also had critical roles in review of the FEIS. All of these agencies knew, or should have known, that this is the first copper/nickel/cobalt/ platinum group elements mine in Minnesota, and that this mine differs from other Minnesota and regional mines in many ways reasonably expected to be potentially significant for human and ecological health.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
629	Bruce Johnson	Citizen	The people of Minnesota expect and deserve an excellent job of evaluating impacts on the human and ecological environment, and they did their parts in providing their scientific and knowledgeable reviews through commenting. Federal and state agencies are in legal violation when they ignored the substance of many of these comments.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
630	Bruce Johnson	Citizen	Not providing many of the cited final documents forming the basis for the FEIS and MDNR Record of Decision for over a decade are also legal violations under the Administrative Procedure Act (APA), National Environmental Policy Act (NEPA), and associated agency-specific regulations governing the activities of the agencies responsible for the FEIS, for review of the FEIS, and empowered to act as safe-guards against state and federal malfeasance.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.		
631	Bruce Johnson	Citizen	Since federal and state laws, rules or requirements are violated as described below, especially crimes under Uniform Code of Military Justice (UCMJ), then Minnesota cannot proceed with any permitting until such time as federal and state infractions, illegalities and/or crimes are adjudicated and remedied.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
632	Bruce Johnson	Citizen	The following violations of environmental laws and regulations by the Co-Leads and USEPA invalidate the FEIS and preclude issuance of any permits. Co-leads' and EPA's oversights, omissions and errors, irregularities, inaccuracies, incompleteness outright misuse and avoidance of environmental laws and regulations are described. We conclude the previous and following violations, alone or together, are so egregious that they constitute bad faith, waste, fraud and abuse in an effort to suppress knowledge of impacts and predetermine the outcome of the EIS. The regulation 40 CFR 1508.18 specifies that Major federal actions include the circumstance where the responsible officials fail to act and that failure to act is reviewable by courts or administrative tribunals under the Administrative Procedure Act or other applicable law as agency action.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.		
633	Bruce Johnson	Citizen	The commenter lists aspects of the EIS that are in violation of regulations. The commenter states that the violations show there is no basis to proceed with permitting. The violations are included in the attachment, pages 2-28. Portions of the violations that specifically mention MPCA are delineated.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

634	Bruce Johnson	Citizen	HUMAN ENVIRONMENT The information basis for the NPDES permit application is supposed to be the FEIS. All data within the application is a result of the FEIS. The FEIS is fatally flawed, as a result information on the permit application is also fatally flawed, thus the issuance of a NPDES permit based on the FEIS cannot be issued.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
635	Bruce Johnson	Citizen	Violation: The Co-leads improperly used the arsenic Maximum Concentration Level (MCL) of 10 ug/l as a ground water evaluation criterion to indicate acceptable risk at NorthMet. In doing so, Co-Leads violated 40 CFR 141.11, "The maximum contaminant level for arsenic applies only to community water systems." The reason for this regulation is that it would be too easy to minimize the potential dangers associated with arsenic. The regulatory arsenic risk level is the MCL Goal of 0.0 (zero) - there is no safe level of arsenic. It is unlikely these violations arise out of violation of 40 CFR 1507.2 Agency capability to comply. All of the people involved in evaluation criteria selection, MDNR, USACE, USFS, ERM, and PolyMet's advocate Barr, excluding the Tribes who were forbidden to participate in that group, ignored MDH and private party comments requesting evaluation criteria that reflected actual risk numbers pursuant to current science and the lowest statutory protective requirements, which for ground water is zero pollution by state statute. Law/ Regulation /Policy violated: 40 CFR 141, 141.11; arsenic MCL, MCLG promulgated.. Minn. Stat. 7060.0600 Subp. 2. Ground water pollution is not allowed except by variance. Minn. Stat. Ch. 116D.03, Subd. 2 utilize a systematic, interdisciplinary approach, consultation with persons in appropriate fields of specialization to ensure the latest and most authoritative findings. Therefore, the permits cannot be issued.	The comment predominantly is an objection to an evaluation process for arsenic utilized in the EIS and an opinion that the EIS is therefore inadequate. However, the EIS has been deemed adequate. To the extent the comment relates to permit requirements related to arsenic, the permit has been revised to include an enforceable operating limit for arsenic in the WWTS discharge. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility thereby minimizing impacts related to arsenic. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. See response to Comment 510.	
636	Bruce Johnson	Citizen	Violation: The Co-Leads failed to identify appropriate risk-based numbers for all evaluation criteria with the MCL as the origin. Law/ Regulation /Policy violated: applicable promulgating regulations for the MCLs. Therefore, the permits cannot be issued.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
637	Bruce Johnson	Citizen	Violation: The inappropriate use of the ground water and surface water evaluation criteria results in deceiving the public and FEIS and subsequent decision-makers into thinking these numbers reflect health risk levels and that it is acceptable to pollute up to the MCL or other standards or health-based numbers; therefore the Co-leads violated 40 CFR 1502.24 that calls for professional and scientific integrity. Law/ Regulation /Policy violated: APA Sec. 10 Agency action, findings, and conclusions are unlawful when found to be arbitrary, capricious, and abuse of discretion, or otherwise not in accordance with law; without observance of procedure required by law; unsupported by substantial evidence, and other conditions. 40 CFR 141, 141.11 promulgated arsenic MCL, MCLG. 7060.0600 Subp. 2 No pollution in the ground water is allowed without a variance. 40 CFR 1502.24 Agencies shall insure the professional integrity, including scientific integrity. Minn. Stat. Ch. 116D.03, Subd. 2 utilize a systematic, interdisciplinary approach, consultation with persons in appropriate fields of specialization to ensure the latest and most authoritative findings. Therefore, the permits cannot be issued.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
638	Bruce Johnson	Citizen	Violation: Co-Leads did not scope in a requirement for technical analysis of all reasonable releases, direct and indirect, to water for the project, making any and all risk assertions about water contamination and health risks invalid. Law/ Regulation /Policy/Violated: 40 CFR 1502.24 Agencies shall insure the professional integrity, including scientific integrity. 40 CFR 1506.5 (a)(c) Agencies and federal officials are responsible for independent evaluation, scope and content of the EAW and entire EIS respectively. Therefore, the permits cannot be issued.	Comment noted. The draft permits were developed according to current state and federal law. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
639	Bruce Johnson	Citizen	Violation: MDNR, USACE and USFS failed to determine the risk to health in all media (surface water, ground water, soils, sediments) by the use of available standard human health assessment tools, and in so failing did not enable actions that protect, restore, and enhance the environment. Law/ Regulation /Policy/Violated: 1500.1 actions that protect, restore, and enhance the environment must be enabled by the NEPA process. Minn. Stat. Ch. 116D.03, Subd. 2 utilize a systematic, interdisciplinary approach, consultation with persons in appropriate fields of specialization to ensure the latest and most authoritative findings. Therefore, the permits cannot be issued.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

640	Bruce Johnson	Citizen	Violation: Cumulative health risks cannot be performed for property not owned by a project proposer because definitive access and boundaries are necessary for modeling. All this air emissions work is fiction until such time as final ownership of surface rights to the mine site are obtained from USFS. Therefore, permitting is not permitted or valid and should stop. According to USEPA staff, to apply for a permit and do modeling, the proposer must or own or lease the surface to be able to plan facilities exactly. According to USEPA staff, a proposer cannot do modeling if the boundary is not known. USEPA has no guidance on modeling for a project where land is not owned or leased, with no identifiable boundary. In summary, EPA staff confirm that modeling of any type and permit modeling is not allowed in proposals until such time as the land surface and subsurface access is owned or leased. Therefore, the permits cannot be issued.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
641	Bruce Johnson	Citizen	Violation: Receiving waters are already impaired with mercury and arsenic, GLI pollutants downstream from the Partridge River, existing priority pollutants and toxic pollutants are currently contaminating Colby lake, the City of Hoyt Lakes drinking water supply. The tailing basin is a source of mercury, arsenic. Elevated mercury is found in a surface water seep from the tailing basin. That seepage is pumped back into the tailing basin untreated. The extent and magnitude of the mercury released to ground water has been ignored. PolyMet has documented that other contaminants from the TB have reach the Embarrass River. The FEIS states mercury is contained within the rock to be mined. Discharge of any addition loading of mercury, arsenic, and lead to a known water supply that is currently contaminated with these parameters downstream is an arbitrary and capricious action that has unaddressed potential human health implications. Lakes in the Embarrass River and sections of the St. Louis River are impaired for mercury. In addition, the lack of a human health risk assessment meeting EPA protocols for the drinking water supply of Hoyt Lakes has not been done. This means no additional loading even up to water quality standard much less an effluent limit is allowed. Law/ Regulation /Policy/Violated: 7052.0300 NONDEGRADATION STANDARDS. Subp. 2. Maintenance of existing water quality. Existing water uses under part 7050.0185 and the level of water quality necessary to protect existing uses must be maintained and protected. Where designated uses of the waterbody are impaired, there must be no lowering of the water quality with respect to the GLI pollutants causing the impairment. 40CFR 401.15 As, Pb,Hg are toxic pollutants , 40 CFR 423 App. A listed priority pollutants are Arsenic, Pb and Hg. FEDERAL WATER POLLUTION CONTROL ACT TITLE I--RESEARCH AND RELATED PROGRAMS SEC. 101 [33 U.S.C. 1251] Declaration of Goals and Policy (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited; 40 CFR 122(2) Each toxic pollutant listed in accordance with paragraph (1) of this subsection shall be subject to effluent limitations resulting from the application of the best available technology economically achievable for the applicable category or class of point sources established in accordance with section 301(b)(2)(A) and 304(b)(2) of this Act. SEC. 301 [33 U.S.C. 1311] Effluent Limitations (1)(A) not later than July 1, 1977, effluent limitations for point sources, other than publicly owned treatment works, (i) which shall require the application of the best practicable control technology. Therefore, the permits cannot be issued.	See response to Comment 198 regarding mercury discharges from the project. Contrary to what is implied in the comment, the project does not discharge to waters leading to Colby Lake. The WWTS discharges, in part, to Second Creek which enters Partridge River below Colby Lake. In addition, the WWTS is designed to remove arsenic and lead to levels below applicable water quality standards. The permit has been revised to include enforceable Operating Limits for arsenic, lead and mercury (among other parameters) set at the respective water quality standard. The same engineering controls described in the response to comment 198 for mercury will also control project wastewater and runoff for arsenic and lead. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation.		
642	Bruce Johnson	Citizen	Violation: In the draft scoping EAW, Co-Leads failed to independently evaluate and identify that the included summary of an AERA was produced under the MPCA-administered air quality permit action with the major effect that the Co-Leads accepted, without evidence of the complete report with calculations, the permit-based recommendation that air emissions would not have potential for significant impact, potentially prejudicing selection of alternatives by eliminating an alternative that might require more mitigation. If a complete HHRA were performed by a qualified preparer, it would show whether or not alternative(s) is sufficient. Law/ Regulation /Policy/Violated: APA Sec. 10 (e) Court will hold unlawful agency action unsupported by substantial evidence. 40 CFR 1506.5 Agency shall independently evaluate/verify for accuracy the information, issues, scope, content of EAW and EIS. 40 CFR 1506.1, No action (e.g., permitting) in EIS Agencies shall commit resources prejudicing selection of alternatives. 40 CFR 1508.18(4) defines actions with effects that may be major and which are potentially subject to federal control and responsibility that are not allowed during the EIS, including permit or other regulatory decision. Therefore, the permits cannot be issued.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.		

643	Bruce Johnson	Citizen	Violation: In its review of Co-Leads' proposed action under Section 309 of the Clean Air Act, USEPA failed to identify environmental justices conflicts between the Co-Leads and the Bands or even to read the Bands comments which indicated the issues, so it failed to ensure that the agencies have fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects, and in defining the area of potential effects. In human health, USEPA failed to review the permitting screening AERA for this complex project, and in so reviewing USEPA should have found there was no final complete AERA to review. Law/ Regulation/Policy/Violated: Clean Air Act, Section 309; Final Guidance For Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses, April 1998. Therefore, the permits cannot be issued.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.		
644	Don Arnosti	Conservation Director, Izaak Walton League	We submit these comments by the Minnesota Division of the Izaak Walton League of America on the PolyMet Corporation's Draft water permit and proposed 401 Water Quality Certification on behalf of our members and supporters in Minnesota. The Izaak Walton League is a 96-year old conservation organization with a mission to conserve, restore, and promote the sustainable use and enjoyment of our natural resources, including soil, air, woods, waters, and wildlife. Our membership includes many who have devoted their life professionally to the management of natural resources, as well all of us who use and enjoy our public lands in many forms throughout the year. We are very familiar with the lands and waters of the region of the proposed mine site itself. Some of our members and supporters live directly downstream, harvesting and eating wild rice and fish from the waters to be affected by the discharges from this proposed mine.	Background statement for comments to follow. No response needed.		
645	Don Arnosti	Conservation Director, Izaak Walton League	We are deeply disturbed by this proposed Minnesota Pollution Control Agency (MPCA) Water Quality Permit– which has no enforceable discharge standards.	The MPCA conducted a reasonable potential analysis and determined there is no reasonable potential to cause or contribute to the exceedance of a water quality standard. Therefore, no WQBELs are required in the permit. The MPCA included TBELs in accordance with 40 CFR part 440. In addition to TBELs, the MPCA included Operating Limits for sulfate, copper, arsenic, cobalt, lead, nickel and mercury. The Operating Limits and TBELs in the permit are enforceable and an exceedance of either the TBEL and/or Operating Limit is a violation of the permit. In addition, to address concerns regarding the permit being protective of water quality, the MPCA has also added language to the permit stating the discharge of treated wastewater from the WWTS must not violate state water quality standards. A Whole Effluent Toxicity LImit of 1.0 TUc has also been added to the permit.		
646	Don Arnosti	Conservation Director, Izaak Walton League	Further we find the water quality anti-degradation review overlooks important shortcomings in the wetland replacement plan proposed in the Permit to Mine. We also find inadequate the 401 analysis that depends upon a flawed draft DNR permit to mine that water quality will be protected with this mine plan and these permits.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
647	Don Arnosti	Conservation Director, Izaak Walton League	The mining plan as presented does not use the best practices possible to protect Minnesota's waters and other natural resources. This company, instead, proposes an off-the-shelf approach to accessing their minerals, choosing to brush aside the use of underground mining to reduce the impact to wetlands, reuses an old tailings basin structure designed to leak for disposal of filter waste products instead of using better waste disposal methods, does not propose to build an advanced water treatment facility until the final year of operations, and uses non-credible assumptions to wave away threats to groundwater which will flow both north into the Boundary Waters watershed, and south to affect waters draining to Lake Superior.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		

648	Don Arnosti	Conservation Director, Izaak Walton League	We can do better. They can do better. We call upon the Minnesota Pollution Control Agency to revise this permit to have enforceable discharge standards, including 10 ppm sulfate, and to withhold 401 water quality certification until the mine plan is further refined to reduce water quality impacts.	PolyMet offered to resolve outstanding issues related to sulfate and wild rice by incorporating advanced wastewater treatment into the project design. While PolyMet volunteered to do this, compliance with the permit operating limit is not voluntary. The operating limit of 10 mg/L for total sulfate is an enforceable permit limit. If the operating limit for sulfate is exceeded, it will be a violation of the permit. To address concerns regarding the permit being protective of water quality, the MPCA has also added language to the permit stating the discharge of treated wastewater from the WWTS must not violate state water quality standards	
649	Don Arnosti	Conservation Director, Izaak Walton League	This draft water discharge permit and 401 water quality certification present a selfish view of our present generation of Minnesotans: take the jobs and get the metals now, leave the hard regulatory decisions and inevitable environmental contamination to later generations. We see a shell mining company with zero operating experience, Poly Met, as the applicant, financed by Glencore, an international mining company with a sorry trail of labor and environmental abuse associated with their operations on five continents. We fully expect Glencore to buy out and take over operations once the permit is issued to their front company – Poly Met Mining, Inc. There is no accountability in issuing a permit to a poorly-financed shell company, Poly Met Mining, Inc. that is owned by another shell company, PolyMet Mining Corporation, in Canada, which is in debt to an international mining company, Glencore PLC, based beyond the reach of many financial regulatory laws in a notorious tax haven in Europe. In order to hold accountable the actual company that controls this mine, Glencore PLC must be on all permits issued. No permits should be issued to the poorly financed shell companies that are Poly Met Mining Inc, and PolyMet Mining Corporation.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.	
650	Don Arnosti	Conservation Director, Izaak Walton League	Anti-degradation assessment is inadequate and fails to support the conditions for 401 certification. The wetlands replacement plan provided in the DNR draft permit to mine is inadequate and no 401 certification should be issued because the state anti-degradation standards are not met, until these inadequacies are addressed.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
651	Don Arnosti	Conservation Director, Izaak Walton League	1)The proposed wetland replacement plan is inadequate and makes no effort to replace wetlands type-for-type as called for in the Minnesota Wetlands Conservation Act. The Application notes the destruction of wetland types 2,3,4,6,7, and 8, while the replacement from Ecosystem Investment Partners (EIP) bank at Sax-Zim bog notes only type 8 credits. More effort must be made to mitigate with type-for-type replacement. 2)No replacement is proposed for partially drained wetlands, which the Environmental Impact statement indicated could extend to 8000 acres or more; instead the impact is to be monitored – with mitigation to be determined later. This is not consistent with federal and state law, which require the damaged wetlands to be replaced in advance of the impact. Replacement, not just monitoring of partially drained wetlands must be required in the permit.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
652	Don Arnosti	Conservation Director, Izaak Walton League	3)No effort is required of the permittee to minimize the indirect impacts to wetlands – as required by federal and state law and rule. The permittee should be required to adopt a plan to minimize the water drawdown in wetlands surrounding the mine footprint. Instead, it is assumed that the impacts of twenty years of dewatering will be reversed upon mine closure. This is not acceptable, as during years of drawdown, the plant community is likely to change radically, resulting in permanent alteration to the hydrology and biology of the area. Minimization of partial drainage of wetlands must be under a specific plan and must be required in permit.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	

653	Don Arnosti	Conservation Director, Izaak Walton League	4) Northern Rich Spruce Swamp is a rare natural community as determined by the DNR's natural heritage program under Minn. R. 8420.0515, subpart 3. There are 225 acres of FPn62 – Northern Rich Spruce Swamp located at the Mine Site. Were this any other applicant, subject to rules under the Board of Water and Soil Resources, the permit must be denied to protect this rare natural community. Minnesota Rules chapter 8424.0515, Subpart 3 reads: "Rare natural communities. A replacement plan for activities that involve the modification of a rare natural community as determined by the Department of Natural Resources' natural heritage program must be denied [emphasis added] if the local government unit determines that the proposed activities will permanently adversely affect the natural community." Instead, the permit allows for the applicant to contest the classification of this as a rare natural community. Unacceptable! Any other company or individual in Minnesota would have to follow this rule, but DNR worked with the legislature to obtain a special law overturning a court decision (passed just last year) to regulate the mining industry under the state wetlands law as it sees fit. This is another case of the DNR acting as a mining promoter, rather than a regulator to protect the public interest. It was the DNR's own ecological experts who determined this classification – long before PolyMet applied for this permit. Stand behind your own experts – not "hired guns" for a company looking to exploit the public for private gain. Deny this proposed wetland impact and require the applicant to reconfigure their mine plan to leave this rare community intact.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	
654	Don Arnosti	Conservation Director, Izaak Walton League	Mine operations will result in uncontrolled discharges to north-flowing watersheds. The water discharge permit fails to anticipate this, and the 401 certification fails to analyze this situation as well. Since groundwater in this geologic setting inevitably flows to surface waters, these seepages must be considered surface water discharges.	The MPCA evaluated the monitoring needed at the facility, including that needed to ascertain whether a north flow may occur in the future, in the development of the permit. The purpose of the north flow path wells is to monitor the hydrogeologic conditions such that it can be confidently predicted whether a north flow path may develop in the future. This can be accomplished by monitoring current and future groundwater elevations along the potential north flow paths. The Permittee is required to provide an assessment on the potential for a north flow path in the bedrock or surficial aquifer north of PolyMet's property boundary at the Mine Site. The assessment must provide discussion on whether or not a potential for a north flow path exists and the logic for that determination. If the potential for a north flow path exists, the Permittee must include a plan and schedule for MPCA review and approval for adaptive management or mitigation to prevent northward groundwater flow.	

655	Don Arnosti	Conservation Director, Izaak Walton League	The proposed groundwater collection system is unproven, untested, and unlikely to perform as forecast – collecting over 90% of groundwater seepage for treatment…into the indefinite future? Particularly, since it is unclear whether the groundwater will all flow as predicted to the south, for collection and treatment. Given the proposed final profile of the PolyMet pit to be several hundred feet above the final profile of the Peter Mitchell taconite pit to the north, this assumption is unlikely.	The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. The draft permit requires that 13 pairs of groundwater monitoring devices (wells and piezometers) at each of the seepage collection systems be monitored on a monthly basis to ensure that the necessary inward gradient is being maintained. The system consists of one of the pair located just inward of the hydraulic barrier and one just outward of the barrier. The primary purpose of the paired devices is to monitor for the presence and maintenance of an inward hydraulic gradient across the barrier which is accomplished by simultaneous measuring of the water table elevation of the two devices. If there is an inward hydraulic gradient, flow will not move out through the barrier. The draft permit further requires that the performance of the capture/containment systems and the adequacy of the monitoring network be assessed on an annual basis. If an inward gradient is not maintained, the Permittee is required to take corrective actions immediately to restore the inward gradient. If the inward gradient is not restored within 14 days, it is considered a violation of the permit. Furthermore, the draft permit requires annual assessment of the engineering controls and an assessment on the suitability of the in-place monitoring network for that purpose. The comment does not provide a basis to dispute that the groundwater collection system is unproven and that the wells are sufficient to evaluate the inward gradient.	
656	Don Arnosti	Conservation Director, Izaak Walton League	The proposed permit condition is another shirking of regulatory duty: "issue the permit now, and figure out the solution later." Draft Permit Condition 66: "Prior to blasting within any mine pit footprint, the Permittee must submit a report and supporting data assessing the potential for current and future northward groundwater flow at the Mine Site. If the DNR concludes that this report, or other monitoring data, indicates a reasonable likelihood of northward groundwater flow at the Mine Site, then the DNR will require adaptive management or mitigation." This sort of information must be submitted, analyzed and made available for public review and comment prior to permitting or 401 certification.	The purpose of the north flow path wells is to monitor the hydrogeologic conditions such that it can be confidently predicted whether a north flow path may develop in the future. This can be accomplished by monitoring current and future groundwater elevations along the potential north flow paths. The Permittee is required to provide an assessment on the potential for a north flow path in the bedrock or surficial aquifer north of PolyMet's property boundary at the Mine Site. The assessment must provide discussion on whether or not a potential for a north flow path exists and the logic for that determination. If the potential for a north flow path exists, the Permittee must include a plan and schedule for MPCA review and approval for adaptive management or mitigation to prevent northward groundwater flow. Furthermore, the draft permit requires annual assessment of the engineering controls and an assessment on the suitability of the in-place monitoring network for that purpose. The comment does not provide a basis to dispute that the groundwater collection system is unproven and that the wells are sufficient to evaluate the inward gradient. The requirements for groundwater monitoring are effective upon issuance of the permit and are not depedent on blasting within the mine footprint. The Draft Permit Condition 66 cited in the comment is a DNR Permit to Mine condition and is regulated by the DNR.	
657	Don Arnosti	Conservation Director, Izaak Walton League	Again and again, the DNR draft permit to mine uses so-called "adaptive management" as in the groundwater issue, above, while deferring difficult regulatory decisions to the future.	The MPCA used available data and reports when developing the permit. Adaptive management is commonly used in NPDES permitting to address issues as they arise. The incorporation of adaptive management as a failsafe does not invalidate the requirements for compliance, it allow a more rapid response in case of a problem. Adaptive management is regularly used in complex environmental scenarios to ensure standards are met while allowing flexibility. In this case, the underlying requirement must be met; the adaptive management is intended to develop strategies to maintain compliance.	

658	Don Arnosti	Conservation Director, Izaak Walton League	The MPCA cannot use such vague assurances of future monitoring and regulatory responses to avoid careful analysis of actual threats to water quality under Minnesota's anti-degradation standards. This is unacceptable: it is a shirking of responsibility by regulators, and puts an undue burden on future generations of Minnesotans to figure out a solution to a problem we are about to create for them. This draft permit should be denied, because it fails to specify specific remedies for problems that are known, if not fully quantified or described, today. Passing such problems on to future generations is unacceptable. We can do better than this!	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
659	Don Arnosti	Conservation Director, Izaak Walton League	Disposal of water filtration membrane backwash in the leaky tailings basin poses a high risk for water quality in the future, when, as DNR experts forecast, the risky tailings dam inevitably fails.	Disposal of the small volume of membrane backwash into the FTB will not affect the ability of the seepage contanment system to capture or for the WWTS to treat the seepage that is captured. Dam safety issues are address by the DNR Dam Safety permit.	
660	Don Arnosti	Conservation Director, Izaak Walton League	We object to the proposed filtration membrane wash waste storage that does not use best practices to assure that the waste is stored in a manner that does not pose a risk to public resources or people for the centuries required. The proposed tailings basin will result in a "permanent" 900-acre lake perched 250 feet above the surrounding landscape resting on old taconite tailings and uses geomorphologically unstable formations which will require constant monitoring and maintenance through the centuries. Numerous experts including the DNR's own dam safety experts have cautioned against this design. [The] Dam Safety [Division] has numerous concerns with this project because the tailings dams must function properly for an extended period of time – we've heard on the order of 900 years. Our first concern is whether the PolyMet tailings will form a structurally sound base to support the perimeter dams. Our second concern is that the proposed wet cap will significantly increase the potential for a dam failure, and will result in costly monitoring and maintenance over the life of the project (including monitoring costs to DNR for 900 years).2 PolyMet must find another disposal option for their filtration wastes before any consideration can be given to permitting this risky operation.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
661	Don Arnosti	Conservation Director, Izaak Walton League	For all of the above-mentioned deficiencies we strongly urge the MPCA to withdraw the draft water quality permit and 401 water quality certification unless and until a better mine plan is submitted by Poly Met or any future applicant wishing to mine sulfide ores in Minnesota that can truly meet the requirements of law, which require non-degradation of our precious water resources. Thank you for your consideration of our comments.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
662	Don Arnosti	Conservation Director, Izaak Walton League	"[The] Dam Safety [Division] has numerous concerns with this project because the tailings dams must function properly for an extended period of time – we've heard on the order of 900 years. Our first concern is whether the PolyMet tailings will form a structurally sound base to support the perimeter dams. Our second concern is that the proposed wet cap will significantly increase the potential for a dam failure, and will result in costly monitoring and maintenance over the life of the project (including monitoring costs to DNR for 900 years).2 PolyMet must find another disposal option for their filtration wastes before any consideration can be given to permitting this risky operation.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
663	Don Arnosti	Conservation Director, Izaak Walton League	For all of the above-mentioned deficiencies we strongly urge the MPCA to withdraw the draft water quality permit and 401 water quality certification unless and until a better mine plan is submitted by Poly Met or any future applicant wishing to mine sulfide ores in Minnesota that can truly meet the requirements of law, which require non-degradation of our precious water resources. Thank you for your consideration of our comments	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
664	Phyllis Saliin	Citizen	I am totally opposed to the Polymet Mine Water Quality Permitting. Minnesota's lakes, rivers, and streams are too valuable to our survival and we cannot afford to threaten them in any way by a potential sulfide mining disaster with its toxic metal contaminants. It has terrible consequences for our health, wildlife, vegetation, and our state's financial health.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
665	Phyllis Saliin	Citizen	The cost of cleanup would be immense. Sulfide mining companies have a poor track record. They file for bankruptcy and leave the cost to the communities that they have destroyed.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	

666	Christie Kearney	Polymet Mining	Poly Met Mining, Inc. submits the attached comments (including two exhibits) in response to the draft NPDES/SDS permit and draft 401 certification.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
667	Christie Kearney	Polymet Mining	Poly Met Mining Inc. (PolyMet) appreciates the opportunity to submit these comments regarding the Minnesota Pollution Control Agency's (MPCA) draft NPDES/SDS permit and preliminary determination concerning the Clean Water Act Section 401 water quality certification (401 certification) for the NorthMet Project (Project). These comments address three matters: (1) the Cross-Media Analysis prepared by PolyMet, which is referenced in both MPCA's draft NPDES/SDS permit fact sheet and its draft 401 certification fact sheet; (2) MPCA's preliminary surface water antidegradation review in support of the draft NPDES/SDS permit; and (3) two conditions in the draft NPDES/SDS permit.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
668	Christie Kearney	Polymet Mining	PolyMet appreciates that MPCA and its staff have invested substantial effort in developing the draft NPDES/SDS permit, draft 401 certification, and associated permit documents. PolyMet will remain available to provide additional information as part of the permitting process. If MPCA has any questions regarding these comments or any other matter, please do not hesitate to contact me at 218-461-7746 or ckearney@polymetmining.com.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
669	Christie Kearney	Polymet Mining	To more extensively consider the effects of the NorthMet Project (Project) on water quality, Poly Met Mining, Inc. (PolyMet) conducted a study that evaluated the effects of Project air emissions, wastewater discharges, and other Project actions on surface water quality. To inform the Minnesota Pollution Control Agency's (MPCA) understanding of the inter-relationship between different media (e.g., air and surface water), the agency relied, in part, on this study, which is generally referred to as the Cross-Media Analysis.1 A complete copy of this study is included in the MPCA's administrative record for the NPDES/SDS permit and Clean Water Act Section 401 certification. The Cross-Media Analysis was informed by an extensive process overseen by the MPCA. For more than a year, a working group of interdisciplinary experts from the MPCA, Minnesota Department of Natural Resources, and PolyMet (including its outside experts) evaluated the underlying science and assumptions for the Cross-Media Analysis and analyzed the results of extensive modeling and data collection. When the Cross-Media Analysis was complete, MPCA then submitted it for independent expert peer-review. This process ensured that MPCA had the necessary technical information to inform its decision-making and that the agency had the opportunity to independently evaluate the data, methodology, assumptions, analysis, modeling, and conclusions developed for permitting purposes.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
670	Christie Kearney	Polymet Mining	The Cross-Media Analysis demonstrates that the Project is not expected to cause or contribute to violations of any water quality standards or to cause any adverse impacts to human health, either in the immediate vicinity of PolyMet's facilities or in any waters farther downstream in the St. Louis River watershed. These determinations are founded on a sophisticated analysis of the overall impacts of air emissions, wastewater discharges, and other Project actions on mercury, sulfate, and metals loading and concentrations in surface waters in the immediate vicinity of the Project and the downstream locations. MPCA's staff memoranda reviewing the Cross-Media Analysis were consistent with these technical determinations. Accordingly, MPCA, in its fact sheet for the draft Section 401 certification, specifically summarized several important conclusions from the Cross-Media Analysis, including that (1) Projectrelated sulfur deposition is not expected to result in any measurable changes in concentrations of mercury in surface waters or fish tissues; and (2) no exceedances of water quality standards are expected due to any Project air emissions.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
671	Christie Kearney	Polymet Mining	To supplement the administrative record, PolyMet includes two additional documents relating to the Cross-Media Analysis with these comments: • Overview of Cross-Media Analysis: Exhibit A is a high-level summary of the Cross-Media Analysis's purpose, design, and results. • Representative Scenario: Exhibit B includes a supplemental evaluation that PolyMet conducted using different assumptions about physical and geochemical processes relevant to the release of sulfur and metals. PolyMet explained in the Cross-Media Analysis why it believes the assumptions in the study, while understandable for the study's purpose, were very conservative in several instances, causing the Cross-Media Analysis to overestimate potential Project impacts. This supplemental evaluation is referred to as the "Representative-Scenario" evaluation, which includes assumptions more representative of actual Project conditions.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
672	Christie Kearney	Polymet Mining	The results of the Representative-Scenario evaluation demonstrate the protectiveness of the Cross-Media Analysis. It also provides further support for the conclusions in the Cross-Media Analysis that the Project will not cause or contribute to any violations of applicable water quality standards or result in any adverse effects to human health.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

673	Christie Kearney	Polymet Mining	Under Minnesota Rules, chapters 7050 and 7052, MPCA conducted an antidegradation review in connection with PolyMet's applications for an NPDES/SDS permit and a Section 401 certification. In accordance with those rules, MPCA issued its preliminary determination on antidegradation, concluding as follows: [the] water quality degradation caused by the proposed project cannot be avoided, but will be prudently and feasibly minimized, existing and beneficial uses will be protected, and the proposed activity is necessary to accommodate important economic or social changes in the geographic area in which degradation of existing high water quality is expected. . . . Therefore, the MPCA has made a preliminary determination that the project will satisfy antidegradation standards in Minnesota Rules 7050.0265, 7052.0300, and 7052.0330.2	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
674	Christie Kearney	Polymet Mining	In describing the general purposes of Minnesota's recently-adopted antidegradation rules, which MPCA has applied to the Project, MPCA explained: "[t]o summarize, antidegradation provisions are a decisionmaking process a state or authorized tribe uses to determine whether and to what extent water quality may be lowered." The U.S. Environmental Protection Agency (EPA) has stated that while the Clean Water Act provides a state "with discretion to permit activities that degrade water quality," the state at a minimum must maintain "the level of quality identified in [its applicable] water quality standards as being necessary to support the water body's existing uses." The focus on the protection of existing beneficial uses centers the antidegradation analysis on determining the extent to which the water quality for certain waters can be appropriately lowered based on existing conditions of the water, applicable water quality standards, available alternatives, and broader economic benefits.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
675	Christie Kearney	Polymet Mining	As EPA further explains: Antidegradation is not a "no growth" rule and was never designed or intended to be such. It is a policy that allows public decisions to be made on important environmental actions. Where the State intends to provide for development, it may decide under this section, after satisfying the requirements for intergovernmental coordination and public participation, that some lowering of water quality in "high-quality waters" is necessary to accommodate important economic or social development.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
676	Christie Kearney	Polymet Mining	Both PolyMet and MPCA relied on the foregoing principles in developing their antidegradation evaluations for the company's applications for an NPDES/SDS permit and Section 401 certification. PolyMet agrees with MPCA's conclusion that the Project will not impair any beneficial uses of receiving or downstream waters and that the Project satisfies all applicable antidegradation requirements. PolyMet does note that its analysis differed in certain respects from that of MPCA and that some elements of MPCA's framework may not be necessary for any subsequent permitting processes (e.g., permit renewals). These differences do not affect MPCA's ultimate conclusion that the Project meets all antidegradation requirements, but are helpful to understand as MPCA responds to public comments and finalizes the NPDES/SDS permit and Section 401 certification.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
677	Christie Kearney	Polymet Mining	Use of FEIS-Model and Design-Model Concentrations PolyMet proposed in the antidegradation evaluations in support of its NPDES/SDS permit and Section 401 certification applications that MPCA utilize the treatment-target concentrations for the Project's waste water treatment system (WWTS) as developed in the models for the Final Environmental Impact Statement (FEIS). To establish that these FEIS-model concentrations in fact will be achievable in practice, PolyMet also provided MPCA with geochemical modeling results of its discharges from its preliminary design of the WWTS for corroborative purposes (referred to as the "design-model concentrations"). MPCA considered in greater detail the design-model concentrations in its antidegradation analysis and ultimate conclusion that existing beneficial uses would be maintained. PolyMet believes that the treatment targets (generally the FEIS-model concentrations) provide the best foundation for the antidegradation review because the Project's actual effluent quality must meet all of those targets under the terms of the NPDES/SDS permit. More specifically, PolyMet believes using the treatment targets as the basis of the antidegradation analysis is more protective of the environment because, generally speaking, the FEIS-model concentrations showed higher concentrations of various parameters in the treated water discharge, thereby ensuring that all potential degradation was considered in the regulatory review.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

678	Christie Kearney	Polymet Mining	This difference in how MPCA and PolyMet weighted the design-model concentrations in their respective antidegradation analyses is ultimately not significant for purposes of issuing the NPDES/SDS permit and Section 401 certification, however, because the same outcomes occur regardless of whether the FEISmodel concentrations or design-model concentrations are used for this antidegradation review. More specifically, both models show a limited number of parameters for which measurable increases in surface water quality are expected to occur as a result of the Project (for example at outfall SD026, there were thirteen parameters under the FEIS model and four parameters under the design model, depending on the criteria for "measurable change" as discussed below). Also, both models confirm that these increases in concentration will not violate currently applicable numeric or narrative water quality criteria and, most importantly from an antidegradation perspective, will not prevent attainment of any applicable beneficial uses.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
679	Christie Kearney	Polymet Mining	Consideration of Other Regulatory Criteria Having estimated that the Project may result in measurable increases in concentrations of certain parameters in waters receiving discharges from the WWTS (and if relevant, certain downstream waters10), PolyMet's NPDES/SDS permit and Section 401 certification applications proceeded to the next steps required by Minn. R. 7050.0265.11 That additional regulatory analysis supported its conclusions that: (1) the company had analyzed appropriate alternatives, (2) there were no prudent and feasible alternatives not already included in the Project design to avoid potential degradation, (3) the Project design is a prudent and feasible alternative that will appropriately minimize any degradation, and (4) any lowering of water quality from the Project is necessary to accommodate important economic and/or social considerations.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
680	Christie Kearney	Polymet Mining	MPCA in in its preliminary antidegradation determination agreed with these PolyMet conclusions, and confirms that the Project "satisfies the [antidegradation] standards in Minnesota Rules 7050.0265 and 7052.033, as well as federal surface water pollution control statutes and rules administered by the [MPCA] commissioner." MPCA supported its conclusions with an overview of the entire Project design, which PolyMet believes is the appropriate approach because the WWTS is only part of the Project's configuration for preventing water quality impacts. The agency's preliminary determination, however, focuses considerable attention on fine design details of the Project's WWTS and of the company's internal performance monitoring system to ensure treatment to the planned sulfate criterion of 10 mg/L in the WWTS discharge. While PolyMet appreciates the agency's attention to detail, the company has some concern that this aspect of the analysis could be misconstrued as tethering any future antidegradation review for the Project to the specific treatment design components described in the Project's application. It is important to note that federal and state antidegradation requirements do not impose absolute requirements concerning technological alternatives or degradation minimization, and, as recognized in the FEIS and permitting process, future modifications to the treatment approach or the applicable regulatory framework may warrant adjustments.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
681	Christie Kearney	Polymet Mining	The possibility of such refinements, however, does not create any impediments to MPCA's antidegradation determination or its issuance of a NPDES/SDS permit or Section 401 certification for the Project. As MPCA noted in its recent antidegradation rulemaking, changes in wastewater treatment design and operations are routinely accounted for in connection with antidegradation reviews because "wastewater treatment facilities must operate under a wide variety of conditions[,] which results in pollutant load and concentration variability." MPCA reaffirmed this statement in its preliminary antidegradation determination for this Project, and properly concluded that "[t]therefore, until a new facility is operational, effluent and water quality concentrations can only be a best estimate." PolyMet agrees with these conclusions, and accordingly, believes any WWTS design changes associated with final engineering, changes in statute or rule, or any other events should be evaluated for antidegradation purposes only when such proposed changes occur.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
682	Christie Kearney	Polymet Mining	PolyMet also agrees with MPCA that if at any time in the future there is a proposal for new discharges that vary from the levels allowed by the then-governing Project permits, the determination as to whether or not a new antidegradation review will be required should be based on the cause and scope of the proposed change and other relevant considerations at that time. Those considerations will include the specific details of any proposed change in design or operations, the terms of the law and water quality standards applicable at that time, then-existing water quality conditions, and if relevant, other factors such as available alternatives for prudently and feasibly minimizing degradation.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

683	Christie Kearney	Polymet Mining	Measurable Change PolyMet provides the following comments regarding an additional point addressed in MPCA's preliminary determination. To determine whether the Project would create a "measurable change" in existing surface water quality concentrations, MPCA used a "central tendency" analysis to conduct a statistical evaluation of the relevant dataset. MPCA's rules define "measurable change" as the "practical ability to detect variation in water quality," but do not mandate use of any specific analytical technique. The approach used by MPCA in the circumstances here is consistent with the requirements of the applicable rules.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
684	Christie Kearney	Polymet Mining	PolyMet believes it important, however, to further explain the company's method for determining potential measurable changes to existing water quality, which is not clearly described in MPCA's preliminary determination. PolyMet used the full range of available monitoring data to determine existing water quality, and reported average concentrations based on that data. PolyMet then used the Laboratory Control Sample (LCS) acceptance criteria, an approach approved by EPA for similar purposes, as a method to determine whether modeled (future) water quality would represent a measurable change from the existing water quality, which was determined using the full range of monitoring data.23 PolyMet used the LCS method for determining measurable change because it aligns with the regulatory definition in Minn. R. 7050.0255, subp. 24, and provides a practical method for comparing measured (existing) and modeled (future) water quality.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
685	Christie Kearney	Polymet Mining	These differing perspectives on the underlying statistical analysis again do not affect the MPCA's ultimate conclusion that the Project satisfies all applicable antidegradation requirements. The differing opinions only affect the number of parameters for which the Project may create a measurable change in water quality (with MPCA concluding there are fewer parameters that would result in such a change), but under the parameter-by-parameter evaluation required by the applicable rules, the number of changes is not important. For as discussed above, even if there is only a single measurable change, a review of alternatives and of the necessity of the proposed degradation is appropriate, and both PolyMet and MPCA conducted the required review.	Comment noted. This comment generally states an opinion on the antidegradation analysis and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
686	Christie Kearney	Polymet Mining	PolyMet has technical comments on two specific conditions of the draft NPDES/SDS permit, as follows: 1. Condition 6.10.2 (located in the draft permit after Condition 6.10.19) states: "All water collected from the Category 1 Waste Rock Stockpile must be collected by the Category 1 Stockpile Groundwater Containment System and routed to the WWTS, with the exception of stormwater from the reclaimed portions of the stockpile." PolyMet showed in its NPDES/SDS permit application and in the FEIS that some of the water from the Category 1 Waste Rock Stockpile would be collected in the mine pits due to the Category 1 Stockpile Groundwater Containment System sump design. Page 23 of Volume II of the permit application refers to Section 2.1.2.2 of the Rock and Overburden Management Plan where the design is explained. The Category 1 Stockpile Groundwater Containment System sumps are designed for a small storm event (their holding capacity), with pumps designed for up to the 100-year, 24-hour storm event. Both sumps are designed to overflow into the mine pits if inflows to the sumps exceed their capacity. To address this design feature, this condition should allow for collection of water from Category 1 Waste Rock Stockpile to be collected by the Category 1 Stockpile Groundwater Containment System or within the mine pits.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
687	Christie Kearney	Polymet Mining	2. Condition 6.10.35 refers to "SW074." This reference is a typographical error. It should be to monitoring location "WS074."	Correction made.	
688	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Attached are Minnesota Center for Environmental Advocacy's, the Center for Biological Diversity's, and the Friends of the Boundary Waters Wilderness's the Comments and Joint Petition for a Contested Case Hearing Regarding Poly Met Mining, Inc.'s Application for a National Pollutant Discharge Elimination System/State Disposal System Permit for the NorthMet Project. In light of the size limitations, the attachments to the Comments and Joint Petition will be sent via U.S. mail as permitted by the Notice.	Background statement for comments to follow. Comment noted.	

689	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Minnesota Center for Environmental Advocacy ("MCEA"), the Center for Biological Diversity ("CBD"), and the Friends of the Boundary Waters Wilderness ("FBWW") (collectively, "Petitioners") submit these Comments and Petition for a Contested Case Hearing ("Petition") to the Commissioner of the Minnesota Pollution Control Agency ("Commissioner" or "MPCA") pursuant to Minn. R. 7000.1800-1900 with regard to the application ("Application") for a National Pollutant Discharge Elimination System/State Disposal System ("NPDES/SDS") permit (the "Permit") for the NorthMet Mine Project ("NorthMet Mine Project" or "Project") submitted by Poly Met Mining, Inc. ("Applicant" or "PolyMet").1 Petitioners seek an order of the Commissioner denying issuance of the Permit unless the Permit and the Project are substantially revised to address the material issues of fact and failure to adhere to applicable legal standards described below. If the Commissioner does not deny the Permit, Petitioners petition for a contested case hearing on the material issues of fact set forth below.	Background to support commenter's contested case hearing request. Comment noted.
690	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	I. TIMELINESS. Pursuant to Minn. R. 7000.1800, a petition for a contested case hearing "must be submitted during the public comment period established under parts 7001.0100." In this case, MPCA published the Permit for public comment on January 31, 2018. The end of the comment period is March 16, 2018. Petitioners filed this Petition on March 16, 2018. The Petition and Comments are timely.	Background to support commenter's contested case hearing request. Comment noted.
691	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	II. STATEMENT OF REASONS. In general, while MPCA attempted to create a Permit with enforceable conditions that will protect the environment, the Permit conditions do not address the fundamental underlying problem with this Project: the engineered systems will not function at their assumed efficiencies either during the mining operation or during the prolonged—essentially endless—period of post-closure. The mine pits, the permanent storage pile, and the flotation tailings basin all ultimately will be sources of pollutants that will cause exceedances of water quality standards and degradation of waters of the state. MPCA has turned a blind eye to the long-term impact of granting this short-term permit.	This comment provides a summary of detailed comments that follow. The MPCA provides responses to the comments in detail below.
692	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Once this project begins, there is no turning back. This can already be seen at the Mine Site, which is already a source of legacy mercury pollution to the watershed.	This comment presents the opinion of the commenter, but does not address the NPDES permit conditions.
693	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Early in the environmental review process, the Minnesota Department of Natural Resources ("DNR") considered whether it would be feasible to backfill waste rock into existing taconite pits Applicant owned. DNR's analysis found it would not be feasible, because the existing pit, created by LTV Steel fifty years ago, is already a source of mercury pollution via overflow.2 If more rock were added to the pit, the discharge of mercury would increase, which would not be allowable under the Clean Water Act, and the proposal was accordingly rejected. In other words, the history of mining on Applicant's property is already a source of legacy mercury pollution from 50 years ago, and what will happen in the next 20 years at that site will reverberate for centuries.	This comment presents background information and the opinion of the commenter, but does not address the NPDES permit conditions.

694	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Under the Clean Water Act and state law, MPCA has an obligation to ensure that the designs intended to prevent pollution of the groundwater and surface water will function as proposed for both the short-term and the long-term. MPCA also has an obligation to include conditions in the Permit that will ensure that the Permit can be enforced both now and in the future, and conditions that will ensure that MPCA retains the authority to require Applicant to meet the highest standards. It is not sufficient for MPCA to prohibit discharges except at the permitted outfalls when the evidence suggests that there will be numerous, unpermitted discharges that will eventually reach surface water undetected by the deficient monitoring system. Nor is it sufficient for MPCA to allow the Permit to be issued on the basis that, in the future, there will be "adaptive management" that will address the predictable problems, particularly where that adaptive management is comprised of untested schemes that are likely to fail. Ultimately, MPCA treats the Permit as if the next 5 years are the only years that matter for Permit approval. But the evidence shows the strategies Applicant proposes will not work long term and that Applicant intends to abandon3 all of water-treatment plans as soon as possible. MPCA cannot ignore known, long-term issues For these reasons and as set forth below, Petitioner seek substantial changes in the Permit and a contested case hearing.	Regarding adaptive management, see responses to Comments 716 through 716-E. The detailed responses to more detailed comments on this issue are below.
695	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	III. STATEMENT OF ISSUES. The Commissioner must grant a petition to hold a contested case hearing if the Commissioner finds that: A. there is a material issue of fact in dispute concerning the matter pending before the board or commissioner; B. the board or commissioner has the jurisdiction to make a determination on the disputed material issue of fact; and C. there is a reasonable basis underlying the disputed material issue of fact or facts such that the holding of a contested case hearing would allow the introduction of information that would aid the board or commissioner in resolving the disputed facts in making a final decision on the matter.4 In Parts VII-X below, Petitioners set forth the material issues of fact that are in dispute. Petitioners further provide the basis underlying the material and disputed issues illustrating that a contested case hearing would aid the Commissioner in making a final decision as to whether MPCA should issue the Permit.	This comment presents background information and the opinion of the commenter, but does not address the NPDES permit conditions.
696	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	IV. STATEMENT OF INTEREST. MCEA is a Minnesota nonprofit public interest organization with over 3,000 members and its mission is to use law, science, and research to protect and enhance Minnesota's natural resources, wildlife, and the health of its people. MCEA has program areas in mining and natural resources, and protecting Minnesota's resources from the unsafe development of copper-nickel deposits has been part of MCEA's mission since its inception. MCEA has participated in the administrative processes concerning the NorthMet Mine Project since the first incarnation of the project proposal in the late 2000s, by submitting comments, retaining expert consulting services, and attending and speaking at public hearings. MCEA members live and recreate on lands and waterways that will be impacted by the NorthMet Mine Project. MCEA members use and enjoy these lands, rivers, lakes and streams for recreation, spiritual, cultural, economic, and aesthetic enjoyment. Many members obtain nutrition and sustenance from resources that would be negatively impacted by the project, including fish and wild rice.	Background information. Comment noted.
697	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	CBD is a nonprofit conservation organization headquartered in Tucson, Arizona, with offices in a number of states, including an office in Duluth, Minnesota. CBD is a leading organization fighting on behalf of wildlife and wild places, including threatened and endangered species such as the Canada lynx and gray wolf that would be adversely affected by the NorthMet Mine Project. CBD believes that the welfare of human beings is deeply linked to nature—the existence in our world of a vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, CBD works to secure a future for all species, great and small, hovering on the brink of extinction.	Background information. Comment noted.

698	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	CBD has over 63,000 members, including members who own land and recreate in northeastern Minnesota, including downstream from the proposed NorthMet Mine Project. These members' interests include fishing, canoeing, wild-rice gathering, camping, hiking, and seeking quiet remote places to recreate within the Superior National Forest. These interests would be negatively and potentially permanently impacted if the NorthMet Mine Project is permitted and allowed to proceed. CBD and some of its members have been actively engaged in the NorthMet Mine Project for many years, including submitting detailed comments to state and federal agencies and attending public hearings.	Background information. Comment noted.
699	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The mission of FBWW is "to protect, preserve and restore the wilderness character of the Boundary Waters Canoe Area Wilderness and the Quetico-Superior ecosystem." As the NorthMet Mine Project is within the Superior ecosystem, its protection falls squarely within FBWW's mission and within the interests of its 3,000-plus members and supporters. FBWW members recreate not only within the Boundary Waters Canoe Area Wilderness, but also in other parts of Minnesota's Arrowhead region, on federal, state, and county land. FBWW members paddle, fish, swim, and rice on the St. Louis River downstream from the NorthMet Mine Project. Impacts on water quality from the Project could affect these activities. Many FBWW members hunt in the area, and many more enjoy seeing and being in the presence of wildlife in its natural habitat. If the Project is built, it will destroy habitat for species that are important to FBWW members, such as moose, Canada lynx, wolves, northern goshawks, and great grey owls. FBWW and its members care deeply about the ecosystems of Minnesota's north woods, and are committed to ensuring that they will not disappear. The Project would destroy hundreds of acres of natural communities that are already considered vulnerable or vulnerable/imperiled and that will not be replaced. Most FBWW members are Minnesota taxpayers. They are also Minnesota residents who hope their grandchildren and great-grandchildren will live in Minnesota and enjoy the Superior National Forest and surrounding lands and waters as they do. The Project as proposed presents risks to future generations that will include the descendants of FBWW members. Those risks are both to natural resources, most especially clean water, and to financial well-being should Minnesota taxpayers be required to pay for the environmental damage caused by the NorthMet Mine Project.	Background information. Comment noted.
700	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Page 7 to 9 describes expectations of the contested case hearing, including timing, witnesses, and purpose of need.	Background information. Comment noted.

701	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	VI. APPLICABLE LEGAL STANDARDS. Before issuing the Permit, MPCA must make the following finding: Except as provided in subpart 2, the agency shall issue, reissue, revoke and reissue, or modify a permit if the agency determines that the proposed permittee or permittees will, with respect to the facility or activity to be permitted, comply or will undertake a schedule of compliance to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the agency, and conditions of the permit and that all applicable requirements of [Minn. Stat. ch.] 116D, and the rules adopted under . . . chapter 116D, have been fulfilled. For solid waste facilities, the requirements of [Minn. Stat. § 473.823, subds. 3, 6] must also be fulfilled.11 Similarly, the MPCA can refuse to issue the Permit if it finds: A. that with respect to the facility or activity to be permitted, the proposed permittee or permittees will not comply with all applicable state and federal pollution control statutes and rules administered by the agency, or conditions of the permit; . . . . C. that the permittee has failed to disclose fully all facts relevant to the facility or activity to be permitted, or that the permittee has submitted false or misleading information to the agency or to the commissioner; D. that the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by a modification of the conditions of the permit; . . . .12 In issuing an NPDES/SDS permit, MPCA must ensure that the permit contains "conditions necessary for the permittee to achieve compliance with all Minnesota or federal statutes or rules."13 The Commissioner is required to establish "effluent limitations, standards, or prohibitions for each pollutant to be discharged from each outfall or discharge point of the permitted facility."14	This comment cites state rule. The MPCA does not dispute the applicability of state rules.	There is no dispute. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
702	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The provisions cited above all have the goal of protecting water-quality standards, including water-quality standards applicable to surface water and groundwater. However, MPCA's rules also prohibit the issuance of permits if the activity would cause unnecessary degradation of waters. For groundwater, MPCA's policy is that "the disposal of sewage, industrial waste, and other wastes shall be controlled as may be necessary to ensure that to the maximum practicable extent the underground waters of the state are maintained at their natural quality."18 If groundwater is not going to be maintained at its natural quality, MPCA must determine "that a change is justifiable by reason of necessary economic or social development and will not preclude appropriate beneficial present and future uses of the waters."19 For surface water, Minn. R. 7050.0250 provides: The purpose of the antidegradation provisions in parts 7050.0250 to 7050.0335 is to achieve and maintain the highest possible quality in surface waters of the state. To accomplish this purpose: A. existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected; B. degradation of high water quality shall be minimized and allowed only to the extent necessary to accommodate important economic or social development; C. water quality necessary to preserve the exceptional characteristics of outstanding resource value waters shall be maintained and protected; and D. proposed activities with the potential for water quality impairments associated with thermal discharges shall be consistent with section 316 of the Clean Water Act, United States Code, title 33, section 1326. Below, Petitioners set forth the detailed reasons why the Permit does not meet the standards set forth above.	This comment cites state rule. The MPCA does not dispute the applicability of state rules.	There is no dispute. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).

703	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	VII. MPCA CANNOT FIND APPLICANT'S PROPOSED ACTIONS TO MINIMIZE GROUNDWATER CONTAMINATION ARE ADEQUATE. The Permit does not adequately minimize groundwater contamination. To issue the Permit, MPCA must determine that Applicant will comply with all applicable state and federal pollution control statutes and rules administered by MPCA, and conditions of the permit.20 Similarly, under MPCA's rules "a [NPDES] permit issued by the agency must contain conditions necessary for the permittee to achieve compliance with all Minnesota or federal statutes or rules."21 Finally, as noted above, under MPCA's water-quality rules, the beneficial uses of surface water and groundwater must be protected from degradation. MPCA includes conditions in the Permit that prohibit Applicant from discharging to surface water from a number of different sites at the facility. For example, permit condition 6.10.17 states "[t]he Permittee shall not discharge any process wastewater from the Mine Site to surface waters under this permit." A similar condition is attached to the Category 2/3 Stockpile, Category 4 Stockpile, Overburden Storage and Laydown Area, Ore Surge Pile, and Equalization Basins:23 "[t]he Permittee shall operate and maintain its engineering controls associated with these infrastructure facilities to ensure there is no discharge to surface waters from the Mine Site."24 MPCA has included the following condition in the Permit applicable to the FTB: "[d]irect discharge to surface waters from the FTB Seepage Containment System is prohibited. All water collected from the FTB Seepage Containment System must either be pumped back to the FTB or routed to the WWTS." 25 In addition, "[t]his permit does not authorize the direct discharge to surface waters from the High Concentration, Low-Concentration and Construction Mine Water Pipelines."26 For each of these areas, the Permit includes conditions that are intended to act as insurance for compliance with the stated prohibitions. Although permit condition 6.16.36 states that "[e]xcept for discharges from outfalls specifically authorized by this permit, overflows, discharges, spills, or other releases of wastewater or materials to the environment, whether intentional or not, are prohibited," in fact MPCA has not prohibited discharges to the groundwater in this Permit.	The permit includes specific authorized discharge points (SD002-SD011). It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters from the mine site and plant site. The permit language quoted in the comment ("other releases of wastewater or materials to the environment, whether intentional or not, are prohibited") directly contradicts the conclusion of the comment, that other discharges are not prohibited.	This comment raises a factual issue, but there is no reasonable basis for dispute. The comment quotes the permit language that directly contradicts the comment's conclusion. Therefore, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
703-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	27 Instead, MPCA has merely concluded that the "combination of controls and mitigation measures (such as engineering controls, wastewater treatment and water monitoring activities) that are part of the Project design" will meet the groundwater-protection requirement.28 For groundwater, these controls and mitigation measures included the "groundwater containment system" for the permanent Category 1 Stockpile and a geomembrane cover for that pile,29 and engineered low-permeability composite liner systems for the Category 2/3 and 4 Stockpiles and the Ore Surge pile, all with collected wastewater routed to the WWTS. MPCA also noted the plan to return the Category 2/3 and 4 waste rock to the mine pits, which will be flooded to control pollutants generated by oxidation.30 In the interim, wastewater will be treated.31 MPCA concluded that "[c]ollectively, the incorporation of these components into the project design at the Mine Site will minimize the release of pollutants from the Mine Site, which significantly contributes to the minimization of impacts from the proposed WWTS discharge at the Plant Site."32 It is unclear upon which basis the MPCA makes this conclusion, since the design of the containment systems have been called into serious question by DNR's consultants,33 and the final design of the containment systems is unknown.34	The MPCA relies on technical review of the permit application and plans submitted to determine if proposed systems will adequately minimize the potential degradation. The MPCA has reviewed the available information, including an engineering review, and concluded the permit conditions can be met and the engineering controls will function as designed. Although the comment questions the engineering conclusion reached by the MPCA, it does not provide a factual basis for disputing it. The comment cites the surface water antidegradation review, when in fact the groundwater nondegradation review addressed the issues regarding potential groundwater contamination raised by the commenter.	The comment raises a factual issue; however, no new information on this issue is identified that could be introduced at a hearing, so there is no reasonable basis underlying the disputed facts to support holding a hearing. *See Matter of Solid Waste Permit for the NSP Red Wing Ash Disposal Facility,* 421 N.W.2d 398, 404 (Minn. Ct. App. 1988) (hereafter "Red Wing"); In the Matter of Amendment No. 4 to Air Emission Facility Permit, 454 N.W.2d 427, 430 (Minn. 1990) (hereafter "Amendment No. 4") (holding that the petitioner must show evidence can be produced contrary to the proposed action) . In addition, the MPCA has adequately addressed the issue. Therefore, a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C). *Cf. In re City of Owatonna's NPDES/SDS Proposed Permit Reissuance for Discharge of Treated Wastewater* , 672 N.W.2d 921, 929 (Minn. Ct. App. 2004) (hereinafter "City of Owatonna") (holding "a genuine question concerning whether the MPCA adequately addressed the disputed fact issues" provides grounds for a hearing).
704	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Needless to say, if these activities and controls will not function as designed, MPCA lacks a reasonable basis for concluding that its permit conditions will be protective. MPCA cannot justify permitting inadequate systems by pointing to requirements in the Permit for the Applicant to do after-the-fact studies of these systems that may lead to their redesign35 because the standard for permit approval does not allow new facilities to be permitted that do not comply with requirements, except if there is a "schedule of compliance."36 For a new facility, a "schedule of compliance" should not be necessary and are not authorized.37	As noted in response to Comment 703-A, the MPCA relies on technical review. The MPCA concluded the permit conditions can be met and the WWTS will function as designed. Although the comment questions the engineering conclusion reached by the MPCA, it does not provide a factual basis for disputing it. The incorporation of adaptive management as a failsafe does not invalidate the requirements for compliance. Adaptive management is regularly used in complex environmental scenarios to ensure standards are met. In this case, the underlying requirement must be met; the adaptive management is intended to develop strategies to maintain compliance.	The comment raises a factual issue; however, no new information on this issue is identified, so there is no reasonable basis underlying the disputed facts. *See Red Wing; Amendment No. 4* . Therefore, a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C).

704-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Petitioners have examined the components intended to protect groundwater and have concluded that, as currently designed, the components will not function as designed to minimize contamination of the groundwater. This issue is compounded by the fact that the monitoring system is inadequately designed and will not identify problems if they do occur.38 Worse, no limits are included in the Permit for the groundwater, which is "monitor only."39 As a result, even if groundwater begins to show impacts because the activities and controls are failing, it is not a violation of the Permit. Although the nondegradation attachment to the Fact Sheet includes discussion of what would constitute degradation of the groundwater, no conditions in the Permit exist to make this determination enforceable.40 The lack of any enforceable condition constitutes a material deficiency in the Permit.	See response to Comment 703-A and 704 regarding the functionality of engineering controls. See responses to Comments 710 through 712-B regarding adequacy of groundwater monitoring. The permit requires an Annual Comprehensive Performance Evaluation Report (item 5.181.216), which must evaluate the effectiveness of each of the major engineering controls (i.e., seepage containment systems, stockpile liner systems, equalization basins) based on all relevant monitoring and performance data, and must identify any adaptive management needed to prevent impacts. The incorporation of adaptive management as a failsafe does not invalidate the requirements for compliance. Adaptive management is regularly used in complex environmental scenarios to ensure standards are met while allowing flexibility.	The comment states the commenter's opinion and contains interpretation of the requirements in the permit. Neither aspect is a disputed factual issue. The comment does not raise any specific new facts or a basis to dispute the MPCA's position. Because it does not raise a factual issue, a contested case hearing is inappropriate. Minn. R. 7000.1900, subp. 1(A), (B); *see Red Wing; Amendment No. 4* .
704-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	As the Applicant admits, polluted groundwater has the potential to reach certain surface waters in 30 to 35 years.41 Petitioners submitted the Permit and supporting documents to Dr. Tom Myers for review. Dr. Myers summarizes the issues, concluding that "[t]he NPDES/SDS permit for the PolyMet mine proposal should not be awarded because the application is based on overly optimistic design assumptions, modeling that does not consider flow path details near either the mine site or tailings impoundment, inaccurate analysis of pathways for contaminants to reach the rivers, and grossly insufficient proposed monitoring."42 Below, Petitioners describe the problems with the assumed efficacy of the mine pit management, waste rock systems, and seepage-collection systems proposed for the Category 1 Stockpile and the FTB. Petitioners demonstrate why it is not reasonable for MPCA to assume that these actions will be effective.	As described in responses to Comments 705 through 713, the MPCA already considered the information provided by Dr. Myers and reached a different conclusion.	The recent submission includes numerous assumptions that MDNR reviewed and disagreed with in the prior review. MPCA considered and supports DNR's position on this matter. As a result, there is not a reasonable basis underlying the alleged factual dispute and a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
705	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	A. The Mine Pit Lakes Will Cause Degradation of Groundwater. Applicant's proposal regarding management of the mine pit lakes will not avoid degradation to groundwater. Applicant proposes to dewater the West Pit during mine operations, and posits that during this time "groundwater will flow inwards towards the pit, thereby having no impact to groundwater quality during mining operations."43 After the mining operation, Applicant will accelerate the natural flooding of the pit with treated water and will treat and return the water as the West Pit fills "to manage the overall water quality of pit waters prior to groundwater outflow from the pit to the surficial aquifer."44 Applicant notes that, at about Mine Year 48, the West Pit will flow into the surficial groundwater flow path towards the Partridge River, but claims that the flooding of the West Pit will control water quality by reducing the oxidation time for the pit wall rock and that "contaminant constituent concentrations [will be at] long-term steady state concentrations."45 The East Pit and Central Pit will also be dewatered during mining operations, which Applicant claims will cause groundwater to flow inwards so that there is no impact to groundwater quality. After mining is completed, the East Pit and Central Pit will be backfilled and flooded. During flooding and approximately 14 years after flooding is complete, Applicant will recirculate and treat mine pit waters at the WWTS.46	This comment is predicated on what was submitted as new hydrogeologic modeling by the petitioners. Similar modeling was submitted by the petitioners during the EIS for which the DNR, through its third party consultant, completed a detailed review. The review specifically included certain model assumptions related to aquifer recharge, hydraulic conductivities, project engineering controls, and model boundaries and their effect on subsequent groundwater flow predictions. See FEIS Appendix A at 483; Comparison of Myers Flow/Transport Model with Agency EIS Models, Sept. 21, 2015. Given the differences in some of the assumptions for the alternative model, many of which DNR did not agree with, MDNR determined that the EIS modeling was sufficient and did not further consider the alternative model. MPCA has worked with MDNR in the review of the newly submitted modeling information and has determined that, in fact, it is not actually new information but rather a repackaging of information already addressed during the EIS process. The recent submission includes numerous assumptions that MDNR reviewed and disagreed with in the prior review. MPCA supports DNR's position on this matter. In addition, the comment addresses a potential discharge that is not authorized by the NPDES permit.	The recent submission includes numerous assumptions that MDNR reviewed and disagreed with in the prior review. MPCA considered and supports DNR's position on this matter. As a result, there is not a reasonable basis underlying the alleged factual dispute and a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).

706	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Applicant's proposal suffers from two unreasonable assumptions that will result in groundwater degradation: (1) the amount of contamination the waste rock will generate; and (2) the way contaminated groundwater will behave. In both circumstances, MPCA relied on the unreasonable assumptions to support issuing the Permit. MPCA should not rely on these assumptions for the reasons set forth below. First, Applicant relies on unreasonable assumptions regarding the contamination that will be generated by the waste rock. Dr. Ann Maest, a leading expert in geochemistry and water resources, reviewed Applicant's assumptions and concludes that: Incorrect assumptions about acid drainage and contaminant leaching have led PolyMet to underestimate the potential impact of mine water on the environment at and around the mine and plant sites. The assumptions include that once wastes go acidic, the pH will "recover." In addition, the repeated and seasonal contribution of secondary salts to waste and ore leaching has been ignored, and release rates and concentration caps rely on incorrect conceptual models. For example, if the measured pH values of Category 1 HCT leachate were used to estimate the concentration cap for nickel, maximum nickel concentrations would be approximately 10 times higher than predicted by the site water quality model. If the pH range between 6.0 and 7.0 is considered, the maximum measured nickel concentration is 120 mg/L, almost 10 times higher than the maximum concentration cap.47 Upon reviewing Dr. Maest's conclusions, MPCA cannot assume that the water coming from the mine pit lakes will not be a significant source of contamination to the groundwater. Dr. Glenn Miller, an expert on mine reclamation, concurs with Dr. Maest, noting that in general predictions of pit lake water quality underestimate the amount of sulfate that will be delivered to the pits.48 Dr. Miller notes that the wall rock in the pits, as well as the dewatered cone of depression, contains sulfides, which suggests that sulfate will be released as the pit lake fills.49 Second, Applicant's conclusion that groundwater pollution will not occur stems from unsupported assumptions about how contaminated groundwater will behave. Dr. Myers reviewed the information in the record and concluded that: ▯ Backfilling the East Pit with highly reactive waste creates a high concentration water in the pit that will increase the concentrations in dewatering flow that is not considered in the application. ▯ Backfilling the East Pit with highly reactive waste and then filling it with water creates a situation where pit water will likely flow into surrounding groundwater, at least temporarily, and contaminate it. ▯ Rapid fill of the West Pit will cause pit water to flow into surrounding groundwater, thereby degrading the groundwater. The application does not consider this groundwater degradation.50 Dr. Myers reaches these conclusions because As PolyMet attempts to fully saturate the backfilled waste, water levels could be higher than the surrounding groundwater for substantial periods. If this occurs, water (and contaminants) will flow into the groundwater. Fracture zones that intersect the pit could allow contaminants to escape the hydraulic control of the pit. PolyMet has not considered this source of groundwater contamination nor provided monitoring to document whether it occurs.51 Both issues are material because they undermine MPCA's conclusion that the "combination of controls and mitigation measures (such as engineering controls, wastewater treatment and water monitoring activities) that are part of the Project design" will meet the groundwater protection requirement.52 The issues are also material because, based on modeling performed by Dr. Myers: Waste water seeping from both the tailings impoundment and waste sites on the Mine Site will reach surface water, as shown by transport analysis. Contaminant plumes released from both mine site and plant site sources will reach long stretches of surface water. This includes waste from the tailings impoundment reaching the Embarrass River and from mine site sources reaching the Partridge River both to the north and south.53 As a result, MPCA should not issue the Permit until Applicant correctly identifies the levels of contamination that will likely be present in the mine pit lakes and how those levels change assumptions about the potential impact from the facility on groundwater and ultimately surface water. MPCA require this information, modify the Permit accordingly, and grant Petitioners a contested case hearing on the issue.	The subject of waste rock characterization for the purpose of predicting geochemical behavior is under MDNR jurisdiction for the Permit to Mine according to Minnesota Rule 6132.1000. The issues of the type and degree of waste characterization done and the practical ability to segregate high-sulfur waste rock during operations was thoroughly addressed in the EIS process. See FEIS Section 3.2.2.1.7 and Table 3.2-8. MPCA concurs with this analysis. Specifically, DNR determined that the number of waste rock samples were sufficient. Samples were pre-selected to be spatially dispersed across the deposit, included rock from each of the major lithologic units, and captured the range in metal and sulfide concentrations found in hundreds of borings. Rather than conducting an assessment of neutralization potential of the waste rock, MDNR assessed the acid-generating potential of the rock by directly measuring effluent from the multi-year humidity cell tests that were performed. Finally, MDNR determined that new technologies, such as high precision GPS, make waste segregation in the field more practical and that they will require confirmational sampling of the Category 1 waste rock stockpile to verify proper placement of waste rock materials. MPCA staff participated in the review of this issue during the EIS process and agrees with the conclusions. The comment provided no new information that would give the MPCA reason to dispute the EIS analysis and conclusion. Regarding groundwater modeling assumptions, see response to Comment 705.	This comment raises a factual issue, but, as explained above, these issues were raised and addressed during the EIS process, and there is no new information that constitutes a reasonable basis for dispute. *See Red Wing; Amendment No. 4* . Therefore, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
707	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	B. The Barrier Walls Surrounding the Tailings Basin and the Category 1 Stockpile Will Not Capture Nearly 100% of Mine-Impacted Surface Water and Groundwater. The barrier walls surrounding the FTB and Category 1 Stockpile will not, as assumed in the Permit, capture nearly 100% of mine-impacted groundwater and surface water. Generally, Minnesota law does not allow discharges to the unsaturated zone.54 Despite this prohibition, MPCA proposes allowing Applicant to discharge wastewater into the groundwater under the assumption that a secondary system will recapture the released pollutants. This "release and catch" system is the method that MPCA proposes to approve for both the seepage from the FTB and the Category 1 Stockpile, both of which will generate this seepage on a permanent basis.55 At both sites, the Permit would allow the discharge of contaminants to the groundwater on a permanent basis with the hope that the contaminants can be collected in a cutoff-trench seepage-collection system and later treated throughout the active mining phase until an unspecified time many decades into the future. Not incidentally, this method has been specifically rejected by the DNR, and permitting such a method would violate DNR's nonferrous mining regulations. Applicant modeled the seepage capture from the Category 1 Stockpile recovery system and has estimated that it will recover between 91% and 99% of the seepage from the waste rock.57 Similarly, Applicant has asserted that the seepage-collection system for the FTB will capture 90% of the seepage from the FTB, relying on a newer modeling exercise conducted by Barr Engineering (2015b).58 Based on these assumptions and Applicant's calculation of the potential level of pollutants in this seepage, Applicant posits that the impacts to groundwater (and eventually surface water) will be minimal.59 MPCA appears to have accepted these assumptions,60 despite the fact that the final design of these containment systems remains unknown.61 Petitioners' experts question these assumptions, however, as described below. Whether these assumptions are reasonable is material because, if the safeguards intended to recapture the seepage do not operate as designed, there is the potential for pollutants from the Category 1 Stockpile to reach the Partridge River, based on the modeling conducted by Dr. Myers.62 If the FTB seepage collection system does not operate as designed, there is the potential for pollutants to reach the Embarrass River.	The MPCA can, and has, issued NPDES/SDS permits prior to the completion of final plans and specifications. MODFLOW modeling specific to both the flotation tailings basin (FTB) seepage capture system and the Category 1 waste rock stockpile containment system was conducted during the EIS and provided reliable estimates of seepage capture. See FEIS at section 3-47, 5-7. Results from this modeling were used in conjunction with the overall GoldSim water quality model, which showed the predicted degree of capture would be sufficient to protect downgradient surface and ground water quality. Additionally, the design details in the permit application for the FTB seepage capture system (including the support drawings in Appendix B, to Vol. V of the application and referenced material in the Water Management Plan - Plant) and for the Category 1 waste rock stockpile containment system (including support drawings in Appendix B to Vol. II of the application and referenced material in the Water Management Plan - Mine) provide sufficient detail on how and where the capture systems will be constructed. The MPCA added language in parts 5.175.54 and 5.175.78 of the draft permit that specifically addresses the design and construction of the FTB and Category 1 containment systems by specifying the key components of the systems that are required, including cutoff wall permeability. In addition, the MPCA added language in parts 5.175.57 and 5.175.80 of the draft permit requiring a signed certification that the systems, as constructed, meet the design performance standards and the submittal of as-built drawings and QA/QC test results for the systems. These requirements provide assurance that the containment systems will be constructed as proposed and as modeled. The MPCA participated in the review of this issue during the EIS process and upon review of the permit application found no reason to disagree with the EIS analysis. The modifications to draft permit language are sufficient to adequately address the comment.	No new information is identified in the petition that provides a reasonable basis for the dispute. As a result, a contested case hearing would not allow introduction of information that would aid MPCA. *See Red Wing; Amendment No. 4* . The MPCA participated in the review of this issue during the EIS process and upon review of the permit application found no reason to disagree with the EIS analysis. The modifications to draft permit language are sufficient to adequately address the comment without a hearing. *Cf. City of Owatonna* . As a result, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).

707-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Based on the evaluation of experts, Petitioners submit that the Applicant's assumptions about the "release and catch" systems are not based on any sense of reality. The first element of unrealistic optimism concerns the levels of pollutants likely to be present in the seepage.64 Dr. Maest examined the waste rock characterization studies performed by Applicant.65 Dr. Maest concludes that levels of contaminants coming off the waste rock storage piles will likely exceed predicted levels.66 Based on her review of the data, Dr. Maest finds that the number of waste rock samples analyzed was too small to generate reliable data about the Category 1 waste rock, and assumptions about neutralization potential cannot be supported due to Applicant's failure to use industry-accepted methods for testing the waste rock.67 The limited mineralogic results that are available indicate that waste rock has nearly no ability to neutralize acidic leachate, should it develop in the stockpiles or the pit.68 Dr. Maest also notes that "[t]he consistent separation of Category 1 wastes from wastes and ore with higher sulfide content during operations will be difficult, if not impossible, leading to a greater potential for pollutants to be generated in the unlined Category 1 storage pile than Applicant assumes."69	The comment interprets the requirements of Minnesota's nonferrous reclamation rules (Minnesota Rules 6132) as it relates to project design. It falls under MDNR's Permit to Mine jurisdiction, not MPCA or Clean Water Act authorities.	The interpretation of the requirements is a legal issue rather than factual issue. Because it does not raise a factual issue and is outside the jurisdiction of the MPCA commissioner, a contested case hearing is inappropriate. Minn. R. 7000.1900, subp. 1(A), (B).
707-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Petitioner's experts universally criticized Applicant's recapture assumptions based on the proposed design of the systems. In his comments regarding the Final Environmental Impact Statement, Dr. David Chambers, an Engineer and Professional Geophysicist, opines that the quality and efficacy of a cutoff wall will depend on: (1) How well the cutoff wall can be grouted into the fractured bedrock to avoid contaminants moving under the wall in more permeable sediments; (2) How effective the collection system on the upstream side of the cutoff wall is at removing pressure on this barrier; and, (3) The permeability contrast between the cutoff wall and the adjacent sediments.70 But Dr. Chambers observes issues, such as: if the grouting is done incorrectly a "zone of relatively high permeability for contaminants to escape could be created"; and that the seepage-collection system for the Category 1 Stockpile may put "more hydraulic pressure" on the cutoff wall, meaning "more seepage through or under the barrier."71 These concerns are shared by Dr. Michael Malusis, a specialist in waste contaminant barriers. According to Dr. Malusis: Specifications generally call for a minimum depth of key into the lower confining unit to ensure an adequate seal that minimizes underseepage. Without a proper key, the assumption of perfect contact between the cutoff wall and the bedrock in the seepage model is probably a poor assumption that will overestimate the actual seepage capture. The permit should include a commitment to a minimum depth of key for the wall.72Malusis also notes that:Use of a cutoff wall with a maximum allowable k of 10-5 cm/s is not consistent with standard practice for vertical barriers used in long-term hydraulic control or geoenvironmental containment (i.e., pollution control) applications. The typical maximum k in these applications is 10-6 or 10-7 cm/s (e.g., Owaidat and Day 1998, McKnight and Owaidat 2001, Spaulding 2007, Ryan and Spaulding 2008), which is 10 to 100 times lower than proposed for this wall.73 Consultants hired by DNR to review Applicant's Permit to Mine Application concluded similarly, noting that "[i]t is our view that this should not be termed a 'wall.' A compacted soil hydraulic barrier should have a hydraulic conductivity of less than 10-7 cm/sec."74 None of these concerns with the efficacy of the containment systems have been resolved by modifications to the design, which has not yet been finalized.75	The commenter questions the validity of the assumed (i.e., modeled) capture rate and that impacts to groundwater will be minimal. These comments were also presented by the commenter during the EIS process (including those offered by the commenter's experts) and were adequately responded to in the FEIS. See RGU Consideration of Comments on the FEIS at 529. The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. Specific comments on the design of the system included in the petitioner's comments (such as keying the barrier into bedrock, the permeability of the barrier material and the efficiency of the collection system) were directly addressed in the EIS. The barrier's primary function is not to hold back the seepage, but instead, together with pumping from the collection system, to allow a hydraulic gradient reversal such that outward flow cannot occur. The MPCA added language in parts 5.175.54 and 5.175.78 of the draft permit that specifically addresses the design and construction of the FTB and Category 1 containment systems by specifying the key components of the systems that are required, including cutoff wall permeability and a requirement to key the cutoff wall into bedrock. These requirements further specify that the systems be constructed and operated so as to maintain an inward hydraulic gradient across the cutoff wall. The draft permit requires that 13 pairs of groundwater monitoring devices (wells and piezometers) at each of the systems be monitored on a monthly basis to ensure that the necessary inward gradient is being maintained. As described in response to Comment 711 and 711-A, if there is an inward hydraulic gradient, flow will not move out through the barrier. The draft permit further requires that the performance of the capture/containment systems and the adequacy of the monitoring network be assessed on an annual basis. As described above in response to Comments 705 through 707-A, the information provided by the commenter's experts regarding waste rock characterization and effectiveness of the barrier were considered in the EIS. For the reasons above, the agency correctly determined that the treatment would meet the standard assumed in the EIS. No new information is presented in the petitions, including the cited experts, to support a different conclusion and the issue was adequately addressed in the EIS.	This raises a factual issue, but there is no reasonable basis underlying the disputed fact. As described above at response to Comments 705 through 707-A, the information provided by the commenter's experts regarding waste rock characterization and effectiveness of the barrier were considered in the EIS. For the reasons above, the agency correctly determined that the treatment would meet the standard assumed in the EIS. The MPCA has added requirements in the permit to require construction consistent with the application. No new information is identified in the petitions, including the cited experts, to support a different conclusion and the issue was adequately addressed in the EIS and the permit. *See Red Wing; Amendment No. 4* . Therefore, a contested case would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *cf. City of Owatonna* .

707-C	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Finally, Dr. Maest also notes that mitigation measures for the Category 1 Stockpile are unlikely to prevent the movement of contaminants to mine site groundwater and surface water.76 Although MPCA included Permit conditions to ensure that the seepage trenches will be monitored, there is no assurance in the Application that the seepage trenches will be appropriately grouted or keyed into the bedrock or that the permeability head will be maintained. With regard to the FTB trench, there is no assurance that all of the compactable silt and peat layers, including legacy tailings from the LTV mining operation.77 It is not clear what construction technique will be used for the Category 1 Stockpile trench, as the Permit to Mine Application is equivocal.78 If the trenches are not properly grouted to competent bedrock or designed to maintain appropriate inward pressure, there is no assurance that the assumed levels of collection will be met and the systems will have to redesigned "on the fly" after the problems are discovered. In order to ensure MPCA's assumptions about the efficacy of the trenches are not unreasonable, MPCA must, at a minimum, include a term in the Permit specifically establishing the "key" to the bedrock for each seepage-collection trench. In addition, as Dr. Maest recommends, MPCA should require that a synthetic liner and segmented leachate-collection system be installed under the Category 1 Stockpile to minimize the release of contaminants to groundwater and help identify the location of leaks that do develop.79 The Applicant's own modeling demonstrates that water from the Category 1 Stockpile will be a major source of water contamination, rendering additional mitigation measures appropriate: Modeling indicates that capping of the stockpile will reduce the total flow and increase sulfate and metal concentrations, but will not significantly reduce the amount of sulfate and metals modeling indicates that the Category 1 Waste Rock Stockpile is a major source of sulfate and heavy metals to the West Pit Lake.80	Waste rock stockpile engineering and design is under the regulatory authority of the MDNR in the Permit to Mine. Minn. R. 6132.1100 subp. 6(B), (C). The MPCA's regulatory authority is to restrict discharges to protect water quality. As described above, the MPCA has concluded that the proposed design will adequately protect water quality. Waste rock stockpile design is based on the potential of the waste rock to generate acid and/or metal leachate as determined by long-term waste rock characterization testing. The adequacy of the Category 1 waste rock stockpile design was assessed in detail in the EIS, taking into account the predicted geochemical behavior of the rock and also including the consequence if higher sulfur waste rock was improperly placed in the stockpile. As identified in response to Comment 706 above, this included an assessment of the representativeness of geochemical samples and the issue regarding the practicality of segregating waste rock types based on sulfur content. The EIS concluded that the proposed engineering controls would be sufficient to control any water potentially affected by the waste rock. See FEIS at 5-7. The MPCA participated in the review of this issue during the EIS process and upon review of the permit application found no reason to disagree with the EIS analysis. The comment does not provide new information to dispute that conclusion. The MPCA did revise the permit regarding construction of the Category 1 stockpile groundwater containment system (part 5.175.78): "The Permittee shall construct the Category 1 Waste Rock Stockpile Groundwater Containment System to include a low permeability cutoff wall keyed into bedrock, a subgrade collection and sump system on the inward side of the cutoff wall, and pumping capable of removing collected water to the Equalization Basins for subsequent treatment at the WWTS. The cutoff wall shall be no less than two feet in thickness and have a maximum permeability of 1x10-5 cm/sec, or equivalent as approved by MPCA. The FTB Seepage Containment System shall be constructed and operated so as to maintain an inward hydraulic gradient across the cutoff wall." In addition, the monitoring surrounding the stockpile described in response to Comment 711 will ensure no seepage leaves the site.	The comment raises a factual issue; however, the consideration of alternatives was addressed adequately in the EIS and jurisdiction on stockpile design rests in the MDNR's Permit to Mine. To the extent this issue is relevant to the NPDES permit, no new information is identified in the petitions, including that from the cited experts, and the MPCA adequately considered the available information. Therefore, a contested case would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (B), (C); *see Red Wing; Amendment No. 4* .
707-D	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Dr. Maest also advises that the FTB should be lined with a geomembrane and leachate-collection system, and that alternative, state-of-the-art methods of tailings management should be considered, including removal of the LTVSMC tailings and the use of dry tailings deposition methods.81 This is reasonable because Applicant's reliance on the application of bentonite to the pond bottom following closure to reduce infiltration and seepage generation is without reasonable basis, as discussed below in Part X. Dr. Maest further suggests that improved techniques for desulfurization of the tailings should be explored.82 MPCA should modify the Permit to ensure that there is an adequate liner system under the Category 1 Stockpile and a liner should also be required (or "dry tailings" be required) at the FTB. In the alternative, MPCA should require Applicant to construct the cutoff wall with an adequate "key" to the bedrock. Petitioners request a contested case hearing on these issues.	Tailings basin design is primarily under the regulatory authority of the MDNR and the Permit to Mine. Minn. R. 6132.1100, subp. 6(B). Alternative tailings basin designs and locations were considered in the EIS process. See EIS at section 3.2.3. Incorporation of a geomembrane liner in the FTB design would require a greenfield site outside the boundaries of the existing tailings basin due to the significant geotechnical impracticalities of placing a geomembrane liner in the saturated and partially inundated cells 1E and 2E of the existing basin. The MDNR determined during the EIS scoping process that an alternative site had not been identified that would likely have significant environmental benefits over the proposed site and that an alternative site may not be feasible or achievable in the time frame of the project. See FEIS at section 3.2.3.3.1. The MPCA has determined that the proposed design will meet all water quality standards and the NPDES requirements under the Clean Water Act. Although not specifically delineated as an alternative in the EIS (section 3.2.3), the removal of the existing LTV tailings for the purpose of making available a location for dry deposition of tailings is not likely to be feasible, nor does it provide an environmental benefit. The removal of the existing tailings would necessitate an additional proposal for a new location for tailings disposal. The EIS process did consider the alternatives of dry stacking and thickened tailings technologies and determined that these technologies would not have significant environmental benefit over the proposed wet tailings method, primarily because a new tailings basin would be required. The MPCA determined that the alternative selected in the EIS will meet all water quality standards, and NPDES and antidegradation requirements.	The comment raises a factual issue; however, MPCA has concluded that the consideration of alternatives has been adequately addressed in the EIS and jurisdiction over tailings disposal lies in the MDNR's Permit to Mine. Minn. R. 7000.1900, subp. 1(B). Additionally, no new information is identified in the petitions such that a hearing is merited. *See Red Wing; Amendment No. 4* . Because no reasonable basis is presented for a dispute, a contested case would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).

708	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	C. The Stockpile Liners and Collection Systems Will Not Adequately Capture Contamination Generated By The Stored Waste Rock In The Category 2/3 and 4 Stockpiles. The issue of whether or not the Category 2/3 and 4 Stockpiles' liners and collection systems will adequately capture contamination is material to the MPCA's conclusion that the degradation of the groundwater will be controlled. As an initial comment, Petitioners note that although Applicant discusses the use of liners for the stockpiles in the Application, the Permit does not require their use. The Permit states: 6.10.22 Category 2/3 Waste Rock Stockpile, Category 4 Waste Rock Stockpile, OSLA, Ore Surge Pile, and Equalization Basins 6.10.23 The Permittee shall operate and maintain its engineering controls associated with these infrastructure facilities to ensure there is no discharge to surface waters from the Mine Site. These engineering controls may include, among other things, liner systems, sumps, underdrains (if used), ponds, pumps, and pipelines.83 The use of the phrase "may include" with regard to the listed features renders these features optional for the permittee. As a result, the public lacks any assurance that the liners and appurtenant systems will be installed at all. The permittee could simply select something else.	The draft permit clearly anticipated installation of liners. See Draft Permit at 4 (describing liner), 6.5.20 (requiring samples from liners), 6.10.73 (evaluating liners). The MPCA added permit language that will require the Category 2/3 and Category 4 liner systems to meet the level of containment identified in the application. The permit in parts 5.175.87 and 5.175.88 requires the Permittee to construct the Category 2/3 and Category 4 stockpile liner systems to the permeability specifications identified in the application (10E-5 cm/sec for the Category 2/3 stockpile and 10E-6 cm/s for the Category 4 stockpile). In addition, language has been added to the draft permit in part 5.175.89 requiring the submittal of as-built drawings and QA/QC test results for the liner systems sufficient to document that the required designs have been achieved.	This raises a factual issue, but a contested case hearing would not aid the commissioner. No new information on this issue is identified that would warrant a contested case hearing. *See Red Wing; Amendment No. 4* . The modifications to draft permit requirements adequately address the comment without a hearing. Minn. R. 7000.1900, subp. 1(C).
708-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The Category 2/3 and 4 Stockpiles are where Applicant intends to store rock that is the most likely to become reactive.84 Although the Category 2/3 and 4 Stockplies are "temporary," the material in the piles is highly reactive and will form acid and leach-elevated metal concentrations during the time that the waste rock will be temporarily stored on the surface85 (up to 11 to 21 years).86 Dr. Malusis has noted that, although Applicant has portrayed the liner for the Category 2/3 Stockpile as being the equivalent of the liners used for modern heap leach facilities, it does not meet that standard.87 A maximum k of 10-6 cm/s is recommended for the compacted soil component of heap leach pad liners (for example, see Lupo, 2008), but the Category 2/3 liner only has a specified maximum hydraulic conductivity of 10-5 cm/s.88 Dr. Malusis, therefore, recommends that MPCA require a maximum k of 10-6 cm/s for both the Category 2/3 and 4 liners, consistent with the standard of practice for heap leach pads.89	The MPCA added permit language that will require the Category 2/3 and Category 4 liner systems to meet the level of containment identified in the application. See response to Comment 708. The MPCA does not dispute that the proposed liner is not equivalent to a heap leach liner. Given the different purpose and material characteristics of the proposed waste rock stockpiles, design standards appropriate for leach pad liners for heap leaching facilities are not appropriate for the category 2/3 and category 4 stockpiles. In contrast to a waste rock stockpile, heap leaching involves ore grade material, is designed to maximize leaching to extract the commodity of interest, and introduces a leaching solution such as sodium cyanide or sulfuric acid to the stockpile. Those factors increase the risk of a release and justify the more protective liner for the heap leach facility.	This comment raises a factual dispute regarding the type of liner needed. The MPCA modified permit language to expressly require a liner, which adequately addresses the comment that a Category 2/3 liner be required. *Cf. City of Owatonna* . No new information is contained in the 2018 Malusis report on this issue beyond what was in the author's 2014 report submitted with comments on the SDEIS that would warrant a contested case hearing. The MPCA considered this information and determined there is not a reasonable basis underlying the dispute, because the type of liner referenced in the comment will be adequately protective as shown by the modeling conducted as part of the EIS. Therefore, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
708-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The efficacy of the liner system installed for the Stockpiles and its proper construction is material because, based on the modeling prepared by Dr. Myers, releases from these locations may not be caught by the monitoring system (as described in Part VIII) and have the potential to impact a significant quantity of groundwater.90 Although the Permit specifies that, "[i]f the Permittee discovers the sump systems at the Category 2/3 Waste Rock Stockpile, Category 4 Waste Rock Stockpile, or Ore Surge Pile has any leakage, the Permittee shall capture the leakage and route it to the WWTS,"91 this requirement will not create a "magic wand" for Applicant to recapture leakage from the sumps, or anywhere else. As Dr. Myers notes, any releases from this site will be very difficult to remediate and will result in groundwater and surface water contamination.92 The MPCA should modify the Permit to require a better liner for the Category 2/3 Stockpile so that it is equivalent to the Category 4 Stockpile. If this modification is not made, Petitioners request a contested case hearing on this issue.	The draft permit is written with the requirement that excessive seepage is not released. See, e.g., Permit at 5.175.90. The stockpile liner systems are designed to capture the vast majority of any stockpile leachate at sumps, and the permit requires treatment of this captured leachate at the WWTS. The MPCA has considered the effectiveness of the requirements and determined it has adequate authority to enforce all permit conditions on this issue. In addition, the draft permit does require an annual assessment of monitoring data specifically as it relates to the performance of engineering controls and the potential need for adaptive management and/or contingency actions. Regarding the appropriateness of liner types, see response to Comment 708-A.	The comment does not raise a factual issue, but rather the issue of the legal enforceability of permit language. The MPCA has adequately addressed this issue through permit requirements. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).

709	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	VIII. THE GROUNDWATER AND SURFACE WATER MONITORING SYSTEM IS INADEQUATE TO DETECT ISSUES AT THE MINE SITE OR THE PLANT SITE SUCH THAT CORRECTIVE ACTIONS CAN BE TAKEN IN A MEANINGFUL TIME PERIOD. The Permit fails to require Applicant to provide an appropriate monitoring system; the monitoring system cannot adequately detect issues at either the Mine Site or the Plant Site such that corrective actions can be taken in a meaningful period of time. MPCA is required to establish appropriate monitoring and reporting requirements to ensure compliance with permitting limitations.93 These requirements must include "any. . .measurement needed to determine compliance with a permit condition."94 As required by applicable law95 and proposed in the Application,96 the Permit requires Applicant to construct and operate a monitoring system as a necessary safeguard to protect groundwater and surface water from unpermitted contamination.97 MPCA relies on the monitoring system to ensure the containment system's 100% effectiveness.98 And the Permit assumes the monitoring plan will detect leaks before significant impacts to groundwater and surface water occur.99 Although MPCA intends the monitoring system set forth in the Permit to detect a leak if a leak has occurred at the Mine Site or Plant Site, for the reasons stated below Petitioners submit the design is inadequate. Thus, the Permit fails to establish an "appropriate monitoring" plan that will detect leaks. Because the design is inadequate, Petitioners request that MPCA require Applicant to create an adequate monitoring system before issuing the Permit. If MPCA does not require Applicant to undertake this work, Petitioners request a contested case hearing on this issue, as the monitoring system's adequacy constitutes a contested issue of material fact with regard to whether the Application satisfies the requirements of section 7001.1080.	This statement summarizes what will be said in more detail in following statements. See the MPCA's detailed responses to comments 710 through 712-B.	The comment does not raise a factual issue, but rather summarizes the detailed issues that follow. See responses to Comments 710 through 712-B for supporting rationale.
710	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	A. Applicant Failed to Describe How It Selected the Location of the Monitoring Wells. In the Application, Applicant failed to describe how it selected the location of the monitoring wells proposed in the Permit.100 At Petitioners' behest, Dr. Tom Myers, an expert in hydrologic monitoring systems, reviewed the Application to assess Applicant's monitoring strategy. Dr. Myers' first observation is that Applicant did not use the steps necessary to create an adequate monitoring plan when Applicant suggested the placement of the monitoring wells.101 Dr. Myers indicates that, while "[t]here is no simple, uniform boilerplate format or guideline for developing a groundwater monitoring plan . . . . monitoring wells should be placed where contaminant plumes are most likely to pass, in order to be effective."102 Thus, to assess the proper placement of monitoring wells, Dr. Myers posits that four steps are "necessary for the establishment of an adequate monitoring plan."103 Specifically: 1. Identify the groundwater dependent ecosystems and wells that should be protected. Determine what is necessary to protect them. 2. Develop a localized conceptual flow model (CFM) that describes the hydrologic system that supports each groundwater dependent ecosystem and water right. This would be more detailed than a CFM used for a large region because broad-scale flows do not describe small features well. For example, some springs may be perched and therefore affected only by nearby local contaminations but larger sinks such as the Partridge and Embarrass Rivers could be supported by groundwater flow from much further away. 3. Implement the more refined CFM to estimate the detailed pathway between the potential sources and sinks. Because the sources could be a large area, such as the entire area beneath the Category 1 waste rock stockpile, the pathways could be defined as an envelope of paths. This may require numerical modeling or data collection to estimate the paths. 4. Determine the type and location of monitoring that would allow the prediction of changes. For water quality, this means determining the depths to screen the well. Understanding uncertainty should inform these decisions, with more monitoring required where pathways are difficult to estimate.104 Dr. Myers conducted detailed modeling using these four steps and concludes that, because Applicant failed to develop a CFM, "contaminant plumes would miss much of the proposed monitoring."105 The reasons contaminant plumes would miss the proposed monitoring wells is discussed in detail in Parts VIII.B and VIII.C. Dr. Myers opines that "[t]here was obviously no consideration given to dispersion of the contaminants or the advective path other than that the general direction was north or south" and, therefore, "[c]ontaminant plumes could easily pass between the point of compliance wells."106 Because there is a substantial chance that the proposed monitoring system will fail to locate a leak, the Permit proposes an inappropriate monitoring system for the NorthMet Mine Project. Petitioners, therefore, request that Applicant implement Dr. Myers' recommendations listed above and that MPCA require Applicant to create an appropriate monitoring system before approving the Permit. If MPCA does not require Applicant to reassess the location of the monitoring wells, Petitioners request that MPCA grant a contested case hearing on this issue.	The comment criticizes the permit applicant for not explaining the basis for the proposed monitoring, but there is no requirement for the application to contain such information. The MPCA included the basis for wells in the fact sheet, which is referenced in the comments. The MPCA's approach was based on its own expertise and experience in developing permitting requirements, rather than the specific method suggested by Dr. Myers. In its own process, the MPCA assessed the location of each individual well as dictated by the purpose of each well and how each well fit into the overall monitoring well network. This approach was coupled with the incorporation of existing monitoring wells (with a record of baseline water quality) and practical considerations such as access and potential disturbance to wetlands. The well network in the permit was developed to meet multiple goals, which included goals beyond the goal addressed in the comments. There is no legal obligation for the MPCA to use a particular set of steps to determine the monitoring needed, and the process proposed in the comment does not necessarily fulfill the multiple goals of the monitoring network. In general, monitoring wells were installed with the primary goals of: (1) monitoring the performance of engineering infrastructure, (2) serving as indicators for the early detection of potential project impacts, and (3) determining compliance at downgradient locations closer to the property boundary. The monitoring well network required by the draft permit is robust and accomplishes these multiple goals, as described in more detail in response to Comments 711 through 712B. As described more specifically in response to Comment 711, the external review appears to misunderstand the purpose of various wells, and that misunderstanding led to criticism of the monitoring network's effectiveness. In addition, the draft permit requires an annual assessment of the suitability of the monitoring network, and requires the proposal of additional/alternative monitoring locations in the event the original network is not sufficient, based on the ongoing collection of data (including flow direction and groundwater quality). If the MPCA determines in the future that the monitoring well network is insufficient, the agency has authority under Minnesota Rule part 7001.0170 to modify the permit, and authority under part 7001.0150 to require sufficient monitoring to determine compliance.	This comment raises a policy issue regarding the method to determine monitoring requirements. Therefore, it does not meet the criteria for a contested case hearing. Minn. R. 7000.1900, subp. 1(A). Furthermore, there is not a reasonable basis underlying any factual issue such that a contested case hearing would aid the commissioner. Minn. R. 7000.1900, subp. 1(C). The MPCA has adequately addressed the facts raised on this issue and a contested case hearing would not aid the Commissioner. *Cf. City of Owatonna* .

711	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	B. Applicant Failed to Propose an Appropriate Monitoring Plan at the Mine Site. Applicant's proposed monitoring plan at the Mine Site is unlikely to detect contamination into groundwater and surface water if a leak occurs. In his attached report, Dr. Myers models the pathway contaminant plumes would take if the mine water collection systems fail.107 Dr. Myers opines that, based on his model, "the proposed monitoring plans are insufficient because the wells are spaced too far apart to provide confidence that contaminant plumes would not pass through the monitoring well network.108	The comment appears to misunderstand the purpose and function of the wells surrounding the Category 1 stockpile. The paired groundwater monitoring network at the Category 1 seepage management system consist of 13 pairs of piezometers or monitoring wells, one of the pair located just inward of the hydraulic barrier and one just outward of the barrier. The primary purpose of the paired devices is to monitor for the presence and maintenance of an inward hydraulic gradient across the barrier, which is accomplished by simultaneous measuring of the water table elevation of the two devices. The consistent presence of an inward gradient across the barrier is essential for the proper functioning of the containment system. Water quality monitoring from the paired wells, in which a sample is taken for water chemistry, is only a secondary purpose of these wells. As opposed to identifying a potential pinhole leak in a liner, for example, which could have a fairly narrow plume and be missed by spaced wells at the edge of the stockpile, verifying the direction of hydraulic gradient is not nearly as dependent on a dense array of paired monitoring devices. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the capture system. Since the primary purpose of this network is to measure hydraulic gradient and not water chemistry, the proposed locations and spacing are appropriate and the concern in the comment is not applicable. Furthermore, the draft permit requires annual assessment of the engineering controls and an assessment on the suitability of the in-place monitoring network for that purpose. The comment does not provide a basis to dispute that the wells are sufficient to evaluate the inward gradient.	This raises a factual issue; however, the comment does not provide a reasonable basis for the dispute and therefore contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C). In addition, no specific new information is identified and the MPCA has adequately addressed the facts raised on this issue. *See Red Wing; Amendment No. 4* .
711-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	One specific example is the monitoring system around the Category 1 stockpile. The monitoring wells are spaced in close proximity to the seepage containment system and, as a result, the monitoring wells "would likely detect contaminants only if the leak or bypass of the containment system is just upgradient of the well."109 Dr. Myers' modeling shows similar spacing issues through the placement of the groundwater monitoring wells around the Mine Site.110 As a result, Dr. Myers' analysis shows the monitoring wells are simply spaced too widely to detect contaminant plumes from the mine operations.111 And modeling demonstrates that a number of mine-site contaminant could evade detection from the monitoring system altogether.112	The draft permit provides for a monitoring program to assess the performance of engineering controls as well as to monitor the overall environmental effect of the project. The monitoring program includes monitoring of flows and water quality from various collection sumps and ponds in conjunction with the numerous proposed and existing monitoring wells. The permit does not rely solely on the downgradient well network to evaluate the performance of those controls; it also relies on internal waste stream (WS station) monitoring of flows and chemistry and visual inspection of the controls. The proposed well network includes monitoring of both shallow and deeper portions of the surficial aquifer and of the bedrock aquifer as well as shallow and deep groundwater monitoring wells. Together, this monitoring is intended to help assess if potential leakage from the controls is having a detectable effect on groundwater. The MPCA is requiring this combination of monitoring to assess the environmental performance of engineering controls, including liner systems. The Annual Comprehensive Performance Report required by the draft permit specifically requires that the effectiveness of each of the major engineering controls (i.e., seepage containment systems, stockpile liner systems, equalization basins) be evaluated based on all relevant monitoring and performance data. In addition, the draft permit requires an annual assessment of the suitability of the monitoring program, and requires the proposal of additional/alternative monitoring locations in the event the original program is not sufficient, based on the ongoing collection of data (including flow rates, flow direction and water quality).	This raises a factual issue; however, there is no reasonable basis underlying the disputed issue. Minn. R. 7000.1900, subp. 1(C). The MPCA has adequately addressed the facts presented. *Cf. City of Owatonna* . Therefore, a contested case hearing would not aid the Commissioner.

711-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Dr. Myers' modeling also shows that surface-water monitoring will fail to detect whether the Mine Site plumes reach surface water, a very significant risk because "there are various potential groundwater pathways for contamination to reach surface water."113 Dr. Myers notes that the location of the surface-water monitoring wells will fail to isolate the location of leaks.114 For example, if SW002 detected contaminants, the leak could be coming from the Category 1 stockpile, the East Pit, the Central Pit, or the Northshore Mine.115 In situations like this, surface water monitoring wells should be placed such that they can detect where contaminants would discharge to surface water. For these reasons, the Mine Site monitoring plan is unlikely to detect contaminants once a leak occurs. Thus, the Permit fails to establish "appropriate monitoring . . . needed to determine compliance with a permit condition"117 and Petitioners request that MPCA require Applicant to create an adequate monitoring system before issuing the Permit. If MPCA does not require Applicant to undertake this work, Petitioners request a contested case hearing on this issue.	The primary purpose of the surface water monitoring requirements in the draft permit is to assess the overall effect that the project may have on downstream water quality and to ensure that unacceptable impacts are not occurring or will be likely to occur. Its primary intent is not to assess the performance of individual features or engineering controls of the project (the various groundwater and waste stream monitoring requirements are better suited to that). Surface water monitoring stations are generally located upstream and downstream of the two main project areas (i.e., Mine Site and Plant Site) and downstream of WWTS discharge points. The selected locations generally have a long monitoring history such that pre-operational baseline conditions can be established and any changes or trends during operation can be identified. Although the proposed surface water stations may not be able to discern the effect from an individual single-source plume, they are suitable to assess the overall impacts of the project.	This is a factual issue; however, the MPCA does not dispute that surface water monitoring will not identify the specific source of pollution. Minn. R. 7000.1900, subp. 1(A). To the extent there is a dispute over the ability to detect pollutants reaching surface water, no specific new information is identified, and there is no reasonable basis for the dispute, so a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
712	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	C. Applicant Failed to Propose an Appropriate Monitoring Plan at the Plant Site. Applicant's proposed monitoring plan at the Plant Site is similarly unlikely to detect contamination into groundwater and surface water if a leak occurs in the engineering controls.118 Dr. Myers models the various pathways a contaminant plume would take if the seepage-collection system at the Plant Site fails. Dr. Myers concludes that: [Monitoring wells] will show a decrease in concentration due to seepage capture, but they will not show leaks with certainty because they are spaced too far apart. Monitoring wells located midway between the impoundment and the river show contaminants reaching the wells, but do not begin responding for 20 or more years. This shows they would not be good indicators of a leak. Simulated plumes from leaks placed within the simulated tailings basin could miss the monitoring wells. This is because the width of the plumes is less than the spacing of the monitoring well.119	Data from the existing monitoring wells downgradient of the tailings basin indicate that monitoring wells GW-009 and GW-016 do intercept the northwest and west plumes from the tailings basin respectively, as indicated by existing elevated concentrations of key indicator constituents. These data demonstrate that the monitoring network is capable of detecting potential impacts from operation of the flotation tailings basin, contrary to the claim in the comment.	This comment raises a factual question; however, there is not a reasonable basis underlying the disputed facts, and therefore a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C).
712-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The modeling indicates that, for the prompt and accurate detection of water contamination, Applicant needs to place more wells around the Plant Site. For instance, Dr. Myers notes that "[t]here should be more compliance wells along the center of the simulated plumes to increase the chances of detecting plumes."120 Furthermore, "[t]he variable slopes in the cumulative load curve, both for with and without the cutoff wall, shows the need for at least four surface water monitoring points along the river, at around mile point 6, 8, 10, and 13."	See response to Comment 711-B.	See response to Comment 711-B.

712-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The modeling also shows that the wells need to be placed more effectively. For example, Dr. Myers says "[p]roposed monitoring wells on the edge of area between the tailings and the Embarrass River are too far west and east to monitor most plumes emanating from either the entire tailings impoundment or from specific leaks within the impoundment."122 Because these contaminant plumes move slowly, this monitoring "must continue for hundreds of years after closure, even if the wells show little contamination at closure." For these reasons, the Plant Site monitoring plan is unlikely to detect contaminants once a leak occurs. Thus, the Permit fails to establish "appropriate monitoring . . . needed to determine compliance with a permit condition"124 and Petitioners request that MPCA require Applicant to create an adequate monitoring system before issuing the Permit. If MPCA does not require Applicant to undertake this work, Petitioners request a contested case hearing on this issue.	The comment appears to misunderstand the purpose and function of the wells surrounding the flotation tailings basin. The paired groundwater monitoring network at the flotation tailings basin seepage management system consist of 12 pairs of piezometers or monitoring wells, one of the pair located just inward of the hydraulic barrier and one just outward of the barrier. The primary purpose of the paired devices is to monitor for the presence and maintenance of an inward hydraulic gradient across the barrier which is accomplished by simultaneous measuring of the water table elevation of the two devices. The consistent presence of an inward gradient across the barrier is essential for the proper functioning of the containment system. Water quality monitoring from the paired wells, in which a sample is taken for water chemistry, is only a secondary purpose of these wells. As opposed to identifying a potential pinhole leak in a liner, for example, which could have a fairly narrow plume and be missed by spaced wells at the edge of the stockpile, verifying the direction of hydraulic gradient is not nearly as dependent on a dense array of paired monitoring devices. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the basin. Since the primary purpose of this network is to measure hydraulic gradient and not water chemistry, the proposed locations and spacing are appropriate and the concern in the comment is not applicable. Furthermore, the draft permit requires annual assessment of the engineering controls and an assessment on the suitability of the in-place monitoring network for that purpose. The comment does not provide a basis to dispute that the wells are sufficient to evaluate the inward gradient.	This raises a factual issue; however, the comment does not provide a reasonable basis for the dispute and therefore contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C). In addition, no specific new information is identified and the MPCA has adequately addressed the facts raised on this issue. *See Red Wing; Amendment No. 4; cf. City of Owatonna* .
713	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	IX. THE PERMIT FAILS TO ACCURATELY PROJECT THE QUALITY AND QUANTITY OF WATER THAT WILL BE GENERATED BY THE MINING OPERATION SUCH THAT THE WWTS AS CURRENTLY DESIGNED CAN TREAT THE WATER PRIOR TO DISCHARGE. Applicant fails to accurately project the quality and quantity of water that the mining operation will generate such that the WWTS, as currently designed, can treat the water prior to discharge. Applicant's inaccurate projections affect both the sizing of the WWTS, as well as the ability of the WWTS to clean the water to the standards set forth in the Permit. In order for MPCA to grant a NPDES/SDS permit, Applicant must show that it can: at all times properly operate and maintain the facilities and systems of treatment and control and the appurtenances related to them which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.125 Additionally, Applicant must "install and maintain appropriate backup or auxiliary facilities if they are necessary to achieve compliance with the conditions of the permit."126 For the reasons set forth in detail below, Applicant has failed to show either that the WWTS will "achieve compliance with the conditions of the permit," that the WWTS will perform "effective[ly]," or that Applicant has "appropriate backup . . . facilities" necessary to achieve Permit compliance.127 In light of these inadequacies, Petitioners request that MPCA require Applicant to make modifications to the proposed WWTS consistent with realistic projections before issuing the Permit. Petitioners request a contested case hearing on this issue, as the WWTS's effectiveness constitutes a contested issue of material fact with regard to whether the Application satisfies the requirements of Minn. R. 7001.0150.	This statement summarizes what will be said in more detail in following statements. See responses to Comments 714 through 715-B.	This statement summarizes what will be said in more detail in following statements. See responses to Comments 714 through 715-B.

714	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	A. WWTS Size Applicant fails to project an adequate size for the WWTS.128 In order to ensure the WWTS performs effectively, MPCA must understand "the water flow through the facility with a water balance" including "approximate average flows at intake and discharge points and between units, including treatment units."129 Such information not only ensures the WWTS will operate properly,130 but is also necessary for the proper calculation of non-TBEL effluent limitations.131 Here, the WWTS will not perform effectively because Applicant underestimates the amount of water that will enter the WWTS and, therefore, the size of the WWTS is likely inadequate for the volume of water.132 In particular, it is imperative Applicant base the WWTS size on accurate dewatering water projections, as dewatering water is "a primary source of water for . . . the treatment facilities."133 Dewatering water includes the groundwater pumped from pit seepage, as well as accumulated runoff in the Stockpiles.134 In 2017, Applicant submitted an updated Water Management Plan – Mine.135 Applicant predicted mine dewatering rates as follows: The East Pit would have the highest inflows due to it intersecting the Virginia Formation. . . . [T]otal inflow to the East Pit in year 1 would average 205 gpm and range as high as 252 gpm (the 90th percentile prediction using the GoldSim model), and during year 11 and 20 would average and range to 378 and 863 gpm and to 448 and 1096 gpm, respectively. Dewatering rates at the West and Central Pits would be lower because, according to PolyMet, the bedrock conductivity is much smaller.136 Contrary to Applicant's statements, the dewatering inflow rates to the WWTS are highly uncertain.137 Applicant's "estimates are based on [a] limited understanding of the hydrogeology of the bedrock at the site, especially the hydrologic properties of the bedrock which control the inflow rates to the pit." In fact, Applicant's own expert report details many ways the dewatering estimates could be too low, including failure to consider the occurrence of unplanned fractures.138 Petitioners asked Dr. Myers to separately evaluate the dewatering rates. Applying his model, Dr. Myers predicts "overall dewatering rates would be significantly higher" than Applicant's projections.139 Dr. Myers contends his model provides "a more realistic estimate for the potential range of inflows."140 Dr. Myers' "dewatering rates are higher because much more groundwater needs to be dewatered in light of calibrated bedrock conductivity being higher than that used by PolyMet and the recharge rate is twice that used by PolyMet."141 Dr. Myers also opines that Applicant failed to "estimate the relative proportions of water entering through different layers or elevations in the pit, which could result in different water quality due to flow through different formations."	The issues related to mine pit dewatering rates were thoroughly addressed in the EIS, including the specific issues raised in this comment regarding efficacy of the WWTS. See RGU Consideration of Comments on the FEIS, Exhibit A at 485. The MPCA reviewed the EIS and has not received information causing it to disagree with the EIS conclusions. The volume and chemistry of pit inflows was specifically considered and the GoldSim modeling conducted for the EIS considered a reasonable range of flows and water quality. The MPCA reviewed this information and concurred it was reasonable. If the flows are higher than expected, fractures can be grouted to reduce pit inflow and/or the WWTS could be expanded to handle higher flow or provide additional treatment. The flows are anticipated to increase over time, and there is sufficient WWTS expansion capacity available to handle these higher flow rates if they were to occur. The comment does not provide facts refuting the feasibility of the approach.	This raises a factual issue; however, no specific new information is identified, including that from the cited experts, making a contested case hearing unnecessary. *See Red Wing; Amendment No. 4* . In addition, the MPCA has adequately addressed the factual issue and there is no reasonable basis underlying the dispute. Minn. R. 7000.1900, subp. 1(C); *cf. City of Owatonna* . Therefore, a contested case hearing would not aid the Commissioner.
714-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Applicant's projections also fail to take into account the need to manage groundwater dewatered to lower the water table beneath the bottom of the sumps and ponds.143 Applicant's Water Management Plan – Mine suggests there are several methods for lowering the water table to avoid "pore pressures on the liner, but has not settled on a final design."144 Dr. Myers indicates that Applicant's groundwater analysis is insufficient "to know precisely the depth to groundwater near the ponds and sumps" and, as such, Applicant has not estimated the additional pumping that may be required.145 Dr. Myers opines: The rate of dewatering to lower the water table beneath the stockpiles could vary seasonally, with substantial amounts of water needed to be dewatered during wet years. This water would be added to the inflow to the WWTS. If the rates are high enough, the design flow rate to the WWTS could be exceeded. [Applicant] presented no analysis of the extra water; therefore, the permit should not be issued without additional analysis and assurance that extra flow would not exceed the WWTS capacity.146 For these reasons, dewatering water will likely exceed the amount Applicant predicted, which calls into question whether the WWTS is the proper size. Consequently, Applicant has failed to show that the WWTS will perform effectively and "achieve compliance with the conditions of the permit."147 Petitioners request that MPCA require Applicant to show the WWTS is properly sized and will perform effectively before issuing the Permit. Petitioners request a contested case hearing on this issue.	The issues related to the management of groundwater from under the stockpile liner systems were addressed in the EIS. See FEIS Section 5.2.2.3.2 at 5-120. The MPCA reviewed the EIS and has not received information causing it to disagree with the EIS conclusions. This water is collected and treated as mine water - volumes are expected to be small, especially relative to other mine site flows and be similar to natural groundwater in quality, so it would have little influence on the sizing or performance of the WWTS. If the flows are higher than expected, the WWTS could be expanded to handle higher flow.	This raises a factual issue; however, no specific new information is identified, including that from the cited experts, making a contested case hearing unnecessary. *See Red Wing; Amendment No. 4* . The MPCA has adequately addressed the factual issue, and there is no reasonable basis for dispute. Minn. R. 7000.1900, subp. 1(C); *Cf. City of Owatonna* . Therefore, a contested case hearing would not aid the Commissioner.
715	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	B. Water Quality In addition to inadequately projecting the amount of dewatering water from the system, Applicant also underestimates the ability of the WWTS to meet the water quality standards set forth in the Permit.148 First, as set forth in Part VIII.A, Applicant likely underestimates the amount of dewatering water the WWTS must treat and, therefore, the "[d]ewatering rates . . . will likely exceed the [WWTS] capacity to treat water.149 If the Permit does not require Applicant to size the WWTS based on accurate projections, water quality will suffer the consequences.	The issues related to the volume and quality of wastewater from the various sources at the mine site, including the back-filled East Pit, were thoroughly addressed in the EIS. The GoldSim modeling conducted for the EIS considered a range of flows and concentrations for this water, including groundwater inflows. See FEIS at 5.2.2.2.1. The MPCA reviewed the EIS and has not received information causing it to disagree with the EIS conclusions. If the flows are higher than expected, the WWTS could be expanded to handle the higher flow or treat higher concentrations. For the flows from the backfilled East Pit in particular, these flows will not be encountered until the later years of the project (beyond mine year 10); thus, there will be sufficient time to assess actual inflow rates to the East Pit prior to the need to collect and treat that water.	This raises a factual issue; however, no specific new information is identified, including that from the cited experts, making a contested case hearing unnecessary. *See Red Wing; Amendment No. 4* . The MPCA has adequately addressed the factual issue, and there is no reasonable basis for dispute. Minn. R. 7000.1900, subp. 1(C); Cf. City of Owatonna. Therefore, a contested case hearing would not aid the Commissioner.

715-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Should the NorthMet Mine Project see an increase in dewatering water that the WWTS cannot handle, Applicant has failed to show, and the Permit has failed to address, how it would handle the excess dewatering water.151 One option is that Applicant will be required to use "dewatering techniques such as dedicated dewatering wells" to handle the excess water.152 The consequence is that other dewatering techniques will likely result in discharge into the environment;153 a blatant violation of the Permit154 and a violation of the zero-discharge requirement in 40 C.F.R. § 440.104(b)(1).155	The issues related to the volume and quality of wastewater generated from the mining operation were thoroughly addressed in the EIS. The GoldSim modeling conducted for the EIS considered a range of flows and concentrations for this water. The MPCA reviewed the EIS and has not received information causing it to disagree with the EIS conclusions. If flows are higher than expected, the WWTS could be expanded to handle the higher flow or treat higher concentrations.	This raises a factual issue; however, no specific new information is identified, including that from the cited experts, making a contested case hearing unnecessary. *See Red Wing; Amendment No. 4* . The MPCA has adequately addressed the factual issue, and there is no reasonable basis for dispute. Minn. R. 7000.1900, subp. 1(C); *Cf. City of Owatonna* . Therefore, a contested case hearing would not aid the Commissioner.
715-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Second, Applicant underestimates the amount of high concentration flow that would be delivered to the WWTS from the Mine Site.156 After thoroughly reviewing the Application, Dr. Myers opines the following: Two of the three pipelines delivering water from the mine site to the plant site for treatment would be a high concentration and low concentration line, with the former being drainage from the Category 2/3, Category 4, and ore surge pile (OSP) and the latter being from the Category 1 stockpile and other supposed low concentration sources. Mine dewatering water would report to the low concentration basin. However, once backfill of the East Pit begins, water pumped from that pit would have a high concentration, but the . . . [A]pplication fails to account for the change in concentration. The [Application] shows that 820 gpm from the East Pit would report to the Low Concentration EQ Basin. However, the East Pit would be in the process of being backfilled with Category 4 waste; this water would be very high concentration. The other two sources shown on the same figure total only 130 gpm, so adding the flow from the East Pit could substantially tax the ability of the high concentration treatment scheme, a chemical precipitation train. If it is added to the Low Concentration treatment scheme, a membrane separation technique, it could upset the process so that expected quality is much poorer. Stated more simply, Applicant's underestimation of the amount of high concentration flow means the WWTS may not "achieve compliance" with the water quality "conditions of the permit."158 Consequently, Applicant has failed to show that the WWTS will perform effectively and "achieve compliance with the conditions of the permit." For these reasons, Petitioners request that MPCA require Applicant to show the WWTS will perform effectively, achieve compliance with Permit conditions, and install appropriate backup facilities before issuing the Permit.159 Petitioners request a contested case hearing on this issue.	See response to Comment 715.	See response to Comment 715.
716	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	X. MPCA CANNOT RELY ON FAULTY ASSUMPTIONS AND FUTURE ACTIONS TO GRANT THE PERMIT. MPCA acknowledges the Project will have some impact on groundwater, thereby degrading surface water,160 during operation, reclamation, and closure of the Project.161 Yet, MPCA finds the Project "as designed" will not violate water quality standards.162 To support this finding, MPCA relies on the assumption that Applicant's proposed engineering controls will be 100% effective.163 The 100% effectiveness means the engineering controls will operate exactly as described without any failures, even though the final design of these controls is unknown and therefore, impossible to evaluate.164 And, in the event of a system failure, MPCA relies on future adaptive management or mitigation strategies to protect groundwater and surface water.165 Yet, for the reasons set forth below, MPCA cannot rely on the assumption that the engineering controls will be 100% effective or that future adaptive management or mitigation will prevent the degradation of groundwater and surface water.	The MPCA cannot permit a system it believes will not comply with the permit conditions. Minn. R. 7000.0140. Nor does the agency issue permits assuming that wastewater treatment systems will fail. The Agency relies on its technical review of the permit application and plans submitted to determine if proposed wastewater treatment systems will adequately treat waste from the proposed source. The MPCA technical staff has reviewed the plans and found there is reasonable assurance the WWTS will work as designed. If the Permittee does not comply with the permit, the permittee may be subject to enforcement actions to correct the violations. To verify proper operation of the treatment system, the draft permit requires an annual evaluation of the engineering controls at the Mine Site and Plant Site. The permittee is required to conduct an annual comprehensive assessment of the engineering controls and monitoring system at the Mine Site and Plant Site to prevent impacts to water resources downstream of the project. If the evaluation of the facility indicates the engineering controls are not operating as intended or are not providing a sufficient level of controls, the Permittee must describe in detail the adaptive management or corrective actions that are being done, or will be done to correct the problem, including a schedule for their implementation. Should such insufficient control cause a violation of a permit condition, the MPCA can take action to enforce the permit. The goal of the engineering controls at the Mine Site and Plant Site is to minimize the pollutants from various engineered project features that could reach the groundwater and surface waters. The annual evaluation of groundwater data, surface water data, waste stream data, and internal monitoring data will provide a frequent evaluation of the performance of the engineering controls and the monitoring networks at the Mine Site and Plant Site. An annual evaluation of the engineering controls along with the evaluation of relevant monitoring and performance data will provide early identification of potential impacts from the project and will help determine the need for adaptive management, corrective actions, or mitigation to prevent potential impacts to the groundwater and surface waters. Should any such actions require a modification to the permit the MPCA will undertake the public process required by law.	The comment raises a legal issue, not a factual issue, regarding the enforceability of permit requirements. Legal issues are not subject to a contested case hearing. Minn. R. 7000.1900, subp. 1(A). The MPCA has adequately addressed the issue raised by this comment. *Cf. City of Owatonna* . No new information on this issue is identified in the petition and a contested case hearing would not aid the Commissioner. *See Red Wing; Amendment No. 4* .

716-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	As currently designed, the Project will require wastewater treatment for more than 150 years, essentially water treatment "in perpetuity."166 In the absence of new technological developments,167 the WWTS and engineering controls must continue to work perfectly the entire time to prevent an unplanned discharge to groundwater and surface water.168 But assumptions that the engineering controls will be "100% effective . . . . are questionable."169 And, studies applying more realistic assumptions show that "there will definitely be leaks that would be very difficult to remediate, and result in groundwater and surface water contamination."170 Thus, MPCA must consider and create Permit conditions around the evidence that groundwater and surface water will be contaminated when the engineering controls fail.	The MPCA relies on technical review of the permit application and plans submitted to determine if proposed wastewater treatment systems will adequately treat waste from the proposed industry. The MPCA has reviewed the available information, including an engineering review, and concluded the permit conditions can be met and the WWTS will function as designed. Although the comment questions the engineering conclusion reached by the MPCA, it does not provide a factual basis for disputing it. The MPCA added language to the permit to require construction of key treatment components of the WWTS to be consistent with the application. The incorporation of adaptive management as a failsafe does not invalidate the requirements for compliance. Adaptive management is regularly used in complex environmental scenarios to ensure standards are met. In this case, the underlying requirement must be met; the adaptive management is intended to develop strategies to maintain compliance. As described in response to comments 714 through 715-A, the WWTS can be expanded to treat higher flows or concentrations if necessary. The permit requires the WWTS to meet all discharge limitations. The ability to expand the WWTS provides the ability to achieve those limits. Adaptive management would be implemented as necessary based on monitoring results. As discussed above in response to Comment 22, flows are expected to increase over time and the permittee will have time to address changes in flow. The WWTS design is adaptable so that the treatment capacity can be adjusted to account for actual conditions encountered during operation and to accommodate varying influent streams. Examples of adaptive management options may include: the transfer of water from reverse osmosis membranes to nanofiltration units or vice versa, the completion of a Clean in Place process, pressure checks of the membrane modules, and replacement of the membrane modules. Adaptive management is commonly used in NPDES permitting to address issues as they arise.	The comment raises a factual issue; however, no new information on this issue is identified, so there is no reasonable basis underlying the disputed facts. *See Red Wing; Amendment No. 4* . Therefore, a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C).
716-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Further, as discussed in Part IX.A, it is far from clear that the WWTS has been adequately sized for the amount of dewatering water that will enter the system. In the absence of an adequately sized system – and accurate projections of dewatering water – MPCA must assume that the WWTS will not work perfectly. Modifications to the WWTS should occur now, not after mine operations begin, as the ramifications for an improperly functioning WWTS are significant contamination to groundwater and surface water. MPCA attempts to correct the fact that the WWTS and engineering controls will likely fail by pointing to future adaptive management and mitigation strategies.173 But "it is not enough to invoke 'adaptive management' as an answer to scientific uncertainty,"174 especially where the evidence before the agency shows there will be noncompliance with water quality standards.175 Thus, MPCA has a legal obligation to deny the Permit when faced with record evidence that water quality standards will be violated.176	As described above in Line 716 and 716-A, the permit defines the requirements the permittee must meet and does not rely on adaptive management to fill a gap in scientific uncertainty. If the WWTS needs to expand, it has the physical capacity to do so. The MPCA believes the conditions are achievable and will result in compliance with water quality standards.	This comment raises a legal issue, not a factual issue. Because the comment raises a legal issue, a contested case hearing is not appropriate for this comment. Minn. R. 7000.1900, subp. 1(A).
716-C	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	But even assuming adaptive management could fix the high likelihood that the WWTS and engineering controls will fail, the Permit does not incorporate any particular adaptive management plan. Instead, MPCA primarily177 relies on Applicant to develop adaptive management plans in the future—after a problem has already occurred. 178 By relying on Applicant to develop adaptive management plans in the future, the public is deprived of a meaningful opportunity to review those plans to assess—during the one and only permitting proceeding—whether they are sufficient and enforceable. Such a procedure contravenes the law, which is intended to ensure that the public has a meaningful opportunity to review and comment on the Permit.179 The fact that unincorporated adaptive management plans may contain some information does not resolve the absence of a Permit condition subject to public review.	Permitting often relies on adaptive management for proposed projects. The MPCA added language to the permit to state any adaptive management plans would be evaluated to determine if a major permit modification is necessary. The public would be able to review any major permit modification to address any adaptive management plans. The MPCA has addressed this issue by adding language to the permit regarding the potential for a major permit modification if necessary to implement adaptive management actions. The permit contains the standards that must be met, and the adaptive management provides a way to ensure ongoing compliance with those standards. The comment did not introduce any new facts to suggest the adaptive management is inadequate. The MPCA adequately considered the need for adaptive management and the conditions for the permit.	The comment raises a legal issue regarding adequacy of public participation; therefore, a contested case hearing is not appropriate on that issue. Minn. R. 7000.1900, subp. 1(A). The comment did not introduce any new facts to suggest the adaptive management is inadequate. The MPCA adequately considered the need for adaptive management and the conditions for the permit. Therefore a contested case hearing is not appropriate. *See Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .

716-D	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	And upon review of MPCA's website, the only adaptive management plan MPCA considered was dated in July 2016.180 That adaptive management plan is wholly outdated, relying on an old configuration of the engineering controls and wastewater treatment.181 MPCA cannot rely on the plan set forth in 2016 to avoid known uncertainties in the newly proposed WWTS and engineering controls.	The proposed treatment components of the reconfigured WWTS are the same as originally proposed. The location of the proposed mine site treatment system is the only thing that has changed. The MPCA has determined the change in location of treatment does not affect the adaptive management.	This raises a legal issue regarding the authority to include adaptive management and the adequacy of public participation. The comment raises a factual issue regarding adequacy of the plan, but identifies no new facts that would be introduced at a hearing and provides no reasonable basis for the dispute. As a result, a contested case hearing is not appropriate and would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing* , *Amendment No. 4* .
716-E	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Finally, Petitioners acknowledge that Applicant submitted an updated Adaptive Water Management Plan in December 2017 to DNR.182 While the Adaptive Water Management Plan does provide some details regarding adaptive management for the WWTS and Category 1 Stockpile,183 Petitioners question whether the strategies are so easily implemented in the face of inadequate monitoring184 and likely leaks into groundwater and surface water.185 But even more importantly, the Adaptive Water Management Plan is extremely limited. As articulated by DNR's expert, the " 'Adaptive Water Management Plan'. . . is probably the most important of all the documents/appendices" but it "only refers to the two water treatment plants and the Cat 1 stockpile, and nothing else."186 DNR's expert further explained that the expert mistakenly believed the Adaptive Water Management "referred to anything that might need fixing if the original design didn't work" and that he "couldn't have been more wrong."187 Then, DNR's expert discerningly observed "I wonder why the title contains 'adaptive.' "188 For example, the Adaptive Water Management Plan regarding the Flotation Tailings Basin ("FTB") is nothing but a vague statement of good intentions. The Permit provides that the FTB will be constructed to ensure "there will be no direct discharge" into "any receiving waters."189 Part of the design is "[a] bentonite amended layer [that] will be placed on exterior sides of the FTB dams to limit oxidation of the tailings."190 But the use of bentonite amended layer is, at best, a "hail Mary."191 Thus, to ensure there is not direct discharge to surface water, the Permit relies on an unproven technology and assumptions which the consultants characterize as "wishful thinking."192 Stated simply, Applicant proposes using bentonite, a type of clay with low hydraulic conductivity, to protect the tailings in the FTB from oxygen infiltration. But Applicant provides "no evidence demonstrating that bentonite-amended tailings . . . will be effective as an oxygen barrier."193 And experts opine that the use of a bentonite-amended layer to minimize oxidations of the tailings is "an unproven and untested approach."194 Yet, the Adaptive Water Management Plan, while acknowledging the bentonite layers may not function as planned, does not provide an option other than changing the thickness of the bentonite to achieve the necessary performance.195 Thus, the Adaptive Water Management Plan does not sufficiently provide alternatives for the possibility that the bentonite does not prevent FTB oxygen infiltration. For these reasons, MPCA cannot issue the Permit until scientific uncertainties are determined and an adequate adaptive management plan is made a condition of the Permit. If MPCA disagrees and finds the assumptions underlying the effectiveness of the WWTS and engineering controls are supported by the record and the Permit requires an adequate adaptive management plan, Petitioners request a contested case hearing on the adequacy of the WWTS, engineering controls, and adaptive management plan.	As described above in response to Comments 710 through 712-B, the MPCA determined the proposed monitoring network identified in the draft permit is adequate. The draft permit requires water quality and/or water level monitoring at a total of 167 monitoring stations at the Mine Site and Plant Site. The draft permit requires an Annual Comprehensive Performance Evaluation Report, which includes an annual evaluation of monitoring and performance data as well as engineering controls at the Mine Site and Plant Site. The requirements of the NPDES permit may not be entirely satisfied by the Adaptive Water Management Plan. The annual evaluation of the engineering controls along with the evaluation of relevant monitoring and performance data, which includes waste stream monitoring results, surface water monitoring results, and internal operational data, will provide early identification of potential impacts from the project and will help determine the need for adaptive management, corrective actions, or mitigation to prevent potential impacts to the groundwater and surface waters. If the evaluation of the facility indicates the engineering controls are not operating as intended or are not providing a sufficient level of controls, the Performance Report must describe in detail the adaptive management or corrective actions that are being done, or will be done to correct the problem, including a schedule for their implementation.	The comment raises a factual issue; however, no new information is identified, so there is no reasonable basis underlying the disputed facts. Minn. R. 7000.1900, subp. 1(C). The MPCA has adequately addressed the facts raised by this comment, and the comment is premised on an inaccurate assumption. *Cf. City of Owatonna* . Therefore, a contested case hearing would not aid the commissioner.
717	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	XI. THE PERMIT FAILS TO ADHERE TO APPLICABLE LEGAL STANDARDS UNDER THE CLEAN WATER ACT AND MINNESOTA LAW. The Permit also suffers from legal infirmities such that it fails to adhere to the applicable legal standards in the Clean Water Act and Minnesota law. To understand these legal infirmities, some factual context is important. Applicant proposes a new direct discharge of pollutants to groundwater and surface water in the St. Louis Watershed. Initially, Applicant proposes to discharge treated effluent from the WWTS to the headwaters portions of Second Creek, Trimble Creek, and Unnamed Creek.196 These headwater segments are low flow, with a 7Q10 flow rate of 0.0 CFS, which means that MPCA may "not allow for dilution when analyzing for reasonable potential to cause or contribute to a violation of water quality standards."197 During the first phase of the Project, Applicant proposes to treat the long list of pollutants that will be present in its discharge (including aluminum, antimony, arsenic, beryllium, bicarbonates, boron, cadmium, chloride, chromium cobalt, copper, fluoride, iron, lead, manganese, mercury, selenium, silver, sodium,sulfate, thallium and zinc) at a WWTS. Following mine closure, Applicant eventually plans to stop operation of the WWTS and move to some form of passive treatment system. That future passive treatment system will likely discharge more pollution that the WWTS and impact rivers and streams that were previously not impacted by direct surface discharges. Applicant has not identified the exact levels of each pollutant it anticipates discharging from its passive treatment system, except to say that these treatment systems will be designed with the goal of meeting applicable water quality standards.	NPDES permits have a five-year term, but the issue the comment raises might occur at some time after facility closure. The MPCA has added language to the permit to require construction of the WWTS component as proposed in the application. The permit does not authorize a discharge from a passive treatment system.	This comment does not raise a factual issue or provide any new facts. To the extent the comment interprets the applicability of antidegradation, it raises legal issues. Because the comment raises legal and not factual issues, and does not raise new facts to reasonable support a dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4.*

718	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The Permit, as currently drafted, contains operating limits, technology based effluent limits ("TBELs"), and monitoring requirements for the laundry list of pollutants anticipated to be present in the effluent discharged from the facility. These TBELs "represent the minimum level of control that must be imposed in a [NPDES] permit" and are not designed to, and cannot, ensure the Project does not discharge pollution that will cause or contribute to a violation of water quality standards in the waters impacted by Applicant's effluent discharge.198 The Permit lacks any water quality based effluent limits ("WQBELs") that would restrict Applicant from discharging pollutants at levels that will violate water quality standards.199 While the Permit does contain effluent limits equal to the water quality standards for sulfate and copper, MPCA insists that these limits are neither TBELs, nor WQBELs.200 While "Polymet voluntarily committed to treating is discharge to 10 mg/L sulfate,"201 the 9.3 ug/L copper limit is included in the permit "to provide assurance" that the WWTS is removing all other pollutants in the discharge to levels below the water quality standard.202 The following table summarizes water quality standards applicable to the Project, projected effluent quality, and the effluent limits in the Permit. Applicant projects that the technology it proposes to meet the voluntary operational 10 mg/L sulfate limit will significantly reduce levels of all pollutants in the discharge to levels below the applicable water quality standards.203 It is the voluntary sulfate limit that forms the sole justification for MPCA's determination that no WQBELs are needed to control the variety of pollutants that will be discharged to the wetlands and rivers surrounding the Project.204 MPCA relies solely on these two operating limits to "indicat[e] that the chronic aquatic life standards for other metals will be met" in the effluent discharges from the Polymet Project.205	The MPCA believes the comment misinterprets the permit. During the EIS process, PolyMet offered to resolve outstanding issues related to sulfate and wild rice by incorporating advanced wastewater treatment into the project design. While PolyMet volunteered to do this, compliance with the permit Operating Limit for sulfate is not voluntary. The Operating Limits for both sulfate and copper are enforceable permit limits; if they are exceeded, it will be a violation of the permit. The modeling and pilot testing demonstrated that concentrations of other parameters in the effluent would be far below the water quality standards when the sulfate Operating Limit is met.	As discussed in response to Comment 718-A, the MPCA did consider reasonable potential for other parameters and determined, based on review of available information, that there is no reasonable potential for the facility to cause or contribute to an excursion above a water quality criterion. This comment does not raise a factual issue, but interprets the language of the permit. This is a legal issue for which a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A). In addition, the comment identifies no new facts for the MPCA to consider that would provide a reasonable basis for a dispute. *See Red Wing; Amendment No. 4* . Therefore, a contested case hearing is not appropriate on this issue. Minn. R. 7000.1900, subp. 1(C).
718-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	MPCA relies on a series of models and pilot tests to predict that the technology used to meet the sulfate limit will reduce other pollutants in the facility's effluent to low levels. These studies are designed to project "achievable potential effluent quality."206 However, when the WWTS is operating, "the actual [] effluent quality could vary from the design model results for a number of reasons, including the actual membrane rejection rates over time, compared to the average values used in the design model, and the blend of reverse osmosis and nanofiltration used to achieve the sulfate internal performance target."207 MPCA has also performed a preliminary antidegradation analysis of the impact of the increased discharge of pollution from the WWTS, but has not done an analysis of the long-term, overall impact of the allowing a new discharge of pollution to these waters. In particular, MPCA has not mad an assessment of whether the future plans for treating legacy pollution after mine closure, when mechanical facilities are abandoned in favor of passive treatment, will degrade the receiving waters beyond the level of degradation anticipated from the WWTS. 203	Federal and state rules require permit effluent limits to be determined by analyzing whether a discharge has the reasonable potential to exceed water quality standards. 40 C.F.R. § 122.44(d). The method to conduct the evaluation is a policy matter. The analysis can use effluent and receiving water data and modeling techniques, or using a non-quantitative approach if effluent data are not available. When actual effluent data are not available, a reasonable potential analysis can be conducted using available information such as modeling and pilot testing data. The EPA NPDES Permit Writers' Manual suggests reasonable potential can be determined through a qualitative process where facility-specific effluent monitoring data is not available. The PolyMet facility has not been built, and therefore has no actual operating data. The MPCA considered the following available information in conducting its RP analysis: 1. Estimated effluent quality as reported in the 2017 permit application on EPA form 2D 2. WWTS design model outputs as described in Attachment H to the WWTS: Design & Operation Report v2, October 2017, cited as a reference in the NPDES/SDS permit application, and 3. Final Pilot Testing Report, included as Attachment B to the WWTS Report. Information available on EPA Form 2D indicates the source of the values provided for "maximum daily value" and "average daily value": the estimates from engineering studies and the "Wastewater Treatment System (WWTS) Discharge Treatment Targets" from Table 2-2 on Page 84 of Volume III of the permit application. The values provided in the application indicate the project will meet the operating limits proposed in the draft permit. The design modeling provided in the permit application accounted for variability in the volume and quality of the wastewater that are expected to occur as the Project progresses from Mine Year 1 into later years. It demonstrated the proposed design can be optimized so the discharge will meet the sulfate and copper Operating Limits proposed in the draft permit. To demonstrate that membrane treatment technologies were capable of meeting treatment targets, the company conducted a 6-month pilot testing program using seepage water from the existing tailings basin. For a portion of the test, additional metals were added to the test influent to more closely simulate projected effluent quality. Results of the pilot testing were used in the MPCA's reasonable potential analysis, and MPCA again determined the proposed design is capable of meeting the Operating Limits for sulfate and copper in the draft permit. In addition, the modeling and pilot testing demonstrated that concentrations of other parameters in the effluent would be far below the water quality standards when the sulfate Operating Limit is met. If reasonable potential is not determined or cannot be determined prior to permitting, the MPCA has the authority to request monitoring as part of the permit. A clause in the permit allows the MPCA to reopen the permit and impose an effluent limitation if the required monitoring establishes that there is reasonable potential the discharge will cause or contribute to an excursion above a water quality criterion. The MPCA has authority under Minnesota Rule part 7001.0170 to modify a permit based on new information. The draft permit states this in item 6.16.13. If the	This comment raises policy and legal issues; it does not present any new facts. Because this comment raises policy and legal issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A). The information before the agency shows that the permit will protect water quality standards. The comment does not identify facts that provide a reasonable basis for dispute, and the MPCA has already adequately addressed the issue. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(C); *cf. City of Owatonna* .

				If reasonable potential is not determined or cannot be determined prior to permitting, the MPCA has the authority to request monitoring as part of the permit. A clause in the permit allows the MPCA to reopen the permit and impose an effluent limitation if the required monitoring establishes that there is reasonable potential the discharge will cause or contribute to an excursion above a water quality criterion. The MPCA has authority under Minnesota Rule part 7001.0170 to modify a permit based on new information. The draft permit states this in item 6.16.13. If the MPCA determines the facility has reasonable potential based on actual operating data, the MPCA could reopen and modify the permit to add limits if necessary. To address this concern, the MPCA proposes to clarify the reopener language in 6.16.13 in the draft permit to reopen and modify the permit to add WQBELs if actual data indicates WQBELs are necessary. In short, the information before the agency shows that the permit will protect water quality standards. With respect to antidegradation, see responses to Comments 720 through 720-E.	
719	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	A. The TBELS and "Operating Limits" Will Not Ensure Long-Term Protection of the Water Quality Standards or Prevent Degradation and WQBELs Are Mandated. Federal law requires MPCA to impose effluent limitations necessary to achieve water quality standards.208 No permit may be issued by MPCA "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States."209 NPDES permits must include WQBELs necessary to achieve water quality standards applicable to waters impacted by the discharge to ensure that the discharge from the facility complies with all applicable water quality standards.210 These "more stringent effluent limitations and conditions, such as WQBELs, are imposed when TBELs are not sufficient to protect water quality."211 WQBELs in NPDES permits are required when a pollutant "may be discharged at a level which will cause, have a reasonable potential to cause, or contribute to an excursion above State water quality criteria."212 Here, the Permit contains no such WQBELs or other controls calculated to ensure the discharge does not, as required by federal regulations at 40 C.F.R. § 122.44, cause or contribute to a violation of water quality standards.213 And the TBELs in the Permit are not sufficient to protect water quality.214	The MPCA modified the draft permit to add operating limits for additional parameters and a prohibition against discharges that violate water quality standards. The permit requires monitoring for a variety of parameters, which will serve to verify compliance with the requirement. For more detailed responses, see 719-A through 720-F.	This comment raises a legal issue regarding legal applicability of water quality-based effluent limits. A contested case hearing is not appropriate on the legal issue. Minn. R. 7000.1900, subp. 1(A). To the extent this questions the method the MPCA used to conduct a reasonable potential analysis, the comment raises a policy issue. Policy issues are not subject to a contested case hearing. Minn. R. 7000.1900, subp. 1(A). Moreover, the comments did not identify any new facts or provide a reasonable basis for the dispute that would meet the criteria for a contested case hearing. Minn. R. 7000.1900, subp. 1(C). MPCA's detailed responses below further demonstrate that a contested case hearing would not aid the commissioner on this issue.
719-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	1. The Lack of Water Quality Based Effluent Limits in the Permit Shield Polymet From Citizen Suit Enforcement. According to MPCA's analysis, no WQBELs are needed in the Permit to protect water quality from pollution discharged from the WWTS because the technology the facility currently proposes to use will be subject to two "operating limits" imposed on an internal waste stream upstream from the discharge points. Based on MPCA's analysis, if these operating limits, one of which is voluntary, are met, the remainder of the pollutants in the discharge from the WWTS will not exceed water quality standards applicable to the receiving waters. By failing to include WQBELs on all pollutants that will be discharged from the facility and impact water quality, MPCA has created a broad enforcement shield for Applicant, that insulates Applicant from enforcement should its discharge exceed water quality standards for those pollutants that are not limited by WQBELs in the Permit. Under the "permit shield" provided under 33 U.S.C. § 1342(k), compliance with a NPDES permit is deemed compliance for Clean Water Act purposes. The permit shield "insulate[s] permit holders from changes in various regulations during the period of a permit to relieve[s] them of having to litigate in an enforcement action the question whether their permits are sufficiently strict."216 But the "permit shield" is broader than the permit. Under the Clean Water Act permit shield, "all discharges adequately disclosed to the permitting authority are within the scope of the permit's protection" even if a limit on the discharge of that pollutant is not included in the NPDES permit.217 As a result, the Permit would exempt the Applicant from any enforcement actions, even those brought by impacted individuals under the Citizen Suit provision of the Clean Water Act, if any of a large number of pollutants—including aluminum, antimony, arsenic, boron, cadmium, chromium, cobalt, iron, lead, nickel, selenium, silver, thallium, zinc, and mercury218—reach levels that may contribute to a violation of the water quality standards. MPCA must revise the Permit to include WQBELs that protect water quality for all pollutants in its discharge. Because Applicant is already required to monitor the amount of each of these pollutants in its discharge, inclusion of those limits in the Permit would impose no additional requirements on Applicant	As noted above, the Operating Limits in the permit are enforceable limits and conditions of the permit. If the discharge exceeds a limit, the permittee can be subject to an enforcement action. In addition, the permit now contains a prohibition against discharges that violate water quality standards. See Permit at 5.119.1.	This comment raises a legal issue regarding applicability of a permit shield. Because this comment raises a legal issue, and the MPCA has adequately addressed the issue, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *cf. City of Owatonna* .

719-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	2. The Operating Limits Elude Anti-Backsliding Restrictions. Under the Clean Water Act, "a permit may not be renewed, reissued or modified . . . subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit."219 This Clean Water Act requirement is called "anti-backsliding." Because the 10 mg/L sulfate operating limit in the Permit is neither a TBEL nor a WQBEL, the Clean Water Act anti-backsliding provision will not ensure a sulfate limit at least this stringent remains in effect beyond the five-year term of the Permit if the underlying wild rice sulfate standard is changed.	Anti-backsliding applies to particular types of effluent limitations, including water quality-based effluent limits. 33 U.S.C. § 1342(o)(1). This comment raises a legal issue, not a factual issue. The comment takes the position that the permit should be revised so that limits could not be modified in the future. As described above in response to Comment 718-A, the MPCA found that there was no reasonable potential to exceed a water quality standard, so no WQBEL is required by law. The permit imposes limits to ensure proper operation of the facility and prohibits discharges that violate a water quality standard.	This comment raises a legal issue, not a factual issue, and therefore a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A). In addition, the comment on future permit contents is outside the jurisdiction of the MPCA commissioner's authority in this action. Minn. R. 7000.1900, subp. 1(B).
719-C	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Likewise, the anti-backsliding provision also will not prevent removal of the 9.3 ug/L copper limit, that provides assurance that the treatment system is removing pollutants, in future permits. Courts have held that performance based limits, such as the "operating limit" proposed for sulfate and copper in the Permit are not comparable to WQBELs for purposes of anti-backsliding, and therefore anti-backsliding is would not prevent a weakening of these limits in future permits.221 Because the operating limits for copper and sulfate limit are the most important factor dictating levels of all other pollutants discharged to area wetlands, streams, and river, MPCA must revise the Permit to ensure those limits remain in effect in future permits.	As described above in response to Comment 718-A, the MPCA found that there was no reasonable potential to exceed a water quality standard, so no WQBEL is required. The permit imposes operating limits to ensure proper operation of the facility and prohibits discharges that violate a water quality standard. Thus, the permit shield does not apply to any discharge that violates a water quality standard.	This comment raises a legal issue of Clean Water Act interpretation, not a factual issue. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A). In addition, the comment on future permit contents is outside the jurisdiction of the MPCA commissioner's authority in this action. Minn. R. 7000.1900, subp. 1(B).
719-D	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	3. Without WQBELs There Will Be No Future Antidegradation Trigger Forcing Applicant to Consider the Least-Degrading Alternative. Antidegradation review of new facilities is integral to achieving the water quality goals of the Clean Water Act, and is needed to prevent projects that will impose unnecessary burdens on the people that use Minnesota's valuable water resources. More specifically, antidegradation review is needed to ensure that "degradation of high water quality shall be minimized and allowed only to the extent necessary to accommodate important or social development."223 Minnesota's antidegradation regulations only allow approval of projects that implement available prudent and feasible prevention, treatment, or loading offsets to avoid degradation.224 Where degradation cannot be avoided, the degradation may only be approved if it is prudently and feasibly minimized or the NPDES permit prudently and feasibly minimizesany net increase in loading or other causes of degradation.225 In no instance may MPCA approve issue an NPDES permit or approve a proposed activity "when existing uses and the level of water quality necessary to protect existing uses are maintained and protected."226 In Minnesota, the triggers for antidegradation review are based on the amount of pollution authorized by limits in permits.227 According to MPCA: the pollutant limit in a NPDES permit reflects the level of degradation the agency approved when it issued the permit.228 Hence antidegradation review will not be triggered during future permit reissuances unless the pollutant loads exceed that authorized level of degradation allowed by current and anticipated discharges authorized by the Permit.229 Here for example, MPCA has included an effluent limit in the Permit authorizing the Applicant to discharge 500 mg/L arsenic. This is the level of pollution that the Permit authorizes.230 Hence, antidegradation review will not be triggered in the future unless the Applicant's discharge exceeds this level. But MPCA's antidegradation review is based on an assumed, but not required, effluent discharge level of 0.004 ug/L arsenic from the Applicant's WWTS..231 To prevent Applicant from future degradation of water quality without antidegradation review, MPCA must include effluent limits on all parameters equal to the level of degradation it is currently authorizing – in this case 0.004 ug/L.232 Without these limits, MPCA's ability in the future to force Applicant to consider alternatives that will avoid or minimize the degradation caused by its future discharges will be limited.	The comment interprets the antidegradation rules, but does not include any consideration of the Operating Limits in the permit. The permit imposes enforceable Operating Limits for several parameters, including sulfate. Any change in treatment method would affect sulfate loading. Any increase to the Operating Limits would affect the loading authorized by the permit, and an antidegradation review would be necessary. See Minn. R. 7050.0280 subp. 1.	The comment addresses the legal triggers for an antidegradation review. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).

720	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	4. MPCA's Anti-Degradation Analysis Fails to Consider Future Phases of the Project. MPCA's assumption that, despite the lack of permit limits that prevent degradation of high quality waters, the Project will not degrade high quality waters as it discharges pollutants to nearby streams for the next several hundred years, is "Pollyannaish" at best.233 MPCA fails to consider the following: First, the models MPCA used to show that the project will not degrade, or will only minimally degrade water quality, are based on conditions in Mine Year 10, and there is significant uncertainty about what happens after that time.	The MPCA conducted an antidegradation review to address the discharges that would be authorized by the draft permit. In addition, the mine year 10 discharges used in the analysis represent the highest discharges projected from the facility.	This comment does not raise a factual issue or identify any new facts. To the extent the comment interprets the applicability of antidegradation review, it raises legal issues. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
720-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Second, MPCA has not performed an antidegradation assessment of the planned discharge to Partridge Creek watershed from the Mine Site that will occur as the Applicant moves to passive treatment. Because the discharge is part of the overall project and treatment of this wastewater is inevitable in future years MPCA must determine that the technologies and treatment it proposes for future phases of this project will avoid or minimize degradation.234	The MPCA conducted an antidegradation review to address the discharges that would be authorized by the draft permit. The permit does not authorize the discharge referenced in the comment and it is therefore beyond the scope of the antidegradation review.	This comment does not raise a factual issue. To the extent the comment interprets the applicability of antidegradation, it raises legal issues. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
720-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Third, neither Applicant nor MPCA have provided a reliable assessment of the quantifiable changes to water quality that will occur when the facility moves to passive treatment of pollution generated at the Mine Site and Plant Site.235	The MPCA conducted an antidegradation review to address the discharges that would be authorized by the draft permit. The issue the comment raises might occur at some time after facility closure and those discharges are not authorized by this permit. As noted in response to Comment 717, MPCA added language to the permit to require construction of the WWTS components as proposed in the application. The permit does not authorize changes to the treatment system referenced in the comment and it is therefore beyond the scope of the antidegradation review.	This comment does not raise a factual issue or provide any new facts. To the extent the comment interprets the applicability of antidegradation, it raises legal issues. Because the comment raises legal and not factual issues, and does not identify new facts to reasonable support a dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4.*
720-C	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Fourth, models are inherently imperfect and the Permit does not limit pollution from the WWTS to the levels of pollution identified by the model.	As described in the antidegradation review, the MPCA found the design model to be the most reliable prediction of effluent quality. The sulfate Operating Limit in the draft permit is enforceable, and the MPCA revised the permit to include additional operating limits for all parameters for which influent is expected to exceed water quality standards. The MPCA found that there was no reasonable potential for other pollutants to exceed water quality standards and therefore did not impose effluent limits on those pollutants. The MPCA's review concluded that to meet the sulfate limit, other parameters would be consistent with model outputs.	This comment does not raise a factual issue or provide any new facts. To the extent the comment interprets the applicability of antidegradation, it raises legal issues. Because the comment raises legal and not factual issues, and does not identify new facts to reasonable support a dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4.*
720-D	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	Fifth, the Permit fails to acknowledge that it is permitting a facility that will degrade water quality unless pollution from the facility is treated in perpetuity. Instead, MPCA and Applicant rely significantly on promises that adaptive management will protect water quality in the future. However, "adaptive management" does not excuse MPCA from making decisions based on the record before it today, particularly when the Permit fails to define when "adaptive management" is required, or include definitive "adaptive management" plans, as in Part X. Nor can MPCA rely on adaptive management in the face of scientific uncertainty.236 Sixth, in future years the mine will discharge to waters, including to areas east of the tailing basin and to Partridge River and its tributaries, which are not currently impacted by a direct surface water discharge, but MPCA has failed to ensure that these discharges to high quality waters are necessary or properly mitigated to reduce degradation.237 5.	The MPCA conducted an antidegradation review to address the discharges that would be authorized by the draft permit. NPDES permits have a five-year term, and the permit requires the discharge to meet water quality standards. The permit also does not address discharges that are prohibited by the permit. Longer-term impacts of the project were evaluated in the EIS.	This comment does not raise a factual issue or provide any new facts. To the extent the comment interprets the applicability of antidegradation, it raises legal issues. Because the comment raises legal and not factual issues, and does not identify new facts to reasonable support a dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* .

720-E	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	MPCA's Anti-Degradation Analysis Did Not Consider Alternatives to Reduce Discharges in the Long-Term. Applicant asserted that the use of the WWTS to treat effluent prior to discharge from the facility is the most prudent and feasible alternative to minimize degradation. However, this conclusion is based on the presumption that the "discharge of treated waste water is a fundamental, inherent aspect of the Project."238 But there are less degrading alternatives that MPCA and Applicant have altogether failed to assess, including feasible and prudent alternatives that prevent and minimize near term and long-term degradation of high quality waters, such as dry stack tailings and filtered tailings.239 These alternatives must either be required to avoid degradation or the Permit must be revised to include effluent limits that will require achievement of the highest effluent quality that could be achieved via these feasible and prudent alternatives. MPCA may neither ignore acknowledged degradation that will occur in future phases of the Project nor ignore alternatives that will eliminate the need for perpetual treatment of wastewater from the Plant Site, FTB, and Mine Site.240 Applicant proposes a Project that will inevitably, and by design, discharge polluted effluent to nearby streams in perpetuity. Applicant's documentation does not assess the degradation to high quality waters that is likely to occur as the mine phases out the WWTS and moves to passive treatment, except to say that the discharge will meet water quality standards.241 But MPCA's antidegradation analysis is based on predicted levels of pollution from the WWTS that are much lower than water quality standards.242 Neither Applicant nor MPCA have established that future phases of this project will continue to achieve the low levels of pollution Applicant believes are achievable at the WWTS, nor that it is reasonable to expect perpetual treatment after income producing activities have ceased. None of the Permit documentation indicates that the future perpetual discharge will not degrade high quality beyond the level of degradation modeled in Mine Year 10. MPCA must either revise the Permit to require compliance with the low levels of pollution it is authorizing from the WWTS or provide reasons why prudent and feasible alternatives to preventing and minimizing pollution in the future, namely dry stack tailings and filtered tailings, are not required.	The MPCA also reviewed alternatives and found that among the prudent and feasible alternatives, the proposed treatment alternative minimized degradation. MPCA looked at alternative project designs, including the designs that were considered during the EIS (see EIS section 3.2.3). The comment presumes the treatment will change at some future point, but the permit does not authorize any such change in discharge. Possible changes in future permits are beyond the scope of the antidegradation review required by law. Minn. R. 7050.0280; 7050.0265.	This comment raises a legal issue regarding adequacy of meeting antidegradation procedures. A contested case hearing on legal issues is not appropriate. Minn. R. 7000.1900, subp. 1(A). To the extent it does raise a factual issue regarding adequacy of the alternatives evaluated, the MPCA adequately addressed the issue and a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *cf. City of Owatonna* .
721	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	B. The Draft Permit Must Include Whole Effluent Toxicity Requirements Needed to Ensure Minnesota's Water Quality Standards. The Permit requires Applicant to conduct Whole Effluent Toxicity ("WET") Testing, but does make an exceedance of levels a violation of the Permit.243 Instead, the WET limit in the Permit, is identified as an "intervention limit" that triggers additional WET testing and analysis, and may ultimately result in permit modification to include an enforceable WET limit. The Permit must make exceedance of the 1.0 TUc threshold value an enforceable limit. State law prohibits chronic toxicity from exceeding the chronic standard or criterion, or 1.0 TUc for WET.244 In addition, Minnesota's narrative water quality standards prohibit conditions that endanger fish.245 Violation of WET test results must constitute a violation of the permit: state agencies may not issue NPDES permits[w]hen the conditions of the permit do not provide for compliance with the applicable requirements of CWA, or regulations promulgated under CWA; . . . [or w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States.246 MPCA must revise the Permit to include enforceable limits that prevent exceedances of the WET 1.0 TUc threshold and prevent degradation.247	The MPCA conducted a reasonable potential analysis on various parameters while reviewing the permit application and determined there is no reasonable potential to cause or contribute to an exceedance of water quality standards. However, to address the commenters' concerns, the MPCA revised the draft permit to include a 1.0 TUc WET limit applicable to station SD001. In addition, a provision has been added to the permit to state the discharge of treated wastewater from the WWTS must not violate state water quality standards.	Because the MPCA has adequately addressed the comment and there is no longer a dispute of fact, a contested case hearing is inappropriate. Minn. R. 7000.1900, subp. 1(A); *cf. City of Owatonna* .

722	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	C. The Permit Allows Applicant to Discharge Mercury at Levels Not Authorized by the Clean Water Act. The Clean Water Act prohibits Applicant from discharging additional mercury to the mercury impaired watersheds impacted by the new discharge from NorthMet Mine Project's , unless, or until, there a concrete plan is being implemented to bring the waters into compliance with water quality standards. The Clean Water Act prevents issuance of a NPDES permit: (i) To a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards. The owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards or is not expected to meet those standards even after the application of the effluent limitations required by sections 301(b)(1)(A) and 301(b)(1)(B) of CWA, and for which the State or interstate agency has performed a pollutants load allocation for the pollutant to be discharged, must demonstrate, before the close of the public comment period, that: (1) There are sufficient remaining pollutant load allocations to allow for the discharge; and (2) The existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards. The Director may waive the submission of information by the new source or new discharger required by paragraph (i) of this section if the Director determines that the Director already has adequate information to evaluate the request. An explanation of the development of limitations to meet the criteria of this paragraph (i)(2) is to be included in the fact sheet to the permit under §124.56(b)(1) of this chapter.248 This provision bans new discharges to impaired waters, even those that are offset by claimed reductions from other sources, unless "a TMDL has been performed and the [permittee] demonstrates that before the close of the comment period two conditions are met, which will assure that the impaired waters will be brought into compliance with the applicable water quality standards."249 These two conditions require MPCA to show that there is sufficient remaining pollutant load allocations to allow for the discharge and that the existing dischargers are subject to "compliance schedules designed to bring the segment into compliance with water quality standards."250 In other words the new discharge can only be permitted if it "can demonstrate that, under the TMDL, the plan is designed to bring the waters into compliance with applicable water quality standards."	The comment interprets federal regulation as applied to the facility. The MPCA conducted a reasonable potential analysis for mercury while reviewing the permit application and determined there is no reasonable potential for the discharge to cause or contribute to an exceedance of the mercury water quality standard. In fact, the MPCA expects the project to lead to a net reduction in mercury load exported from the facility because of the capture and treatment system. Because the discharge will not cause or contribute to a violation of water quality standards, it does not violate 122.4(i).	This comment presents a legal interpretation, not a factual issue. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
722-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The Permit authorizes Applicant to discharge mercury limit up to 1000 ng/L, without the threat of enforcement. Even if the Permit were revised to include a new mercury effluent limit of 1.3 ug/L, Applicant's new discharge of mercury cannot be permitted because the discharge will impact several waters that currently exceed mercury water quality standards, including: The Embarrass River exceeds the mercury water quality standards for mercury in fish tissue and mercury in water column, and is covered by MPCA's Statewide Mercury TMDL.252 MPCA has not explained in the factsheet whether there is sufficient remaining pollutant load in the Embarrass River TMDL, nor does the fact sheet include an explanation of how the 1000 ug/L limit in the draft permit meets the criteria of 40 C.F.R. § 122.4(i)(2).253 Both the St. Louis and the Partridge rivers are listed on MPCA's Impaired Waters List as impaired for mercury in fish tissue and mercury in the water column, but are awaiting development of a TMDL.	As described above in response to Line 722, the discharge will not cause or contribute to a violation of water quality standards, and 122.4(i)(2) does not apply,	Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
722-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	· Nearly all the remaining rivers, lakes, and wetlands, that will be impacted by Applicant's new mercury discharge (except Second Creek), are currently exceeding the water quality standard for mercury, but are not identified as impaired on Minnesota's 303(d) Impaired Waters List.255 MPCA and Applicant estimate that the NorthMet Mine Project's new mercury discharges will not increase mercury concentrations in any of these impaired receiving waters (except in the unnamed creek, where Applicant admits there will a small increase in mercury concentration in Mine Year 10) because this new discharge will be offset.256 However, there is nothing in the Clean Water Act "that provides an exception for an offset when the waters remain impaired and the new source is discharging pollution into that impaired water."257 Applicant's analysis is flawed, and its new discharge of mercury is not allowed because its conclusion, showing no increased concentration of mercury will be present in Mine Year 10, is based on projected offsets. For this reason, MPCA must deny the Permit unless and until Applicant meets the conditions in 40 C.F.R. § 122.4(i).	The comment interprets federal regulation as applied to the facility. As described in response to Comment 722, the facility will not cause or contribute to an exceedance.	This comment raises a legal issue, not a factual issue. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).

723	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	D. The Permit Fails to Limit or Prevent Discharges of Pollutants to Surface Water Via Hydrologically-Connected Groundwater. MPCA failed to include conditions or limitations in the Permit that prevent pollutants discharged to surface water via hydrologically connected groundwater, as required by the Clean Water Act. Here, the various groundwater containment systems, basins, ponds, mine water collection systems, and stormwater management systems that collect and discharge pollutants to groundwater at the Mine Site and Plant Site are considered point sources under the Clean Water Act.258 The Environmental Protection Agency has recognized the need to regulate pollutants from point source discharges to surface waters via groundwater or other subsurface flow.259 Courts agree: the Clean Water Act covers indirect discharges of pollutants that are fairly traceable from these point sources to a navigable waters.260 Applicant and MPCA acknowledge that these various point sources will discharge to groundwater and that the discharges will impacts surface water.261 MPCA has even established a groundwater monitoring network to assess whether there is a discharge to surface water and to "identify the potential for impacts for surface water far enough in advance to allow implementation of adaptive management or mitigation actions that would prevent the impacts from occurring."262 MPCA must include effluent limits, or otherwise prohibit, these discharges before it issues the Permit.	The permit includes specific authorized discharge points. It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters from the mine site and plant site. The Annual Groundwater Evaluation Report required by the permit specifically requires an annual assessment of the current and future potential and timeframe for migration of groundwater towards surface water from the mine site and plant site. Also, the Annual Comprehensive Evaluation specifically requires that the performance of engineering controls be assessed for any impact to groundwater. Together, these annual reports provide early warning before impacted groundwater would reach surface water such that adaptive management can be implemented before impact to surface water occurs. As a result, the MPCA does not anticipate that groundwater affected by mine operations would pollute surface water.	The comment interprets federal law as applied to the facility. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
724	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	E. The Permit Will Endanger Human Health and the Environment. MPCA's regulations provide that the agency may refuse to issue a permit if it finds "that the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by a modification of the conditions of the permit."263 Applicant's proposal to impound slurry mine waste behind a stair-step earthen berm in perpetuity constitutes just the sort of threat to human health and the environment that would require MPCA's refusal to issue the Permit as proposed. Consultants hired by DNR to evaluate the Applicant's Permit to Mine Application have warned for years that the proposal to impound slurry mine waste in perpetuity is highly likely to fail, and when it does it will cause water quality degradations and threats to human life. In May 2017, DNR's consultants wrote to DNR: "the FTB plan gives me severe indigestion because a lake on top of a pile of sand is inherently unstable, and irresponsible. The dam embankments are a stair step arrangement that is inherently geomorphologically unstable, and will erode and cause the ponded water and tailings to escape if it is not maintained and repaired forever."264 No changes to the design of the FTB were made as a result of these critical observations. The likelihood of such a failure is not low: Give that there will be impounded water inside the FTB and that if erosion of the embankments is not properly maintained forever, there is a reasonable probability that erosion will head cut back into the pool and release some pooled water, which may wash out some tailings depending on how fast things unravel.265 DNR's consultants have, in fact, described the eventual failure of the tailings dam as a near certainty: "If the FTB is to remain as a permanent structure without perpetual maintenance, then I recommend that the embankments be designed using established geomorphologic land reclamation principals. Otherwise there is a high probability that the embankments will eventually fail due to erosion, and catastrophically release the saturated tailings."266 This failure is likely to occur during a rain storm, making wide dispersion of the tailings highly likely: The gullys [formed by precipitation] would develop into head cuts that have the potential of eroding back into the stored water pool or into the saturated tailings. If this happens, there is a potential for a massive release of tailings. . . . by storing the water and saturated tailings above and behind a geomorphologically unstable embankment configuration that is constructed of highly erodible sandy silty sized particles, a future failure is likely and could cause substantial environmental harm . . . . It is important to note that the initial failure will be due to localized erosion, but once the embankment is breached, the failure would be identical to other failures. The failure would typically occur during a rain storm, so the pond water may be at maximum capacity. The damage would be cause by the water rushing out and carrying the saturated tailings with it.267 DNR is well aware that the resulting damage would, at a minimum, cause water quality violations regarding sulfate, metals, or suspended solids:268 The wet closure is temporary, it is not permanent. The geomorphologically unstable slopes will erode back into the pooled water if the slope erosion is not repaired perpetually. The saturated tailings will gush out, oxidize, and cause a variety of downstream water quality problems. After this happens, the State of Minnesota will need to collect the escaped tailings, and rebuild the FTB as a dry closure. This will be very expensive.269 Lastly, Petitioners note that DNR Dam Safety staff agrees with these warnings: "[t]he geomorphological issues are essentially why I favor dry closure. I would like to be able to see PolyMet be able to walk away from a site that no longer has seepage issues and can be allowed to revert to forest. Wet closure will not allow that."270 Despite these clear warnings, the proposed mine design being permitted by the Permit would allow the permanent impoundment of slurry mine waste using dangerously unstable and highly erosive dam structures, just as DNR's consultants feared. Because the threat to human health and the environment is well established, MPCA must refuse to issue the Permit. In the alternatives, Petitioners request a contested case hearing to resolve disputed issues of material fact concerning the long term stability of the FTB dam.	This comment raises a factual issue regarding dam construction, but that activity is not within the scope of this permit or within the commissioner's jurisdiction. The adequacy of the dam safety requirements is within the jurisdiction of the DNR. Minn. Stat. §§ 103G.501-561. The DNR has issued dam safety permits for the project and "concluded that any hazards to the health, safety, and welfare of the public and the environment that would potentially be associated with the HRF and FTB Dams, including any arising from probable future development, are not likely to be significant." Dam Safety Findings of Fact at ¶285. The comment does not present a basis to disagree with this conclusion.	Because this is outside the MPCA's jurisdiction, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(B). In addition, the comment does not raise any new facts that would merit a contested case hearing; all the cited information was provided to the DNR directly. *See Red Wing; Amendment No. 4* .

725	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	F. MPCA's Antidegradation and Nondegradation Analyses Erroneously Relied on a Nonexistent Continuation of Existing Conditions Scenario Both MPCA's antidegradation and nondegradation analyses compared the impact of the Project to a scenario in which the Project does not occur.271 Implicit in this scenario is the notion that the existing LTVSMC FTB will continue to seep into groundwater and surface water at its current rates. The antidegradation analysis, for example, states in the summary that: while the project will cause degradation for some water quality parameters, the project will also cut off movement of existing polluted groundwater associated with [the] former LTVSMC tailings basin. As a result, the headwaters of Second Creek, Trimble Creek, and Unnamed Creek will experience an improvement in water quality for sulfate and salty parameters.272 This conclusion "relie[s] on FEIS-modeled concentrations from the November 2015 Final Environmental Impact Statement approved by the Minnesota Department of Natural This conclusion "relie[s] on FEIS-modeled concentrations from the November 2015 Final Environmental Impact Statement approved by the Minnesota Department of Natural Resources."273 The MPCA then compared projected effluent concentrations to existing water quality conditions to determine the potential for a measurable change in water quality.274 This methodology forms the basis on the MPCA's antidegradation conclusions: "[c]onsidering the FEIS concentrations and the evaluation of existing water quality and measurable change provided in PolyMet's evaluation, 13 parameters would experience degraded water quality at SD026 because of the proposed discharge."275 In evaluating mercury impacts—the only bioaccumulative chemical of concern—MPCA concluded that "all downstream waters are expected to show no measurable increase in estimated mercury concentrations or loading as compared to existing conditions."276 The existing conditions for the antidegradation analysis were calculated using monitoring data "sufficient to reflect the condition of the surface waters" (expressed as a central tendency value).277 In the GoldSim modeling for the FEIS, existing conditions for water modeling were based on "conditions in the absence of the NorthMet Project Proposed Action and also in the absence of future activities that may improve water quality under the Consent Decree between the MCPA [sic] and Cliffs Erie."278 This is equally true for the nondegradation analysis of the project's impacts to groundwater, where the MPCA compares the projected impact to an assessment of existing conditions: The GoldSim modeling predictions included both a "Continuation of Existing Conditions" scenario and a "Proposed Action" scenario that allowed a comparison of predicted project impacts against what conditions would be in the project was not built. The modeling predicts that during Project operations and after closure, Project activites would result in small increases in the groundwater concentrations for a limited number of solute contaminants compared to existing conditions.279 As noted above, the Continuation of Existing Conditions scenario does not include any consideration of future activities to improve water quality under the Consent Decree between MPCA and Cliffs Erie.280 This assumption lies at the heart of the MPCA's nondegradation analysis conclusions: MPCA staff reviewed the GoldSim modeling predictions for contaminant impacts to groundwater and found that, in general, the concentration of groundwater contaminants with the Project would remain the same or decrease over time, and would be lower than concentrations that would occur if the project was not built. The GoldSim modeling predictions indicate that the Project would not cause exceedances of drinking water standards beyond what would occur with no Project activities. This indicates PolyMet's proposed Project actions at the Plant Site would not preclude appropriate beneficial present and future uses of the groundwater beyond what would occur if the Project was not constructed, in accordance with Minnesota Rule 7060.0500, Nondegradation Policy.	The MPCA's nondegradation and antidegradation reviews used the modeling developed during the EIS. The MPCA participated in the model development and concurred with its results. The comment alludes to a "Legacy Closure Plan" proposed by PolyMet as a basis to argue that existing conditions are not the baseline against which to measure according to the rule. The Legacy Closure Plan is an appendix to the Permit to Mine, and is not a document issued by the Commissioner. The comment ignores this fact in reaching its legal conclusion, but does not dispute it. The existing control documents are the existing NPDES permit and the associated consent decree, which was the baseline ("no-action alternative") used for the antidegradation review. For the tailings basin, the consent decree referenced in the comment does not identify additional specific actions that will be taken beyond continuation of operation of the current pumpback systems at SD004, SD006 and SD026. The consent decree does not have specific dates to terminate the ongoing pumpback systems, to dewater the tailings basin, or to meet particular water quality objectives, so existing conditions are expected to continue and there is no basis to calculate the "alternative" existing water quality conditions as the comment requests.	This comment raises a legal issue, not a factual issue. The comment interprets the state antidegradation rule as applied to the facility. The comment relies on various facts, but there was no dispute of the facts provided. Because the comment raises a legal and not factual dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
725-A	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	This assumption that forms the central premise of both the antidegradation and nondegradation analysis, however, is incorrect. If the NorthMet project does not proceed for any reason, it is not the case that no future activities will occur to remediate water contamination issues from the LTVSMC tailings basin. Applicant has a Legacy Closure Plan that covers LTVSMC Legacy Properties to which it will receive fee title from Cliffs Erie, LLC, including the existing tailings basin.282 The purpose of Applicant's Legacy Closure Plan is to "ensure that the continuing reclamation obligations under [Minn. Stat. §] 93.49 will be met with respect to the former ferrous LTVSMC taconite facilities if the NorthMet Project (Project) were not to commence operations for any reason."283 The Legacy Closure Plan is not discretionary, but is a condition to closing on Applicant's purchase of the former LTVSMC processing plant and tailings basin.284	The comment argues that the baseline "existing conditions" against which to measure degradation is a "Legacy Closure Plan" proposed by PolyMet. However, the Legacy Closure Plan is not a document issued by the Commissioner. The Legacy Closure Plan was submitted as part of a Permit to Mine application, and is not enforceable by the MPCA. The comment ignores these facts in reaching its legal conclusion, but does not dispute it. The antidegradation and nondegradation reviews did not rely on this unenforceable document as a substitute for existing water quality, which is the baseline contemplated by the antidegradation rules. Minn. R. 7050.0260.	This comment raises a legal issue, not a factual issue. The comment interprets state rule as applied to the facility. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).

725-B	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The Legacy Closure Plan detailing Applicant's assumed obligations as a condition of its purchase of LTVSMC's legacy properties, requires Applicant to dewater and close the existing tailings basin if the NorthMet project were not to proceed "for any reason."285 MPCA analysis of the post-dewatering condition of the LTVSMC basin concluded that conditions in Trimble Creek and Mud Lake Creek could improve.286 It is also apparent that dewatering the LTVSMC tailings basin would improve local surface water conditions for sulfate, thereby improving conditions for wild rice downstream of the proposed mine.287 Existing seepage from the LTVSMC basin contains 350 mg/L of sulfate, and this seepage leaves the existing tailings at a rate of 200 gpm to groundwater and 2,390 gpm to surface water.288 Dewatering the existing basin would reduce that seepage to near zero, thereby eliminating the sulfate contributions to ground and surface water from the tailings basin.289 The error is assessing water quality for existing conditions is also perpetuated throughout the analysis of mercury loading to the Embarrass, Partridge, and St. Louis Rivers. MPCA has accepted the Applicant's assertions that it will offset its mercury contributions by making reductions elsewhere, but this assertion depends on a faulty assessment of existing conditions. This can be readily seen in Large Tables 1 and 2 of Attachment F to Appendix A in Volume III of the NPDES/SDS Permit Application.290 Table 1 is intended to demonstrate that the project will reduce mercury loading to the Embarrass River by 1.3 g/yr, as compared to existing conditions. The 'existing conditions' assume seepage from the existing tailings basin at current rates and mercury loads – 2,590 gpm at 1.5 ng/L.291 But as described above, this assumption is incorrect. If the NorthMet project were not to proceed for any reason, the tailings basin will be dewatered and seepage will be reduced to near zero. If this assumption were corrected to reflect this reality, Large Table 1 in the Mercury Balance Calculations would show that the WWTS mercury discharge of 6.3 g/yr would produce a net increase in mercury loads to the Embarrass River, not a decrease. This would also change the project's contributions to mercury in the St. Louis River, Unnamed Creek, Trimble Creek and Second Creek, all of which calculate net mercury loading by comparing the project to "existing conditions" where the LTVSMC tailings basin continues to seep at current rates rather than be dewatered.292 The error is endemic to the MPCA's antidegradation and nondegradation analysis, and renders both of those documents as fundamentally flawed and misleading. The Legacy Closure Plan therefore establishes that existing conditions at the proposed Plant Site if the NorthMet Project does not proceed cannot assume that no remediation of the existing tailings seepage will occur. In fact, if the NorthMet project does not proceed, the existing basin will be dewatering, thereby drastically reducing the existing basin's impact to ground and surface water. By rule, MPCA is obligated to consider these activities in determining existing water quality conditions.293 It is unlawful for MPCA's antidegradation and nondegradation analysis to rely on a fundamental premise that is not true, namely, that the existing water quality conditions at the site will continue to be impacted by seepage from the existing tailings basin.	The comment addresses a memo that was written to aid DNR in estimating future financial assurance needs for the Permit to Mine. It does not relate to terms and conditions of the proposed NPDES/SDS permit. The memo referenced in the comment describes actions that would be necessary in the event that PolyMet acquires title to the property, prematurely closes before operations, no other entity obtains title, and the state subsequently becomes responsible for the property. It is not a reflection of an existing control document or existing water quality.	As described in response to Comment 725, this comment raises a legal issue, not a factual issue. The comment interprets state rule as applied to the facility. The comment does not raise any new factual issues that could be addressed at a hearing. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
726	Elise Larson	Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness	The NorthMet Mine Project as currently proposed does not conform with state and federal laws protecting clean water, and cannot be permitted as currently designed. For the foregoing reasons, Petitioners request that the MPCA order a contested case hearing to resolve the identified material issues of disputed fact pertaining to the NPDES/SDS Application for the NorthMet Mine Project. In the alternative, should the MPCA choose to forego a contested case hearing on the foregoing issues of disputed fact, Petitioners request that the Application for a NPDES/SDS for the NorthMet Mine Project be denied as noncompliant with lawful requirements.	For reasons described in the responses above, the MPCA disagrees with the legal conclusion in the comment.	This comment states a legal conclusion, not a factual issue. The comment interprets law as applied to the facility. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
727	Nancy Schuldt	Fond du Lac Band	Dear Commissioner Stine: The Fond du Lac Band of Lake Superior Chippewa ("Band") appreciates this opportunity to comment on the draft PolyMet NPDES/SDS permit. In this letter, the Band raises objections to the draft Permit under Minn. R. 7001.1070 subpt. 1 (incorporating Minn. R. 7001.0110), and presents comments raising its other concerns with the draft permit. Because these comments describe ways in which the draft permit fails to comply with the law, they are "significant" comments to which the MPCA must respond under Minn. R. 7001.1070 subpt. 3. The Band requests that this response be made in writing.	This comment is a background statement for comments to follow. The responses below fulfill the request for written responses.	

728	Nancy Schuldt	Fond du Lac Band	I. Statement of Interest and Actions the Commissioner Should Take The Band is a federally recognized Indian tribe and a member band of the Minnesota Chippewa Tribe ("MCT"). The Band was a cooperating agency on the Project during the National Environmental Policy Act review process, along with the Grand Portage and Bois Forte Bands. All the Bands involved retain hunting, fishing, and other usufructuary rights that extend throughout the entire northeast portion of the state of Minnesota under the 1854 Treaty of LaPointe1 (the "Ceded Territory"). Band members rely on those rights to hunt, fish and gather natural resources in the Ceded Territory for subsistence, cultural and religious purposes, and the Bands accordingly have a legal interest in protecting natural resources on which those rights depend. In addition, the Fond du Lac Band holds and occupies a Reservation established as the Band's permanent home by Treaty with the United States and which lies directly downstream from the Project. The Band provides governmental services to Band members and other qualifying persons. The Band accordingly has rights and interests in ensuring that its reservation lands and waters and the natural resources on which Band members depend are not adversely affected by the Project. For that reason, it constitutes an "interested person" under the Minnesota Administrative Rules. 2 PolyMet has applied for a state National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit for its proposed NorthMet mine project. The NPDES/SDS permit is intended to control discharges to surface waters and provide groundwater protection in the project area. PolyMet applied for a permit authorizing only a single discharge point (SD001) that splits flow to three small streams near the Flotation Tailings Basin (FTB) at the plant site. Other conditions in the permit are intended to protect groundwater resources under state standards, Minn. R. 7060.0100-.0900.	This comment is a background statement for comments to follow. Comment noted.
729	Nancy Schuldt	Fond du Lac Band	1. Legal Standards for Approval of NPDES Permit In Minnesota, with exceptions not relevant here, "no person may discharge a pollutant from a point source into the waters of the state without obtaining a national pollutant discharge elimination system [("NPDES")] permit" from the MPCA.3 The Minnesota Administrative Rules governing NPDES permits provide that "[e]ach draft and final permit must contain conditions necessary for the permittee to achieve compliance with applicable Minnesota or federal statutes or rules, including . . . any conditions that the agency determines to be necessary to protect human health and the environment."4 These conditions are described in Minn. R. 7001.1080.5 They include effluent limitations, standards, and prohibitions, when feasible, for each pollutant to be discharged from each outfall or discharge point of the permitted facility.6 When establishing these effluent standards, the MPCA Commissioner must "consider . . . effluent standard or limitations applicable to the permittee" under the CWA and its implementing regulations, 7 as well as the Minnesota water quality standards.8 Permits must also include monitoring requirements to ensure compliance with permit limitations.9 The MPCA cannot issue a final NDPES permit unless it determines that "the proposed permittee . . . will, with respect to the facility or activity to be permitted, comply or will undertake a schedule of compliance to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the agency, and conditions of the permit and that all applicable requirements of Minnesota Statutes, chapter 116D, and the rules adopted under Minnesota Statutes, chapter 116D, have been fulfilled."10 Chapter 116D of the Minnesota Statues require state agencies to interpret and administer the laws of the State to, among other things, "utilize a systematic, interdisciplinary approach that will insure the integrated use of the natural and social sciences and the environmental arts in planning and in decision making which may have an impact on the environment . . . ."11 MPCA is justified in denying a permit if the proposed permittee "will not comply with all applicable state and federal pollution control statutes and rules administered by the agency," if "the permittee has failed to disclose fully all facts relevant to the facility or activity to be permitted," or if "the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by a modification of the conditions of the permit . . . ."12	The MPCA conducted a reasonable potential analysis (See response to Comment 718-A) and determined there is no reasonable potential to cause or contribute to the exceedance of a water quality standard. Therefore, no WQBELs are required in the permit. The MPCA included TBELs in accordance with 40 CFR part 440. In addition to TBELs, the MPCA included Operating Limits for sulfate, copper, arsenic, cobalt, lead, nickel and mercury. The Operating Limits and TBELs in the permit are enforceable and an exceedance of either the TBEL and/or Operating Limit is a violation of the permit. To address concerns regarding the permit being protective of water quality, the MPCA has also added language to the permit stating the discharge of treated wastewater from the WWTS must not violate state water quality standards. See permit at 5.119.1.	

730	Nancy Schuldt	Fond du Lac Band	2. MPCA's Draft Permit Does Not Meet These Standards The permit application pertains to the first five years of mine construction and operations, although in some sections it describes the mine plan for eleven years, and in other sections refers to closure. The application defines eleven sources of wastewater generated by the project: • Mine water: water collected by the mine water management systems, which includes runoff and groundwater from the mine site. Ostensibly, this is only water that has contacted mine sources, such as pit wall, waste rock, or ore, and has been collected from the pit sumps or various collection systems on the mine site. • Treated mine water: water routed from the mine site to the plant site, after collection and treatment at the mine site water treatment facility. Process water: water used in beneficiation or hydrometallurgical process. • Sewage: water from sanitary facilities. • Tailings basin water: water in the tailings basin pond or the pores of the tailings, which includes process water, treated mine water route to the tailings basin, tailings basin seepage, treated sewage, and precipitation on the tailings. • Tailings basin seepage: tailings basin water that infiltrates through the tailings basin. • Hydrometallurgical residue facility (HRF) water: water collected and stored within the HRF. • Plant reservoir water: water stored in the plant reservoir, including makeup water from Colby Lake and precipitation on the plant reservoir. • Industrial stormwater • Construction stormwater • Non-contact stormwater Under existing conditions, runoff from the northernmost area of the Mine Site generally drains north into One Hundred Mile Swamp and associated wetlands along Yelp Creek and the Partridge River. These wetlands form the headwaters of the Partridge River, which meanders around the east end of the Mine Site before turning southwest. Runoff from the majority of the Mine Site naturally drains to the south through culverts under Dunka Road and the adjacent rail line, into the Partridge River downstream of the Dunka Road crossing. The Partridge River hydrology is affected by periodic and variable dewatering of the Peter Mitchell Pit operated by the Northshore Mining Company near the headwaters of the Partridge River, upstream of the proposed Mine Site.13 The majority of the Plant Site is located in the Embarrass River watershed, upstream of the Embarrass River chain of lakes. A small portion of the Plant Site, including stormwater from the Process Plant Area, and Areas 1 and 2 Shops, drains south to Second Creek. Under existing conditions, groundwater and surface water seepage from the existing LTVSMC tailings basin drain towards Unnamed (Mud Lake) Creek to the north, Trimble Creek to the northwest, and Unnamed Creek to the west. Runoff from the outer slopes of the existing LTVSMC tailings basin is tributary to these creeks. Tributaries to the Embarrass River, located between the existing LTVSMC tailings basin and the Embarrass River, which may potentially be affected by the Project include Unnamed (Mud Lake) Creek, Trimble Creek, and Unnamed Creek. Other tributaries located between the Tailings Basin and the Embarrass River that are not expected to be affected by the Project include Spring Mine Creek, which drains LTVSMC's former Mine Area 5N, (another) Unnamed Creek, and Heikkila Creek, and Bear Creek. 14 The infrastructure corridors for roads, rail lines, and pipelines connecting the Mine Site and Plant Site cross Wetlegs Creek, Longnose Creek, and Wyman Creek.15	This comment appears to be a restatement of the content of a portion of the permit application and the 401 Certification Fact Sheet. There is no specific comment offered regarding the content of the NPDES/SDS permit.
731	Nancy Schuldt	Fond du Lac Band	As stated in the NPDES/SDS Fact Sheet, MPCA has determined that the Project as designed does not have reasonable potential to cause or contribute to any violations of any applicable water quality standards in waters of the state. These standards include numeric and narrative water quality criteria, antidegradation standards for surface water, nondegradation standards for groundwater, and beneficial use designations. The draft permit includes extensive requirements to ensure that the Project will comply with all applicable water quality standards. The draft permit also includes requirements to ensure the Project will be constructed and operated consistent with the design reviewed in the final environmental impact statement (FEIS).16 The NPDES/SDS permit is one of the most critical regulatory control documents for this project, and as such, the Band has been awaiting this opportunity to learn specifically how the state proposes to protect surface and groundwater resources given our reasonable trepidation about the likelihood of adverse impacts despite PolyMet's universally optimistic predictions during environmental review.	This comment provides a summary of the content of the draft permit. There is no specific comment on the NPDES/SDS permit content.

731-A	Nancy Schuldt	Fond du Lac Band	There are many disputed issues of material fact, however, that are common to both the draft Permit to Mine and the draft NPDES/SDS Permit, and the Band incorporates our recently submitted comments to the MNDNR on the draft Permit to Mine with our comments on this permit, including: • The ability for the PolyMet project to comply with Clean Water Act requirements and meet MN water quality standards is predicated on the agencies' unsupported faith in seepage capture systems at the Mine Site and Plant Site working flawlessly for centuries. • The draft NPDES/SDS permit completely fails to regulate any pollution seeping from groundwater and welling up in adjacent wetlands and streams, apparently disregarding the strong and repeated recommendations from the EPA throughout the course of the EIS and developing the draft permit. The MPCA's draft permit sets no limits on surface water contamination resulting from this toxic seepage.17 • The draft NPDES/SDS permit fails to require monitoring of water quality in wetlands and streams near PolyMet's mine pits, tailings basin or concentrated waste storage facilities. 18 Without targeted surface water monitoring, even if PolyMet pollution violates Minnesota standards, it could be decades before the contamination of nearby waters is detected. • PolyMet's Final EIS committed to upgrading seepage collection on the south side of the existing LTV tailings basin to have zero discharge to either surface or groundwater.19 However, the NPDES/SDS permit contains no such requirements.20 The draft permit fails to disclose whether the existing seepage capture system will protect downstream water, or allow polluted discharge into groundwater where it surfaces into Minnesota streams. • Contaminant modeling by PolyMet does not consider important flow path details near the mine site or the tailings basin, leading to inaccurate analysis of pathways for contaminants to reach the Partridge and Embarrass Rivers. • Proposed surface and groundwater monitoring is grossly insufficient to ensure the environmental controls are protecting downstream water resources, detecting exceedances, or identifying problematic hydrologic conditions. • PolyMet's application, and the draft permit, have not considered evidence that shows that mercury discharges will likely violate water quality standards	This comment provides a summary of comments that are provided in more detail below. Each of these will be addressed in detailed responses below.	
731-B	Nancy Schuldt	Fond du Lac Band	But perhaps most disturbing, the draft NPDES/SDS permit does not reflect the EPA's clearly and consistently conveyed recommendations throughout the environmental review period, including during the supplemental EIS phase when EPA became a cooperating agency. For instance, EPA summarized its NPDES permitting concerns in a 2015 email to the MPCA21, noting that the MPCA had requested that "specific responses to our comments on NPDES related issues be deferred to the permitting phase of the project rather than during the EIS development phase." EPA had accommodated that request, but was seeking a 'shared understanding of the issues and documentation of decisions and approaches we agreed upon.' EPA wanted to verify their understanding of MPCA's expected permitting approach, and explained again, for the record, EPA's position regarding the applicability of NPDES permit requirements for point source discharges of pollutants to surface waters, including those that occur via subsurface flow. EPA noted that because they had deferred settling these issues with MPCA until permitting, they did not anticipate that the information in the EIS would necessarily be sufficient to address the concerns they had raised. Further, EPA stated: Discharges are proposed for the NorthMet site which require NPDES permit coverage in order to be in compliance with the CWA. The project proponent has a duty to submit an NPDES permit application to seek coverage for all proposed pollutant discharges, so that the permit can be in place when the proposed pollutant discharges occur. The MPCA is responsible for issuing an NPDES permit, where appropriate, that contains conditions and limits which assure compliance with all applicable requirements of the CWA and regulations, including limitations controlling all pollutants which are determined to cause or have reasonable potential to cause or contribute to an excursion from any state WQS. The enclosure highlights the more significant issues that we have identified to date for this facility and that must be addressed during the NPDES permitting process. 22	The MPCA considered the previously submitted EPA comments in its development of the permit. The permit complies with Clean Water Act requirements identified by EPA, including permit coverage for all pollutant discharges expected from the facility.	

732	Nancy Schuldt	Fond du Lac Band	Those issues in the enclosure included: • MPCA's apparent disagreement with EPA's interpretation of the CWA as it applies to discharges of pollutants from a point source to surface water, specifically those via hydrologically connected groundwater • MPCA's rationale for deferring NPDES permit issuance at the Mine Site until "a point source water discharge adds pollutants to waters of the US.23 EPA comments on the SDEIS24 had earlier raised concerns about PolyMet's modeling approach and that the Partridge River would not be the first receiving water of mine site discharges (adjacent wetlands would be). • MPCA had not been clear about how they would apply potential future NPDES permitting authorities to mine site discharges, based upon monitoring associated with the SDS permit that was intended to cover the mine site. Uncertainties regarding timely detection of pollutants that could trigger NPDES permit development did not provide assurance that PolyMet could avoid noncompliance. Simply applying for a permit does not provide the coverage needed to authorize discharges of pollutants to surface waters under the CWA. • An NPDES permit for discharges of pollutants would need numeric and/or narrative effluent limitations necessary to protect WQS of the receiving waters, as well as any limitations necessary to ensure that downstream WQS are protected. 40 CFR § 122.44(d). • As a "new source", as defined in 40 CFR § 122.2, the PolyMet facility must be able to meet standards at the time of permit issuance; it would not be eligible for variances or schedules of compliance. • If PolyMet did not have NPDES permit coverage for identified pollutant discharges prior to pollutants reaching surface waters, then the company will be discharging without a permit in violation of the CWA – and there is no minimum threshold of predicted pollutant load needed to trigger the requirement to submit a permit application.25	The MPCA considered the previously submitted EPA comments in its development of the permit. The permit complies with Clean Water Act requirements identified by EPA. See responses to Comments 723 (groundwater hydrologically connected to surface water), 703 and 717 (authorized discharge points), 732 (monitoring to ensure no unauthorized discharge), 718-A (limitations to protect water quality standards), and 716 (engineering controls preventing impacts).	
733	Nancy Schuldt	Fond du Lac Band	Additionally, at the plant site, MPCA's criteria for assessing "permittability" of the tailings basin, as outlined in a memo to MNDNR26, included that groundwater seepage from the tailings basin should not exceed 500 gallons/acre/day, which they considered equivalent to an engineered lined system. For PolyMet, this could translate to over two million gallons/day, yet the tailings basin would not be subject to NPDES requirements. "Excess" wastewater from the tailings basin (that discharges to the Embarrass River) during operations must meet effluent limits based upon the 10 mg/l wild rice sulfate standard, but MPCA further explained that they would "seek evidence the facility will not have a statistically significant impact on sulfate in receiving waters…groundwater quality standards can be met at the property boundary, and all applicable surface water quality standards can be met in surface waters at the facility." EPA also warned MPCA that the CWA does not include exemptions that would limit NPDES permit coverage to only "excess" wastewater discharges that are deemed to have a "statistically significant" impact on receiving waters at the property boundary. There is no exclusion or exemption for discharges from facilities based on technology or engineering controls, and again, failure to obtain NPDES coverage for discharges of pollutants to waters of the US would put PolyMet at risk of violating the CWA. EPA expressed bewilderment that the MPCA did not clearly understand these issues after substantial interagency discussions over several years, and in fact believed it had been understood and agreed to by both parties some time ago.	The memo referenced in the comment responded to a previously proposed project design. As described in response to Comment 711, maintaining an inward gradient across the seepage containment systems will ensure containment of potential pollution from the tailings basin. This method of containment also addresses the issues raised by EPA because it does not rely on calculating statistically significant impacts.	

734	Nancy Schuldt	Fond du Lac Band	And now, the MPCA is asking for public comments on a draft NPDES/SDS permit that defies EPA's clear recommendations and warnings that MPCA's approach for regulating water quality impacts from the proposed PolyMet project is not consistent with the CWA, and leaves surface and groundwater resources at foreseeable risk. Given what we know about the MPCA's track record in regulating hard rock mining in Minnesota, this does not come as a surprise. But it is entirely unacceptable for the agency to offer this water quality permitting scheme for the first of potentially many other copper-nickel mines, and profess that they are protecting northeastern Minnesota's irreplaceable water resources. The Band submits the following additional specific comments relevant to major environmental concerns that we have consistently raised throughout our engagement in the environmental review process. As we show below, PolyMet's proposed mining project relies on remediation and containment designs that are untested, have not yet been finished, or that will not function properly to prevent the discharge of pollutants into the waters of the State in violation of the State's water quality standards and the CWA. We do not believe that the draft NPDES/SDS permit sufficiently dispels those concerns, nor does it comply with the Clean Water Act or Minnesota rules intended to protect the waters of the state; rules that we also rely upon to protect vital treaty resources. It should be denied as currently written, and the Commissioner should take action to resolve these issues – consistent with EPA's recommendations - so that when a revised NPDES/SDS permit is issued, it is based on proper scientific and engineering analyses, and subject to clear limits and conditions that ensure the project complies with the law.	The MPCA disagrees with the comment's general characterization of the permit's compliance with federal law. Responses to specific issues related to this topic are detailed below.
735	Nancy Schuldt	Fond du Lac Band	II. The Band's Comments and Reasons Supporting Them The Band's comments, and the specific reasons supporting them, are as follows. 1. Compliance with permit unrealistically assumes unsupportable seepage capture rates The issuance of the NPDES/SDS permit relies upon a finding that the Applicant will comply with conditions established in the permit,27 including the condition requiring recapture of the contaminated groundwater leaving the tailings basin, the Hydrometallurgical Residue Facility (HRF) and Category 1 waste rock storage pile, in order to maintain compliance with applicable water quality standards. This perspective was confirmed in a consultation meeting between MPCA and tribes on March 1, 2018.28 The Band submitted extensive comments to the MNDNR on the draft permit to mine, summarizing our concerns that no evidence has been presented to demonstrate that the predicted rate of seepage capture was feasible. Among our comments: The PolyMet FEIS claimed that, during mine operations, 3,860 gallons per minute (gpm) of the total 3,880 gpm of seepage modeled would be collected from the unlined, permanent FTB. This represents a nearly perfect collection rate of 99.5%.29 It estimated a similar collection rate of 98.8% during long-term maintenance. 30 In order to arrive at this conclusion, the FEIS first assumed that all but 200 gpm (5%) of total NorthMet tailings seepage will be "surface seepage."31 Then, based on PolyMet's modeling, the FEIS assumed that 100% of both tailings surface seepage and groundwater seepage would be captured on both the east side and the south side of the tailings waste facility,32 and that 100% of the surface seepage and 90% of seepage retained in groundwater would be captured at the north, northwest and west toes of the tailings storage facility.33 Verification of this prediction is fundamental for determining whether this project can even be permitted (both the permit to mine and the NPDES/SDS permit): whether the barrier walls surrounding the tailings basin and the waste rock stockpiles will function as predicted to capture nearly 100% of mine-impacted surface and groundwaters. As Dr. Myers pointed out in his independent expert analysis of the NPDES/SDS permit, compliance with nondegradation requirements is crucially dependent on the seepage collection system "operating perfectly."34 The proper functioning of this system will also determine whether the project complies with permit to mine regulations at Minn. R. 6132.2200, 6132.2500, and 6132.3200. But such verification has not been done.	The permit has been revised to include greater detail regarding required facility design of the FTB Seepage Containment Systems, Category 1 Waste Rock Stockpile Groundwater Containment System, and the Wastewater Treatment System. See permit at 5.175.54, 5.175.78, 5.181.166. Regarding the collection rate, see response to Comment 711, which describes why the MPCA does not anticipate release through the FTB and Category 1 seepage containment systems. The Modflow modeling conducted for the EIS indicated that the capture efficiency for both of the seepage capture systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7.. As stated in response to Comment 711, the draft permit requires that 13 pairs of groundwater monitoring devices (wells and piezometers) at each of the systems be monitored on a monthly basis to ensure that the necessary inward gradient is being maintained. The system consists of one of the pair located just inward of the hydraulic barrier and one just outward of the barrier. The primary purpose of the paired devices is to monitor for the presence and maintenance of an inward hydraulic gradient across the barrier which is accomplished by simultaneous measuring of the water table elevation of the two devices. If there is an inward hydraulic gradient, flow will not move out through the barrier. If an inward gradient is not maintained, the Permittee is required to take corrective actions immediately to restore the inward gradient. If the inward gradient is not restored within 14 days, it is considered a violation of the permit. The draft permit further requires that the performance of the capture/containment systems and the adequacy of the monitoring network be assessed on an annual basis.

735-A	Nancy Schuldt	Fond du Lac Band	Despite its promises in the FEIS, in its permit to mine application, PolyMet walks back from its promises in the FEIS that more than 99.5% of total tailings facility seepage will be contained by its seepage capture system. Instead PolyMet states, "tailings basin seepage will be collected to the extent practical by the FTB seepage capture systems."35 This change is substantial and effectively eliminates performance standards. PolyMet states that it will build various segments of a seepage containment system on the west, north and part of the east sides of the tailings storage facility,36 but the draft special conditions do not specify any performance standards for this system. PolyMet proposes to furnish criteria, such as containment system trench wall thickness, conductivity and depth "prior to system construction." 37 Despite more than a decade of project planning, revisions and refinements, PolyMet seeks a Permit to Mine based upon a "conceptual" layout and cross-section of the tailings facility seepage containment system.38 Consistent with its obligations under the Administrative Rules, MNDNR should establish in the special conditions the design and performance criteria that PolyMet must meet in order for this seepage containment system to function as described in the FEIS. Otherwise, Minnesota water quality standards simply cannot be met at the Plant Site.	The NPDES/SDS permit has been revised to include greater detail regarding required facility design of the FTB Seepage Containment Systems and the Category 1 Waste Rock Stockpile Groundwater Containment System. See response to Comment 735.
735-B	Nancy Schuldt	Fond du Lac Band	On the south side of the tailings waste facility, PolyMet acknowledges that groundwater from the existing LTVSMC tailings basin is currently flowing south toward NPDES/SDS monitoring station SD026 at the headwaters of Second Creek, downstream to the Partridge River.39 But PolyMet's permit to mine Application fails to fulfill commitments made during the FEIS process – commitments that ensured environmental protections and the ability to acquire necessary permits - for 100% collection on the south side of the tailings facilities. Now, however, PolyMet is apparently deferring implementation of critical environmental controls with a statement that does not lead to enforceable permit conditions: PolyMet is working with Cliffs Erie and MPCA to evaluate possible improvements to this system, which will be called the FTB South Seepage Management System for the Project. . . A geotechnical investigation is required to determine if additional improvements are needed and to develop a design for these improvements, if deemed necessary. If improvements are necessary, design drawings will be submitted to the DNR for approval and potentially a permit amendment, as determined by the DNR, prior to the initiation of construction.40 Again, during the March 1, 2018 consultation with MPCA, the agency called the tribes' attention to the "different objectives" that currently control this permitted discharge point: A surface seepage pumpback system was installed by Cliffs Erie in 2011 as part of a short-term mitigation plan required by the Consent Decree between Cliffs Erie and MPCA. This system currently is collecting a portion of the south seepage for the purpose of complying with the 1000 umh/cm specific conductance effluent limit in the existing Cliffs Erie permit. (Note: complete capture is not required by the Consent Decree – it needs only to capture an amount sufficient to meet the permit conductivity limit). This capture system will become part of PolyMet's FTB South Seepage Management System. PolyMet has committed to collecting essentially all of the seepage from the basin in this area as part of the NorthMet project. Geotechnical investigations are planned to identify the subsurface conditions in order to identify a final design to achieve this. Options that have been considered to date include lining the existing collection dam with bentonite, injecting grout into the existing dam and/or constructing a second collection dam with a clay or concrete cutoff wall extending to bedrock. Details on the final design depend on the geotechnical findings.41 As the Band reviews the draft NPDES/SDS permit, it appears we are expected to trust that PolyMet will come up with a design, sometime in the future, that will assure 100% capture of seepage at the south discharge of the FTB. Existing conditions under Cliffs Erie's management under the Consent Decree are not in compliance with even the less rigorous 'objective' of complying with the state specific conductance standard; nor is this discharge meeting the existing sulfate standard for wild rice, and Second Creek is a wild rice water. Clearly, this South Seepage Management System is critical for PolyMet to meet WQS, but no plan has yet been developed and neither water quality monitoring nor limits have been proposed. This is a major deficiency in the draft NPDES/SDS permit that must be corrected.	Parts 5.175.51 and 5.175.52 address unauthorized discharges at the plant site by prohibiting direct discharges to surface water from the FTB pond, the FTB seepage containment system or the south seepage management system. All water collected by the containment systems must either be pumped back to the FTB or routed to the WWTS for treatment. As noted in the comment, the intent of the existing pumpback is to meet permit limits, not eliminate discharges. The MPCA has modified language in Item 5.175.75 of the draft permit regarding unauthorized discharges from the mine site, which prohibits the Permittee from directly discharging any mine water or other process wastewater from the Mine Site to surface waters under this permit. All mine water or other process wastewater from the Mine Site must be routed to the Equalization Basins and pumped to the Plant Site for treatment. Permits contain requirements applicable to the permittee. Statutes and rules define the scope of enforcement authority available to the permitting agency. Enforcement actions are determined at the time of discovery and range in seriousness based on the severity of the violation. If there is an unauthorized discharge, it will be considered a violation of the permit and the MPCA will determine appropriate enforcement action at that time.	

736	Nancy Schuldt	Fond du Lac Band	2. The draft permit assumes, without scientific support or enforceable conditions, that the contaminated groundwater containment systems at both the flotation tailings basin and the waste rock stockpiles will maintain an inward hydrologic gradient at all times. As the Band stated in its comments and objections to the draft permit to mine, the assumption that the contaminated groundwater containment systems at both the flotation tailings basin and waste rock stockpiles will maintain an inward hydrologic gradient at all times, is not supported by any scientific analysis or enforceable conditions. This problem, and our comments on it, are equally applicable to the draft NPDES/SDS permit, as MPCA staff explicitly stated to the tribes during consultation that their confidence in PolyMet's capture system was based upon the maintenance of an inward hydraulic gradient, unlike similar capture systems at U.S. Steel Minntac and the existing system at SD026 managed now by Cliffs under Consent Decree. In PolyMet's modeling for the FEIS, the contaminated groundwater containment systems at both the Flotation Tailings Basin (FTB) and the waste rock stockpiles, including the Category 1 Waste Rock Stockpile were assumed to collect ninety percent of groundwater moving out of these facilities. 42 Here too, despite numerous requests to the co-lead agencies, we have not been provided with any evidence that this level of effectiveness has ever been achieved before for a cut-off wall, drain, and pump type of system. The co-lead agencies accepted PolyMet's assumption of ninety percent efficiency solely on the presumption that the systems are designed to maintain an inward hydraulic gradient. Under those conditions, any breach in the containment wall would result in water flowing into the tailings basin side of the wall, rather than water escaping from the tailings basin into the surrounding environment. But that assumption of ninety percent efficiency presumes that the inward hydraulic gradient would be maintained at all times. The FEIS never discusses any scenarios or any percentage of the year during which the inward gradient might be compromised. The Permit to Mine application maintains this unrealistic assumption. The application states: The FTB Seepage Containment System will draw down the water table on the Tailings Basin side of the cutoff wall, maintaining an inward gradient and mitigating the potential for tailings basin seepage to pass through the cutoff wall (i.e., any seepage through the cutoff wall would be inward into the FTB Seepage Containment System).43 As to the Category 1 Stockpile, the application states: The groundwater containment system will collect stockpile drainage and draw down the water table on the stockpile side of the cutoff wall, thereby maintaining an inward gradient along the cutoff wall and eliminating the potential for stockpile drainage passing through the cutoff wall. Potential leakage through the cutoff wall, if it occurs, will be inward into the groundwater containment system.44 However, when seeking to find any enforceable requirements of the systems, the only reference for operational requirements that could be found in the Permit to Mine application is the statement that "Proposed performance monitoring for the FTB Seepage Containment System is described in Appendix C of Reference (4)."45 This cited document is PolyMet's NPDES/SDS permit application.	The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. As described in responses to Comments 711 and 735, the draft permit requires that 13 pairs of groundwater monitoring devices (wells and piezometers) at each of the containment systems be monitored on a monthly basis to ensure that the necessary inward gradient is being maintained. The system consists of one of the pair located just inward of the hydraulic barrier and one just outward of the barrier. The primary purpose of the paired devices is to monitor for the presence and maintenance of an inward hydraulic gradient across the barrier which is accomplished by simultaneous measuring of the water table elevation of the two devices. If there is an inward hydraulic gradient, flow will not move out through the barrier. The draft permit further requires that the performance of the capture/containment systems and the adequacy of the monitoring network be assessed on an annual basis. If an inward gradient is not maintained, the Permittee is required to take corrective actions immediately to restore the inward gradient. If the inward gradient is not restored within 14 days, it is considered a violation of the permit. The Category 2/3 and Category 4 waste rock stockpiles will be temporary and do not have the type of capture system required for the FTB and Category 1 stockpile. The permit has been revised to limit the permeability rates for each stockpile. See permit at 5.175.87 – 5.175.88.
			As to the Category 1 Stockpile, the application states: The groundwater containment system will collect stockpile drainage and draw down the water table on the stockpile side of the cutoff wall, thereby maintaining an inward gradient along the cutoff wall and eliminating the potential for stockpile drainage passing through the cutoff wall. Potential leakage through the cutoff wall, if it occurs, will be inward into the groundwater containment system.44 However, when seeking to find any enforceable requirements of the systems, the only reference for operational requirements that could be found in the Permit to Mine application is the statement that "Proposed performance monitoring for the FTB Seepage Containment System is described in Appendix C of Reference (4)."45 This cited document is PolyMet's NPDES/SDS permit application. Appendix C states: Successful containment system performance will be defined by: maintenance of an inward hydraulic gradient during average annual conditions; and consistent pumping rates, with changes attributable to weather. "Average annual conditions" is not defined. And although it downplays the risk for reversing the gradient, the permit application does admit: As long as heads are higher on the exterior side, there will be negligible flow escaping capture through the cutoff wall. It is possible that there could be temporary localized ponding of water on the interior side of the cutoff wall during certain events, such as large rain events or snowmelt, causing heads to temporarily be higher on the interior side of the containment system than on the exterior side.46	

737	Nancy Schuldt	Fond du Lac Band	The draft NPDES/SDS permit also states: The Permittee shall maintain an inward hydraulic gradient across the Category 1 Waste Rock Stockpile Groundwater Containment System as determined by comparing water level measurements from the paired monitoring wells and piezometers taking into account temporary conditions that may result from short-term precipitation or snowmelt events. Short-term precipitation or snowmelt events on the stockpile side of the low-permeability hydraulic barrier must not cause overtopping of the barrier.47 There are no clear or specific criteria for "taking into account temporary conditions that may result from short-term precipitation or snowmelt events". This vague language does not ensure that PolyMet must maintain an inward hydraulic gradient at all times, as had been assumed in the modeling for the FEIS. Both state permitting agencies seem to be ignoring the potential for cracks or other breaches in the containment wall, or for water flowing under the bottom of the wall. The permit to mine assumes that these systems will operate flawlessly for hundreds of years, yet visual inspections are not possible, nor does the permit include any specific conditions under which a detailed investigation would be required. These deficiencies in the design make it impossible to ensure that PolyMet will meet the conditions of the permit, and these deficiencies must be addressed before the permit can be issued. At the tailings basin, FEIS modeling suggested that any contaminated water escaping the system would escape through the bedrock aquifer, and would not surface until miles downstream. But if the hydraulic gradient were reversed for a period of weeks during snowmelt conditions or heavy rain events, the result would be contaminated water escaping through the surficial aquifer and surfacing quickly in the wetlands and headwaters of Embarrass River tributaries, where the impact on water quality would be significant.	The MPCA has removed the "temporary conditions" language and has revised the language of the permit in light of the comment. As described in response to Comment 735, the permit states that if an inward gradient is not reestablished within 14 days of detection, it is a violation of the permit. The permit also requires monitoring of the Category 1 stockpile paired wells/piezometers weekly following a 100-year storm event to ensure that monitoring and any necessary preventative maintenance occur promptly.	
737-A	Nancy Schuldt	Fond du Lac Band	The FEIS conclusion that no groundwater would escape the containment system on the east side of the tailings basin is particularly dubious. The FEIS completely omitted any explanation for why the co-lead agencies assumed that PolyMet could collect 100 percent of seepage in this location, but that assumption is highly unlikely if an inward hydraulic gradient is not maintained at all times. The area immediately below the toe of the dam on the east side is a wetland that receives overflow from the Spring Mine Creek headwaters.48 Along with Yelp Creek and Second Creek, the FEIS provided no predictions for potential water quality impacts to this waterbody, which would become the headwaters of Mud Lake Creek after the east side of the tailings basin is built up to a higher elevation. This information must be made available for public review before a permit to mine – or, for that matter, an NPDES/SDS permit – can be issued.	During the EIS, a hydrologic assessment was used to evaluate the effectiveness of the eastern section of the FTB Seepage Containment System. Along most of the eastern side of the Tailings Basin, elevated bedrock will prevent groundwater seepage. In the area of the East Dam, groundwater flow is currently from the east toward the Tailings Basin because of the high hydraulic head in the high ground east of the Tailings Basin. Construction of the East Dam and the tailings deposition behind the dam will result in hydraulic heads that will allow water from a limited area at the eastern edge of the FTB to flow east towards the toe of the East Dam. Installation of the eastern segment of the FTB Seepage Containment System will address this scenario in the same manner as described in response to Comments 711 and 735. The permit stipulates that cells 2E and 1E of the FTB cannot be merged until that segment is fully constructed and operating. The hydraulic gradient across the containment system cutoff wall will be inward, toward the Tailings Basin, to prevent the scenario raised in the comment.	
737-B	Nancy Schuldt	Fond du Lac Band	These unsupported and unsupportable assumptions apply equally to the waste rock stockpile liners, and in particular, the Category 1 stockpile, as it will remain a permanent post-closure feature generating reactive mine waste for centuries. The FEIS assumed that all water escaping the collection system would exit via the bedrock aquifer, and virtually all of that water would flow into the mine pits. However, water escaping north of the stockpile, because of a reversal in the hydraulic gradient from mine pit pumping, would likely flow through the surficial aquifer to nearby Yelp Creek. No analysis of this potential groundwater flow path or water quality impacts on Yelp Creek and the uppermost reaches of the Partridge River has been done – but must be, before permitting can proceed.	As described in response to Comment Multiple-543-BN, the MPCA evaluated the monitoring needed at the facility, including that needed to ascertain whether a north flow may occur in the future, in the development of the permit. The Annual Groundwater Evaluation Report required by the permit specifically requires an annual assessment of the current and future potential and timeframe for migration of groundwater towards surface water from the mine site and plant site. Also, as described in response to Comment 711-A above, the Annual Comprehensive Performance Evaluation specifically requires that the performance of engineering controls be assessed for any impact to groundwater. Together, these annual reports provide early warning before impacted groundwater would reach surface water such that adaptive management can be implemented before impact to surface water occurs. As a result, the MPCA does not anticipate that groundwater would pollute surface water.	

737-C	Nancy Schuldt	Fond du Lac Band	In both the draft Permit to Mine and the draft NPDES/SDS permits, the state regulatory agencies are relying exclusively on monitoring to not only demonstrate performance of the containment systems but also to reveal any failures and contaminant release to nearby surface and groundwaters. But proposed monitoring wells are spaced to far apart to reliably detect groundwater plumes escaping the containment systems. As described by Dr. Myers, the primary problem with the design's location of the monitoring wells is that the well monitors can only detect contaminants in groundwater that flows directly past them.49 But the monitoring wells are in very close proximity to the stockpiles and the tailings basin, such that "detailed modeling of the mine site and the plant site showed that contaminant plumes would miss much of the proposed monitoring."50 This despite the fact that Minnesota law requires NPDES permits to include monitoring requirements that will ensure compliance with water quality standards.	See response to Comments 710 through 711-B, which directly address the concerns expressed by Dr. Myers. As described in those responses, the MPCA determined the proposed monitoring network identified in the draft permit is adequate. The draft permit requires water quality and/or water level monitoring at a total of 169 monitoring stations at the Mine Site and Plant Site. The draft permit also requires an Annual Comprehensive Performance Evaluation Report, which includes an annual evaluation of monitoring and performance data as well as engineering controls at the Mine Site and Plant Site. As described in response to Comment 716, the annual evaluation of the engineering controls along with the evaluation of relevant monitoring and performance data, which includes waste stream monitoring results, surface water monitoring results, and internal operational data, will provide early identification of potential impacts from the project and will help determine the need for adaptive management, corrective actions, or mitigation to prevent potential impacts to the groundwater and surface waters. If the evaluation of the facility indicates the engineering controls are not operating as intended or are not providing a sufficient level of controls, the Performance Report must describe in detail the adaptive management or corrective actions that are being done, or will be done to correct the problem, including a schedule for their implementation. If the MPCA determines in the future that the monitoring well or surface water monitoring network is insufficient, the agency has authority under Minnesota Rule part 7001.0170 to modify the permit, and authority under part 7001.0150 to require sufficient monitoring to determine compliance.	
737-D	Nancy Schuldt	Fond du Lac Band	In short, absent studies that addresses these issues, and absent the imposition of clear conditions in the permit that would require PolyMet to meet specific performance standards, the permit to mine violates Minnesota law. Compliance with Minnesota law clearly relies upon an 'engineered design' that will prevent violations of the State's water quality standards of the State and a monitoring design that will ensure compliance with the permit. The necessary studies must be done and any permit to mine must be amended to include such conditions.	This comment addresses the permit to mine, not the NPDES permit.
738	Nancy Schuldt	Fond du Lac Band	3. Elimination of WWTF at mine site does not ensure protection of Partridge River watershed As described in PolyMet's application for the permit to mine, incorporated into MNDNR's draft permit to mine, PolyMet has changed how it plans to undertake waste water treatment at the mine and plant sites. As the Band described in its comments to the MNDNR on the PolyMet draft permit to mine: Throughout the entirety of environmental review - in the draft EIS, supplemental draft EIS and the final EIS - PolyMet's operations plan have included a mine site [Waste Water Treatment Facility ("WWTF")]. Beginning with the release of the supplemental draft EIS, PolyMet has assured that their project would protect water quality in the Partridge River watershed by upgrading the mine site WWTF during closure to provide reverse osmosis treatment of discharge and collected seepage.51 In the final EIS, the WWTF is an essential part of the company's plans to protect water quality at the mine site during operations, closure and post closure, and provides flexibility for adaptive engineering and contingency mitigation. The WWTF is referred to hundreds of times in the final EIS, and FEIS modeling of solute levels in mine site surficial aquifer and surface water included treatment at the WWTF as a fundamental assumption.52 However, PolyMet has now eliminated the previously proposed WWTF at the mine site, and replaced its prior plan with a single Waste Water Treatment System (WWTS) at the plant site. A single WWTS cannot handle the volume of water from mine site and plant site, as shown by the Water Management Plan and Water Appropriations Permit. Elimination of the WWTF appears to be part of a strategy to avoid issuing an NPDES/SDS permit in the Partridge River watershed, even though there will be contaminated discharges that must be regulated. In its comments, the Band also raised significant concerns about the highly concentration contaminant waste stream being pumped across eight miles of wetlands and streams from the mine site to the single treatment facility at the plant site, and the risk to those surface waters from spills or ruptures. Treatment of contaminated process water at the mine site would now depend solely on uninterrupted operation of pumps and pipelines, and in the event of any disruption in the central pumping system or pipelines, no method of treatment would be available to address contaminated groundwater seepage being managed at the mine site, or any overflow of wastewater from equalization basins. We cautioned that PolyMet's characterization of the quality of mine site wastewater being pumped to the plant site is incorrect and misleading; that in fact the concentration of pollutants in pipeline water referenced in the permit to mine application 53 were based on earlier modeling that assumed a mine site WWTF would treat mine wastewater before piping it from the mine site to the plant site.54 We noted in a major departure from the FEIS, the PolyMet draft permit to mine shows the Equalization Basins have been relocated and are now the closest mine features to the Partridge River. There are no apparent provisions for adequate water management that will prevent overflow of these Basins or other mine site wastewater features, which will quickly end up in the Partridge River.	The proposed treatment components of the reconfigured WWTS are the same as originally proposed. Anticipated flow volumes from the Mine Site to the reconfigured WWTS will remain the same as originally proposed. The location of the proposed mine site treatment system is the only thing that has changed. The equalization basins must have a composite liner system including a clay layer overlain by a synthetic liner. See permit at 5.178.116. In addition, the permit ensures they will not overflow because they must maintain at least three feet of freeboard. See permit at 5.178.125. Thus, the permit restricts leakage to groundwater and prevents discharges to surface water from the equalization basins. The DNR's Permit to Mine specifically addresses the design of the high concentration Mine to Plant Pipeline. Special condition 93 of the Permit to Mine requires this pipeline to be upgraded from the original design. Specifically, the first 25% of the pipeline, where operating pressure is highest, is being upgraded from SDR11 HDPE pipe to SDR9 HDPE pipe. This results in an increased safety factor of 1.25 along the entire pipeline based on operating pressure and a safety factor greater than 2 for surge pressures if the pipe was exposed. Because the pipe is buried (to protect from freezing and physical damage) and will not be exposed to solar radiation, actual safety factors are higher. The Annual Comprehensive Performance Evaluation Report required by the NPDES/SDS permit requires that the Mine to Plant Pipeline be part of the annual performance assessment.	

738-A	Nancy Schuldt	Fond du Lac Band	These concerns are supported by the Myers technical memorandum: The mine site would not intentionally discharge directly to surface water, but waste rock stockpiles, mine ponds, and open pits are potential sources of contamination to groundwater, as the following subsections describe. There are also sources throughout the mine site. Runoff from stockpiles could contaminate shallow groundwater. Mine ponds are potential sources of contaminants to groundwater if they are not lined or if the liners leak. Each time they fill, groundwater seepage will cause a plume to enter groundwater. This includes stormwater ponds if runoff from dumps will enter stormwater ditches and flow to a pond. There are many examples of how the mine site could be a source of groundwater and surface water degradation. For example, if water reaches the ditch on the north side of the Category 2/3 dump, it will reach the stormwater pond from which it could seep into groundwater. The pond on the NE corner of the Category 1 dump collects runoff from all along the NE and NW side of the dump, essentially half of the dump. Vol II Sheet SW-008 shows no liner on Pond A and sheet SW-017 shows no liner for the North Perimeter Stormwater Ditch. There is also no liner for the ditch on the north side of the Category 2/3 stockpile. The ditches would carry mine-impacted water and the pond would contain mine-impacted water at least until the dump is reclaimed. The ditch essentially overlies the cutoff ditch, so that seepage would be into the one-inch rock filling the cutoff trench. GCS-010 shows the cutoff trench and stormwater ditch do not coincide. On the north side, the stormwater ditch, unlined, lies outside of the perimeter of the dump and cutoff trench. On the south, there is no stormwater ditch and the cutoff is between the dump and the pit lake. The combination of unlined ditches, cutoffs, and ponds could lead to a significant contaminant source not prevented by the NPDES/SDS permit. 55 In summary, not having a treatment plant at the mine site is not the equivalent of no discharges; it just means that the inevitable discharges to the Partridge River watershed from multiple sources will not be controlled or regulated. This is unacceptable, from a permitting standpoint and for protecting natural resources proximal to the mine site.56 But it also leaves PolyMet at substantial risk for significant liabilities for unauthorized discharges, for instance if/when the Equalization Basins overtop or stormwater collection systems around waste rock stockpiles are overwhelmed and pollutants enter the State's waters.57	The proposed treatment components of the reconfigured WWTS are the same as originally proposed. Anticipated flow volumes from the Mine Site to the reconfigured WWTS will remain the same as originally proposed. The location of the proposed mine site treatment system is the only thing that has changed. Regarding potential pollution from mine site sources, see responses to Comments 736 through 738 and 707 through 708-B.	
739	Nancy Schuldt	Fond du Lac Band	4. EPA has consistently interpreted the Clean Water Act (CWA) to apply to discharges of pollutants from a point source to surface water, including those that occur via hydrologically connected ground water. MPCA's draft permit does not. Currently, the EPA is requesting comment on their previous statements regarding the CWA and whether pollutant discharges from point sources that reach jurisdictional surface waters via groundwater or other subsurface flow that has a direct hydrologic connection to the jurisdictional surface water may be subject to CWA regulation.58 They have not stated that CWA permits are required for pollutant discharges to groundwater in all cases, but they have clearly expressed their position and underlying rationale to the MPCA about this issue as it specifically pertains to the PolyMet project as well as other MPCA-permitted mining discharges. Even though the groundwaters are not considered "waters of the US", EPA has interpreted that NPDES permitting authority exists and in fact is required because such discharges are effectively discharges to the directly connected surface waters.59 The permit requirements are intended to protect surface waters which are contaminated via a groundwater (subsurface) connection. This issue has been litigated throughout the US, with various court interpretations and decisions. However, one court noted that "it would hardly make sense for the CWA to encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater." 60 It is hard to imagine a more appropriate analogy to the proposed PolyMet project, but MPCA has developed a draft NPDES/SDS permit that does not align with that interpretation. MPCA must clearly articulate and support their alternative interpretation of the CWA so that the Band and the public can discern whether the agency is seeking to protect water resources and the public interest, or PolyMet.	See response to Comment 723, which explains that the permit includes specific authorized discharge points. It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters from the mine site and plant site.	

740	Nancy Schuldt	Fond du Lac Band	5. MPCA has not placed any controls at all on discharge to groundwater that seeps to wetlands, streams and rivers at the mine site and plant site, inconsistent with EPA recommendations. The Clean Water Act requires protection of surface water from pollution released through connected groundwater.61 Yet, there do not appear to be any enforceable requirements anywhere in the draft NPDES/SDS permit for the treatment of mine and plant seepage. PolyMet has admitted that more than 5,250,000 gallons of contaminated wastewater from the mine site and over 10,500,000 gallons of contaminated wastewater from the tailings site would be released without treatment into Minnesota groundwater.62	See response to Comment 723 regarding discharges to surface water via hydrologically connected groundwater. The permit does not authorize discharges to surface water from any source other than the WWTS. As described above, the permit requires construction of engineering controls to prescribed design specifications and these controls required by the permit will protect against impacts to surface water and groundwater from the project.
740-A	Nancy Schuldt	Fond du Lac Band	Additionally, the MPCA failed to perform a reasonable potential analysis for any mine site or plant site discharge to surface water via hydrologically connected groundwater. As a result, the draft MPCA wastewater permit fails to control or even to monitor the effects of polluted seepage on adjacent wetlands and streams. All of these issues must be addressed before a permit may be issued. Without a clear statement of prohibition, the Draft NPDES/SDS Permit appears to actually allow PolyMet to discharge untreated water from its tailings facility to surface waters via hydrologically connected groundwater. The Draft Permit only conditions that there will be “no direct discharge from the FTB (Flotation Tailings Basin) Pond to any receiving waters”63 and that “Direct discharge to surface waters from the FTB Seepage Containment System is prohibited.”64 Nowhere is groundwater addressed.	See responses to Comments 740 and Multiple-543-AL through Multiple-543-AS.
740-B	Nancy Schuldt	Fond du Lac Band	The MPCA Fact Sheet appears to sidestep the issue by stating that, “based on typical defect size and frequency, expected hydraulic head, and measured hydraulic conductivity of system components” for the hydrometallurgical residue facility (“HRF”), “no leakage is expected through the lower composite liner.” 65 But this does not address the issue, because as the Band described in its comments on the draft Permit to Mine, the proposed HRF site is located on wetlands, which are inherently unsuitable for a toxic waste storage facility because they are structurally unstable.66 As described by MDNR’s consultants, “The soft ground beneath the proposed residue facility consists of up to 30 feet of slimes, peat and tailings concentrate. This will not be an adequate foundation for the 80 foot high basin. . . . The basin will have a geomembrane or geosynthetic liner. The liner could deform and fail if the existing underlying material cannot support the material added to the basin.”67 PolyMet has proposed compressing the wetlands before building the HRF to avoid this problem, but this engineering approach did not work as intended under similar conditions at a recent Superfund remedial site in the St. Louis River Area of Concern.68 If the liner fails, leakage will occur. Although PolyMet has proposed some leakage capture for HRF maintenance post-closure, that maintenance will “eventually cease once the [HRF] cover system has been completed, once vegetation has become established, and once it is confirmed that there are no areas where surface runoff is becoming channelized and causing erosion of the facility dams.69 Despite the risk of failure and inadequate capture plan, which create a real and unacceptable risk of seepage into groundwater that is hydrologically connected to surface water, the Draft NPDES/SDS Permit establishes no limit on discharge of HRF pollutants through groundwater. The Draft Permit simply says, “Direct discharge from the HRF Pond and/or the HRF Leakage Collection system to surface waters or to the FTB is prohibited.”70 The Draft Permit describes a lengthy investigation work plan that MPCA will require for a preload design and liners, but includes no conditions that would revoke the authority being granted in the permit that the “HRF is permitted to receive hydrometallurgical residue and process water.”71 Both the MNDNR and the MPCA propose to issue permits for the HRF, although neither agency nor permit has resolved concerns regarding the site, stability and potential leakage from the HRF.	See response to comment Multiple-543-AQ. The design components of the HRF were raised in the EIS and DNR, in consultation with MPCA, considered those issues. The issue of foundation stability was considered in the EIS and requirements for a detailed process of investigation, design and MPCA approvals are included in the draft permit to address that issue. The MPCA and DNR worked with a third-party consultant to evaluate the stability of the HRF foundation and construction methods. The MPCA added language in part 5.181.234 of the draft permit in light of the comment to state that if the MPCA determines that site conditions at the proposed HRF location preclude the construction and operation of the HRF in compliance with applicable water quality standards, construction of the HRF at that location is prohibited.

740-C	Nancy Schuldt	Fond du Lac Band	The EPA has been providing clear and consistent recommendations to MPCA since early in the environmental review process regarding how the proposed PolyMet project should be regulated under the CWA to protect surface and groundwater resources, although apparently, they were not necessarily valued. For example, in their agency comments on the Preliminary SDEIS, EPA states: 72 Recommendation: The SDEIS should consider surface water criteria applicable to the Partridge River as evaluation criteria for the contaminated groundwater entering the Partridge River due to activities at the mine, in addition to the groundwater criteria used in the PSDEIS. According to EPA's ATTAINS database, none of the receiving waters immediately adjacent to the Mine Site, including the Partridge River, Yelp Creek, Unnamed Creek, have been assessed. Biological data consists of measuring community health by sampling and characterizing macroinvertebrates and fish. Minnesota does not have numeric water quality standards based on aquatic life for parameters known to be present in the discharge for many mining and mining related operations. However, the state does have a narrative water quality standard of no toxics in toxic amounts. Recommendation: The SDEIS should acknowledge that the narrative water quality standard- no toxics in toxic amounts - is relevant to NPDES permitting for the NorthMet project and its receiving waters, and that how to address that narrative standard will be considered in the NPDES permitting process. EPA will consult with MPCA in the context of permitting regarding approaches to protecting aquatic life and habitat in receiving waters.	This comment is primarily a quote from EPA in a letter during the EIS process. The MPCA considered the previously submitted EPA comments in its development of the permit. The permit complies with Clean Water Act requirements identified by EPA, including permit coverage for all pollutant discharges expected from the facility.	
741	Nancy Schuldt	Fond du Lac Band	Implementation of Effluent Limitations Guidelines (ELGs): Discharges from the Mine Site which impact surface waters would be subject to effluent limitation guidelines (ELGs) found at 40 CFR 440 Subparts G, J, and K. These ELGs apply to discharges from mine drainage. Mine drainage is defined at 40 CFR 440.132 as "any water drained, pumped, or siphoned from a mine." A mine is defined as "an active mining area, including all land and property placed under, or above the surface of such land, used in or resulting from the work of extracting metal ore or minerals from their natural deposits by any means or method, including secondary recovery of metal ore from refuse or other storage piles, wastes, or rock dumps and mill tailings derived from the mining, cleaning or concentration of metals ores." Based on these definitions, all drainage from the Mine Site collected as stormwater is subject to these ELGs. It is expected that the ELGs will be implemented in an individual NPDES permit for the Mine Site.	This comment, as delineated, is a continuation of the EPA quote started in comment 740-C above. The MPCA considered the previously submitted EPA comments in its development of the permit. The permit complies with Clean Water Act requirements identified by EPA, including permit coverage for all pollutant discharges expected from the facility. The permit contains limits consistent with 40 CFR part 440.	
742	Nancy Schuldt	Fond du Lac Band	Implementation of water quality standards: Section 301 of the CWA prohibits point source discharge to surface waters, either directly or via directly connected ground water, unless the discharge complies with a NPDES permit. Section 502(12)(A) of CWA defines "discharge of a pollutant" as any addition of any pollutant to navigable waters from any point source. Further, at CWA § 502(7), "navigable waters" are defined as "the waters of the United States, including the territorial seas." The definition of "Waters of the United States" includes lakes, rivers, streams, creeks, and wetlands, etc., and applies to all surface waters on the NorthMet Project site. See 40 CFR 122.2. The PSDEIS seems to anticipate that there will be discharges from the Mine Site to the Partridge River as well as other surface waters such as the West Pit Outlet (aka Unnamed Creek), and on-site and off-site wetlands, but does not conclude that the Mine Site will require an individual NPDES permit. Based on currently available information we believe that an NPDES permit is required at both the Mine and Plant Sites, with limits and monitoring requirements applied at the points of discharge. To comply with the CWA, the permit will need to have been issued when the discharge occurs. WQBEL's must be developed based on water quality standards, including downstream standards, and standards applicable to wetlands. WQBEL's must be calculated based on low flow (7Q10) conditions in the receiving waters. Although Yelp Creek is in close proximity to the Category I stockpile we have not found any discussion in the PSDEIS of whether there will be a discharge from Mine Site features to Yelp Creek (taking into account measures to prevent discharge from the Category 1 stockpile). Recommendation: Identify whether there will be discharges to Yelp Creek; and if so indicate that these discharges will be addressed through NPDES permitting	This comment, as delineated, is the conclusion of the EPA quote started in comment 740-C above The MPCA considered the previously submitted EPA comments in its development of the permit. The permit complies with Clean Water Act requirements identified by EPA, including permit coverage for all pollutant discharges expected from the facility. The permit includes specific authorized discharge points. It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters, including Yelp Creek, from the mine site and plant site except as authorized through discharge SD001.	

742-A	Nancy Schuldt	Fond du Lac Band	Upon publication of the SDEIS, EPA submitted additional comments, including:73 Comment# 7. The SDEIS anticipates that pollutants will be discharged from mine site features, travel via groundwater pathways and reach the Partridge River several years following the start of the mining project. See SDEIS Table 5.2.2-26. However, as EPA has stated previously, the pollutants originating from mine site features may discharge to jurisdictional wetlands and tributaries prior to reaching the Partridge River. CWA Section 301 prohibits any point source discharge of pollutants to waters of the United States, either directly or via directly connected ground water, unless the discharge complies with a NPDES permit. Waters of the United States include jurisdictional wetlands and tributaries. See 40 CFR 122.2. Finally, in a communication to MPCA regarding PolyMet's NPDES Permit Application, EPA related the results of their focused review of the application74, specifically new industrial discharges but also describing other deficiencies they noted in the application materials. They again called attention to the lack of request by the applicant for NPDES permit coverage for discharges at the mine site, as identified in the FEIS: EPA's position, as we explained previously during the development of the FEIS, is that the incorporation of the FEIS into the Application without ensuring that NPDES permit coverage is fully consistent with the information presented in the FEIS could create potential enforcement and permit shield issued under Section 402(k) of the Clean Water Act (CWA). If the application is not revised to either request NPDES permit coverage for the specific discharges proposed in the FEIS or to remove all references to the FEIS and supporting documentation, then any draft permit must include a prohibition on discharges from mine site point sources to surface waters including those discharges that occur via a direct hydrologic connection, as documented in the FEIS. The draft NPDES/SDS permit fails to address these issues, and an NPDES/SDS permit cannot be issued until these matters are fully addressed.	This comment primarily includes quotes from EPA communications made as part of the EIS process. The MPCA considered the previously submitted EPA comments in its development of the permit. The permit complies with Clean Water Act requirements identified by EPA, including permit coverage for all pollutant discharges expected from the facility. The permit specifically prohibits a discharge that violates water quality standards. See permit at 5.119.1.	
743	Nancy Schuldt	Fond du Lac Band	Even the proposed special conditions for the draft permit are inadequate75: Special Permit Requirements – No Unauthorized Discharge Permit conditions to ensure there are no unauthorized discharges from the Mine Site and Plant Site: • Permit conditions specifically prohibiting discharge to surface waters from the Mine Site and from the FTB Seepage Containment System and the HRF Leachate Collection Systems at the Plant Site. • Requirement for all water collected by the groundwater containment systems at the Category 1 Waste Rock Stockpile and the FTB seepage capture systems to be routed to the WWTS or pumped to the FTB. • Requirement to monitor and maintain a series of paired piezometers and wells at the Category 1 Waste Rock Stockpile and the FTB Seepage Containment System. • Requirement for the facility to maintain an inward gradient at Category 1 Waste Rock Stockpile and the FTB Seepage Containment System and mitigation requirements to begin in the event inward gradients are not maintained. • Requirement to conduct regularly scheduled inspections of the FTB Seepage Containment System and HRF Leachate Collection System Glaringly absent from this list of special permit requirements is an explicit prohibition from discharges to surface waters via hydrologically connected groundwater. Without this condition, PolyMet will be able to discharge their mine site and plant site wastes and not be considered in violation of their permit. MPCA must establish this prohibition; otherwise, it will be clear that the agency is seeking to protect PolyMet, not the public or the environment.	See responses to Comments 736 through 737-C. The permit includes specific authorized discharge points. It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters from the mine site and plant site except as authorized through station SD001. In addition, the MPCA added a prohibition against discharges that violate water quality standards. The Annual Groundwater Evaluation Report required by the permit specifically requires an annual assessment of the current and future potential and timeframe for migration of groundwater towards surface water from the mine site and plant site. Also, as described in response to Line 711-A above, the Annual Comprehensive Performance Evaluation Report specifically requires that the performance of engineering controls be assessed for any impact to groundwater. Together, these annual reports provide early warning before impacted groundwater would reach surface water such that adaptive management can be implemented before impact to surface water occurs. As a result, the MPCA does not anticipate that groundwater would pollute surface water.	

744	Nancy Schuldt	Fond du Lac Band	6. The draft permit does not have sufficient monitoring of surface and groundwater resources to determine compliance with permit conditions and applicable law. The Band does not find that proposed surface and groundwater monitoring system associated with the NPDES/SDS permit is adequate to detect issues at either the mine site or at the plant site so that corrective actions can be taken in a meaningful time period. Additionally, in some cases the permit allows improper or insufficient monitoring limits.	See responses to Comments 710 through 711-B, regarding monitoring, and Comment 735 through 737-C, regarding the basis for MPCA's determination that the seepage capture system will prevent releases. Regarding the ability to ensure corrective actions can be taken, see response to Comment 716-E. If the MPCA determines in the future that the monitoring well or surface water monitoring network is insufficient, the agency has authority under Minnesota Rule part 7001.0170 to modify the permit, and authority under part 7001.0150 to require sufficient monitoring to determine compliance.	
745	Nancy Schuldt	Fond du Lac Band	Insufficient Discharge Limits In reviewing the draft Fact Sheet for the NPDES/SDS permit and attachments, the Band notes that the discharge at SD001 (which monitors the WWTS) has a mercury limit of 2,000 ng/l (daily max) and 1,000 ng/l (calendar monthly average).76 While this is one of the required federal limits (technology based effluent limit or TBEL) for new industrial sources (taconite), it is not the controlling limit for mercury in the Lake Superior Basin. The Great Lakes Initiative ("GLI") chronic wildlife criterion of 1.3 ng/l is the applicable standard for this discharge,77 and this is particularly critical for a new or expanded discharge to a watershed that is already impaired for mercury yet does not have a TMDL in place. The draft permit must be modified to use the GLI criterion.	See response to Comment Multiple-543-BX regarding the expected reductions in mercury through the treatment process. The MPCA has reconsidered the permit conditions and added an operating limit for mercury, additional dissolved mercury monitoring and a requirement to submit a Mercury Minimization Plan in accordance with the Agency's mercury strategy. The MPCA determined that weekly monitoring for mercury in the influent and effluent to the WWTS and the inclusion of a 1.3 ng/L operating limit for the WWTS effluent is sufficient.	
745-A	Nancy Schuldt	Fond du Lac Band	There is no discharge limit defined for specific conductance, even though there are exceedances to the Class 3 and 4 standards in the receiving waters from existing legacy contamination, and assessed aquatic life use impairments in the Embarrass River that have been correlated with elevated specific conductance.78 The Band has urged the MPCA to promulgate a protective aquatic life use criterion for specific conductance in its next triennial review; in the meantime, the existing standard should be applied in this permit to ensure that the pollution attenuation expected by PolyMet environmental controls can be clearly distinguished from new loadings.	The MPCA conducted a reasonable potential analysis on various parameters while reviewing the permit application and determined there is no potential to cause or contribute to an exceedance of water quality standards. However, to address the commenter's concerns, a WET limit of 1.0 TUc applicable to station SD001 has been added to the permit. In addition, a provision has been added to the permit to state the discharge of treated wastewater from the WWTS must not violate state water quality standards. The 1.0 TUc limit addresses the narrative standard against toxicity in the discharge.	
746	Nancy Schuldt	Fond du Lac Band	Monitoring Will Not Detect Mine Site Discharges Although EPA has established that any mine site discharge to surface water via hydrologically connected groundwater would be a permit violation under the Clean Water Act, mine site surface water quality monitoring actually seems to be designed to avoid detection of such a violation. For example, it appears that MPCA is proposing to monitor as "background" sites that may in fact be impacted by the PolyMet project. From the draft Fact Sheet: Monitoring of the upstream background monitoring stations will be used to establish background/baseline conditions at the Mine Site against which downstream monitoring can be compared. Monitoring of the upstream stations will be required monthly for Group B parameters and twice per year for Group C parameters.79 Background Surface Water Monitoring A total of four surface water monitoring stations will be located upstream of the Mine Site: • Partridge River – upstream of the Mine Site at SW002 • Wyman Creek – upstream of the Transportation and Utility Corridors at PM-6 • Longnose Creek – upstream of the Transportation and Utility Corridors at LN-2 • Wetlegs Creek – upstream of the Transportation and Utility Corridors at WL-2 Downstream Surface Water Monitoring A total of four surface water monitoring stations will be located downstream of the Mine Site: • Partridge River – downstream of the Mine Site at SW004c • Wyman Creek – downstream of the Transportation and Utility Corridors at PM-5 • Longnose Creek – downstream of the Transportation and Utility Corridors at LN-1 • Wetlegs Creek – downstream of the Transportation and Utility Corridors at WL-1 The Band is concerned that if groundwater contours and likely flowpaths of pollutants through the surficial aquifer are closely examined, the sites designated as "background" may actually be downstream of PolyMet groundwater seepage from either the mine site or tailings site, and would reflect mine-influenced conditions rather than unimpacted or reference conditions. Such a closer evaluation should be made to verify that this is not the case, and should also consider the pattern of the mapped fractures, which generally flow from northeast to southwest.	The MPCA reviewed the locations of the surface water monitoring stations and believes the identification of whether they are upstream or downstream locations is accurate. A location the comment appears to be concerned about is upstream station SW002, which is located northeast of the East Pit. The project is not expected to affect this location during at least the first decade of operation because the East Pit will be dewatered and will be at a lower elevation than the river. During later periods of operation and during closure when the East Pit is backfilled, the monitoring data at this location can be assessed against previous data to help determine whether is being affected by the project. (Other groundwater monitoring in this same general area can aid this assessment.) Even if this location was affected, it would still serve as a relative comparison against points further downstream to assess for the potential of overall impacts from the mine site. The surface water monitoring stations located along the railroad corridor have the primary intent of monitoring for potential effects of ore spillage along the railroad, and for this purpose they are independent of mine site activities. A direct comparison of water quality from the upstream location of these "paired" sampling points against the water of the downstream location will accomplish this intent.	

746-A	Nancy Schuldt	Fond du Lac Band	The draft permit's requirements for internal waste stream monitoring at the mine site, pit dewatering, waste rock stockpiles, ore surge pile, and Overburden Storage and Laydown Area (OSLA), unreasonably assume complete capture of all seepage associated with these reactive mine waste sources. For the OSLA and Construction Mine Water Basin, even fewer monitoring requirements are imposed. As summarized by the draft NPDES Fact Sheet: *Overburden Storage & Laydown Area (OSLA) and Construction Mine Water Basin: Monitoring of runoff collected at the OSLA will be monitored for Group A parameters once per month. Because the OSLA and Construction Mine Water Basin will store materials that are not expected to release harmful constituents, a reduction in the parameter list from what is monitored at other stockpile locations is appropriate.[80] The draft NPDES Fact Sheet also states: *The OSLA runoff is expected to be of sufficient water quality so as not to require treatment beyond settling to remove suspended solids prior to pumping to the FTB. Any mercury that may be released from the stored peat will be removed with the settled solids in the collection pond and/or via filtration and adsorption by tailings particles at the FTB. *Groundwater downgradient of the OSLA will be monitored using one monitoring well screened in the surficial aquifer. This well (GW411) will be monitored quarterly for a focused set of key parameters and annually for a wider set of parameters.[81] Since these are unlined mine wastewater storage features, and dissolved pollutants can migrate quickly through shallow groundwater to downgradient surface water features (wetlands and Partridge River), there should be a mercury limit (1.3 ng/l) associated with these monitoring locations. Minnesota rules require that every permit issued by the MPCA contain monitoring requirements "that are sufficient to yield representative data to determine whether there is compliance with the terms and conditions of the permit or compliance with Minnesota and federal pollution control statutes and rules." 82 The draft permit should be revised to do this.	MPCA reviewed the monitoring requirements related to the OSLA and determined they are sufficient. The OSLA is primarily used for the storage of excavated peat and saturated overburden and is unlined but has a low-permeability compacted base layer that reduces infiltration and promotes runoff to the OSLA pond. Monitoring of the OSLA pond includes mercury and sulfate. In combination with monitoring of downgradient groundwater, the pond monitoring will be sufficient to determine compliance with state and federal requirements. In addition, the permit requires an annual evaluation of the overall suitability of the existing groundwater monitoring network, including its ability to detect a potential future groundwater impact to any surface water.	
747	Nancy Schuldt	Fond du Lac Band	North Flow Path Bedrock Aquifer Monitoring Is Insufficient to Capture Plumes During the preparation of the FEIS, Dr. John Coleman with the Great Lakes Indian Fish and Wildlife Commission provided the co-lead agencies compelling evidence that groundwater from the Mine Site could potentially flow north into the Rainy River Basin via the Northshore Mining Company's Peter Mitchell Pit (Northshore Mine) at mine closure.83 The Co-Lead Agencies considered this possibility, and concluded that such northward flow was possible, but not reasonably foreseeable. Following publication of the FEIS, additional comments were submitted regarding the possibility of northward flow. DNR's adequacy decision concluded that even if northward flow were to occur, it would be possible to detect and prevent effects within the Rainy River Basin. The USFS similarly concluded that northward flow to the Rainy River Basin was unlikely, and that any potential northward flow could be detected and prevented. A monitoring plan for assessing hydrogeologic conditions in the area between the NorthMet pits and the Northshore Mine has been submitted to the DNR and Minnesota Pollution Control Agency (MPCA) separate from this Application (Reference (10)).84 The Band's submitted comments on the MNDNR draft permit to mine addressed this issue, and noted that the MPCA also bore regulatory oversight through their permitting and monitoring responsibilities. Excerpted from those comments: *Neither PolyMet in its revised application nor the MNDNR in its draft special conditions address EPA's position on what needed to be done to address the northward flow. In its comments on the PolyMet FEIS, the EPA agreed with experts that "a northward flow path is a possibility." The EPA stated that "further impact assessment is needed during the permitting process, including information on water quality and quantity impacts that may occur as a result of a northward flow path and/or contingency mitigation measures."85 The EPA recommended: ***Recommendation I: Given the possibility of a northward flow path, analyses of environmental impacts associated with this possibility should be conducted and evaluated during the permitting process. These analyses should include anticipated direct and indirect environmental impacts that may occur if one or more of the proposed contingency mitigation measures are implemented.86 But rather than follow EPA's recommendations and resolve this controversial issue by including as part of the permitting process, specific conditions to prevent northward flow, the MNDNR would allow PolyMet to defer analysis just long enough to avoid scrutiny and reduce its own leverage to deny or condition the PolyMet permit to mine. The MNDNR's draft special conditions simply recite that: ¶66. Prior to blasting within any mine pit footprint, the Permittee must submit a report and supporting data assessing the potential for current and future northward groundwater flow at the Mine Site. If the DNR concludes that this report, or other monitoring data, indicates a reasonable likelihood of northward groundwater flow at the Mine Site, then the DNR will require adaptive management or mitigation. ¶67. Any required management or mitigation must be approved by the DNR.87 The Band believes these MNDNR draft Conditions are vague, unenforceable, and shield PolyMet from their obligation to demonstrate that their proposed mine project will meet legal requirements. The draft Permit is deficient because the MNDNR has not specified their authority to	The MPCA evaluated the monitoring needed at the facility, including that needed to ascertain whether a north flow may occur in the future, in the development of the permit. This resulted in the requirement to install 11 bedrock aquifer and 8 surficial aquifer monitoring wells. As described in response to Comment Multiple-543-BN, the purpose of the north flow path wells is to monitor the hydrogeologic conditions such that it can be confidently predicted whether a north flow path may develop in the future. This can be accomplished by monitoring current and future groundwater elevations along the potential north flow paths; monitoring of groundwater quality is not needed to accomplish this purpose. The Annual Groundwater Evaluation Report required by the permit specifically requires an assessment on the potential for a north flow path. If that potential exists, the permit requires that a plan and schedule for adaptive management or mitigation to prevent northward flow before it can occur must be submitted to MPCA for approval (emphasis added). As stated in the permit, such adaptive management or mitigation may require a modification of the permit, including a public notice of the proposed modifications.	

			But rather than follow EPA's recommendations and resolve this controversial issue by including as part of the permitting process, specific conditions to prevent northward flow, the MNDNR would allow PolyMet to defer analysis just long enough to avoid scrutiny and reduce its own leverage to deny or condition the PolyMet permit to mine. The MNDNR's draft special conditions simply recite that: ¶66. Prior to blasting within any mine pit footprint, the Permittee must submit a report and supporting data assessing the potential for current and future northward groundwater flow at the Mine Site. If the DNR concludes that this report, or other monitoring data, indicates a reasonable likelihood of northward groundwater flow at the Mine Site, then the DNR will require adaptive management or mitigation. ¶67. Any required management or mitigation must be approved by the DNR.87 The Band believes these MNDNR draft Conditions are vague, unenforceable, and shield PolyMet from their obligation to demonstrate that their proposed mine project will meet legal requirements. The draft Permit is deficient because the MNDNR has not specified their authority to review and approve the report, and because the way that "adaptive management or mitigation" will be implemented under the Permit is not clear. The Permit should establish the required content for the report, and define their guidelines for approving the report. If the report is approved, and if the information in the report supports the conclusion that there is the potential for a northward groundwater flow, the MNDNR should: o require PolyMet to submit a plan for how that flow will be mitigated o define the agency's criteria for approval of the mitigation plan, and o provide for a process under which the approved plan will be incorporated into the permit as an amendment. Given the nature of this disputed issue, the MNDNR should require that these reports be submitted to the MPCA as well for its review and approval, and the plans should be incorporated into the Permit to Mine and NPDES/SDS permit through formal amendments.	
748	Nancy Schuldt	Fond du Lac Band	No Limits at Mine Site Surface Water Monitoring Stations According to the draft NPDES/SDS Fact Sheet, the only allowable discharges from the Mine Site are those authorized by Minnesota's Industrial Stormwater General Permit and Construction Stormwater General Permit. The draft permit explicitly prohibits any discharge of wastewater to surface waters from the Mine Site. All mine-related wastewaters will be collected in various sumps and collection systems, routed to equalization ponds at the Mine Site, and then pumped via pipeline to the Plant Site for treatment and discharge at that location. The draft permit envisions that each of the Mine Site features will be constructed and managed such that there is no point source discharge to surface waters nor a discernable impact to surface waters or groundwater. To that end, the draft permit requires monitoring of the performance of the Mine Site engineering controls and the groundwater quality downgradient of the Mine Site features. But both the limited number of monitoring sites proposed for baseline conditions and those proposed to identify surface water impacts are insufficient to detect performance failures of the engineering controls. Similarly, the sites on Longnose Creek and Wyman Creek are intended to monitor impacts of any spills or leakage from the railway and pipeline corridor between the mine site and the plant site.88 Yet only a single surface water site (identified on the map as SW004c) is proposed to monitor impacts from discharge via groundwater to surface water from the entire mine site. This lone monitoring site, located on the Partridge River approximately a mile south of the mine site,89 simply cannot be expected to capture evidence of systems performance failure for the entire mine site. The PolyMet Draft NPDES/SDS permit must be revised to include additional surface water monitoring sites at the mine site, and in wetlands and streams in proximity to mine site sources of contamination in order to ensure that PolyMet is complying with the draft permit's prohibition of the discharge of pollutants into surface water.	See response to Comment 711-B, which explains that the intent of the monitoring wells is not to assess individual features at the mine site. Monitoring related to engineering controls would accomplish this.

749	Nancy Schuldt	Fond du Lac Band	Insufficient Hydrology, Water Quality Monitoring and Lack of Protective Thresholds in Partridge River Watershed The MPCA proposes to include a condition referencing the stream hydrology monitoring required by the DNR Water Appropriation permits for the Project. If monitoring indicates an annual average change in hydrology of greater than 20% from existing conditions at the Plant Site – that is, conditions before the implementation of the tailings basin pumpback systems, which are short term mitigation measures as part of the Cliffs Erie Consent Decree – in Unnamed Creek, Trimble Creek, Unnamed (Mud Lake) Creek, or Second Creek at the Plant Site, the certification requires the permittee submit to the MPCA the stream hydrology data, along with an analysis of whether existing and beneficial uses of the stream(s) have been affected. The certification also requires a proposal for adaptive management, including possible mitigation, as appropriate, to address any loss of existing uses.90 But no such conditions are proposed to protect hydrology in the Partridge River watershed. In 2008, Barr Engineering provided Cliffs Natural Resources with a Long Range Hydrology Study ("LRHS") for the NorthShore Mine Peter Mitchell Pit. On page 20 this study states that "Flows in the upper Partridge River immediately downstream of the post-closure watershed boundary may be reduced by close to 100 percent relative to current conditions." The 4.5 mile reach of the Partridge River that the LRHS suggests might completely dry up is the portion of the Partridge River that winds around the PolyMet mine pits. Based upon this prediction, the DNR must consider how augmentation to flows in the Partridge River could be implemented through enforceable conditions in PolyMet's water appropriation permit. Additionally, wetlands near the mine site may need augmentation and treated water may be needed to prevent a northward flowpath of contaminated groundwater from the mine pits at closure.91 Water quality evaluation points have apparently been negotiated with the regulatory agencies with minimal input from the public. Inexplicably, the FEIS does not include any model evaluation or monitoring points for the first three-mile (or longer) section of the Partridge River that may be impacted. It appears that the model evaluation and monitoring points for the Partridge River were chosen to minimize the potential impacts from the mine project that are shown by modeling or monitoring. Impacts to the Partridge River would presumably be greatest along the primary groundwater recharge zone closest to mine operations. Based on predicted pathways for discharges to the river from mine features, monitoring and evaluation points are more than three miles downstream from this point and are just below the discharge from a creek. Selection of these monitoring and evaluation points ensures that the discharges likely to be highest in pollutant concentrations are not caught by monitoring until well downstream, having been diluted by presumably clean groundwater and by surface water from an area less likely to be affected by mine operations. The failure to monitor surface water at the actual point of contact with groundwater and surface water closest to the mine is directly contrary to GLI requirements and standards to ensure that water quality will not be lowered for impaired waters. The FEIS methodology fails to evaluate the receiving water nearest the actual discharge to the Partridge River, and therefore is inadequate to address potential impairment.92	Comment noted. This comment relates to the 401 certification and DNR's water appropriation permits, not the NPDES/SDS permit.
750	Nancy Schuldt	Fond du Lac Band	Plant Site The draft NPDES/SDS permit would require five surface water quality monitoring stations, the nearest of which is approximately one mile from the northern edge of the tailings facility.93 However, there are streams that originate significantly closer to the FTB than the surface monitoring stations selected. And like the mine site, there are wetlands located immediately adjacent to the sources from which FTB contamination would originate: both the discharge outfalls and the seepage containment system.94 Additional surface water quality monitoring sites must be established in all surface water features (streams and wetlands) in proximity to the FTB, in order to ensure the performance of the engineered controls intended to prevent the release of pollutants to the environment.	MPCA evaluated locations for surface watering monitoring downstream of the tailings basin during permit development and determined that, given the dispersed nature of the treated discharge to headwater wetlands via outfalls SD002 through SD010, the locations in the permit are appropriate. Also see response to comment 748.
751	Nancy Schuldt	Fond du Lac Band	Insufficient Seepage Containment System Groundwater Monitoring Stations: at the HRF According to the NPDES/SDS Fact Sheet, the Hydrometallurgical Residue Facility (HRF) is a closed-loop system that will not have a discharge. Water is recirculated through the facility and reused in the hydrometallurgical process. The draft permit requires monthly monitoring of the HRF Pond water at WS004 and any leachate collected by the HRF Leakage Collection System at WS005 for Group B parameters and annual monitoring for Group C parameters. The Draft NPDES/SDS permit requires monthly inspection of HRF pond and HRF leakage collection system to "evaluate the effectiveness of the liner and Leakage Collection System."95 Yet, although there are monitors for internal waste streams at the HRF, there are zero monitoring sites that could actually detect liner leakage at the HRF: no bedrock groundwater monitoring sites, no surficial aquifer monitoring sites and no surface water quality monitoring sites. 96 This despite the fact, as discussed above, that the location of the HRF invites liner failure and subsequent seepage. Given the potential for failure of the liner system, and the need to comply with the monitoring requirements of the Minnesota Administrative Rules,97 the PolyMet NPDES/SDS permit must also include strategically placed groundwater and surface monitoring sites to determine whether the liners for the HRF are leaking. The HRF will contain highly toxic wastes, including a large mass of mercury, on an unsuitable site with an unstable foundation; therefore, it is imperative that MPCA verify effective leakage capture, not assume.	The issue raised in the comment pertaining to site suitability for the HRF is addressed in the permit by requirements of the Preload Design Investigation Work Plan (which includes a component addressing additional subsurface investigation), the HRF Preload Design Plan (which is designed to address issues related to foundation variability/stability) and the HRF Liner Plan. The HRF Liner Plan includes a requirement for a lysimeter under the sump or other suitable device and the permit has been revised to require the HRF Liner Plan to also include an analysis of the suitability of the proposed monitoring to detect leakage from the HRF. Until the final design of the HRF is known (after completion of the required investigations and studies), it is premature to specify the exact type, number and placement of monitoring.

751-A	Nancy Schuldt	Fond du Lac Band	All monitoring results from the PolyMet project should be immediately made available online so that members of the public will have timely and transparent information as to PolyMet's compliance with Minnesota water quality standards and the requirements of the federal Clean Water Act.	All monitoring data is reported to the MPCA on monthly Discharge Monitoring Reports (DMRs) which is posted online on the MPCA website (available at https://www.pca.state.mn.us/quick-links/eda-surface-water-data). Monitoring data and report submittals are also available by request to the agency.	
751-B	Nancy Schuldt	Fond du Lac Band	Surface water monitoring sites located in wetlands should also specifically measure sulfate, mercury, methylmercury and water fluctuations, to address concerns about increased mercury contamination resulting from the PolyMet project.	Comment noted. This comment relates to monitoring required by conditions in the 401 certification, not the NPDES/SDS permit.	
752	Nancy Schuldt	Fond du Lac Band	Effluent Limits at Monitoring Locations are not Sufficiently Protective Federal regulations require that any new copper mine must comply with new source performance standards which provide technology-based effluent limitations (TBELs).98 The only effluent limits contained in the Draft NPDES/SDS Permit for the PolyMet copper-nickel mine project are set at SD001, the monitoring station for surface discharge from the plant site wastewater treatment system (WWTS); those limits are based on TBELs.99 But if treated wastewater was discharged at the contaminant levels allowed under new TBELs for copper mining, it would greatly exceed Minnesota water quality standards. While each NPDES permit must include TBELs, where applicable,100 these TBELs serve as a floor, not a ceiling: Generally, the Clean Water Act uses two different types of standards "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters": technology-based standards and water-quality standards. 33 U.S.C. § 1251(a). Technology-based standards set a minimum level of treatment that must be performed by those who discharge pollutants into waters. That level is predetermined by EPA to be both technologically available and economically achievable. . . . In contrast, water quality standards depend on the purpose for which a particular body of water is used. 40 C.F.R. § 131.3(i). Each NPDES permit must also include water quality-based effluent limits (WQBELs) and requirements in addition to or more stringent than technology based standards, to the extent necessary to achieve water quality standards established under section 303 of the Clean Water Act, including state narrative criteria for water quality."101	The MPCA conducted a reasonable potential analysis for the discharge from the WWTS and determined there is no reasonable potential for the discharge to cause or contribute to an exceedance of the water quality standard for mercury. Therefore, no Water Quality Based Effluent Limits (WQBEL) are required in the permit. Further discussion regarding MPCA's reasonable potential analysis is contained in response to Comment 718-A. However, to ensure that the discharge from the WWTS does not exceed water quality standards, the MPCA included Operating Limits for sulfate, copper, arsenic, cobalt, lead, nickel and mercury (set at their respective water quality standards). The permit also includes Technology Based Effluent Limits (TBELs) in accordance with 40 CFR part 440 (even though these values are higher than the aforementioned Operating Limits). The Operating Limits and TBELs in the permit are enforceable and an exceedance of either the TBEL and/or Operating Limit is a violation of the permit. To address concerns regarding the permit being protective of water quality, the MPCA has also added language to the permit stating the discharge of treated wastewater from the WWTS must not violate state water quality standards.	
753	Nancy Schuldt	Fond du Lac Band	Annual Assessment to Ensure no Unauthorized Discharges from the Mine Site and Plant Site Lacks Enforcement Mechanism The draft permit contains special requirements for both an Annual Groundwater Evaluation Report and an Annual Comprehensive Performance Evaluation Report in addition to the permit conditions mentioned above. The purpose of these reports is, in part, to utilize all available monitoring and operating data (including groundwater quality, groundwater elevation, waste stream monitoring and pumping records) to fully evaluate facility performance on an annual basis and to assess whether there is, or is the potential for, a discharge to surface waters. The annual evaluations will provide a comprehensive assessment of the facility engineering controls at the Mine Site and Plant Site in minimizing impacts to water resources downstream of the facility and will require an assessment of potential mitigation options or adaptive management is needed if the potential for an unauthorized discharge to surface waters exists. The Annual Groundwater Evaluation Report and the Annual Comprehensive Performance Evaluation Report are further discussed in the sub-section of the same name below. Monitoring data evaluation and reporting are key elements for MPCA's regulatory oversight of any permitted facility. But the draft NPDES/SDS permit lacks any penalties or repercussions for evidence that engineering controls are not meeting performance requirements, or if a violation has occurred. MPCA has wide ranging authority to enforce permit violations, including "criminal prosecution; action to recover civil penalties; injunction; action to compel performance; or other appropriate action" under Minn. Stat. § 115.071.102 The failure to describe what actions MPCA will take to enforce the permit is a major deficiency of the draft permit, and must be rectified so that the public will be assured that PolyMet will be held accountable for failing to meet permit requirements.	Permits contain requirements applicable to the permittee. Statutes and rules define the scope of enforcement authority available to the permitting agency. Enforcement actions are determined at the time of discovery and range in seriousness based on the severity of the violation. If there is an unauthorized discharge, it will be considered a violation of the permit and the MPCA will determine appropriate enforcement action at that time. In addition, the MPCA has modified language in Item 5.175.75 of the draft permit regarding unauthorized discharges from the mine site, which prohibits the Permittee from directly discharging any mine water or other process wastewater from the Mine Site to surface waters under this permit. All mine water or other process wastewater from the Mine Site must be routed to the Equalization Basins and pumped to the Plant Site for treatment. Parts 5.175.51 and 5.175.52 address unauthorized discharges at the plant site by prohibiting direct discharges to surface water from the FTB pond, the FTB seepage containment system or the south seepage management system. All water collected by the containment systems must either be pumped back to the FTB or routed to the WWTS for treatment.	

754	Nancy Schuldt	Fond du Lac Band	7. The Draft Permit Does Not Sufficiently Address Mercury Impacts The MPCA NPDES/SDS Fact Sheet states that a reasonable potential analysis for mercury was conducted as part of the permit application review and the Agency determined there is no reasonable potential for concentrations of mercury to cause or contribute to an exceedance of water quality standards.103 The Band remains entirely unpersuaded by the arguments put forward by PolyMet and apparently adopted by the MPCA, that mercury impacts from the project will be insignificant. FAs the Band described in its comments and objections on the MNDNR draft permit to mine: *Throughout its PTM Application, PolyMet has failed to include mercury in its characterization of wastes or water quality. As noted above, two of the areas where mercury is of greatest concern are not characterized at all – the HRF in which 164 pounds of mercury will be deposited each year104 and the unlined OSLA, where mercury-containing peat will be stored. We have found multiple tables in PolyMet's Water Management Plans and draft permit to mine that estimate water quality in various locations where water contacts waste, from the toe of the FTB to mine pits and waste rock seepage. But none of these tables estimate levels of mercury in the seepage or wastewater, even though all of the receiving waters for the proposed PolyMet project (the Partridge River and Embarrass River; Embarrass, Sabin, Wynne, Esquagama and Colby Lakes; the Whitewater Reservoir and numerous downstream segments of the St. Louis River) are all listed by MPCA under the Clean Water Act 303(d) as impaired due to mercury.105 MNDNR should require PolyMet to revise its application to analyze and disclose mercury concentrations in all project wastes and in all water quality associated with mine site or plant wastes or ores before a permit to mine can be issued. PolyMet continues to overlook mercury impacts. PolyMet's NPDES/SDS Application does not assure any level of mercury removal efficacy for its proposed treatment. PolyMet states, "Some mercury removal is expected across the greensand filter. However, the influent concentration of mercury to the tailings basin seepage treatment train is expected to be below the WWTS discharge treatment target." 106 To support this conjecture, PolyMet cites a "bench-scale study" of the effectiveness of flotation tailings for removing mercury107 and concludes that the concentration of future FTB seepage "is expected to be similar to the concentrations in the seepage from the existing LTVSMC tailings basin, which is approximately 1.0 ng/L."108 This conclusion is entirely unsupported; PolyMet's seepage will have an entirely different chemical "fingerprint" than seepage from taconite tailings. Although neither the draft PolyMet Permit to Mine nor the NPDES/SDS permit applications provide the underlying data to assess these claims, documents produced during the course of environmental review made the same claims and supplied underlying documents that allegedly supported them. Yet, neither the bench-scale study of flotation tailings adsorption of mercury nor monitoring data from the existing LTVSMC tailings basin support PolyMet's claims that PolyMet's tailing seepage would have mercury concentrations below the levels required to comply with Minnesota's 1.3 ng/L standard. Nevertheless, the draft permit accepts PolyMet's view that mercury impacts are likely to be insignificant:	As stated in the comment, the MPCA conducted a reasonable potential analysis for the discharge from the WWTS and determined there is no reasonable potential for the discharge to cause or contribute to an exceedance of the water quality standard for mercury. Therefore, no Water Quality Based Effluent Limit (WQBEL) is required in the permit. Further discussion on reasonable potential is in response to Comment 718-A. However, to ensure that the discharge from the WWTS does not exceed the 1.3 ng/L mercury standard, the permit has been revised to include an enforceable Operating Limit for mercury (set at 1.3 ng/L) at internal monitoring point WS074 prior to discharge. In accordance with 40 CFR part 440, the permit also includes a Technology Based Effluent Limit (TBEL) for mercury (even though this value is higher than the aforementioned Operating Limit). The EIS concluded that the demonstrated ability of the NorthMet tailings to adsorb mercury, in combination with the previously documented mercury removal capabilities of the underlying taconite tailings, would be expected to result in an overall increase in mercury adsorption and subsequently lower concentrations of mercury in the FTB seepage. (MPCA notes that this is an existing taconite facility.) Thus, the influent to the WWTS is expected to be approximately at the water quality standard of 1.3 ng/L. The MPCA expects further removal by the greensand filtration and reverse osmosis components of the WWTS. MPCA considered this information in conjunction with the results of the pilot testing and the design modeling in the reasonable potential analysis. Further discussion on this is in respons to Comment Multiple-543-BX.	
754-A	Nancy Schuldt	Fond du Lac Band	Mercury A Reasonable Potential analysis for mercury was conducted as part of the permit application review. Based on its review, the Agency has determined there is no reasonable potential for concentrations of mercury to cause or contribute to an exceedance of water quality standards. The MPCA expects no measurable change in mercury concentrations downstream in the St. Louis River at Forbes or below. The draft permit requires weekly monitoring of the effluent at SD001 for total mercury using analytical method 1631 and clean-sampling method 1669. The applicable TBEL under the NSPS for mercury is a daily maximum of 0.002 mg/L and a monthly average of 0.001 mg/L.[109] The Band has already identified this error in the applicable mercury permit limit. The draft permit should not be issued until mercury impacts can be properly assessed in light of the bench-scale study and monitoring data from the existing LTVSMC tailings basin, which indicate that mercury concentrations will not comply with applicable standards.	See response to comment 754.	
754-B	Nancy Schuldt	Fond du Lac Band	More broadly, the Band has consistently challenged the conclusion that the NorthMet Project Proposed Action would increase mercury loadings in the Embarrass River but decrease mercury loadings in the Partridge River, with the net effect of an overall reduction in mercury loadings to the downstream St. Louis River. 110 We provide additional extensive comments on unmeasured, unmodeled, yet predictable mercury impacts from the PolyMet project in our comments on the draft §401 certification, also submitted today. The Band is convinced that the PolyMet project, when examined holistically for its direct and indirect impacts to surrounding watersheds and waterways, will contribute to mercury exceedances in downstream and downgradient waters, and will contribute to existing wildlife and human health impairments.	The subject of mercury loadings from the project was addressed in the EIS and the EIS was deemed adequate. No information the MPCA has received would undermine that conclusion. The MPCA considered the potential mercury loading and determined there was no reasonable potential to exceed the water quality standard for mercury. See responses to Comments 722 through 722-B for additional discussion. To ensure the discharge from the WWTS complies with the 1.3 ng/L water quality standard the permit was revised to include an enforceable operating limit of 1.3 ng/L for the discharge. Comments submitted on the draft 401 certification are addressed separately in the response to comments for that document.	

755	Nancy Schuldt	Fond du Lac Band	8. The Resolution of Legacy Contamination is Uncertain under the Draft Permit MPCA's Fact Sheet for the draft permit includes a section referencing how the agency expects to see legacy contamination issues from the former LTVSMC facility addressed if the PolyMet project is permitted and the company acquires land and facilities currently subject to a Consent Decree. Again, the agency bases its determination that the legacy contamination will be attenuated and the PolyMet project can achieve compliance with these conditions by assuming a seepage capture rate of 100% at the tailings basin111 – which, as the Band has already described, is implausible. The Fact Sheet goes on to state: *Water quality in the wetlands and other waters downgradient of the existing tailings basin, which LTVSMC operated until 2001, has been affected by ferrous (legacy) surface seepage and groundwater seepage. Baseline monitoring in Mud Lake Creek, Trimble Creek, and Unnamed Creek has documented exceedances of surface water quality standards for several parameters associated with the former ferrous operations, namely total dissolved solids (TDS), specific conductance, alkalinity and hardness. *…When the Project begins operating, the existing legacy seepage and future nonferrous seepage captured by the seepage containment system will no longer contribute to the hydrology of the downstream wetlands and creeks. To obtain the benefits of the seepage capture system while at the same time maintaining the functional hydrology of these downstream waters, the collected seepage will be replaced with treated water from the Waste Water Treatment System (WWTS). The treated water, which will meet all surface water quality standards, will be discharged in a dispersed manner to the headwater wetlands immediately downstream of the capture system in the Trimble and Unnamed Creek watersheds. * …Once PolyMet begins operating the FTB Seepage Containment System and starts collecting the existing ferrous tailings basin seepage for treatment at the WWTS with subsequent discharge of treated augmentation water downgradient of the containment system, there will be a beneficial effect on downstream water quality. However, because there will be previously impacted waters attributable to pre-Project conditions remaining in waters downgradient of the containment system (both wetland water at the surface and deeper seepage that has yet to up-well into surface waters), there will be a period of time following the startup of FTB Seepage Containment System and WWTS before the pollutants in downstream waters are fully attenuated. In other words, there will be a lag in time before PolyMet's capture of seepage and discharge of treated water will completely disperse the remaining legacy contaminants presently in downstream waters.[112] The MPCA's assumption that augmenting the three affected streams with treated water will completely disperse the legacy contaminants is, again, based upon the unrealistic assumption of 100% seepage capture at the FTB. The failure of the Draft NPDES/SDS Permit to set water quality-based effluent limitations for this direct discharge from the existing LTVSMC tailings basin prior to the construction of the FTB and its seepage containment system fails to comply with the Clean Water Act, its implementing rules or Minnesota water quality standards. During future project construction, or under a scenario where the PolyMet Project does not proceed for any reason, existing LTVSMC tailings seepage discharge to surface waters would clearly have the potential to cause or contribute to exceedances of Minnesota's water quality standards. The MPCA must conduct a reasonable potential analysis for existing LTVSMC discharge, and the Draft NPDES/SDS Permit must incorporate water quality-based effluent limitations (WQBELs) for any parameters that have the potential to cause or contribute to exceedances of Minnesota's numeric and narrative water quality criteria.	The comment primarily addresses conditions for an existing facility that is regulated under a separate, existing NPDES/SDS permit. To the extent the comment addresses the effectiveness of augmenting downgradient waters via the discharge of treated wastewater, the hydrologic effects were evaluated in the EIS and the water quality effects were addressed during the NPDES permitting process. The permittee conservatively calculated that it would take up to 18 months to attenuate (defined in the calculations as a 90% mix of treated water to legacy seepage) the effects of the existing seepage upon construction of the seepage containment system and the discharge of treated wastewater. It should be noted that prior to full attenuation, concentrations in receiving and downstream waters would be reduced to levels below water quality standards. To the extent the comment addresses seepage capture system efficiency, the MPCA did not rely on 100% seepage capture efficiency (nor did the EIS in its effects analysis). Modeling conducted during the EIS indicated that capture efficiencies greater than 90% were likely and MPCA relied on the conservative assumption used in the EIS of a 90% capture efficiency.	
755-A	Nancy Schuldt	Fond du Lac Band	The EPA has advised the state that enforcement of Minnesota surface water quality standards is not discretionary under the Clean Water Act.113 Regardless of the time elapsed before PolyMet commences operations, the MPCA has no discretion under applicable federal or state law to decide not to regulate a direct discharge from the existing LTVSMC to waters of the United States. The Band is just as deeply concerned about the MPCA's broader policy regarding the cleanup of mining pollution at the plant site, for which PolyMet will be assuming the liabilities that Cliffs now holds. From the Band's comments on the draft Permit to Mine: *PolyMet has long planned to acquire, repurpose and reuse former LTVSMC facilities at the Plant Site from Cliff's, including the tailings basin. These properties are identified as the LTVSMC Legacy Properties for purposes of Section 16 of the revised PTM application 114, and PolyMet provided a Legacy Closure Plan and specifically associated financial assurance to replace Cliffs Erie's closure plan and financial assurance under Cliffs' permit to mine. This Legacy Closure Plan (Appendix 15.1) includes provisions for investigations and remedial actions in accordance with MPCA's voluntary investigation and cleanup program (VIC), and other reclamation activities such as dewatering of the tailings basin. After consistently questioning MPCA and the co-lead agencies about their anticipated regulatory oversight for addressing LTVSMC's legacy contamination throughout the entire EIS process, the Band is astounded to see that PolyMet will not be held to any water treatment activities or costs to remedy legacy pollution at the tailings basin115. The Band objects to this proposed decision, as it is a clear violation of the Clean Water Act and must be rejected and revised. This determination that no water treatment would be required, nor any associated costs included in the financial assurance for the Legacy Closure Plan, is apparently based on a December 12, 2017 memorandum from the Minnesota Pollution Control Agency (MPCA) to the DNR. This memorandum states: "…should the PolyMet copper-nickel mine project never become operational (scenario II), no treatment or mitigation would be required for potential exceedances of mercury, sulfate, alkalinity, hardness, total dissolved salts and specific conductance at the LTVSMC tailings facility.116 The tailings basin is currently regulated under an existing Cliffs NPDES/SDS permit (MN 0042536) and a Consent Decree, which requires Cliffs to implement a Long Term Plan for testing and implementing active and passive water treatment at two outfalls, SD026 (south discharge from tailings basin) and SD033 (Area 5N). MPCA has been exceptionally lenient	The comment primarily addresses a closure scenario in the absence of the NorthMet project that is regulated under a separate NPDES/SDS permit. The comment does not address the NorthMet NPDES/SDS permit.	

756	Nancy Schuldt	Fond du Lac Band	9. Failure to meet zero-discharge requirements The PolyMet project would likely also violate the "zero discharge" requirement. A "zero-discharge requirement applies to the process facilities, including tailings impoundment. The zero- discharge standard is described as follows: 40 C.F.R. § 440.104(b)(1): Except as provided in paragraph (b) of this section, there shall be no discharge of process wastewater to navigable waters from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores or any combination of these ores. The Agency recognizes that the elimination of the discharge of pollutants to navigable waters may result in an increase in discharges of some pollutants to other media. The Agency has considered these impacts and has addressed them in the preamble published on December 3, 1982. PolyMet will violate the zero-discharge standard in two ways. First, tailings seepage not captured by the collection system will violate the standard, regardless of the effect on groundwater quality. PolyMet plans to effectively meet the zero discharge by planning to collect and recycle all tailings water that seeps beneath the facility (Vol. III, § 5.2) even if the collected seepage would be treated and later discharged to surface streams. But, seepage that escapes the tailings seepage collection system will violate the zero-discharge standard because it will not be part of the combined waste stream and will reach the Embarrass River or tributaries. If PolyMet's assumption regarding seepage collection does not manifest, PolyMet will violate its permit. Second, mine dewatering water would violate the standard if dedicated dewatering wells become necessary. As discussed in the NPDES modeling section, there is a substantial chance that the dewatering requirements will exceed the predicted rates. If dewatering needs exceed the predicted rates, and PolyMet requires dedicated dewatering wells, PolyMet will violate the permit. Both of these deficiencies must be addressed before the permit can be issued.	The zero discharge standard (at 40 C.F.R. part 440) applies to direct discharges of process wastewater to surface water. Direct discharge to surface water from both seepage containment systems is prohibited by this permit. Mine dewatering wells are not currently being proposed - the commenter is speculating on their use. In any event, mine dewatering water (whether from direct pumping or from dewatering wells) is considered mine drainage in the context of applying the "allowable discharge" requirements of 40 CFR 440.104(b)(2)(i) and is not part of the restricted allowable discharge. In addition, the permit has been revised to include a numeric maximum allowable discharge limit in accordance with the above regulation.		
757	Nancy Schuldt	Fond du Lac Band	10. Antidegradation The Minnesota Administrative Rules provide that §401 certifications for new federal licenses can only be issued when "existing uses and the level of water quality necessary to protect existing uses are maintained and protected." Existing uses can be preserved by "compensatory mitigation . . . when there is a physical alteration to a surface water" only when certain conditions are met, including that prudent and feasible alternatives are not available to avoid or minimize adverse impacts, the mitigation is sufficient in quality and quantity to ensure replacement of the lost surface water, the mitigation is accomplished by "establishing or enhancing a surface water of the same type," and that it occurs within the same watershed "to the extent prudent and feasible." If a permittee is seeking compensatory mitigation, then it is required to provide to the MPCA a proposed compensatory mitigation plan. The plan must, among other things, provide a "description of how compensatory mitigation will establish sufficient quality and quantity of uses to preserve existing uses and the level of water quality" needed to preserve them, and "a proposal for monitoring and reporting the changes in existing uses and the level of water quality necessary to protect existing uses of the surface waters in which mitigation will occur." Because PolyMet proposes to destroy an extensive area of wetlands that are "surface waters" under Minnesota law, it has submitted a wetland mitigation plan that it claims will meet these standards. However, it is far from clear that PolyMet's proposed mitigation plan is sufficient, and the §401 certification should not be granted until these issues with the antidegradation standards can be addressed. The Antidegradation Evaluation and MPCA's subsequent review demonstrate that water quality degradation caused by the proposed Project cannot be avoided, but will be prudently and feasibly minimized, existing and beneficial uses will be protected, and the proposed activity is necessary to accommodate important economic or social changes in the geographic area in which degradation of existing high water quality is expected. The proposed Project will implement the best technology in practice and treatment. Therefore, the MPCA has made a preliminary determination that the Project will satisfy antidegradation standards in Minnesota Rules 7050.0265, 7052.0300, and 7052.0330. (NPDES Fact Sheet)	This comment is about antidegradation as it relates to MPCA's 401 certification and is not about the NPDES/SDS permit. Comment noted.		

758	Nancy Schuldt	Fond du Lac Band	11. Nondegradation for Groundwater Minnesota Rules part 7060.0500 identifies a Nondegradation Policy applicable to underground waters of the state. Because MPCA's review of the Groundwater Nondegradation Evaluation was completed prior to submittal of the October 2017 updated permit application, the review did not fully capture or acknowledge some of the specific updates that were included in the updated application. For example, MPCA's hydrogeological review recommended installation of an additional monitoring well in a particular hydrogeologically-favorable area at the Mine Site with the result that this well location was included in the updated application and draft permit. MPCA also incorporated into the draft permit the hydrogeological review's recommendation on the use of appropriate statistical methods in the review of groundwater monitoring data. The Nondegradation of Groundwater Evaluation and the MPCA's subsequent review demonstrate that the requirements set forth under Minnesota Rules 7060 for protection of groundwater resources have been satisfied and that the proposed groundwater monitoring included in the NPDES/SDS permit will verify the protection of the groundwater resources. Therefore, the MPCA has made a preliminary determination that the project satisfies the nondegradation standards in Minnesota Rules 7060. Furthermore, the MPCA has determined that even though its review of the Groundwater Nondegradation Evaluation occurred prior to submittal of the October 2017 updated application, its conclusions and preliminary determination would not be different than had the updated information been available.	Comment noted. This comment quotes from MPCA's draft permit Fact Sheet that was placed on public notice with the draft permit; it does not include a new comment on the draft permit.	
759	Nancy Schuldt	Fond du Lac Band	12.MPCA record in regulating hard rock mining Minnesota has repeatedly failed to control water pollution, even when required to do so under the federal Clean Water Act. The MPCA has a long history of delayed and inadequate permits and poor enforcement of limits on mining pollution. In fact, the State is under investigation for failure to comply with the Clean Water Act and failure to control pollution from existing mines. Permits are being administratively continued long past expiration dates, with no new limits imposed regardless of monitoring data or reasonable potential analysis. This draft permit is a continuation of the status quo, not a responsible example for how the agency intends to regulate new, more environmentally hazardous mining projects and protect high quality waters that sustain ecologically, economically and culturally significant resources.	Comment noted.	
760	Nancy Schuldt	Fond du Lac Band	13. Summary In summary, the NPDES/SDS permit does not meet the requirements of state law. It does not contain conditions that will ensure that PolyMet will achieve compliance with applicable Minnesota or federal statutes or rules, or with the terms of the permit itself. As the Band describes above, the designs that PolyMet has provided and that are effectively adopted by the draft permit, do not ensure that PolyMet will meet applicable effluent limitation, standards, and prohibitions for pollutants that will be discharged by the mine and associated facilities. Nor does it provide sufficient monitoring to ensure that PolyMet will continue to meet permit limitations. More modeling must be done, and amendments made to the draft permit conditions, to ensure that PolyMet's operations will not harm human health and the environment. For those reasons, MPCA cannot issue the permit as currently drafted and must take the actions the Band has requested above to make the permit compliant with applicable laws.	This comment is a summary statement for the comment letter. See individually delineated comments above for specific responses.	
761	Walter Sve	Citizen	I oppose the proposed copper nickel mining in the Lake Superior watershed. As a commercial fisherman having seen and struggled through Reserve mining dumping tailings into the lake, that devastated my business for over 30 years, I fear another blow to the fishing industry with this type of mining. Mercury levels are already high in Lake Superior fish and this type of mine will cause more mercury contamination, not only mercury but other contaminants as well.	See response to Comment 198. The control of sulfate in the discharge to less than 10 mg/L will minimize the potential for increased methylation of mercury.	
762	Walter Sve	Citizen	The risk of this type of mine is not worth devastation it can cause. I understand other states and countries have done this type of mining and none of them have been done safely. Why would anyone consider this mining without first having a proven method of doing it, and / or cleaning up and reversing the damage done to these other sites?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

763	Steve Sve	Citizen	Do not issue a 401 certification, air, or wastewater discharge permit to PolyMet Mining Company. No one has prevented acid mine drainage pollution from an open pit copper mine. The St. Louis River will be PolyMets drainage ditch and pollute Lake Superior for centuries. As a commercial Fisherman this will have a negative effect on my Business. And also endanger the lives of everyone living downstream from the mine site.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
764	Anita Suzanne Tillemans	Citizen	To whom it may concern: Creative expression is an essential ingredient in all of our lives and it stems from a love of beauty in all its forms. Without this where are we? Is artistic expression something we do when other "more important" things are accomplished? Or is it, like the song of a sparrow, the rush of a spring, essential to our survival? Sigurd Olson remarked that everyone needs to find their "spot of blue". Over the years, his reference developed from a "spot of blue" in his search for water on a portage in northeastern Minnesota in the BWCAW and in the Quetico of Ontario, the sense of adventure and discovery on that quest, to a metaphor encompassing a search for knowledge and spiritual meaning. Humans have evolved into super predators through the use of tools and weapons. Once our dominance over the animal and plant kingdoms was assured we turned these weapons on ourselves. As a consequence, it becomes even more essential that we find our "spot of blue" and a place where we can meditate on our existence and the paths each one of us needs to take for the sake of our species and life on earth. When there is no wilderness, places where we can find solitude, no respite from the drum of socalled progress, nothing but the steady beat of production at all costs and money our god, what then? Where will we find the space and the time to appreciate the beauty and find our spot of blue? Our survival as a human species may depend upon it.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
765	Anita Suzanne Tillemans	Citizen	This permit proposes to monitor discharges in the Laurentian area from this project's coppersulfide mining of low grade ore in an extremely water-dependent area of the world at the headwaters of the Great Lakes and the St Lawrence Seaway. Infrastructure including rails and roads will be required for the North Met Project. Among the facilities referenced in the draft permit, the following: • A beneficiation plant • A hydrometallurgical plant • A flotation tailings basin (FTB) including Seepage Capture Systems • A hydrometallurgical residue facility (HRF) • A waste water treatment system (WWTS) - discharge of which will be routed through pipes to maintain flows in Trimble Creek, Second Creek, and Unnamed Creek, with some being recycled directly to FTB pond. • Other ancillary facilities (eg Colby Lake water pipeline) including: o Mine water filtration train o Tailings basin seepage treatment train o Wastewater treatment of solids/byproducts: from the tailings basin seepage treatment train including waste from filters and membrane cleaning and concentrate, which will be routed to FTB pond and mine water chemical precipitation treatment train. Can we rely on a for-profit corporation to monitor itself? The permittee, Polymet, is expected to report all data from the required monitoring stations, whether favorable or not. If reported accurately and standards are not met, then Polymet will be required to monitor again until standards are met. What worthy and worthwhile actions will be taken at the "end of the day?" If the unfathomable number of reports (essentially required just to monitor the discharge from this mining operation) are maintained accurately with regularity, consistency and competency, what truly effective actions can be taken when standards are exceeded? What of the monitoring stations that have no set standards as guidelines? What of those that are not enforceable?	See response to Comment 144.	
766	Anita Suzanne Tillemans	Citizen	What actions are possible that will return the water to its base levels when the degradation becomes apparent to us all? What amount of money in the form of fees or financial guarantees can reclaim what is lost?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

767	Anita Suzanne Tillemans	Citizen	In addition, there is little that anyone can do to prevent natural processes and disasters from occurring, or human error whether knowingly or not; and so, by any standard, this mine will degrade our water resources in Minnesota and beyond. Can any permit for such a mine adequately address these issues?	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
768	Anita Suzanne Tillemans	Citizen	Once copper mining has run its course in the Arrowhead by setting precedent with Polymet, the first of many to come, what will remain and what can truly be reclaimed? "Downstream," the St Louis River estuary and Lake Superior, the largest body of fresh water in the world? "Downstream," the BWCA, and the Rainy River Watershed, the Superior National Forest and Voyageurs, the most pristine wilderness areas on the planet? Can we afford this mine?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
769	Anita Suzanne Tillemans	Citizen	There are hundreds of pages listed (in this water permit draft and other permits) of essential equipment and gauges required just to monitor pollution from the proposed NorthMet Project (copper mine) on a continuing basis daily, monthly and/or annually through the life of this mine and beyond. This alone speaks for itself and cannot be reconciled with the safety of our greatest natural resource. I respectfully request that MPCA deny this permit to pollute and to mine the waters of the St Louis River watershed in a land that has no equal on earth in a water dependent ecosystem at the headwaters of the Great Lakes and the St Lawrence Seaway. How long will such beauties last in a copper mining scenario?	Comment noted. Monitoring data considered in the development of the draft permit and required by the draft permit documents are publicly available. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
770	Arnie and Cindy Whiting	Citizen	We respectfully request that you deny the NorthMet Mining Project Water Quality Permit for the following reasons: •As stated by the Environmental Protection Agency, sulfide mining is the most toxic industry and creates a much greater risk than iron ore mining. •It is a well-documented fact that sulfide mining has never been done without a breach. Never.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
771	Arnie and Cindy Whiting	Citizen	•This draft permit proposes the same wet slurry storage method that caused a catastrophic collapse in the Mount Polley mine project in British Columbia, Canada in 2014 and the Samarco project in Brazil.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
772	Arnie and Cindy Whiting	Citizen	•This draft permit would allow PolyMet to use billions of gallons of water per year that would drain into the headwaters of the Lake Superior Water Basin without adequate protection.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
773	Arnie and Cindy Whiting	Citizen	•The Environmental Impact Statement provided by PolyMet concedes that water treatment from this mining proposal would be required for 200 years and the overall site for 500 years. Are we, as constituents of the MN DNR and homeowners near this proposed mine, to believe that PolyMet will continue to pay for this for the entire 500 years???? We think not!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
774	Arnie and Cindy Whiting	Citizen	•According to the Minnesota Voter's Environmental Priorities Survey in February 2017, 74% of those polled oppose sulfide mining and nearly half are very concerned about rollbacks in environmental laws.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

775	Arnie and Cindy Whiting	Citizen	•In his State of the State address on February 21, 2018, proposed $477 million in clean water initiatives, which includes $214 million for the Clean Water Fund and supports efforts to protect sensitive groundwater and drinking resources. Please protect our water first... before it is put at risk! Protecting clean water should be our first and foremost objective.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comment states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
776	Arnie and Cindy Whiting	Citizen	•In the March-April, 2018 issue of the Minnesota Conservation Volunteer magazine, a magazine published by MN DNR, the article "The Long Reach of Legacy" made the following statement regarding the November, 2008 Clean Water, Land and Legacy Amendment: "More than $2.2 billion has been allocated as a result of the amendment, which increased the state sales tax from 6.5 percent to 6.875 percent in July 1, 2009 ". It goes on to list the projects that this money has been allocated to, such as "reduce harmful drainage into waters" and "monitoring aquifers to ensure the quality of drinking water". As taxpayers in the State of Minnesota, we vehemently oppose any approval of this or any sulfide mining project that will potentially require our tax dollars to clean up their mess!	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
777	Arnie and Cindy Whiting	Citizen	DENY THE NORTHMET MINING PROJECT WATER QUALITY PERMIT, AND PROTECT THE CLEAN WATER AND LAND THAT WE HAVE FOUGHT FOR SINCE NOVEMBER OF 2008!	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
778	Dennis Szymialis	Citizen	I am writing to express my objections to the PolyMet application for a permit along with the grossly inadequate provisions for the public to protect itself from a corrupt government bent on approving this deplorable project including a grossly inadequate amount of review time provided for at any and all stages of review.	Minnesota permitting rules require that proposed NPDES permits be public noticed for 30 days. For this this permit, the public comment period was extended to 45 days. (It should also be noted that the public review period for the EIS was extended by the DNR beyond what is mandated by rule.)	
779	Dennis Szymialis	Citizen	Tailings basin seepage treatment train at the WWTS estimate of 4000 gpm during operations is underestimated at 5,760,000 gallons per day. This amount seems unrealistically optimistic given the treatment demands for a much smaller amount of process material at the Humboldt Mill in Michigan will take 2.8 million gallons a day and does not include treatment of water from a very large mine. The PolyMet mine is planning to process 32 thousand tons of ore per day while the Humboldt mill only processes 2 million tons. This indicates that PolyMet is claiming to be 7-8 time more efficient even though they have no experience in mineral processing. This much larger amount of water to be treated will inundate the system. These claims are consistently underestimated with the low estimates proven to be wrong at the Humboldt Mill and at the Resolution mine site as necessary. These dishonest estimates are a danger to the public and it must not be acceptable for PolyMet simply to be expected to be allowed to simply dump tens of millions of gallons of tainted water into the St. Louis River water shed to poison downstream water consumers with heavy metals and arsenic from this high arsenic mineral formation and processing. This and it's allowance is simply not an oversight it is criminal. With the limited time I have had to review the permit to mine this is the one blaring lie that sticks out along with the fact that the greensand filtering contingency does not actually describe greensand filtering.	The comment compares the discharge volume at Eagle Mine's Humboldt mill with PolyMet's discharge but does so incorrectly and without taking into consideration differences in the mill flowsheet, water recycling and reuse between the two projects. Eagle is authorized to discharge at up to 972 gpm, which is reasonably proportionate to PolyMet's maximum discharge rate at full development given the differences between the two facilities. In any event, PolyMet's treatment system is sized to treat the expected water flow for its project and is designed such that it can be expanded to treat a larger flow if actual flows are higher than expected.	
780	Dennis Szymialis	Citizen	I have standing in this matter based on being a downstream water consumer who has been engaged in recreation with the effected PolyMet project lands and waters including the swimming and fishing in the St. Louis River, hiking on the PolyMet land exchange site, and viewing the area as the view exists from the skibo, mn viewing site at that roadside rest.	This comments states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
781	Dennis Szymialis	Citizen	I have been opposing the PolyMet mining project and others that will be utilizing the PolyMet processing plant now for more than 12 years. The processing plant is being built to 3 times the capacity of the mine. I have read hundreds of articles on sulfide mining and spent more than 4 weeks at the rate of about 35 hours per week analyzing and commenting on the PolyMet SDEIS. I have attended conferences on mining in South Dakota, Minnesota, Michigan, Wisconsin, and Arizona. These conferences had mining engineers and other professionals lecturing.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

782	Dennis Szymialis	Citizen	Not only is PolyMet a moral issue it is an economic issue. Mining exploration devalues the tax base, and in redistributing the tax burden to other business inhibits economic development and economic prosperity. A ten percent allocation of electrical rates to Polymet as a future subsidy at the expense of consumers and businesses is also having an adverse economic impact on the Minnesota rate payers in the Minnesota power rate payer district that extends from Little Falls to Silver bay Minnesota. Pollution from PolyMet will have an adverse impact on the tourism economy in Minnesota and Wisconsin from water pollution. Businesses in Minnesota and Wisconsin other than mining will be hurt by increased health care costs from arsenic, mercury, and other heavy metals. PolyMet and its supporters venture to enslave the people and businesses of northeastern Minnesota to the subservience of mining. What business would want to locate in this economic environment? More is on the way. There are projects other than PolyMet on the drawing board as the Minnesota Legislature works to repeal the federal Clean Water Act for the benefit of mining companies. Future mining is a clear job and people killer. Other subsidies include the loss in taxes from devalued land and the homes served by tainted water, decreased standard of living from destroyed recreational opportunities, higher health care costs, ect. Basically, destroying the desirability for other economic development. It is a mining make work project with horrible consequences.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
783	Dennis Szymialis	Citizen	The power rate subsidy for PolyMet can only be imagined. It is a mine right in the middle of a geological formation known as the hundred mile swamp on the inside bend of a horseshoe shape of the partridge river. The amount of water that will need to be pumped much less treated from this open pit will be incredible with the electric costs for the pumps etc. being passed on to the Minnesota power rate payer district, much of it rural, that extends from Silver Bay, Minnesota to Little Falls, Minnesota. The amounts of water needing treatment and pumping has been dramatically underestimated in both of the last two projects supervised by PolyMet CEO John Cherry as indicated in the following two articles: http://savethewildup.org/2015/01/concerns-raised-about-proposed-discharge-permit-for-eagle-mineshumboldt-mill/. http://tucson.com/news/resolution-copper-mine-venturing-feet-below-earth-surface/article_44ca18f8-7a29-5562-9833-dd6611c968fc.html.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
784	Dennis Szymialis	Citizen	Water in mining became an unexpected problem for John Cherry's mining company even in the desert. In the Duluth Tribune article titled "Coasters vs. copper" from Sunday, February 25, 20071 John Cherry project manager for PolyMet is quoted as saying regarding the Eagle Project in Michigan, "The mining industry has learned from the mistakes of the past." Clearly, as evidenced has subsequently happened at that project, they haven't and he hasn't as indicated in the article above. Discharges increased from .82 million gallons per day from their tailings basin in their first requested permit to 2.8 million gallons per day and this is for a mine output many times smaller than at PolyMet. Their treatment plant has a capacity of 1.44 million gallons per day. For whatever treatment that is. In addition, PolyMet is expected as indicated in the SDEIS to treat the water infiltration from the mine pit as it gets discharged into the tailings basin. Cherry is quoted by the Duluth News Tribune regarding the Eagle project in Michigan, as saying, "To avoid problems with acidic pollution, he said, all of the ore would be loaded onto trucks and sent to an Ontario smelter." This didn't happen and is indicative of the bait and switch tactics that have occurred with the mining companies, government agencies, and their engineering agents. Mr. Cherry is also quoted as saying, "The water will be clean enough we could bottle it and sell it." The Humboldt mill discharging the above water is not a greensand facility which means that all of the process mercury and arsenic gets discharged.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		

785	Dennis Szymialis	Citizen	The subject matter of H.R. 3115 land exchange involves the exchange of U.S. Superior National Forest Service land and is currently one of the issues in litigation in Minnesota Federal Court. The main parcel of land that is being exchanged for Weeks Act land at the prospective PolyMet mine sight is the Hay Lake land near the currently inactive McKinley mine. A dominant portion of this land was previously land exchanged by the U.S. Forest Service to a mining company. The pretext for the PolyMet exchange is that they will be getting land that will enable them to consolidate the Superior National Forest. However, in the past it was the judgement of the Forest Service that this land was not necessary. I had to do a title search with a friend to determine this. Also, the Forest Service has been secretly conspiring to limit access to the PolyMet mine land exchange site for the purpose of attempting to help PolyMet deny standing to litigants. First, they denied that there was any access. Then, we bushwhacked in through a Forest Service parcel which forced them to acknowledge access in court. The whole time the Forest Service Superior National Forest branch in Duluth Minnesota has been recognizing a gate that has been installed on forest service road 113c as private property. Again, I was obligated to do a title search and determined that there existed a public easement in the County Recorder's office in Duluth. The Forest service never provided notice that they intended to have this easement vacated and no notice of vacation has been provided in the public record. More recently I determined that there is a gate on the north end of 113c blocking public access to a public road of record, i.e. the Dunka Road. The claims made by the Forest Service that the land exchange parcels are not legally accesible to the public are also just a boldface lie of their own creation for the benefit of this toxic mining company and their select private interests that conflict with the actual public interest. Soon after entering highway 113c there is an expansive beaver dam. The PolyMet land exchange site and the surrounding public lands are flush with moose poop and moose and wolf tracks, and I am told Lynx poop and tracks. It has been grueling hiking for me but well worth the effort. I am hoping, ironically, that the presence of some endangered wolves and Lynx will ultimately lead to save thousands of people from painful and premature death from heavy metal toxification. The methylation of mercury is explained by the mining companies as at mile x in the river with a sulfate level of 6x only 2x of mercury is methylated by 2x of sulfate. This is to give people the impression that the only place for mercury methylation is at mile marker x. However, the 4x of sulfate continues downstream to methylate 2x of mercury at mile markers 2x and 3x. The result is that the more sulfates that are generated by mining companies the more mercury is methylated. Mercury methylization is the process by which mercury enters the food chain and is consumed by people. Studies have shown that sulfates continue to escalate from mines in the Lake Superior watershed after closure. The distraction that is taking place is to show that sulfates produce sulfides which inhibit the growth of wild rice. Copper mining produces arsenic which rice takes up so the substitution of providing for the growth of wild rice by perhaps using reverse osmosis to remove sulfates is a arsenic toxic crop of wild rice. Furthermore, eventually the entire fishery of Lake Superior is to be contaminated with methylated mercury to the extent that it will be unfit for human consumption. This is expected to occur from the continued run-off from old mining even if no future mining occurs. Again, the amount of water needing treatment will far exceed estimates in the permit application. Twin Metals that they would deposit their tailings in the St. Louis River watershed again an expression of a disregard for human life as these tailings are likely to be "rich in arsenic" as the nearby Wetleg deposit just a few miles to the south west of some of Antofagasta's deposits that they intend to mine. Protection of human life cannot be deferred.	See response to Comment 370. The issue of the land exchange between PolyMet and the USFS is not germane to the NPDES permit. See response to Comment 198 on the issue of mercury methylation. See response to Comment 788 regarding arsenic removal and wild rice.
786	Dennis Szymialis	Citizen	Allowing Antofagasta or PolyMet mining would be tantamount to the loading and abandoning of a spring gun as in Katko v. Briney, 183 N.W.2d 657 (Iowa 1971) and the repeal of the principle in that case that "the law has always placed a higher value upon human safety than upon mere rights in property." With mining being allowed by these companies it would not be sufficient for regulators giving permission to simply escape with a civil judgement against them. Given the scope of and severity of the pain inflicted on victims of various types of cancer and hideous cancer deaths caused regulators should be judged with a capital murder conviction for crime against humanity. In Chile where Twin Metals primary partner Antofagasta does their usual business 34 people die in that country each year alone from mining accident s. "(Since 2000, about 34 people have died every year on average in mining accidents in Chile - with a high of 43 in 2008, according to Sernageomin data." http://www.cbc.ca/news/world/story/2010/10/14/chile-mine-safety-104.html I have been having trouble lately locating arsenic references to the PolyMet deposit lately because of the volume of information. However, my friend, retired from the MPCA, has indicated to me glittering rock walls he observed in the 1970's at the AMAX bulk sampling and now Teck Cominco site to the east of PolyMet indicating a rich presence of pyrite containing arsenic (reference arsenopyrite). The Wetlegs deposit shown on the following map to the West of PolyMet is close to PolyMet as you can see from the link: http://sosbluewaters.org/Deposit_map.pdf The following report indicates that Wetlegs is rich in Arsenic: http://forum.amiminerals.it/viewtopic.php?t=12078 The Cities of Superior, Duluth, and Cloquet are I am told by a representative of PolyMet 170 river miles downstream. Anafogosta Chile has experienced serious and ongoing health issues resulting in large numbers of premature death from arsenic flowing 180 miles downstream: http://www.academia.edu/10724720/Arsenic_enrichment_in_waters_and_sediments_of_the_Rio_Loa_Second_Region_Chile Research indicates that arsenic alone will kill a conservative 50 but more likely closer to 100 people per year in the Duluth, Superior, Cloquet area, i.e thousands of people in Superior WI over the next 300 years. Your help can save lives in exposing this (PolyMet) criminal venture. Arsenic has been linked to a variety of illnesses including diabetes and heart disease. http://www.bmj.com/content/342/bmj.d2431 There is no known safe amount of arsenic: http://www.reuters.com/article/us-chile-cancer-idUSTRE80N1YJ20120124 The PolyMet Supplemental Draft EIS indicated that Arsenic and Mercury would be removed with reverse osmosis. In the Final EIS it was acknowledged the RO would not do the job and a reference to Greensand Filtering was made with a denial contrary to the 1960's Chilean experience that the Arsenic would not make the 170 river miles to the drinking water intakes of Duluth, Superior, and Cloquet. Even with greensand filtering which is simply promised and not guaranteed A 1999 study of methods highlighting greensand filtering indicates the complications in arsenic removal and one of the main conclusions of greensand filtering was "the technology discussed here is probably not cost effective." http://www.usbr.gov/research/AWT/reportpdfs/report041.pdf Third world African countries are fighting the importation from Chile of arsenic laced copper concentrate. https://www.lusakatimes.com/2015/06/22/dont-demonise-kcms-motive-to-import-toxic-copper-concentrates-from-chile-sinkamba/	This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

787	Dennis Szymialis	Citizen	Speaking of third world journalism. Although the EPA regional director indicated guarded approval of the PolyMet project as a result of political pressure she has since resigned as a result of suppressing a report in the Flint, MI case which has gone unreported in Duluth/Superior and her PolyMet report continues to be cited by PolyMet supporters. http://www.clickondetroit.com/news/breaking-epa-regional-administrator-for-flint-resigns In addition to the dangers of Arsenic questions linger regarding the synergistic effects of heavy metals. In one study it was determined that rats exposed to an amount of mercury that would kill 1% of rats combined with lead that would kill 1% of rats killed 100% of rats. http://amalgam.org/education/scientific-evidenceresearch/synergistic-effects-of-mercury-other-toxic http://amalgam.org/education/scientific-evidenceresearch/synergistic-effects-of-mercury-other-toxicexposures/	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
788	Dennis Szymialis	Citizen	A big deal is being made about sulfides inhibiting the growth of wild rice, but if a strain of wild rice is found that will grow in these sulfate waters/arsenic waters they will be poison from an uptake of arsenic. http://www.huffingtonpost.com/2012/09/20/arsenic-rice-toxic-element-inside-grain_n_1900654.html This is the Science indicated above.	The potential uptake of arsenic by wild rice has not been substantiated and no standard or measure related to arsenic and wild rice is available. In any event, the WWTS treatment technology is effective at removing arsenic and an enforceable arsenic operating limit set at the applicable water quality standard has been added to the permit.		
789	Dennis Szymialis	Citizen	This comment includes 2 appendix pages with a photo.	Comment noted.		
790	Dennis Szymialis	Citizen	The photo on this page shows the tailings basin in the background.	Comment noted.		
791	Rachel Nelson	Citizen	I quote from your own website: "Water is one of Minnesota's most abundant and precious resources. The Minnesota Pollution Control Agency helps protect our water by monitoring its quality, setting standards and controlling what may go into it." Indeed. Protecting our water quality is how we are kind to the earth and to the generations of humans, plants, and animals to follow us here. Given that, I can only presume that the PCA has been influenced and bought on this PolyMet project issue.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comments states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.		
792	Rachel Nelson	Citizen	There was never a question as to whether there would be a spill affecting our water. That is a given. It will happen, sooner or later. The only question you asked and demanded answer from PolyMet was "How will you clean up spills when they happen? Prove to us that you have the funds in reserve to do this."	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.		
793	Rachel Nelson	Citizen	There are no sufficient funds to clean up after such a spill. For how many years would that money provide reverse osmosis treatment to all drinking water for Minnesotans drinking the contaminated water? For how many generations?	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.		

794	Rachel Nelson	Citizen	HAS IT OCCURRED TO ANY OF YOU that MN is a co-guardian, with Canada and Wisconsin, of the largest freshwater sink in North America? That PolyMet's proposed aquifer would drain into that precious water? That WATER will be here, and already is in many parts of the world, THE SINGLE MOST ESSENTIAL AND THREATENED HUMAN RESOURCE ON THE PLANET? Given these facts, and placing them next to MN PCA'a avowed mission vis a vis water protection, I must conclude that there has been collusion and illegal influence on MN PCA in this matter. It is not too late to avoid investigation. Listen to the comments of your constituents who understand water and its current overriding value today. Deny the water quality permit draft to PolyMet .	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comments states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
795	Bethel Anderson	Citizen	My name is Bethel Anderson. My late husband, Len Anderson, and I have been studying this project for over 12 years. There are several areas of concern for me about the PolyMet project, most notably in the water quality permit. #1. The use of the old LTV tailings basin, already containing waste rock and adding to that, with it's known seepages into the ground water, should be unacceptable to the MPCA.	This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). The effectiveness of the FTB seepage containment system, including the barrier component, was evaluated in the EIS. The permit has been revised to include the	
796	Bethel Anderson	Citizen	#2. Catastrophic waste dam failure must be considered, especially with climate change and the frequency of adverse weather events. Dam failure would imperil the St. Louis River watershed, it's people, and Lake Superior.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
797	Bethel Anderson	Citizen	#3. The increase in sulfate and subsequent methylation of mercury in the St. Louis River watershed is already a problem. My concern here is allowing PolyMet to operate using "adaptive management". Past experience for over 20 years with Minn Tac and it's discharges, makes me wonder how this would be managed. If PolyMet operates with a variance for 20 years like MinnTac has, the life of the mine would end with only a variance agreement in place for the entire time.	See response to Comment 370. The MPCA used available data and reports when developing the permit. Adaptive management is commonly used in NPDES permitting to address issues as they arise. The incorporation of adaptive management as a failsafe does not invalidate the requirements for compliance, it allow a more rapid response in case of a problem. Adaptive management is regularly used in complex environmental scenarios to ensure standards are met while allowing flexibility. In this case, the underlying requirement must be met; the adaptive management is intended to develop strategies to maintain compliance.	
798	Bethel Anderson	Citizen	#4. The Health Risk Assessment, which has been requested by Minnesota doctors and nurses, has not been done. We need to find out with a new study, the mercury levels of people living near the proposed plant and those downstream. We cannot afford to add more methylation of mercury from sulfates to already existing high levels in our fish and subsequently in our future generations. Despite the improvements made to the mining permits, I believe it is not safe to operate this sulfide mine in our water-rich environment. I believe the water quality permit should be denied.	The comment related to a health impact assessment was addressed as part of the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). See response to Comment 198. The control of sulfate in the discharge to less than 10 mg/L will minimize the potential for increased methylation of mercury.	
799	Margaret Watkins	Grand Portage Band of Chippewa	Thank you for opportunity to comment on the draft PolyMet NPDES SDS permit MN0071 013. The Band is a federally recognized Indian tribe, as one of the member bands of the Minnesota Chippewa Tribe ("MCT"). The Band participated as a cooperating agency in the Environmental review of the PolyMet project, along with other MCT-member Bands, Fond du Lac and Bois Forte. All the Bands involved retain hunting, fishing, and other usufructuary rights that extend throughout the entire northeast portion of the state of Minnesota under the 1854 Treaty of LaPointe1 (the "Ceded Territory"). In the Ceded Territory, all the Bands have a legal interest in protecting natural resources and all federal agencies share in the federal government's trust responsibility to the Bands to maintain those treaty resources. 2	Background statement for comments to follow. No response needed.	
800	Margaret Watkins	Grand Portage Band of Chippewa	New Source Performance Standards While the stated goal of this permit is to "reduce pollutant levels in point source discharges and protect water quality in accordance with the U.S. Clean Water Act, Minnesota statutes and rules, and federal laws and regulations," the draft permit lacks the required minimum federal effluent limits with the exception of SD001, the wastewater treatment plant discharge.	The federal effluent limits are applied at SD001, which is the point of compliance. The effluent is then distributed via SD002-SD011, to maintain flow to various receiving waters. Compliance at SD001 ensures compliance at the distributed outfalls.	
801	Margaret Watkins	Grand Portage Band of Chippewa	As a new source, and a copper/nickel mine, the permit must include a daily maximum and monthly average limit for total suspended solids, copper, zinc, lead, mercury, aresnic, and pH for all surface water discharges	The permit contains daily maximum and monthly average effluent lmits for these parameters at SD001.	

802	Margaret Watkins	Grand Portage Band of Chippewa	If the only permitted discharge will be SDO 1, all other groundwater and surface water monitoring locations at both the plant and mine sites listed in the permit must state that no discharge is authorized under the permit.	The permit includes specific authorized discharge points. It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters from the mine site and plant site except as authorized through discharge SD001.	
803	Margaret Watkins	Grand Portage Band of Chippewa	Lack of Surface and Groundwater Monitoring Locations Near the mine site there must be additional surface monitoring locations. Above the confluence of Stubble Creek, the Partridge River is in very close proximity to the mine pit. Yet, the nearest monitoring locations are located upstream at SW402 and downstream at SW413 leaving a vast area in close proximity to the mine pit unmonitored. We recommend adding at least one surface water monitoring site on the Partridge River between SW413 and SW402 upstream of Stubble Creek.	See response to Comment 711-B. In addition, the MPCA evaluated the surface water monitoring needed at the facility during the development of the permit, considered the facts presented in the comment, and added a surface water monitoring station (SW414) downstream of the mine site at the West Pit Outlet Creek downstream of the Transportation and Utility Corridor. The MPCA has determined that the proposed surface water monitoring locations, with the addition of SW414, are adequate to evaluate effects from the mine site.	
804	Margaret Watkins	Grand Portage Band of Chippewa	Wyman Creek has no surface monitoring locations even though in MN water quality standards it is classified as a drinking water source and trout stream. Wyman Creek has been identified as impaired due to elevated temperature, low dissolved oxygen, and high concentrations of specific conductance, sulfate, total suspended solids, iron and iron precipitate. 3 We recommend requiring a surface water monitoring location on Wyman Creek downstream of the railroad connection track.	See response to Comment 803. The MPCA evaluated the surface water monitoring needed at the facility during the development of the permit, considered the facts presented in the comment, and determined that the proposed surface water monitoring locations on Wyman Creek are adequate to evaluate effects from the Transportation and Utility Corridor.	
805	Margaret Watkins	Grand Portage Band of Chippewa	The only surface monitoring location on Second Creek is SD026. Mitigation of high concentrations of sulfate, TDS, bicarbonates, total hardness, and specific conductance resulting from tailings basin leakage to Second Creek was included in the Cliffs Consent Decree. Second Creek was not one of the streams monitored during the St. Louis River Watershed Intensive monitoring effort that lead to the St. Louis River Stressor Identification report. We recommend one additional surface monitoring location in Second Creek downstream of the Colby Lake Pipeline.	See response to Line 803. The MPCA evaluated the surface water monitoring needed at the facility during the development of the permit, considered the facts presented in the comment, and determined that the proposed surface water monitoring locations are adequate to evaluate effects from the Plant Site.	
806	Margaret Watkins	Grand Portage Band of Chippewa	To increase the likelihood of identifying groundwater discharges, additional monitoring wells must be added near the equalization basins at the mine site, the Overburden Storage Layout Area (OSLA), the ore surge piles, north of the mine pits, and around the tailings basin. Parameters including copper, zinc, lead, mercury, arsenic and pH, must be included in addition to water level monitoring.	The MPCA assessed the location of each individual well as dictated by the purpose of each well and how each well fit into the overall monitoring well network. This approach was coupled with the incorporation of existing monitoring wells (with a record of baseline water quality) and practical considerations such as access and potential disturbance to wetlands. The monitoring well network in the permit was developed to meet multiple goals, which includes monitoring the performance of engineering infrastructure; serving as indicators for the early detection of potential project impacts; and determining compliance at downgradient locations closer to the property boundary. The monitoring well network required by the draft permit is robust and includes 78 wells/piezometers at the mine site and 40 monitoring wells/piezometers at the plant site. The wells monitoring the mine site near the OSLA and EQ Basin are adequate for determining potential project impacts and determining compliance at downgradient locations. The MPCA has considered this comment and in addition to the wells identified in the draft permit, the MPCA will be requiring an additional bedrock well to be located downgradient of the tailings basin.	

807	Margaret Watkins	Grand Portage Band of Chippewa	Reasonable Potential to Exceed Determination of a reasonable potential to exceed water quality standards for the Lake Superior basin is based on comparing preliminary effluent limitations to projected effluent quality. "In all cases, the permitting authority shall use any valid, relevant, representative information" to determine if there is a reasonable potential to cause or contribute to an exceedance of water quality standards.4 Where facility-specific effluent monitoring data is not available "the permitting authority shall specify the project effluent quality as of the distribution of the projected population of daily values of the facility-specific effluent monitoring data projected using a scientifically defensible statistical method that accounts for and captures the long-term daily variability of the effluent quality."5 Based on this analysis the permitting authority must then set water quality based effluent limits if the projected effluent quality exceeds the preliminary effluent limitations to protect aquatic life, human health and wildlife from chronic effects and/or aquatic life from acute effects.6 However, MPCA, by their own admission and in violation of 40 CFR part 132, did not conduct a "quantitative" reasonable potential to exceed water quality standards analysis, and instead relied on a "qualitative" analysis that only included the projected water quality intentionally discharged from wastewater treatment plant.	See response to Comment 718-A. As described in response to Comment 802, discharges are only authorized through SD001.	
808	Margaret Watkins	Grand Portage Band of Chippewa	Poly Met will be purchasing the plant site from Cliffs. MPCA has provided that "A condition to closing on that purchase is that the NPDES/SDS permit and Consent Decree obligations held by CE for the Basin be assigned to Poly Met or one of its affiliates (together, "PolyMet")."8 In clear violation of the Clean Water Act (CWA), MPCA stated "[I]t is important to note that operation of the proposed NorthMet project resolves any legacy water quality issues at the ferrous Basin."9 Yet, there appears to be no plan to clean-up Spring Mine Creek, nor is there certainty that 95 percent of the seepage from the tailings basin can be collected and treated.	Regarding legacy issues, see response to Comment 587. Spring Mine Creek is not affected by the proposed project and impacts to it are not relevant to the draft permit. Seepage capture efficiency is addressed in lines 807, 588-A, and 588-B.	
808-A	Margaret Watkins	Grand Portage Band of Chippewa	PolyMet's operation may resolve legacy pollution at the plant site, but this determination cannot be made until PolyMet is operational. Therefore, all pollutants, legacy or otherwise, known to exceed water quality standards must have a limit in the NPDES permit.	As described in Response to Comments Line 801, the MPCA did consider reasonable potential for other parameters and determined, based on review of available information, that there is no reasonable potential for the facility to cause or contribute to an excursion above a water quality criterion. If reasonable potential is not determined or cannot be determined prior to permitting, the MPCA has the authority to request monitoring as part of the permit. A clause in the permit to allow the MPCA to reopen the permit and impose an effluent limitation if the required monitoring establishes that there is reasonable potential the discharge will cause or contribute to an excursion above a water quality criterion. The MPCA has authority under Minnesota Rule part 7001.0170 to modify a permit based on new information. The draft permit states this in item 5.183.300. If the MPCA determines the facility has reasonable potential based on actual operating data, the MPCA could reopen and modify the permit to add limits if necessary. To further address this concern, the MPCA proposes to add additional reopener language in part 5.119.2 in the draft permit to reopen and modify the permit if the MPCA determines that the discharge is causing or contributing to a violation of water quality standards; this could include adding WQBELs if actual data indicates WQBELs are necessary.	
809	Margaret Watkins	Grand Portage Band of Chippewa	In the same memo 10 MPCA provides discussion regarding groundwater issues including exceedances of arsenic, barium, aluminum, iron, manganese, and pH. The only groundwater exceedances that are explicitly dismissed are arsenic and barium since "an evaluation of tracer pollutants indicates these exceedances are not due to the Basin. " 11 This is in spite of the fact that MPCA has not ruled out stack emissions from the L TVSMC operation as one of the sources of groundwater exceedances of arsenic and barium.	The referenced memo reflects current knowledge. The memo focused on groundwater migrating from the basin to surface water and did not further evaluate sources.	

810	Margaret Watkins	Grand Portage Band of Chippewa	Surface water issues surrounding the tailings basin include exceedances of mercury, sulfate, alkalinity, hardness, TDS and specific conductance criteria. To dismiss these issues, MPCA incorporated multiple rationales including high priority rulemaking where proposed revisions could make criteria for alkalinity, hardness, TDS and specific conductance less stringent. 12 No treatment would be required for surface water sulfate exceedances because of the proposed wild rice rule revisions or the possibility of developing site specific criteria. 13 Elevated mercury concentrations are "most likely due to influences from precipitation and background concentration, not from seepage from the existing Basin" and therefore would not be an issue.14 Minnesota surface water criteria have been exceeded in water samples collected near the tailings basin proposed for use by PolyMet.15 All permitted discharges within the vicinity of the tailings basin must have limits on mercury, sulfate, alkalinity, total dissolved solids (TDS), bicarbonates, total hardness, specific conductance, and iron, to ensure that they will not contribute to an existing excursion from water quality standards.	The concern in the comment appears to be about legacy pollution, which is regulated by the existing tailings basin permit as described in response to Comment Multiple-543-CI. Regarding the MPCA's approach regarding reasonable potential in this permit, see response to Comment 718-A. The MPCA conducted a reasonable potential analysis and determined there is no reasonable potential for these parameters to cause or contribute to the exceedance of a water quality standard. Therefore, WQBELs for these parameters are not required in the permit. The MPCA included TBELs in accordance with 40 CFR part 440. In addition to TBELs, the MPCA included Operating Limits for sulfate, copper, arsenic, cobalt, lead, nickel and mercury. The Operating Limits and TBELs in the permit are enforceable and an exceedance of either the TBEL and/or Operating Limit is a violation of the permit. To address concerns regarding the permit being protective of water quality, the MPCA has also added language to the permit stating the discharge of treated wastewater from the WWTS must not violate state water quality standards.	
811	Margaret Watkins	Grand Portage Band of Chippewa	Impaired Waters Within the Lake Superior basin, which includes the Project area waters, MN Water Quality Standards prohibit any new or expanded point source discharges ofbioaccumulative substances of immediate concern including mercury.16 Moreover, Minnesota's mercury TMDL process does not adequately address the fish consumption impairment in these waterbodies. Therefore, any new discharges that would result in further degradation to waters with an existing water quality . impairment are not legally permittable under the, CW A.17	See response to Comments 722 through 722-B and 745. The statewide mercury TMDL was calculated to address mercury in the water column, not necessarily fish consumption impairments, but the reductions assigned in the TMDL may achieve fish consumption targets.	
812	Margaret Watkins	Grand Portage Band of Chippewa	Waters with known mercury impairments in the vicinity of the project including: the Embarrass and the Partridge Rivers; Embarrass, Sabin, Wynne, Esquagama and Colby Lakes, and; the Whitewater Reservoir. 18 In spite of these impaired waters, neither the PolyMet Water Management Plans nor the draft permit to mine estimate concentrations of mercury in seepage from various locations where water will contact mine waste including the toe of the tailings basin, waste rock storage piles, ore surge piles, or the mine pits. Additionally, there has been no estimate of the amount of mercury that could seep from the unlined Overburden Storage Layout Area (OSLA), where mercury-containing peat will be stored. 12 !d. pg.4.	Monitoring for mercury is required at several internal monitoring points including the influent to the WWTS from the FTB seepage capture system (WS015), mine pit dewatering (WS401-404), combined mine water sources (WS415 & WS416), treatment of the mine water effluent (WS072 & WS073), OSLA runoff (WS413). Mercury is also limited at the internal performance monitoring station (WS074). In addition, the Permittee is required to submit an Annual Comprehensive Performance Report to assess the performance of the facility engineering controls at the Mine Site and Plant Site in minimizing impacts to water resources downstream of the facility. Mercury is required to be evaluated in the annual comprehensive performance report.	
813	Margaret Watkins	Grand Portage Band of Chippewa	In 2003, the Minnesota Department of Natural Resources (MNDNR) reported that taconite tailings appeared to be a sink for mercury in tailings basins in northern Minnesota. The loss of mercury through adsorption to solids in the tailings basin and subsequent burial in the sediments resulted in an overall permanent retention of mercury within the basin and decreases the mercury load released to receiving waters. 19 However, mercury in the existing Cell2E pond of the L TVSMC tailings basin has a concentration of 1.4 ng/L of mercury and water collected seeping out of the toe of the tailings basin has a concentration of 4.9 ng/L.20 This contradicts the MNDNR21 by demonstrating that mercury concentrations after seeping through the tailings do not decrease, in fact the concentration more than triples.	See response to comment Multiple-543-CA.	
814	Margaret Watkins	Grand Portage Band of Chippewa	PolyMet estimates that 164 pounds of mercury will be deposited in the Hydrometallurgical Residue Facility (HRF) each year.22 This estimate is accompanied by an assumption that none of the mercury in the .HRF will be released into the environment into perpetuity.	Direct discharges from the HRF Pond and/or the HRF Leakage Collection system are prohibited. The HRF is a double-lined facility, will operate as a closed-loop system, and will have no discharge to groundwater or surface waters, or to the FTB/WWTS system.	
815	Margaret Watkins	Grand Portage Band of Chippewa	Poly Met has predicted that the concentration of total sulfide mineral dust deposition could exceed 1,000 milligrams per square meter per year, or four times more than the predicted concentration of the deposition to the "wetland of interest". Yet, this prediction was made for areas at the mine site where water will be draining into the "wetland of interest" without discussing how a particular downstream wetland could legitimately receive just one-quarter of the predicted sulfide mineral dust deposition. The effect from sulfide mineral dust deposition on stormwater mercury methylation was not estimated in this analysis, or the effect that might have on wetlands with high concentrations of sulfate reducing bacteria. Mercury deposition into wetlands, where high sulfur concentrations can greatly increase methylation of mercury should have received more scrutiny.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.	

816	Margaret Watkins	Grand Portage Band of Chippewa	Mercury releases into the environment go beyond the wastewater discharge, and include deposition of dust contaminated with mercury originating from the Project. Using cross media analysis the spread of dust from the facility was examined to determine the potential for contamination of water and wetlands through deposition?3 Dust deposition resulting from blasting at the mine site and wind erosion from the Category 1 waste-rock stockpile were excluded from this analysis. Further, MPCA did not consult with their own in-house experts and was unconcerned about the concentrations of mercury in dust. This lack of concern was based on speciation and assumed, without scientific data, that mercury is bound to dust and therefore would not be released into the environment.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
817	Margaret Watkins	Grand Portage Band of Chippewa	Without the estimates of mercury releases from dust, storm water, the OSLA, ore surge piles, waste-rock stockpiles, mine pits, and toe of the tailings basin, the FEIS stated that, based on mercury mass balance analyses, the Project is predicted to result in an overall net decrease of mercury loadings of approximately 1.0 grams per year to the St. Louis River. This is accomplished by a decrease of 1.2 grams per year in the Partridge River and a net increase of 0.2 grams per year in the Embarrass River.24	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
818	Margaret Watkins	Grand Portage Band of Chippewa	While SD01 permit limits include mercury, the concentrations are one-thousand times higher than MPCA Lake Superior Basin Water Quality Standards allow.25 However, there are no mercury discharge limits in the NPDES permit or the Stormwater Construction General Permit for the OSLA. All surface water discharges must include mercury limits that are consistent with Great Lakes mercury criterion.	Runoff from the OSLA will be treated as mine water and routed through the WWTS. The MPCA conducted a reasonable potential analysis and determined there is no reasonable potential to cause or contribute to the exceedance of a water quality standard for mercury, therefore, a WQBEL for mercury is not required in the permit. This is further described in response to Comment 811. The MPCA included TBELs in accordance with 40 CFR 440. In addition to TBELs, the MPCA added an Operating Limit of 1.3 ng/L for mercury. The Operating Limits for mercury in the permit is enforceable and an exceedance of this limit is a violation of the permit. To further address the concerns of this comment, the MPCA also added language to the permit stating the discharge of treated wastewater from the WWTS must not violate state water quality standards. With respect to construction stormwater, the MPCA requires best management practices that will have the effect of reducing mercury in stormwater. The type of construction proposed at the facility is comparable to the types of construction at other projects covered by the construction stormwater general permit. The construction stormwater general permit is beyond the scope of this NPDES permit.
819	Margaret Watkins	Grand Portage Band of Chippewa	Specific conductance limits are not included in the draft permit. Yet, Spring Mine and Wyman Creeks, and the Embarrass and Partridge Rivers are known to have aquatic life impairments resulting from high concentrations of specific conductance. 26 Therefore, all permitted discharges must have specific conductance limits that that comply with Minnesota's 7050 rule.	See response to Comment 721.
820	Margaret Watkins	Grand Portage Band of Chippewa	Tailings Basin Seepage PolyMet's seepage capture rates are unrealistic and cannot be demonstrated by any other project that has been cited as a reference. Predicted tailings basin seepage capture system efficiency rates are: 100 percent of the Tailings Basin 's surface seepage; 100 percent of the groundwater approaching the containment system from the Tailings Basin 's east and south toes, and; 90 percent of the groundwater approaching the containment systems from the Tailings Basin 's north, northwest and west toes (Poly Met 2015d). 27	The comment questions the efficacy of controls of the seepage capture systems required in the NPDES permit at the Mine Site and Plant Site and presumes failure of control systems without justification. See response to Comment 707 through 707-B regarding capture rates and Comment 711 for an explanation of why maintaining an inward gradient ensures capture.

821	Margaret Watkins	Grand Portage Band of Chippewa	Poly Met' s. claim that 90 percent or more of the seepage from this tailings basin can be captured is unrealistic, to say the least. Tribes requested any example of the "90 percent or better" capture efficiency rate to be provided by the Co-Lead Agencies, but they were not able to provide a single example anywhere in the world. 28 Instead, just one citation was provided from an EPA guidance document that stated: ((Most barriers in the study have been in place for fewer than 10 years; therefore, long-term performance can only be extrapolated ... All sites included in the study were existing sites that had vertical barriers and, in many cases, caps. None of the sites has an engineered bottom barrier. Therefore, the effect of leakage through aquitards was not evaluated in this study. "29 The same report also indicated that "10% of the containment systems reviewed failed to meet the performance objectives and required corrective action, and 19% of the evaluated facilities did not have sufficient data to conclude whether the containment system was operating successfully or not."30 In other words, even the Co-Leads' own authority did not support a 90 percent capture efficiency rate. Further, tailings ponds in Fort McMurray, Alberta, Canada, are cited by Poly Met as an example of successful seepage containment: "Another example is the installation of a soil-bentonite cutoff wall around the p erimeter of a mine tailings pond located in the province of Alberta, Canada. The cutoff wall is approximately 100-feet deep and 3 feet wide, and has a hydraulic conductivity of less than 1 x1 0-7 em/sec. The cutoff wall was used to isolate the tailings pond from down gradient surface water features including wetlands and the Athabasca River."31 Unfortunately, Environment Canada, a federal agency, published research in 2014 that substantiates that the Athabasca River has been contaminated by toxic chemicals seeping from Alberta's tar sand tailings ponds in spite of the fact that ditches, cutoff walls, groundwater interception wells, and water pump back systems were used to prevent the seepage pollution from occurring. 32 One of the two leaky tailings ponds studied reportedly seeps toxic wastewater at a rate of approximately 2.65 cubic feet per second, or more than 625 million gallons per year, into the Athabasca River.33 So this example is actually the opposite of "successful seepage containment." Other examples of similar proposals show similarly poor results. The Zortman-Landusky Mine in Montana installed containment and pump-back systems to be used in conjunction with a wastewater treatment facility. However, they "did not capture all surface and subsurface drainage."34 The Molycorp, Inc. Mine site in New Mexico concluded that " [t]he pathway for contaminant migration is the leaching of tailing seepage downward from the tailing facility to ground water that migrates through fractures to surface water."35 Therefore, no credible support for Poly Met's claim of seepage capture rates by these means has been provided or has been found.	See response to Comment 707 regarding the modeling used as a basis for the capture rate. See response to Comment 707 through 707-B for further discussion regarding capture rates and Comment 711 for an explanation of why maintaining an inward gradient ensures capture. See response to Comment 588-B, which includes discussion regarding the enforceability of maintaining an inward gradient.
822	Margaret Watkins	Grand Portage Band of Chippewa	Yet, MPCA has promoted the idea that as long as groundwater seepage from the tailings basin does not exceed 500 gallons/acre/day (greater than 2 million gallons per day), the basin is permittable because it is "equivalent to an engineered lined system with respect to release of seepage to groundwater."36 Further, as long as the facility does not leak polluted groundwater at rates higher than 500 gallons/acre/day the tailings basin would not be subject to NPDES/SDS requirements,37 without having to address the hydrologic connection between groundwater and surface water flow at the site. In order to evaluate the need for permit coverage for the facility, MPCA will "seek evidence the facility will not have a statistically significant impact on sulfate in receiving waters ... groundwater quality standards can be met at the facility property boundary, .[and] all applicable surface water quality standards can be met in surface waters at the facility. "38 However, no exemptions exist in the CW A that constrain NPDES permit coverage to "excess" wastewater discharges that are estimated to have a "statistically significant" impact on receiving waters at the property boundaries. US EPA has clearly articulated to MPCA and PolyMet that failure to obtain NPDES coverage for discharges of pollutants to waters of the United States would place-the discharger at risk of violating the CWA.39 40 CFR § 122.21(a)(1), "Duty to apply," requires that "any person who discharges or proposes to discharge pollutants ... and who does not have an effective permit ... must submit a complete application to the Director in accordance with this section and part 124 of this chapter." 40 CFR § 122.21(c) states that "Persons proposing a new discharge are encouraged to submit their applications well in advance of the 90 or 180 day requirements to avoid delay." Simply applying for a permit does not provide the coverage needed to authorize discharges of pollutants to surface waters under the CW A. Yet, MPCA has not included any groundwater or surface water discharges beyond the wastewater treatment plant for the plant site or the tailings basin.	See response to Comment 723. Additionally, as a clarification, the MPCA added a prohibition against discharges that violate water quality standards.

823	Margaret Watkins	Grand Portage Band of Chippewa	Residential Wells MPCA's groundwater standards prohibit any discharges that could pollute groundwater, limit or preclude using groundwater as a drinking water source.40 MPCA has conflated polluted tailings basin groundwater with natural background conditions. "Data shows groundwater quality is generally better than applicable groundwater standards at the property line. For aluminum, iron, manganese and pH, natural background exceeds the groundwater criteria. For arsenic and barium, an evaluation of tracer pollutants indicates these exceedances are not due to the Basin."41 Even if arsenic and barium concentrations are not due to the Basin, they may be related to stack emissions from LTVSMC and must be addressed along with manganese, aluminum and sulfate.42 Fourteen residential wells located between the tailings basin and the Embarrass River were identified during the environmental review of the PolyMet project. Minnesota rule 7060.0200 states that " [I]t is the policy of the agency to consider. the actual or potential use of the underground waters for potable water supply as constituting the highest priority use and as. Such to provide maximum protection to all underground waters ... For the ... prevention of possible health hazards, it is necessary and proper that the agency employ a nondegradation policy to prevent pollution of the underground waters of the state." Many of the residential wells exceed the Health Risk Limit for manganese. In high concentrations, manganese is a potent toxin that is known to cause Parkinson's like symptoms. PolyMet's contaminant transport modeling suggested that the project will cause manganese, aluminum and sulfate to exceed drinking water standards. In the monitoring wells near the tailings basin, pollutants including iron, sulfate, manganese, aluminum, and fluoride already exceed drinking water standards. 43 Therefore, drinking water limits for arsenic, barium, sulfate, manganese, aluminum and fluoride should be included in groundwater monitoring locations between the tailings basin the residential wells to ensure that further degradation of potable groundwater does not occur.	See response to Comment 710 regarding the basis for groundwater well locations. See response to Comment 723 for an explanation of why the Annual Groudnwater Evaluation Report will ensure prevention of groundwater impacts. See response to Comment Multiple-543-EL for discussion of existing exceedances.	
824	Margaret Watkins	Grand Portage Band of Chippewa	Mine Site Seepage Similar to the tailings basin, MPCA and PolyMet contend that there will be no seepage from the mine pits, waste-rock stockpiles, ore surge piles, or OSLA, that will not be captured and treated by the wastewater treatment facility. Because there is no federal minimum seepage requirement that triggers the need for a permit, capturing 95 percent of the seepage from the tailings basin and 99 percent from the mine site simply means Poly Met is planning on violating federal rules, and MPCA is allowing these violations. The draft permit states "[T]here will be no discharge of mine water or other process wastewater to surface waters from the Mine Site." 44 This statement excludes groundwater seepage that has a direct connection to surface water. In fact, in terms of prohibiting a discharge from the mine site, the draft permit only excludes direct discharges to surface water:	This comment addresses actions not authorized by the permit conditions. The permit includes specific authorized discharge points. It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters from the mine site and plant site, except as authorized through station SD001. If the Permittee does not comply with the permit, the permittee would be subject to enforcement actions to correct the violations. For any other point to be authorized, the permittee would have to submit an application to modify the permit. The MPCA has modified language in Item 5.175.75 of the draft permit regarding unauthorized discharges from the mine site, which prohibits the Permittee from directly discharging any mine water or other process wastewater from the Mine Site to surface waters under this permit. All mine water or other process wastewater from the Mine Site must be routed to the Equalization Basins and pumped to the Plant Site for treatment.	

825	Margaret Watkins	Grand Portage Band of Chippewa	"This p ermit does not authorize the direct discharge to surface waters from the HighConcentration, Low-Concentration and Construction Mine Water Pipelines. 45 This permit does not authorize a direct discharge from the Mine Site Equalization Basins or any other industrial mine water pond system to surface waters. "46 This is a great concern because the FEIS presented the sulfur concentrations of Project waste rock ranging between 0.01- 5.0%47 with an average mass-weighted concentration of0.15%. The Virginia Formation has the highest concentrations of sulfur, 0.4-5.0%, and the Duluth Complex, 0.13-0.6% sulfur. These concentrations are much higher than in Montana's Zortman-Landusky Mine waste rock (0.2% sulfur)48 that has already required perpetual wastewater treatment. And, like the project proponent in Zortman-Landusky, the Project proponent has suggested that "most (70 percent) of the NorthMet waste rock would be the low-sulfur, non-acid-generating" and will never cause acid mine drainage. However, the north wall of the east pit is composed of the Virginia Formation (sulfur concentration 0.4 -5%) meaning that it will be exposed to both air and water and will likely contribute a substantial load of sulfate and metals to mine pit water. Twenty-feet of pit wall will never be submerged and as such constitutes a perpetual source of mine related contaminants. 49 Poly Met claims bedrock transport of contaminated water is negligible due to the very low bulk hydraulic conductivity of bedrock and that groundwater flow rates in these flowpaths were not large enough to affect water quality at the groundwater and surface water evaluation locations. 50 Modeled projections of the rate and volume of flow of polluted water from the mine pits suggest that it could take 17-34 years after the commencement of mining for pollutants to reach the Partridge River. 5 1 A potential that was not considered in model development for the mine site was the possibility that pollutants may be discharged to wetlands ~n close proximity to the mine site. The possibility also exists that pollution from mine features, including the pits, may reach the Partridge River more quickly than predicted because pollutant flow paths may not be exclusively underground, or travel time may be reduced as a result of pressurized fracture flow.	See response to Comment 824 regarding the possibility of groundwater impacts to surface water. As discussed in that response, the permit prohibits unauthorized discharges. Mine pit water is handled as process water and would be treated by the WWTS before discharge. See response to Comments Multiple-543-AZ and Multiple-543-EJ regarding the MPCA's nondegradation review for groundwater, including potential transport through faults and fractures.	
826	Margaret Watkins	Grand Portage Band of Chippewa	Although the draft permit requires groundwater monitoring for both the mine site and the plant site, there are no permit limits for groundwater. It appears that MPCA will only require Poly Met to apply for NPDES coverage at the mine site if monitoring results indicate that there is, or will be, a discharge of pollutants to surface waters. However, this does not comply with Minnesota rules or the Clean Water Act. A complete NPDES permit application must include information detailing when and where pollutants originating from the mine site will enter surface waters. 52 Even ifPolyMet could ensure that monitoring would detect a potential discharge to surface waters before a discharge occurred this would still violate Minnesota rules.	See response to Comment 824. See response to Comment 723 for an explanation of why the Annual Groudnwater Evaluation Report will ensure prevention of groundwater impacts.	
827	Margaret Watkins	Grand Portage Band of Chippewa	MPCA has stated that if an unauthorized discharge occurs the agency may pursue enforcement action. 5 3 Further, MPCA put forth two options to address an unauthorized discharge in the permit: " 1) there could be a new permit limit in an adjustment to the permit, or 2) discharge would need to stop." The option to stop a discharge may not be possible; therefore this is simply not adequate and does not comply with Minnesota rules or the Clean Water Act. If Poly Met insists that there will be no unauthorized discharges to surface water and therefore does not apply for adequate NPDES permit coverage, MPCA must pursue enforcement actions for noncompliance and add new permit limits for all discharge points not previously included in the permit.	See response to Comments 591-A and 716.	
828	Margaret Watkins	Grand Portage Band of Chippewa	Conclusion NPDES permits must include numeric and/or narrative effluent limitations necessary to protect water quality standards of the receiving waters, as well as any limitations necessary to ensure that downstream water quality standards are protected, 5 4 MPCA's groundwater standards prohibit any discharges that could pollute groundwater, limit or preclude using groundwater as a drinking water source. 55 Therefore, all authorized discharges to groundwater and surface water must have limits that comply with new source performance standards and limit the concentrations of pollutants that are kno\vn to exceed water quality standards. Since there is no federal minimum seepage requirement that triggers the need for a permit, capturing most of the seepage from the tailings basin and mine site simply means Poly Met is planning on violating federal rules. By not requiring permit limits at all external monitoring locations, MPCA is sanctioning these violations of federal rules. If after operations begin, it is determined that PolyMet has erroneously concluded there will be no discharges to surface or groundwater, MPCA must swiftly pursue appropriate enforcement actions against the company for violating theCWA.	The MPCA notes that the permit includes specific authorized discharge points. (See responses to Comments 802, 824, and 826.) It does not authorize any other point source discharge and in fact prohibits direct discharge to surface waters from the mine site and plant site. If the Permittee does not comply with the permit, the permittee would be subject to enforcement actions to correct the violations. For any other point to be authorized, the permittee would have to submit an application to modify the permit.	

829	Margaret Watkins	Grand Portage Band of Chippewa	Although Grand Portage is not specifically requesting a contested case hearing, we reserve the right to participate if a contested case hearing is ordered. Sinerely, Margaret Watkins, Grand Portage Water Quality Specialist.	Comment noted.

"Multiple" Spreadsheet Response to Comments

Sort ID	Commenter Name	Commenter Org	Comment Text	Combined Theme and Individual Responses	Contested Case Hearing Response
1	Susan Flygare	Citizen	I really appreciate the fact that the DNR is here to answer our questions. I'm very concerned that the process of mining the copper is so extreme, blasting the rock, releasing heavy metals, and when asking the DNR about that and if their job is to protect our natural resources, the answer that I'm getting consistently is, no, their job isn't to make a judgment about whether this is good or not for Minnesota. Their job is only to review the permit. And I find that distressing, because my sense was that they were also there to help provide some context in judgment around the types of permits that are submitted. And so the fact that this has gotten this far for something that is so egregious in its process and use of water and potential for contaminating our water in Minnesota, I'm very concerned that the DNR is somehow saying that they have to do it because of legislation and statute and whatever and that they don't have a way or a process to bring concerns if they have a moral compass and they have concerns about our natural resources to the forefront. So if nothing else, hopefully this project will at least bring that to light, that there is no vehicle for the DNR to protect our natural resources if they only have to react to statute and the permits that are submitted to them.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
2	Elanne Palcich	Citizen	I'm Elanne Palcich, P-a-l-c-i-c-h. The potential for pollution of the headwaters on Lake Superior is not in the best interest of the citizens of the state. And the PolyMet permit to mine must be denied. I believe that everyone in this room deep inside knows that the permitting of PolyMet will result in a pollution of our watershed, the sole source of drinking water aquifer of the region. This claim to mining cannot be done in a water rich environment without leaving behind a toxic legacy. The permitting of PolyMet would also open the door for tax encampments. (Inaudible) creating an industrial mine zone with additional scattered deposits throughout the Arrowhead. The permitting of PolyMet will not save us. And instead, it will destroy all intrinsic value, including the clean water upon which our life depends. The PolyMet science process is derived from the depth of management solutions. Adaptive management is not science. The permit to mine process has weakened environmental protections in order to facilitate PolyMet, a foreign mining company seeking to mine on our federally protected lands. It is too expensive and it's technologically not feasible to control pollution on a scale of such mining operations, including the 99 percent waste rot that will remain. The mining of copper, nickel, and sulfide ores results in matters such as arsenic, mercury, copper, nickel, and manganese into our water and our environment. Those most impacted would be women in child-bearing age, infants, children, and our children's children for the next 20 generations. The permit to mine is a corporate politically controlled process, placing the health risks and burden of cleanup upon our children and our children's children. This is not the way of the future. We must find jobs for our young people that will not destroy the environment for all future generations. And I believe that there are people within our agencies who will have the courage to step up and deny the permit to mine. Thank you.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process. It also generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). The draft permits were developed according to current state and federal law. No changes were made to the draft permit in response to this comment.	
3	Gary Anderson	City Counselor, City of Duluth	Thank you. Commissioner Landwehr, Assistant Commissioner Naramore, and other folks here tonight and people in the audience, it's a pleasure to be here and an honor to be able to speak with you tonight. As you know, we've been working on building a relationship with you, as a city counselor for the city of Duluth, and I'm grateful for the opportunity to see you here in Duluth tonight and see the support and the trust that the people of this area have in the DNR. I'm not an expert in anything and I'm sorry I can't speak to the technical aspects, but I'll gratefully use my two minutes remaining to say that the draft PolyMet permit to mine does not protect the public interests. The comment goes on to explain the purpose of DNR and how the project could impact resources.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
4	Gary Anderson	City Counselor, City of Duluth	DNR Commissioner Landwehr, use your discretion to call for a contested case hearing on the permit to mine prior to approval. Thank you	Comment noted. Requests for a contested case hearing were evaluated according to current state law.	
5	Dave Lislegard	Mayor of Aurora	My name is Dave Lislegard, L-i-s-l-e-g-a-r-d, and I am the mayor of Aurora, Minnesota. Let me begin by urging the MPCA and the DNR to grant these permits in a timely manner.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
6	Dave Lislegard	Mayor of Aurora	As the new mayor of Aurora, I know firsthand that the last 15 years our city has been through much and lost much. But through it all we haven't lost hope. We continue to persevere and support a process that would bring about new job opportunities for our community.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

7	Dave Lislegard	Mayor of Aurora	Today's hearing is a part of that process. Tonight and tomorrow you'll hear stories about why the PolyMet project shouldn't move forward. Opponents of this project in a mining community are eager to kill our opportunity at any cost, even when the company proves it meets or exceeds all state and federal regulations as required by law. Let me repeat that. Even when the company proves it can meet or exceed all state and federal regulations required by law. We see the delay tactics as a part of their strategy, trying to step outside the established process to destroy the future of the people I represent. Yet the people I represent continue to be polite, kind and courteous throughout this whole process. Let me state for the record, I would not support any project that failed to meet the environmental standards. But PolyMet hasn't failed, they've excelled. And yet, we continue to hear the opposition state that it can't be done safely. The notion that we can't have both jobs and protecting the environment is simply wrong. In the history of mankind we went from no cars to cars to mars. Technology has advanced. I believe the State has been thorough in its permitting process. I trust the science and the findings of State experts, which now show NorthMet project will protect human health and the environment. In closing, let me say, the company has done its job, you have done your job. Please move the process forward so we can do our job. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
8	Dan Snidarich	Business agent of Operating Engineers Local 49	Good evening commissioners, thank you for giving us this time to speak. I'm Dan Snidarich, I'd like to introduce myself. I'm a business agent for Operating Engineers Local 49 out of Virginia. I represent as of a couple days ago 524 unemployed operating engineers that are out there looking for something to build, construct and things like that. We do it best and we do it good. And I struggled -- I've been to many of these programs and I struggle each time I decide to come up and talk and what I should talk about and what's best. "..." For all the contractors, the members, the vendors that Local 49 represents and we have people in the public sector in these communities that are directly around here that I personally represent, I'd like to see that happen for those individuals, for these towns, for these places to keep this thing going. But the one thing I struggle with that I really wanted to talk about tonight if I got an opportunity is that word that I just said, is opportunity. I have a 14 and a 16-year-old boys myself at home. And if you go back in time when these meetings started, they were little. And now I'm looking at my kids going, geez, I'm wondering what they're going to do and what opportunities are they going to have to sit there in these crowds and have good jobs like the ones that we have to offer. And I just hope that some day that we can get together and make this thing happen and we can actually have opportunities for these young individuals that are behind us. None of them are my kids, but I would like to say that that opportunity would be there for them.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
9	Dan Snidarich	Business agent of Operating Engineers Local 49	And I guess we've proven that we can do things right. PolyMet has done the science. Every time somebody comes up and they contest something, they stand tall, they do what they have to do. I just hope that after these meetings that a good decision can be made and maybe this thing can actually go forward so my kids aren't standing here ten years later having these same discussions with a lot of the same people in the same building. I appreciate your time. I'd like to say I -- I think it's the right thing. I think it's time, it's overdue. Give them the opportunity to do what they need to do and let our people have the opportunity so maybe in a short period of time I'm not talking about 529 people that I represent that don't have jobs. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
10	Robert Bassing	Citizen	Hello, my name is Robert Bassing, B-a-s-s-i-n-g. And I'm a senile old retiree from U.S. Steel and I live in Buhl. And I'm here because I do support the idea of mining. I think those that say it has been shown to never have been done safely before could also say, well, man can't fly or man can't go to the moon. We can't be naysayers, we have to be positive and say we can do that which they say cannot be done.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
11	Robert Bassing	Citizen	But in the environmental issues we have to ask ourselves, are our studies impartial? Are they being paid for by corporations, corporations that have proven in the past that the standards, as in the lifeboats on the Titanic, the standard of nondouble hull on an oil tanker, the standard of not having a blowup preventer on a rig out in the Gulf of Mexico? These were all standards that were met. And for us to ask the question, why do we have to accept on the dike, which has been a problem in Chile and a problem in Canada of collapsing, why do we have to accept either concrete columns or a buttress? Why not go the extra length and say we're going to put in those concrete columns and we're going to put the buttress in? And we're going to make damn sure that that dike does not let loose out into the environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

12	Robert Bassing	Citizen	And I think it's up to you people in the positions to demand them to go that extra distance to ask why if there's a liner under Stockpile 2 and there's a liner under Stockpile 3, why is there no liner under Stockpile 1? And if it's not as reactive, why does it have to be capped with an impermeable barrier if it's not as reactive? And are we handling that Number 1 the way we should, that stockpile? We can be partners with corporations, we can be partners in progress or we can be partners in crime. And so far there's plenty of examples that we have been partners in crime with the corporations. We can change that. We can hold their feet to the fire and say we are going to make you do the right thing. Thank you.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
13	Jack Eloranta	Citizen	Thank you. My name is Jack Eloranta, E-l-o-r-a-n-t-a. And I just have a very short message, two points that I want to make. And one is that we're talking about Minnesota mining. Minnesota is where surface mining was invented. And the mining is done better in Minnesota than anywhere in the world. And the people who are doing it, I've worked with most of the people involved. And they're the most honest, reputable and trustworthy people. And their reputation around the mining world is unmatched. And I'd like to just say, having said what my two points are is that this isn't the first mining operation that I've seen. I've got a degree in geology and I've got a degree in mining engineering and my master's in mining engineering. I spent 22 years in the taconite operations here. I spent 18 years as the international consultant, done work in Senegal, South Africa, Panama, Chile, Peru, Canada, New Zealand, Australia. The notion that it's being done poorly in Minnesota is laughable. This is where mining was invented and this is where it's done properly. I also ran a coal mine in Pennsylvania where we treated acid mine drainage. And people have a tendency to place these all together. This is hard rock mining. This is where -- to get that -- for sulfates to be leached out of rock is very difficult. The softer coal mining formations are completely different. And we treated that water out of mines that had been worked since the Revolutionary War, very old archaic mining practices. But you know what? From me to that screen away from our treatment pond, that's where the trout fishermen were catching trout out of that stream. So, this notion that this is somehow the end of the world coming because of acid mine drainage is just foolish. So, just to reiterate my two points is, one is that people here know what they're doing. And maybe I'll add one other, and that's, if we're not going to get our minerals from here, then you're signing up for getting them from Senegal, from around the world. And I can tell you the standards there are not anywhere near ours. Thank you very much.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
14	Matt Olsen	Citizen	My name is Matt Olsen from Nashwauk and I'm going to let Brandi speak on my behalf.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
15	Brandi Salmela	Citizen	Hi, I'm Brandi Salmela, B-r-a-n-d-i, S-a-l-m-e-l-a. I'm a student here at Mesabi East High School. Growing up on the Iron Range is different than anywhere else in Minnesota and maybe even the world. We have a different perspective on what makes this state great. We have an appreciation for the great outdoors and small town life. And we respect the industries that make our way of life possible. I'm from a mining family. My grandpa worked in the mines and my dad works for (inaudible). Mining jobs and the wages they pay support our way of life. I'm proud to be a Ranger. I'm proud of what comes from our mines. We have been mining for over a hundred years here. I and many others are looking forward to continuing the tradition of mining on the Iron Range for many years to come. We have a chance to ensure that we produce safe mining industry to supply the metals we use almost every day. PolyMet's copper nickel mine makes the future possible for not only my generation, but the next generation, too. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
16	Louflinn Johnson	Citizen	My name is Louflinn Johnson and I live in Hoyt Lakes, Minnesota. And I support PolyMet and I defer my time to Dave Thompson.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

17	David Thompson	State Senator (Chisholm)	Thank you very much. I'm David Thompson, a state senator from Chisholm. And I proudly represent the Iron Range in the Minnesota State Senate. I have six taconite plants in my Senate district. PolyMet processing plant will be in my Senate district and will be refurbishing the former taconite plant on the current brown field. We mine for a living. I'm the son of a miner. We've been mining for 135 years. The environmental quality report card clearly indicates we know how to mine. He have the best water anywhere in the state. Mining has been our livelihood from generation to generation. We want to keep mining for generations to come. So, just like our iron mines were responsible for winning two world wars and building this country, we now want to be part of building our new age economy. PolyMet could, in fact, contribute to the four and a half tons of copper and nickel used in solar panels. Other precious metals would be part of things like batteries for electric cars or cell phones and computers, critical medical devices. And it's becoming more and more evident that our defense systems need a reliable source of minerals mined right here in our country, not in an unreliable third world country with no American laws, no safety standards for the workers. And not to mention all of the children doing the mining at 50 cents a day. We want to be and should be a part of the next generation of mining. Good paying jobs done right with safety standards and environmental safeguards in place. And make no mistake about it, we must mine in order to produce things. Those 30-some minerals and microbes don't just magically show up in factories. They are mined. Let's mine them here. Today is a big day. The Iron Range has been waiting for over a decade to get to this point.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
18	David Thompson	State Senator (Chisholm)	The draft permit to mine that is in front of all of you today is one of the most comprehensive and scientifically sound documents this state has ever seen. Industry experts and scientists have spent thousands of hours studying and restudying the data. Every box has been checked and rechecked, every T crossed and every I dotted. And the reason the draft permit has been issued and the reason we are here today is because PolyMet has met the letter of the law. What we have here is a gold standard of mining operation in this country. Its significance cannot be understated.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
19	David Thompson	State Senator (Chisholm)	Minnesota is setting the bar for environmental standards and we should be proud of that. Financial assurance will be assured. We should also be proud that PolyMet put our people to work. Construction hours alone are like building a Twins stadium on the Range. The next generation of miners will have the opportunity to work in one of the most state-of-the-art mines in the country. Let me thank our state and federal agencies for the very hard work they put in for more than ten years in this process. It's another indication of how comprehensive our environmental laws are Once the public comment period closes the fate of this project is out of our hands. After this it's time for state agencies and Governor Dayton to make a final decision. As an selected official and as a Ranger, I cannot be more proud to support this project and encourage the agencies to issue the final permits quickly. Its time to mine, let's get started	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
20	Stephanie Dickinson	Citizen	My name is Stephanie Dickinson, D-i-c-k-i-n-s-o-n. My family and I live in Aurora. It was important for me to come here today because I believe that PolyMet is crucial to the well-being of our community. Our community, like most on the Iron Range, have supported and is supported by the mining industry for all of my life. I believe that PolyMet is fortunate to have us, a community of people knowledgeable about mining and its way of life. I believe that there are communities fortunate to have PolyMet here to invest in (inaudible). There is no question that PolyMet itself would have a huge impact on our area and would assist in furnishing (inaudible) something that has been hard to sustain since the closing of the LTV plant, PolyMet now calls home. My husband and I chose to raise our family here because when we married we were familiar with the area and enjoyed it. We have friends and family to spend time with and we also work nearby. Northern Minnesota is a beautiful area and provides recreational opportunities, beautiful schools with small class sizes and low crime rates. More families are not planting their roots in our local communities because it's hard to make a decent wage here due to lack of jobs that are needed and have enough spare money to enjoy. A family has a better chance of re-investing in our area, so we need jobs to support. I care about our neighbors having good jobs to report to so that we will no longer be a dying town. Everyone wants to see our communities not only maintain the population and operational existence, but also to see them grow. The impact of PolyMet operations on our local economy will allow us to achieve those things and so much more.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

21	Stephanie Dickinson	Citizen	This is why I encourage the MPCA and the DNR to in the most timely manner grant these permits to PolyMet because they have met the criteria set by the State. And as soon as you can give the instructions so they can move into our communities. Lastly, I want to say that my husband and I work for Minnesota Power and ask many of the local residents if they know what standards goes into the permitting processes in our state. We know that Minnesota has some of the strictest review processes to help the people that live here and also the land, which is so important for the recreation that's one of the biggest area attractions. PolyMet spent more than ten years working for an accepted Environmental Impact Statement, in which many significant environmental issues were analyzed and reviewed. This proves that PolyMet has not only adjusted and tolerated, but they also take pride in hoping we celebrate the Iron Range's first copper-nickel mine. (Inaudible) of responsible mining and continue to grow our communities by maintaining an attractable living.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
22	Paul Rennesisen	Citizen	Paul Renneisen, R-e-n-n-e-i-s-e-n. And I live in Schroeder, Minnesota. I am a pro ferrous U.S. owned and regulated mining supporter. I'm opposed to foreign owned and internationally unregulated mining. I'm here to state the falsified and job creation and consequences of environmental damage by unmanned mining operations. I'm opposed to the DNR plan, particularly the lack of environmental and liability insurance necessary to pay for damage outside the mining perimeters as shown in the exhibit hall.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
23	Paul Rennesisen	Citizen	Mining operations, domestic and international worldwide, are being built from the start as unmanned operations. Robots, unmanned machines, used to mine do not breathe, need clean water, pay income taxes, pay Medicare taxes or Social Security taxes. Robots don't pay unemployment taxes, they don't pay workers' comp premiums, they don't buy groceries, and by far they don't pay union dues. And robots don't vote. Robots include driverless trucks, unmanned security, et cetera, all which will be at PolyMet. At the mining control centers, these robot control centers are remote, not 600 yards away on the property, but a control center outside the U.S.A. Could be in China, owned and controlled by foreign owners who are outside the jurisdiction of Minnesota and U.S. supports. Will Minnesota be the first state to have a robot that gets sentenced to prison for violating state or environmental laws? I don't think so. Where in this proposal is the contract for human being manned jobs? None.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
24	Paul Rennesisen	Citizen	I've yet to see a newspaper article of a promise for jobs that comes with an enforceable contract. Robotics will be, unlike human operations, unable to detect dust being released. The following future is as likely as the so-called promise for protections of PolyMet, which (inaudible). A future report, Cook County citizens take to mandatory evacuation. The governor has ordered the Minnesota National Guard to help protect Cook County, Minnesota citizens following the release of toxic sulfates. This year is the driest year ever, which resulted in water shortages impacting PolyMet mining operations. U.S. Forest Service is using military helicopters to remove (inaudible) as the governor reaches out to PolyMet control center in Asia and is unable to make contact. No human observers are on the project site. The mining site is run by robots and they're unable to detect that. In short, there's a clear threat in the future to the environment of Northeastern Minnesota. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
25	Jerry Tyler	Executive Director, Up North Jobs	Commissioner, my name is Jerry Tyler, I'm the executive director of Up North Jobs in Ely, Minnesota. My last name is spelled T-y-l-e-R. I'm here to yield my time. I support PolyMet and yield my time to speaker Kurt Daudt	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
26	Kurt Daudt	MN Speaker of the House	I'm Kurt Daudt, D-a-u-d-t, from Zimmerman, Minnesota and I am the Speaker Of The House in the Minnesota House of Representatives. It's been a long road for PolyMet and the various regulatory agencies and all of those interested in this project to get to this point. First and foremost I want to thank you for you all and everyone for their time and energy in working on this project.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
27	Kurt Daudt	MN Speaker of the House	Minnesotans love the outdoors. I think our state's public embrace of the Bold North theme during the Super Bowl this last week showed that to the world. As someone who greatly values our beautiful, abundant natural resources, I can tell you that I'm confident that we can take advantage of our natural resources and protect the environment. And I know my fellow members in the House Republican Caucus feel the same way. The NorthMet project has and continues to undergo very rigorous, independent scientific scrutiny from many different entities. The bar has been set high and that's okay. I don't think we'd be here tonight commenting on these draft permits if PolyMet and the regulatory agencies didn't believe the standards within them could be met by a company in both the permit limits and the financial assurance.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

28	Kurt Daudt	MN Speaker of the House	The economic activity that this modern state-of-the-art mine will bring to Minnesota will be significant. The NorthMet project will create an estimated 1,000 jobs and will generate $515 million in economic benefits annually for St. Louis County alone. Northern Minnesota needs more good paying jobs and can be a leader in the world in developing products that are in high demand around the globe. The governmental agencies and the company have done their due diligence. Let's take advantage of this exciting opportunity. Rangers and Minnesota have waited long enough. It's pretty exciting to see these kids sitting here tonight in support of this project. They're the future of the Iron Range and the future of the state of Minnesota. It's time to mine. I urge our state and federal regulators to finalize and issue these permits as soon as possible so this project can move forward. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
29	Paul Undeland	Citizen	Hi, my name is Paul Undeland, U-n-d-e-l-a-n-d, and I'm a resident of Grand Rapids, formerly a resident of Aurora where I was born and raised and where I still own property close to the prior bridge and watershed. It's important for me to come here tonight to support the advancement of the required permits to continue moving this project forward. Because I believe the State has been thorough in its permitting processes. And as an engineer and as a downstream landowner to the PolyMet project, I trust the science and the finance of the state expert, which show the project will protect human health and also protect the environment. PolyMet has also followed the State's strict regulatory review and permitting process and has met all the conditions the State has imposed on the project. These conditions the State has imposed on PolyMet in its draft permit to mine and the air and water permits are prudent and reasonable.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
30	Paul Undeland	Citizen	They will ensure the mining project will protect human health and the environment and the taxpayers will be protected under the financial assurance provisions in the permit to mine. The permit to mine also goes above and beyond the requirements of Minnesota law by establishing bankruptcy proof financial assurance loans for two years when the law only calls for one year. This is just one example where PolyMet and the State have gone to extra lengths to ensure taxpayers are protected in the case of bankruptcy and that the mine and processing facilities are properly closed and reclaimed with no risk of impact to the environment, including my downstream property, where I spend time hunting and fishing and being outdoors while growing up in Aurora. And I want my kids to experience the same outdoor activities that I have passion about.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
31	Paul Undeland	Citizen	Minnesota has some of the strictest environmental standards of any state. The company has demonstrated through the environmental review and permitting process that it can meet those standards. The permitting conditions, which were informed by the comprehensive environmental review process, would spell out the monitoring, operating, and reporting and inspection requirements for the mine during construction, operation, and closure. Together they provide the framework for mining and environmental protection to co-exist. The resources that this mine produced are in demand and they will be mined by someone somewhere. On the Range we have a rich history of mining with one of the most stringent environmental regulated states in the nation. We can do it better, safer and more environmentally responsible than anyone else, while putting our residents of Northeastern Minnesota to work. Thank you.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
32	Doug Christy	Citizen	I'm Doug Christy from Grand Rapids and I'm giving my time to Mike Syversrud.	This comment simply defers speaking time to another individual. No response needed.
33	Mike Syversrud	President, Iron Range Building Trades and Construction Trades	Good evening. I'm Mike Syversrud, S-y-v-e-r-s-r-u-d, I'm from Gilbert, Minnesota. And I thank you for the opportunity to speak here. As Dan, one of my coworkers here, I'm actually president of the Building Trades. I represent thousands of building tradesmen and women up here in Northeast Minnesota. Dan mentioned something about his son growing up, he was ten years old. I was 150 pounds when this thing started ten years ago. PolyMet has been a steward already of the communities up here. They've been involved, they've been active in everything, whether it be sports, community events, from one end of the Range to the other. I've worked hand in hand with these guys to get an agreement in place with PolyMet to put our tradespeople to work. And like I say, these are hard working families. You look around here, there's a lot of retirees that busted bones in these mines, they worked hard. My grandpa, my great-grandpa, these are where I started.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

34	Mike Syversrud	President, Iron Range Building Trades and Construction Trades	I'm a cement finisher by trade, not a very good one, but I am. We used to work on all these plants, buildings, putting them together to make sure they're done right, correctly, environmentally safe, done on time and ahead of schedule under budget. That's what we pride ourselves on in the building trades. We also pride ourselves in being community active in the building trades as well. We get out, we go forward, we try to bring work to our areas. So these communities, like Aurora, can still bring people here to work. You have to have a job before you can have a school. If you have a school, you've got to have people to pay for it. The Aurora community just passed a referendum over here to do the addition on the school. This will be done by you, local union craftsmen, will build this school and they'll do it right and they'll do it on time and ahead of budget. But it wouldn't have been done if it wasn't for PolyMet. PolyMet has given this community in Northeast Minnesota a light at the end of the tunnel so we can bring communities back to where they should be, We must find jobs for our young people that will not destroy the environment for all future generations. And I believe that there are people within our agencies who will have the courage to step up and deny the permit to mine. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
35	Jerry Baland	Citizen	Distinguished guests, thank you for this opportunity. My name is Jerry Baland. I spell my name B-a-l-a-n-d. I live here in Aurora, all three children of ours went to the local schools. I am a very proud Iron Ranger. My background is about 45 years in mining, 30 years with Erie Mining Company and 15 years with the State of Minnesota with the Soudan Underground Mine. And those of you who may not know, this is one of our outstanding state parks. I would like to have the opportunity passed on to my children, my grandchildren and great-grandchildren that I had and my family had growing up here. We see all of these nice young people here. They're going to be going on from Aurora -- Mesabi East, excuse me, they'll be going on to school, both from the crafts and also going on to college. I think it's wonderful if we give them the opportunity to have part-time jobs while they're working their way through school. And one of the ways we can is with PolyMet being operational. And the sooner the better. I would like to think that we as adults -- and Michigan at Eagle Mining Company is successfully meeting the environmental challenges. Can't we do the same? They have received national environmental awards. I think we owe that to these young people and the local people to get this show on the road and get the approval process that has taken over ten years. I think the time to analyze and rescrutinize is over. Let's get the show on the road and get this behind us. I think we have the intelligence, the educated people that can do this and do it environmentally sound. Thank you very much.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
36	Greg Mosher	Citizen	My name is Greg Mosher, M-o-s-h-e-r, I'm from Ely. I support PolyMet. And I defer my time to Julie Sandstede.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
37	Julie Sandstede	MN State Representative, 6A	Hi, I'm Julie Sandstede, I'm a wife, a mother, an educator, and also a state representative. To follow up on some statements that were made previously, mining is a great Minnesota tradition. The safety of mining has been a first priority for generations because we live in the various communities where we work. This project has been in the works for over ten years. We've been thoughtful, responsible, and intentional about the thorough review of every aspect of its completion and the impact it will have on Northeast Minnesota. We care deeply about the environment. And this project is setting the bar for environmental standards and we can be proud of that.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

38	Julie Sandstede	MN State Representative, 6A	We have not ignored the crucial safety standards that are necessary when implementing a project of this scope. We're thankful for the opportunities that PolyMet has brought and will continue to bring to our communities for many generations to come. Vibrant communities need new opportunities to build upon the successes of the past. PolyMet is just that, a chance to expand our economy and offer the next generation a future of hope. This project will not only better the economy in Northeast Minnesota, but for the state as a whole. The modern mining technology used for this project would become a positive impact on the global market. There's no need for outsourcing when we have the innovative tools right here at home. Families in my district choose to raise their children on the Iron Range because Rangers come together and fight for the successes of our region. We stand together and support the science and the strong environmental regulation and we also are united in our support of this project. The production tax this project could bring in could be an outstanding source of revenue to improve our schools, which are the bedrock to any thriving community. As a state legislator, it is my job to shed light on the needs of Northeast Minnesota, which is why I'm called to proceed in convincing our governor to approve this project and help create the next generation of world class miners in Minnesota. I encourage you to approve these permits. And I thank you for the opportunity to share my thoughts.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
39	Gregg Allen	Superintendent, Mesabi East School	Good evening. My name is Gregg Allen, A-l-l-e-n, and I'm from Gilbert. And I'm also the superintendent of Mesabi East School District. I have a resolution of support for PolyMet from District 27 and 28 school superintendents. The letter of support states, and I will summarize, that the Minnesota Association of School Administrators of Region 7, Districts 27 and 28, declare its support of the issuance of state permits and is confident that the exhaustive review by state and federal regulatory agencies have concluded the project can operate in an environmental safe and secure manner.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
40	Gregg Allen	Superintendent, Mesabi East School	We support the success of this project and believe by meeting Minnesota's strict environmental standards through a comprehensive environmental permitting process PolyMet will be poised to play a significant role in contributing to the sustainability of our region's economy by mining metals we need every day without harming our region's air and water quality.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
41	Gregg Allen	Superintendent, Mesabi East School	This project is extremely important to the school districts on the Iron Range. Funding for most schools in Minnesota comes in three major ways: local, state, and federal. However, for schools in the taconite assistance area, which includes most schools in Northeast Minnesota, there's a fourth funding source and it's from production tax from the mines. Production tax is used in lieu of property tax. Nonferrous mines like PolyMet uses different formulas, but the concept in the same. If the mine is producing, schools receive funding. If the mines are not producing, schools receive less or no funding. The funding from mining is important to schools from this area. Mesabi East receives about $10,400 for students from all sources of funding. The state average per pupil funding is about 12,000. That leaves Mesabi East about $1,600 per student short of the average, leaving Mesabi School District about 1.5 million dollars short per year. The PolyMet project will increase funding to Mesabi East and help close this gap and, therefore, allowing more learning opportunities for students. Our students are our future. The students attending the school and the students here tonight need the best education possible. These students are PolyMet's next generation of workers. They're also our future doctors, engineers, teachers, and employees of the DNR and MPCA.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
42	Gregg Allen	Superintendent, Mesabi East School	I thank all of you for your hard work in the permitting process. On behalf of Mesabi School District, I look forward to MPCA and DNR granting these permits as soon as possible. Thank you for your time.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
43	Erik Erie	Principal, Mesabi East High School	Good evening. My name is Erik Erie, I'm the principal of Mesabi East High School. I'm a resident of Biwabik Township. I support the PolyMet project and defer my time to Jason Metsa.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

44	Jason Metsa	MN Representative, 6B	My name is Jason Metsa, I'm a state representative for District 6B here, the most mining center district in the United States of America. And proud to be here today. Commissioners, thank you for being here as well. It's been a long time coming, hasn't it, Rangers? I want to speak to a few things that I heard earlier I thought were pretty misleading. And this has been a long, tedious process where I know that there's been a very thorough review from our federal, state, and local folks who have really put in the time and due diligence and patience to hear every side out on this issue. But I am sure glad that my constituents can see dust and that they're not robots. They're people who will ensure, just like our steel workers have for many generations up here, that we are meeting the upmost quality in standards. And Minnesota will be a shining star of the north for many years to come for having the most safe, responsible mining in the world. And everyone in this room can be proud of that. My wife and I just had a baby last year and I can assure you that there were no issues with the water in Virginia, which comes from a reclaimed mine pit. And our baby is doing just fine. In fact, today as soon as I left the house my wife ecstatically was texting me that he got behind his little walker for the first time and started pushing it around. So, I can't wait to go home tonight to go and enjoy that time with him before session starts.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
45	Jason Metsa	MN Representative, 6B	But overall, again, we've been here time after time again and essentially laid out the ground work for what's a phenomenal project in Minnesota's largest recycling of a plant at the former LTV site. That alone reduces the carbon footprint, puts good people back to work. PolyMet takes on the responsibility of some of the troubles that we had with the closure of LTV, like Senator Thompson mentioned. Those are all wonderful things for the environment. I couldn't be prouder today that we're in the final stages of what's been a very long process. Overall, the people in this room, the kids behind me here, they're our future. They're going to come up behind us, fill these jobs, become steel workers, tradesmen, doctors, lawyers, and the next state senator, the next state representative and they're going to lead us into an even better place. And tonight is the start of that. I look forward to continuing work with you all. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
46	Jeff LeDoux	Citizen	Hello, my name is Jeff LeDoux, I'm a resident of Pengilly, Minnesota. And I would like to defer my time to Pete Stauber.	This comment simply defers speaking time to another individual. No response needed.
47	Pete Stauber	District County Commissioner, St. Louis County	Thank you very much. My name is Pete Stauber, S-t-a-u-b-e-r, and I live in the city of Hermantown, Minnesota. I serve as a district county commissioner here in St. Louis County and I'm a candidate for Minnesota's 8th Congressional District seat. Mining, as we all know, is the economic engine that powers St. Louis County. The mining industry already provides thousands of some of the best paying jobs for families here in Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
48	Pete Stauber	District County Commissioner, St. Louis County	The State has thoroughly reviewed the NorthMet project and PolyMet has proven the project will protect Minnesota's pristine environment and ensure clean water and clean air.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
49	Pete Stauber	District County Commissioner, St. Louis County	All of us here tonight want the same things for our kids and grandkids. We want good paying jobs and clean water. Our commonalities far outweigh our differences. The time has now come in these final stages of the environmental review for us to move past one or the other discussions.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
50	Pete Stauber	District County Commissioner, St. Louis County	I look forward to PolyMet paving the way forward and proving once and for all that we can have both clean water and air and mine these minerals. If there's anybody in the world who knows how to mine safely for the minerals we all use it's the folks here in Northeastern Minnesota who spend their weekends fishing and summers camping right here. We all care deeply about the environment in our back yard. Mining and all of our watersheds have co-existed for decades and will continue to co-exist going forward. The science is in, the review process is nearly complete and the time is now. The LTV mining site has sat quiet long enough. It's time for us to recycle that plant, revive the economy of the East Range and realize the promising new era of mining and economic growth for St. Louis County in Minnesota. I urge the agencies to approve these permits. And I appreciate your time. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
51	Cyndee Forsman	Citizen	Hi, my name is Cyndee Forsman, I live in Aurora and I support PolyMet. And I defer my time to Chris Vreeland.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

52	Chris Vreeland	Councilman, City of Hoyt Lakes	Hi, my name is Chris Vreeland, V-r-e-e-l-a-n-d. Good evening and thank you for taking my comments. My name is Chris Vreeland, I am a councilman of the City of Hoyt Lakes and I'm a licensed Minnesota water and waste water operator for 35 years. When I started as an operator, the standard treatment limits and laboratory analysis for waste water in the state of Minnesota were parts per million. With technology advancements over the last 40 years, we now test out chemicals at parts per billion, like mercury. My point is, technology analysis and treatment methods have gotten a lot better. It is unfair to compare copper-nickel operations from 40 years ago. I have no doubt that PolyMet can meet all state and federal requirements in protecting the environment.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
53	Chris Vreeland	Councilman, City of Hoyt Lakes	In 2001 the LTV taconite plant closed, permanently eliminating 1,400 good paying jobs. It was devastating to our area and we still have not recovered. So, the PolyMet project will reuse the old site and many of its buildings. This project will bring good paying jobs, benefiting the city of Hoyt Lakes and surrounding areas. This project will give a major boost to our schools in the communities. The metals that PolyMet will mine are essential in our lives for clean energy. Copper is critical to components in wind mills, solar energy and the like. Nickel is used in batteries and stainless steel. I believe if we are going to use these metals, it is our responsibility to ensure that we get them from an environmentally compliant mine. PolyMet is that mine. Let's get this done. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
54	Allen Brown	Citizen	My name is Allen Brown, I'm from Aurora. When I first moved to Aurora (inaudible) he lived in North Dakota and paid $200 a month. The first weekend, he worked on Labor Weekend, he made more money than he made in a month in North Dakota. He said, "I'm never going back." Now, I worked 41 years in the paper industry in International Falls and moved back. And I'm hoping these meetings that -- and I see the same people that's against everything were against people in the paper industry.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
55	Allen Brown	Citizen	We moved back after 41 years because my grandchildren ended up living down here. That was 13 years ago. And PolyMet was in the works then. And we sat there and waited and waited. And during that time we've watched a grocery store, a dentist office, a drug store, this town is going. I mean, it's been hurting. And I think we really need to do something to help the people out. And like you say, Minnesota has the strictest rules for mining anyplace. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
56	Mike Perala	Citizen	Good evening everyone. My name is Mike Perala, P-e-r-a-l-a. I'm a resident of Virginia. I'm a logical supporter of the PolyMet project and passionate supporter of the PolyMet project. I'd like to concede my time to my good friend Mary Hess.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
57	Mary Hess	Citizen	Thank you. And thank you panel commissioners for taking my comments today. My name is Mary Hess, I'm the former mayor of Aurora. And I've spoke many times on behalf of PolyMet, supporting PolyMet's operation.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
58	Mary Hess	Citizen	And today I've decided to take a different avenue, kind of telling my personal background in regard to mining. I was born and raised in Sunburg, Minnesota and grew up on a farm, my mom and dad were farmers and had a tough time. I was young, I didn't realize the tough times, but I learned later that they struggled. In 1959 my dad was hired at Erie Mining Company and we moved to Aurora, Minnesota. My mom and dad were in heaven, actually. They were drawing a paycheck every two weeks, they were getting benefits, they were getting insurance, their kids had a good school to go to, we had a clinic, we had a hospital, we had a dentist office right at our fingertips. So, I've seen the good side. But then again, I've also seen the bad side because I was an employee of the IRRRB for 30-some years when LTV closed, it was very devastating. Fortunately my husband had retired, but I had a brother that worked for LTV and many, many friends that worked for LTV. So, I saw what happened there. And, actually, my husband and I helped a lot of people during that time. So, now today I am talking -- it's been years. As I said, I worked at the IRRRB, I heard about the PolyMet project when I was there and retired in 2003.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
59	Mary Hess	Citizen	In the last ten years, like I said, I have supported the PolyMet project, spoke many times on behalf of PolyMet. And I just look back at all of the time and all of the money, of course, that's been spent on this whole process and money that probably could have been in families' pockets.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

60	Mary Hess	Citizen	But I appreciate all of the studies that have been done. I have children, grandchildren here that attend Mesabi East Schools. I have brothers that live in town, siblings that live here, nieces, nephews have all gone to school here. So, I appreciate all that have been done. And, of course, I want it environmentally safe as well. But I think it's time now to move forward. I think we've waited long enough. I thank you for all of your work, but I think it's time to put a shovel in the ground. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
61	Arik Forsman	Citizen	Good evening. Thank you to the agencies for the opportunity to speak tonight. My name is Arik Forsman, F-o-r-s-m-a-n. And I live in Duluth, but I'm from Aurora. And I could not be more excited to stand tonight in support of PolyMet. Tonight's setting, as we discuss our future, is in a place where Mesabi East holds commencement ceremonies.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
62	Arik Forsman	Citizen	For over a decade our little communities have fought pushback from environmental elitists who demand wind turbines and electric vehicles, but don't want the minerals that go into them to come from our back yard. They claim to want to help the Iron Range economy and in their next breath attack the iron mining industry and union jobs with nonsense regulations. We've been at this for a very long time.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
63	Arik Forsman	Citizen	It would be easy for us to get frustrated and give up. Just last night I had a woman at my precinct caucus in Duluth who introduced a resolution claiming that PolyMet will destroy baby brains from mercury. Never mind that the EIS states that there will be an overall, and this is a quote, "decrease in mercury concentrations in the receiving waters due to water treatment activities that would occur as part of the proposed NorthMet project." So, in other words, it won't. But these uninformed activists have accomplished something else that is truly remarkable. They've inspired us, generally soft-spoken Iron Rangers, to get in the game and fight for our future.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
64	Arik Forsman	Citizen	And take a look tonight at who's in here in support with us. We've got our local elected officials from the Range, House Speaker Daudt, and candidates for federal office, organizations like Jobs for Minnesotans, which have done more for our region than most will ever know. And maybe most impressively, moms with young families who tonight are setting aside the anxiety of public speaking and the inconvenience of finding child care on a week night because they know how much this matters to their own families. By a show of hands tonight, I want to see who here is a graduate or student of Mesabi East, Aurora, Hoyt Lakes, Biwabik, and Palo. Tonight I'm proud to call myself one of you. Thank you for coming and fighting for our future and way of life. In 2006 I graduated in this gym and gave a speech as the class salutatorian, because I wasn't as smart as John Stark, about the importance of valuing time and each and every day we're blessed with I was a kid and didn't know anything about life, but somehow that message holds up tonight because we've wasted enough time waiting for this project and it's time to move forward.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
65	Arik Forsman	Citizen	The rebirth of our economy on the East Range is close at hand. And when those who would rather see us go away speak loudest, remember that we are the giants, that we couldn't be prouder. And even when they refuse to hear us, we will yell a little louder. I urge the agencies to approve these permits and allow the East Range the fighting chance we deserve of a brighter future because we should think globally and mine locally. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
66	Cathy Bissonette	Citizen	Hi, my name is Cathy Bissonette, I'm from Babbitt. And I defer my time to Dan Fabian.	This comment simply defers speaking time to another individual. No response needed.
67	Dan Fabian	MN Representative, 1A, Chairman of the Environment anbd Natural Resources Policy and Finance Committee	Thank you, Cathy, and thank you everyone for being here. Commissioner Landwehr and Linc Stine, thank you for being here. I'm Dan Fabian, F-a-b-i-a-n. I'm the chairman of the Environment and Natural Resources Policy and Finance Committee in the Minnesota State House of Representatives. Most of you know I'm a proud supporter of this project and I look forward to the day when we actually start sticking a shovel in the ground.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

68	Dan Fabian	MN Representative, 1A, Chairman of the Environment anbd Natural Resources Policy and Finance Committee	Minnesota has a very strong, rigorous and independent environmental review permitting process. Sometimes, as you guys know, I'm very frustrated by some of the processes. But we are what we are and we're getting to the end.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
69	Dan Fabian	MN Representative, 1A, Chairman of the Environment anbd Natural Resources Policy and Finance Committee	I believe that PolyMet can and will meet the environmental and financial assurance standards required for the NorthMet project.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
70	Dan Fabian	MN Representative, 1A, Chairman of the Environment anbd Natural Resources Policy and Finance Committee	I spent 35 years in a high school gym like this one as a physical education teacher and a track and cross-country coach. I'm so proud to see you guys here today, this is awesome. This is about your future. And it's also fun to see some of my legislative friends here. I'm proud to stand next to you on this project. We've been through some ups and downs with our economy. (Inaudible) in 1980, Arctic Cat plant in Thief River Falls closed in 1981. We're back up and we're producing the best ATVs in the world right now and we're very proud of that. So, let me just say that I'm fighting for you folks here on the Range. I want to see this project. I urge our state agencies to issue the permits for the NorthMet project as soon as possible. This project's time has come. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
71	Seth Thun	Citizen	My name is Seth Thun, T-h-u-n, and I'm not from Aurora necessarily, but I'm from Silver Bay. And T-h-u-n is my name. And I have the Norshor Agency on Main Street in Aurora. My brothers and I and my dad decided ten years ago when this process was two years in, so I'm going to bring a different perspective. Our perspective was this is a place to expand our insurance agency, too, at a time when things weren't that great. And they still may not be great, but it's time, it's high time for this project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
72	Seth Thun	Citizen	Part of what we did coming to Aurora was about purchasing a building, expanding our business. The other part was PolyMet and what was happening with it, as the project itself looked to be very promising for our area. My dad, my grandpa, my uncles all worked for Reserve Mining Company. I knew the impact it was. Before that they were rock farmers in Central Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
73	Seth Thun	Citizen	So, we got together with the Honorable Mayor Hess there and the economics and we bought the old Moose Club. We put a lot of elbow grease into it and $200,000. We invested in this community for the future. And it's time, it's high time to have this project go. We know there's been progress in this project. We've invested here. We want it to go, we know it can go. I'm a political guy, too, I'm kind of a junkie.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
74	Seth Thun	Citizen	This process is so burdensome. And you guys have done a great job, I can't take anything, technology has pushed us to that level.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

75	Seth Thun	Citizen	When we started this project of having meetings and converting to lease space, we hoped that we could rent these spaces and make some money. That hasn't turned out real good. However, we've had tenants who have now done the same thing we did. They moved out of our building after three years and purchased two other vacant buildings in our town, in this town. So, it works. Our $200,000 investment has now led to them paying taxes to this town and this county. And the taxes aren't cheap here, right? Not that I can tell. So, we want to get this thing going and we have to assume we can. The detractors out there are doing their thing and we understand that. But technology has brought us to the point where we can't do more than what? What the state of the art is. And I appreciate your time.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
76	Ross Petersen	Citizen	My name is Ross Petersen, P-e-t-e-r-s-e-n, I'm from Ely. I'm the former mayor of Ely and I still own some rental houses in our Hoyt Lakes area. I think I have a little bit of a unique perspective in some ways. I especially have a unique perspective on some of the opposition to this project. I've seen a lot of the opposition from this project come out, very few people from Ely. Overwhelmingly folks in Ely are for this project. The leaders of kind of the opposition tend to come from Ely. And to be honest with you, I've been monitoring that very closely and I've been very disappointed in some of the reasons I feel they're really using to oppose this project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
77	Ross Petersen	Citizen	And I think if you're familiar with Becky Rom and Reid Carron in the article in the New York Times, I think it displays something that a lot of us have known for a long time. A lot of the opposition to this project comes from people who don't want to see a similar project in Ely. And I think in many ways it's not because they're worried about pollution, I think they have some other reasons that have been exposed.And I think it's kind of sad what some of those reasons are. They feel that miners and blue-collar people are kind of in that basket of deplorables that Hilary Clinton talked about and they don't want to see a number of those additional folks in Ely.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
78	Ross Petersen	Citizen	And some of them have businesses. They have businesses that have excellent people that they're paying virtually nothing to. And they feel that that would change if the mining comes in. So, they've done an excellent job of throwing up road blocks to these projects. And you can't say that these are some of the reasons why you're really opposed to these projects.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
79	Ross Petersen	Citizen	So, it's been kind of a hard thing to see, but one thing I'm sure of is they're not worried. The people who are really spearheading some of these projects aren't worried that this project PolyMet is going to pollute. They're worried that PolyMet is not going to pollute and that will further additional projects in Ely. So, that's a part of this. I don't think it gets displayed enough. And they've used every trick, political and whatever, to kind of throw up some road blocks. So, I want to throw that out there. I think there's some kind of nefarious reasons for the things that have been done. And I hope that doesn't affect this panel in moving forward. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
80	Daniel Manick	Citizen	My name is Daniel Manick, M-a-n-i-c-k, I'm from Cook. I fully intended on deferring my time, but when the superintendent from Mesabi East School spoke I felt I had to speak. I do represent, I guess by default, ISD 2142, the St. Louis County schools, kind of neighbors to Mesabi East and everybody. We have a school over in Babbitt, we have five schools in our district. Our school in Babbitt was built to hold enrollment of 2,000 students. We currently have 200 in that building. I would hope that now would be the time to grant these permits before another graduating class from Mesabi East, another graduating class from any of the schools in our systems. When these kids leave, they're gone. Can we please keep some more of our students in this area?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
81	Daniel Manick	Citizen	We do love the tourism dollars that Boundary Waters brings and everything, snowmobiling. We love the people that come here to play, but we need people to stay. Thank you for your time. And this shirt today, I'm also a 31-year member of the United Equipment Operators. Jason Metsa, you have earned this. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
82	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	Good evening, I'm Chris Knopf, that's K-n-o-p-f. And I'm the executive director of Friends Of The Boundary Waters Wilderness. And I want to thank Commissioner Landwehr and Commissioner Stine for being here and giving this opportunity to all of us to speak on this important issue here. I believe strongly in community. I strongly believe in union jobs and family. And I also believe in clean water. When I think of PolyMet, I think of that slick road on a winter day that's covered in ice. And you look down that road and you see the cars and trucks stranded on either side of the ditch. And you see that F150 on the right and you see the Chevy Silverado on the left and the Toyota Corolla further down the road and an 18-wheeler further down, jackknifed.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

83	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	And you wonder if you're going to go down that icy road, what's going to happen. With PolyMet and sulfide mining, we're not talking about ferrous mining, we're talking about a different type of mining.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
84	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	The track record is very, very clear. What you have, that F150 down the road, that's the Berkeley Pit in Montana where you have 900 feet of acid water where in December, 2016, a thousand snow geese went in for a drink of water in a snowstorm and all died. You have Mount Polley mine disaster in Canada where on August 4, 2014 the dam burst, destroyed the lake and river downstream from that.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
85	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	You have another mine down in Montana where the water coming off of it is orange, just like orange juice. And that's the track record that we have here. So, when you ask yourself what we're going to get, that's what we're going to get with PolyMet here.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
86	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	We have water coming into contact with the sulfide and you get an acid runoff here. We don't have a state-of-the-art mine that's going to keep that water from coming into contact with that road here.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
87	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	When you're driving the car, you get insurance to -- in case you have some damage to pay for that. Here we really do not have insurance for PolyMet mine. After ten years you don't have a half billion dollars, you don't have a billion dollars that DNR's own experts say. You only have 26 million dollars. So, what you have with PolyMet is an uninsured driver going down the road there. And that other 974 million dollars will be paid by all of us, all the taxpayers. It's not being paid by the Canadian company that's going to be long gone by that time here. So, again, I'm grateful for the opportunity to speak here and I welcome the opportunity to continue a dialogue on this to protect clean water. Thank you so very much.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
88	Hailey Lislegard	Citizen	Hello, my name is Hailey Lislegard, L-i-s-l-e-g-a-r-d, and I'm from Aurora, Minnesota. Thank you for the opportunity to comment. As I stated before, my name Hailey Lislegard and I'm proud to say that I was born and raised on the Iron Range. I come from a long line of miners. It started with my great-grandfather who mined where my grandfather worked. And he was followed by my father, who worked there until the plant closed in 2001. Mining is in my blood. So, when it came time to think about a career, I chose to follow my family's footsteps. I wanted to support the mining industry.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
89	Hailey Lislegard	Citizen	Now, I stand before you as an apprentice with the Operating Engineers Local 49. And I've been blessed to find a job that I love that allows me to live in my hometown of Aurora, Minnesota. I find it insulting when I hear people from outside this region say that my job is not worth this, we do not care about the environment. No one here would support a project moving forward if they did not prove that they can meet or exceed our strict environmental standards. I hunt and I fish. I take pride in where I live because it's where my family and I spend our free time. This is land we depend on. I also take great pride in working in an industry that provides me with the quality of life on the Iron Range.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
90	Hailey Lislegard	Citizen	I support the science and the work by the DNR and MPCA and independent experts who found both in the environmental review and in drafting these permits that the PolyMet project can meet all the state and federal standards. I believe the conditions spelled out in these permits will ensure that the project can be built and operated in a way that protects our health and the environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
91	Hailey Lislegard	Citizen	By doing this right I know that we can produce the jobs we need to support our families now and for future generations while being protective of our waters and other natural resources. I urge the agencies to finalize these permits as quickly as possible. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

92	Andrea Zupancich	Mayor, City of Babbitt	Hi, thank you. My name is Andrea Zupancich, Z-u-p-a-n-c-i-c-h. I'm the mayor of the city of Babbitt. And thank you for coming here. Our population is about 1,500. We used to be almost 4,000, but that was before the mine closed in 1987 and the town pretty much emptied out. Prior to that we were a thriving community. We had two growing elementary schools, a booming state-of-the-art high school with a shop class that no one could rival, with the help of the mine, of course. They provided us (inaudible) and they were very intent on training those people, those future miners.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
93	Andrea Zupancich	Mayor, City of Babbitt	Our schools even had their own swimming pool and an indoor arena, hockey arena. Class sizes were over 400. Now fast forward to today, as the gentleman from Cook spoke before. We have in our third grade about ten kids, tenth grade has 13. We are cutting down, our kids are consolidating classes. And as parents you want to offer the best we can to our kids.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
94	Andrea Zupancich	Mayor, City of Babbitt	Those that are against mining say bring in other business into town. You need to do something better. I don't see them offering solutions, just criticism. But we are trying to get other businesses. We are working on every option that is remotely being dangled in front of our communities.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
95	Andrea Zupancich	Mayor, City of Babbitt	We have some of the best resources here and such a fantastic opportunity to show the world how to do it and how to do it right. I don't see what's wrong with that or that person or that area that does it the right way.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
96	Andrea Zupancich	Mayor, City of Babbitt	At one time we had a thriving pool table company in our town. They employed about 50 people. To some that's a small number. To us, that's a big number. China was able to duplicate or design and with the cheap labor and work environments they were able to manufacture those tables at a fraction of the cost. You can imagine what happened next. We had five very large working buildings (inaudible) any tax revenue either as they went bankrupt.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
97	Andrea Zupancich	Mayor, City of Babbitt	Now, I also know a very talented person who moved to our area in Babbitt. They had a plan and they had a savings. They sold everything to come up here, they wanted to live up in this area. Now they purchased a home back down in the Twin Cities and they got jobs back down there. They were unable to find work here. And by work, I mean, sustainable work. But they were a family that wanted to rely on benefits and a retirement plan for their future. They wanted to live up here and gave themselves time to do something and they were unable to do that. So, unfortunately, they had to move back.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
98	Andrea Zupancich	Mayor, City of Babbitt	Let us not forget the statement in the thoroughly permitting process. We have reviewed and justified the mining and the statement is true, PolyMet NorthMet project will protect human health and the environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
99	Andrea Zupancich	Mayor, City of Babbitt	The NorthMet project will require an estimated two million construction hours for us to build. This is a lot of jobs for everyone. All right. That's all I have to say. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
100	Mike Larson	Citizen	Hello, my name is Mike Larson, L-a-r-s-o-n, and I'm from Aurora. I'm a strong supporter of the PolyMet and I'm deferring my time to Charlie Baribeau.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
101	Charles Baribeau	Councilman, City of Virginia	Thank you. My official name is Charles Baribeau, but everyone calls me Charlie. That's spelled B-a-r-i-b-e-a-u. I'm here to speak about the water quality that everybody is so concerned and afraid of that PolyMet is going to destroy the environment or water.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

102	Charles Baribeau	Councilman, City of Virginia	I'm also professionally a pharmacist, so I know the chemistry and I know what goes into this. PolyMet is going to use reverse osmosis. And I don't know how many of you know what reverse osmosis is, it's a system -- a lot of you do, the students especially know what it is. It's a system that's used in the pharmaceutical industry and being used (inaudible) it purifies the water that goes into these products, pharmaceuticals that you take into your body, other things.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
103	Charles Baribeau	Councilman, City of Virginia	PolyMet is going to use reverse osmosis when they discharge their water into the -- discharged in the facilities that they're going to be using this. This is going to be millions and millions of dollars of high-tech technology with membranes.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
104	Charles Baribeau	Councilman, City of Virginia	I'm also a city councilman at the City of Virginia where our water, as said before by Jason Metsa, comes out of a mining pit. We test that every year. That water is as pure as any water in the Boundary Waters or anyplace else. Once you get rid of water through reverse osmosis you actually have to add chemical entities to it to make it drinkable so your body can handle it. It's almost like drinking distilled water, if everybody knows what that is.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
105	Charles Baribeau	Councilman, City of Virginia	There's nothing left for chemicals that go into the environment. And people are so concerned about the water. I am not concerned as a professional person using our technology that is being put forth by this project.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
106	Charles Baribeau	Councilman, City of Virginia	I would say that that is better than the water that comes out of any of your sewage treatment plants. We just had a video on sulfate and that's what they're talking about, saying it goes through sulfuric acid. A judge just ruled on sulfate standards for wild rice and threw everything in the science out because they aren't using the right science.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
107	Charles Baribeau	Councilman, City of Virginia	Right now the science that PolyMet and their advisors they've gotten is the best science in the world. So, I'd appreciate if anyone has questions afterwards about it, I will answer questions about reverse osmosis. Thank you.	Comment noted. Comments related to this theme generally state an opinion and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
108	Bob Berrini	Supervisor, Town of Morse	Hello. Thank you, I'm Bob Berrini, B-e-r-r-i-n-i. I'm a supervisor in the Town of Morse that surrounds Ely. And I want to yield my time to my commissioner, everybody here knows him, Tom Rukavina.	This comment simply defers speaking time to another individual. No response needed.
109	Tom Rukavina	Citizen	Thank you, Bob. And just for Mike Syversrud, when this project started 14 years ago and I was in the legislature, I was six feet tall. So, I'm -- I was in the legislature for 26 years, I represented the good people from Ely all the way through Babbitt and down here to Aurora, Hoyt Lakes. Representing the people on the Iron Range for 30 years, I can assure the gentlemen from Schroeder that I don't represent robots, I represent super men and women who have contributed to this country and this state like no other people in this world. And I have to say this, for anybody to think that I would want anything to harm my daughter and my two grandchildren that live five miles south of here, that's absurd.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
110	Tom Rukavina	Citizen	Whether you're against mining or for mining, you're a consumer that consumes all these minerals. And they can only be mined where they lay in the ground.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
111	Tom Rukavina	Citizen	We have a proven track record for 135 years. We are looking at one of the largest recycling projects in the history of the state of Minnesota. For people that don't know it, everything is there basically in order to run this mine. The only thing that has to be done is to dig a new hole amongst all the other holes that have been dug by both North Shore Mining and the old LTV site. It's time for this project to move on.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
112	Tom Rukavina	Citizen	Again, we are all consumers, we all use this. I want to thank my constituents and the people of the Iron Range for their perseverance on this project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
113	Tom Rukavina	Citizen	And I want to thank you folks because you have done what you are supposed to do and you have made sure that all the statutes and all the rules that have been on the books since the agreement between the environmental community and the mining community in the 1990s, I believe, that those rules and statutes have been met. And that's why we're here tonight because PolyMet has met them. I say it's time to move on. I want to thank you for what you've done and I want to thank the people of the Iron Range for putting up with this for 14 long years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

114	Bill Erzar	Citizen	Good evening, I'm Bill Erzar from Ely. I'm a proud supporter of PolyMet and I defer my time to Mr. Mike Jugovich.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
115	Mike Jugovich	7th County Comissioner, St. Louis County	Thank you. My name is Mike Jugovich, J-u-g-o-v-i-c-h, I live in Chisholm. I am the 7th District County Commissioner right here in St. Louis County, proud to be, and represent a lot of the people here. It's an amazing thing this process has taken so long. And I understand it's a process, but at some point we've got to get to work. We talked about our future, these kids are our future. I have one of my kids here tonight.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
116	Mike Jugovich	7th County Comissioner, St. Louis County	Because this is what it's about, generations being able to stay here, generations having their own kids. This is why we all moved here because we love the area. No one wants to pollute where we live, work and raise families. And I believe the science is clear. And I think deep down we all know the '70s is long gone. And what we have now is the technology and the ability to mine and mine right. So, people like these young people right across from me will have the opportunity to stay here, raise their own families and have their kids go to Mesabi East. It's a great, great feeling to be an Iron Ranger and understand what it takes to be an Iron Ranger.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
117	Mike Jugovich	7th County Comissioner, St. Louis County	You've got to be tough. You've got to be Tom Rukavina, you've got to be tough, because he's been through it all. He gets it. And I see a lot of blue and white hats, tradespeople, all kinds of people here. You've been through the ups and downs. They understand how important it is to have these jobs.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
118	Mike Jugovich	7th County Comissioner, St. Louis County	We need them, our families need them. We can do this right, we can do this safely. We've been doing it for 135 years, nobody does it better, nobody does it safer, right here in the Iron Range. And we can make this go and be a success environmentally and economy-wise. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
119	Jean Akkanen	Citizen	Hello, I'm Jean Akkanen, A-k-k-a-n-e-n, from Embarrass. And I'm a supporter of PolyMet and defer my time to Lance Johnson.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
120	Lance Johnson	Aurora Chamber of Commerce	My name is Lance Johnson, L-a-n-c-e, J-o-h-n-s-o-n. I'm from Biwabik Township. I'm a business owner here in Aurora, but I'm also speaking on behalf of the Aurora Chamber of Commerce. My wife and son and my mother are in the crowd tonight. My wife and I have attended many meetings about this project dating back quite a bit. We attended PolyMet public comment meetings in Blaine and Aurora in 2010, I believe. Next were meetings in Duluth and Aurora and in St. Paul in 2014. And that was followed by another round of meetings in Duluth and Aurora in 2016. And here now we are in 2018, another round tonight and then tomorrow in Duluth. After following this process for nearly a decade the agencies have overseen a thorough scientific review process. There's been ample opportunities all over the state for both local residents here where the project will take place and also those 100 miles away to provide input on the PolyMet permitting process. With PolyMet following our state's rigorous review and permitting process and years of scientific study by state experts, I see no reason why this important project for our area needs to wait any longer.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
121	Lance Johnson	Aurora Chamber of Commerce	I'm not sure when you folks got here today, if you're going to be in the area tomorrow when we go back down to Duluth, but if you get an opportunity and you want to take a drive into Hoyt Lakes, you'll find multiple manufacturing facilities that have closed down over the last few years. You can drive through Aurora's Main Street, and you've heard that referenced here tonight multiple times, and you can see buildings that were once homes to productive businesses and they're now falling apart and in disrepair and empty. In just the last few years we also lost a grocery store and the pharmacy, too. The scientific review process has been followed and this project should not be delayed any longer. The positive economic benefits that PolyMet will bring to our community is desperately needed. This project will inject new life to our local businesses, along with hired additional employees and expand instead of laying off and closing doors. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
122	Tonia Kittelson	Friends of the Boundary Waters Wilderness	Hi, I'm Tonia Kittelson, K-i-t-t-e-l-s-o-n, I'm from Duluth. And I'm with Friends of the Boundary Waters Wilderness. Thank you for the public comment. We strongly urge you to deny the PolyMet mine application and we ask for our comments tonight to be about specific things that are in the permit request. My comments are about that. So, there's an example of the mine in British Columbia, the Mount Polley mine, the toxic waste from that mine followed 400 miles down the tributary and down the river.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

123	Tonia Kittelson	Friends of the Boundary Waters Wilderness	And if PolyMet mine pollution, the acid mine drainage, was to go 400 miles, it would go all the way from here down through the Partridge River, down through St. Louis River, 197 miles down to the Duluth and Superior, Wisconsin area and estuary, if you go another 203 miles down from Lake Superior, 203 miles from the lift bridge. My request is that you determine how far PolyMet pollution would travel and let people know how far that would go out into Lake Superior. People living downstream of the mine deserve to know just how far that contamination is going to reach, especially since it contains six of the top ten worst chemicals that the World Health Organization has identified in acid mine drainage.	This comment pertains to issues considered in the development of the DNR Dam Safety permit. Regarding potential contamination from the discharge from the WWTS, the discharge is required to meet Operating Limits for sulfate, copper, arsenic, cobalt, lead, nickel and mercury at the point of discharge at the project site. The permit also states that the discharge must not violate water quality standards; again, this would be at the point of discharge. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility to prevent the pollution of downgradient water. Consequently, impacts to the St. Louis River and Lake Superior will not be discernable.	
124	Tonia Kittelson	Friends of the Boundary Waters Wilderness	A couple other things to consider are that the St. Louis River estuary had decades of cleanup going on for the area of concerns in the estuary. And that's cleaning up legacy pollution from the past industries. And PolyMet would be a new industry putting new legacy contamination into that area that's had hundreds of thousands of dollars spent in cleanup and decades to clean it up.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
125	Tonia Kittelson	Friends of the Boundary Waters Wilderness	I know the health impact assessment was thrown out, but I think that was legislation that determined that. And that's actually, I think, something that's worthy of consideration for you in your role as impact on humans, even lastly for their sulfide mine proposals.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
126	Tonia Kittelson	Friends of the Boundary Waters Wilderness	Regarding reverse osmosis, I know the pharmacist made some excellent points, but the reverse osmosis in the proposed permit to mine application was done on taconite rock, not in the sulfate ore that's going to be used in the PolyMet mine proposal. So, I would request that you use the rock that's going to be used in the PolyMet mine for your testing for the reverse osmosis. Thank you very much.	Reverse osmosis as a treatment technology is designed to treat water with certain chemistries, so it is not important to the viability of the treatment where that chemistry came from. However, to demonstrate that membrane treatment technologies were capable of meeting treatment targets for the PolyMet project, the company conducted a 6-month pilot testing program using seepage water from the existing tailings basin. For a portion of the test, additional metals were added to the test influent to more closely simulate projected effluent quality (i.e., wastewater that would be expected from the mining of sulfide-bearing ore). Results of the pilot testing were used in MPCA's engineering review of the treatment system design, and MPCA determined the proposed design is capable of providing the necessary level of treatment.	
127	Patricia Renneisen	Citizen	I'm Patricia Renneisen from Schroeder. And I give my time to John Gappa.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
128	John Gappa	Board Member, Friends of the Boundary Waters Wilderness	Good evening. My name is John Gappa, G-a-p-p-a, I live in St. Paul. I served as a corporate chief financial officer for a number of Minnesota companies and I've been actively following the financial assurance aspects of this proposed project. I also serve on the Board of the Friends of the Boundary Waters Wilderness. Governor Dayton has stated that permitting for the proposed PolyMet mine will occur only if taxpayers from Minnesota enact financial assurance.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
129	John Gappa	Board Member, Friends of the Boundary Waters Wilderness	While the DNR's latest financial assurance departments are much improved, they still do not provide the financial protection Minnesota taxpayers deserve. The DNR analysis shows that the first year of mining creates a cleanup bill of 588 million dollars. After 11 years of mining the cleanup exposure is over a billion dollars. At the conclusion of mining the remediation cost and the cost of treating polluted water for a hundred years is 782 million. And these estimates assume that everything goes according to plan.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.	

130	John Gappa	Board Member, Friends of the Boundary Waters Wilderness	To protect the taxpayers in Minnesota I recommend the following: First, significantly increase the up-front cash contribution required. As it stands, total cash requirements by the ninth year of mining operations total 26 million dollars, a mere 3 percent drop in a billion dollar bucket. DNR's own consultants state that it would be very difficult for PolyMet or even a major mining company to obtain the financial instruments required in the permit. Second, require PolyMet to complete an updated tentative feasibility study, examine the project's ability to meet the cash contribution requirements. This study should be subject to public review and comment. And the information learned from the study should be incorporated into the final permit to mine. Outside expert analysis of the project shows that this project produces marginal financial income at best, even with copper prices at ten-year peak levels. Third, the DNR should provide public transparency into the annual review process for financial assurance and continue to use its third-party consultants for these annual reviews.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
131	John Gappa	Board Member, Friends of the Boundary Waters Wilderness	Finally, if PolyMet fails to meet any of its financial assurance requirements, the DNR needs to have the options to, first, prohibit payment of dividends to mine shareholders, prohibit payment of bonuses, stock options or other incentives to the mine and require full cash funding of all financial assurance obligations in the event the mine is sold.	Comment noted. This comments pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
132	John Gappa	Board Member, Friends of the Boundary Waters Wilderness	In conclusion, a significantly more financial assurance package needs to be funded with cash rather than difficult to obtain financial instruments. To adapt an old saying, "In God we trust." PolyMet, please bring cash. Thank you.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
133	Bob Tammen	Citizen	I'm Bob Tammen, T-a-m-m-e-n, from Soudan, Minnesota, home of Minnesota's first iron mine. And I've also worked on the mine site of the PolyMet proposed processing plant. That was back in the days when Lindsey (sp.) had an (inaudible) plant there. So I'm an old-timer.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
134	Bob Tammen	Citizen	I guess, I don't know, I didn't prepare a presentation. I just want to respond to a couple of things I heard here tonight. We have been assured several times that when it comes to mining, Minnesota knows how to do it right. It was just two weeks ago I was at a hearing in Mountain Iron with my wife Pat for US Steel that was asking for a variance. They want another 20 years for their groundwater to be attenuated. I think that means diluted to meet Minnesota standards. So I started working on that property 50 years ago. Fifty years ago those lakes were leaking. Today those lakes are leaking. We are told it's going to take another 20 years to attenuate the groundwater coming off that site.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
135	Bob Tammen	Citizen	So when you hear somebody say when it comes to mining, we know how to do it right, it's not very accurate. We have a sad record. I know our regulatory agencies have good leadership and good rank and file people. What they don't have is the political clout to clean up Minnesota water that's been degraded by our existing mining industry.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
136	Bob Tammen	Citizen	We've been told we need these metals to make cars and batteries and windmills and all these wonderful things. Which is an element of truth, but we should acknowledge that we pay a price for using our metals.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
137	Russell Hess	Citizen	My name is Russell Hess. I'm a resident of Plainview, Minnesota. I support PolyMet. And I defer my time to Julian Collins.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
138	Julian Collins	President, IDEA Drilling	Hello. Thanks for having me today. My name is Julian Collins, C-o-l-l-i-n-s. I am the president and CEO of IDEA Drilling, a local drilling company based in Virginia, Minnesota. IDEA Drilling offers lots and lots of high-paying jobs for local citizens specifically by aligning ourselves with (inaudible) such as PolyMet. In fact, we relocated our headquarters to the Iron Range specifically to support the local economy. I'm here today, quite simply, to ask you to please approve the permitting process to allow me to continue to offer local employment to the citizens of this area. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
139	Randy Lasky	Presizent, Northspan Group	My name is Randy Lasky, L-a-s-k-y. I'm a resident of Duluth. I'm also president of the Northspan Group. We are a private nonprofit business and community development organization. And my board and myself we strongly support the PolyMet project. I defer my time to Melissa Cox, president of the Laurentian Chamber.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

140	Melissa Cox	President, Laurentian Chamber of Commerce	Hi. My name is Melissa Cox, C-o-x. I'm a resident of Hibbing and I am president and CEO of the Laurentian Chamber of Commerce and we represent nearly 300 businesses in the Quad Cities and surrounding communities. And on behalf of the Laurentian Chamber of Commerce and our board of directors and our member businesses, we stand today in strong support of our next generation of mining and the draft permit to mine, air and quality permits, and 401 wetland certification for the PolyMet NorthMet project. I also want to note that my nephew goes to school here, my family lives in this area and I'm an Iron Ranger at heart and proud to live and work here, which makes this even more important and close to my heart.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
141	Melissa Cox	President, Laurentian Chamber of Commerce	So utilizing natural resources is a core aspect of our economy on the Iron Range. Beyond our region of strong, sustainable, domestic supply of minerals that will be mined by PolyMet, it's essential to a vibrant American manufacturing sector. This, in turn, positively affects all of our other member industries, including financial, legal, defense and communications, which are all integral in supporting our high standard of living.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
142	Melissa Cox	President, Laurentian Chamber of Commerce	The Laurentian Chamber of Commerce supports responsible mining in all forms in northeast Minnesota. We believe in the systematic application of science upon which decisions must be made to guide mining and create economic viability. PolyMet has undergone an exhaustive environmental permitting process and has been fair to all stakeholders. We believe the State has been thorough in their permitting processes and we trust the science and findings of the State's experts which show that the PolyMet NorthMet project will protect human health and the environment.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
143	Melissa Cox	President, Laurentian Chamber of Commerce	PolyMet will not only provide up to 1000 direct and indirect jobs, but it will also have a massive impact on our infrastructure, our schools and other areas. The profound effect of this project will be seen in our communities, in our schools, and the people in this room without projects like this won't be able to sustain our communities and our viabilities. We won't be able to stand here much longer to even be here to support. So we need to have the mining continue and support. So we urge today that the MPCA and the DNR grant these permits in a timely manner. Thank you for the opportunity to speak. We appreciate it.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
144	Kara Josephson	Citizen	Hi. My name is Kara Josephson. And I would like to cede my time to Kristina Noghre (sp.).	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
145	Kristina Nighre	Citizen	Hi. My name is Kristina Noghre (sp.). I'm from Knife River, Minnesota. My last name is N-o-g-h-r-e (sp.). I just came up here to voice a couple of concerns that I have. What concerns me is the permit waste storage element of this project. The waste storage basin will be unlined and will leak (inaudible) rock. And according to the PolyMet plan, untreated water will seep directly into the groundwater. According to their numbers, that's 5,000,000 gallons from the site itself and 10,000,000 gallons from the storage basin. And it struck me that when everything is operating perfectly, millions of gallons of contaminated water are going directly into our groundwater.	See response to Comment Water-510.
146	Kristina Nighre	Citizen	And then the second piece that I wanted to mention was the real value of our water in Minnesota. If you think about the nation as a whole, how many states are undergoing serious crisis in terms of drought and we are so rich in water. The amount of water that the PolyMet plan says they are going to use is 6.1 billion gallons of water each year. Each year. And they aren't paying for that water. They are paying $8 per million gallons.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
147	Kristina Nighre	Citizen	I live downstream, and my thought, my concern is for everyone around the mine, wherever along, whether the top or the bottom of the stream or anywhere, my concern is about our kids, about contamination, contaminating water. And, you know, what's the value of our land if we can't drink the water. So I ask the DNR and MPCA to deny the permits and certifications for the PolyMet sulfide mine. Thank you.	Treatment of the discharge through the WWTS using membrane treatment technology (e.g., reverse osmosis) and where enforceable operating limits for sulfate and various metals apply, will minimize effects on downstream water quality. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility. The effectiveness of these controls was evaluated in the EIS and the water quality permit requires their installation and operation.
148	Mark Giese	Citizen	My name is Mark Giese, G-i-e-s-e. I'm from Gilbert, Minnesota. I defer my time to Chara Jarvela.	This comment simply defers speaking time to another individual. No response needed.

149	Chara Jarvela	Citizen	Hi. I'm Chara Jarvela, J-a-r-v-e-l-a. Originally Chara Chuck. I live in Hoyt Lakes, Minnesota, but I grew up in Aurora and went K through 12th grade here at Mesabi East School District. "..." Sadly, many of these schools had to close their doors due to LTV shutting down in 2001. After that date, we lost almost one-third of my graduating class. Friends left, families moved away and businesses shut down. After growing up in these small towns, I realized how important it is to trust people, to be a part of a community and to be close to family. After moving away to college and getting my degree in elementary education, I immediately moved back to try to start my new career in the Iron Range. I'm currently a teacher in Virginia. "..." The upcoming possibility of PolyMet opening in our area is amazing for our young family. It has been very depressing driving down the streets that used to be filled with people mingling and businesses thriving that have now become vacant and closed. The possibility of the class sizes going up, people moving into the hundreds of houses that are currently sitting for sale, and the use of a current infrastructure and reuse of our resources is more than anyone could ask for around here. I have dreams of my daughter -- sorry, growing up in the school just like both of my parents did and how her father and myself did. Molly will some day get to use the new athletic complex, play volleyball and basketball on this court like I did, meet new friends and find success here at Mesabi East. I implore you all to think of these dreams as well: Hundreds of jobs and families moving to our area to work at PolyMet, schools and other businesses, more money in our communities and a more secure life on the east end of the Iron Range. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
150	Nancy Norr	Director of Regional Development for Minnesota Power	Nancy Norr, N-a-n-c-y N-o-r-r. It is my privilege to be in front of you again this evening as the director of regional development for Minnesota Power as well as the chair of Jobs for Minnesotans. I'm here on behalf of those 55,000 labor union members, 2500 businesses across the state and thousands of citizens in the Arrowhead region and across the state as well who commend the regulatory agencies for the work you have been doing and how closely you have been working together to reach this important and historic milestone. The core belief in our organization is we do not have to choose between jobs and the environment. We can do both. A key economic driver clearly here in the region is mining. And the growth in terms of (inaudible) of this industry is critical to the long-term success of our way of life here in northern Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
151	Nancy Norr	Director of Regional Development for Minnesota Power	As the nation with the highest consumption of strategic metals in the word, it is imperative that we maintain the regulatory framework that allows responsible mining to move forward. You will hear from a very vocal minority of people that these permits should not be issued and that the financial assurance is insufficient. And they will criticize agencies, the governor and anyone else that supports PolyMet. In fact, I don't think they would ever think the project is good enough or safe enough. And yet those same individuals consume, like we all do, an average of 1400 tons of metal to minerals to fuels in their lifetime. Critics of the financial assurance package are loose with the facts, and it seems as though they are as loose as those who keep claiming there will be acid rock drainage when the DNR has clearly stated that there will not. PolyMet will have to meet the bankruptcy approved petition for the financial assurance before they will be issued their permit. And that is the same as mines across this country who post bonds and letters of credit as the primarily means of meeting their financial obligations. That's the same high standard the State of Minnesota will require.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
152	Nancy Norr	Director of Regional Development for Minnesota Power	Our members, along with the vast majority of the people, understand our society, that we fundamentally rely on our natural resources and fully support your rigorous review to be conducted over these dozen years. We support a process based on sound science that strives to minimize and mitigate risks and at some point comes to a close. We fully recognize that if you say no to mining here, we are saying yes to mining somewhere else in the world where it's unlikely their environmental protection or labor safety laws are as rigorous as ours here in Minnesota. So the agencies have done their jobs, the process works. Now it's time to let Minnesotans get to work. And we respectfully request permits to be issued in a timely manner and that the agencies now can turn your attention to long-term compliance activity that will on daily basis protect human health and the environment. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

153	Tony Jeffries	DIrector, Engineers Club of Northern Minnesota, Director of Iron Range Tourism Bureau	Good evening. Tony Jeffries, J-e-f-f-r-i-e-s. And I apologize to all for having no prepared remarks. I'm here not only as the director of the board of the Engineers Club of Northern Minnesota and as the director of the Iron Range Tourism Bureau, I'm here as myself. And only for myself. And I would like to speak mostly in support of the agencies and your great work and the long time it has taken to get where you're at. The brunt of my professional life has been spent in environmental science and environmental engineering and I've been blessed with the opportunity to work not only in Minnesota, but across this country in many pretty controversial and contentious projects, from the mining where extraction of landfill of gas to be converted into usable energy to the combustion of solid waste, and a project in downtown Minneapolis which now is being celebrated in about its 28 years of operation, the Hennepin Energy Resource Center, which took almost 10 years to permit for Hennepin County to combust their solid waste and convert that into steam and usable electricity. So as a guy who woke up every morning and put his shirt and tie on and ran into that brick wall waiting for the permits to come through, lots of things happened, including the world's first commercial mercury permit limit. It was kind of like Field Dreams, build it and they will come. There was not even any technology available at that date that the PCA put that permit limit on there. Guess what? We got the technology. We made it. We made it happen. And we made it happen successfully.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
154	Tony Jeffries	DIrector, Engineers Club of Northern Minnesota, Director of Iron Range Tourism Bureau	I am not convinced that there has been any argument to date that suggests that this project will be environmentally degrading to human health or the environment. I am fully convinced back from my days of doing graduate research for the DNR and looking at chelating leachable and toxic heavy metals out of the Goat Ridge Lee (sp.) case to my work with the PCA on several rulemaking task forces, this project has not to me demonstrably ever been proven to come anywhere close to degrading human health and the environment. I believe the agencies have done their jobs and done it well, have done it multiple times over. I'm not going to speak to the -- I grew up in Ely, I grew up in Eveleth, I live in Eveleth now again. I'm not going to speak to the socioeconomic aspects as so many of these other folks have so successfully spoke to. I'm going to speak completely technologically and scientifically. There is nothing that I see that suggests that this project is going to be degrading to human health or the environment and I urge that consideration to pass on this permits by the agencies. And I thank you all for your work.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
155	James Watson	Citizen	I'm not much of a public speaker. My name is James Watson, W-a-t-s-o-n. No relation to Sherlock and his buddies. I have lived up here on the Iron Range now for about just under 50 years. Two of my kids would have been in that blue shirt group 10 years ago. Now my grandkids are going to be in that. That's where they're at. They are in school right now. Well, I have a little bit of a unique situation here. I had an opportunity to work at PolyMet for three summers in a row cleaning up and reorganizing things that the mine had left. Rewarehousing, picking up parts, new parts, used parts, and what I picked up along the way just from the conversation among the workforce that was out there at the time, that these PolyMet people they really have got their stuff together. It was clean, do it right, do it the way it really needs to be done, prepare for when PolyMet finally gets over there and gets the ball rolling, they can jump right in and just go for it. Well, I think PolyMet has really got the environment at heart. Well, making money, too.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
156	James Watson	Citizen	Now, in the 50 years that I have been here, I also played in a country band and it used to be in the heyday when the LTV and the Erie Mining Company were running you couldn't find a parking place on Main Street or the side street on a Friday or a Saturday night. Now, you shoot a bazooka down the street and not hit a person or a car or nothing. It's becoming just almost abandoned. You take a look at the streets now compared to what they were 15 years ago, it's becoming a ghost town. We lost our grocery store, the drugstore, about six or seven or eight bars, hardware stores, zilch. Now, I would like to see some opportunities for the younger people. Most of our young families have left the area. Why? Their means of support is gone. PolyMet I think is their salvation.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
157	James Watson	Citizen	Now, I appreciate the fact that you folks have done such an extensive, tight-knit job of this. But I do have one complaint. You are taking way, way too long. I mean, I've been waiting 13 years for this opportunity. And I'm 76 years old now. It's too late for me. But what about my kids and my grandkids? Two of my grandkids, three of my grandkids are going to graduate from this school. Sitting up there with them blue shirts on. Which is kind of nice I think. And as far as the opposition to this PolyMet project, I think these folks just don't have their stuff together. I'm doing pretty good I thought. I was afraid to get up here and talk and I was going to give my time to somebody because I couldn't keep my language clean. But I think I'm doing pretty good. When my name came up, I changed my mind and to just go for it. But PolyMet in my opinion is good to go. It's time. Let's go for it. Go PolyMet. Thank you.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
158	Joni Stutzman	Citizen	Hi. My name is Joni Stutzman. My name is spelled J-o-n-i, last name Stutzman, S-t-u-t-z-m-a-n. I live in Gilbert. I would like to defer my time tonight to Lance Kupka.	This comment simply defers speaking time to another individual. No response needed.

159	Lance Kupka	Citizen	My name is Lance Kupka, L-a-n-c-e, K-u-p-k-a. I'm from Hibbing, Minnesota. I am the son of a steelworker, a grandson of a steelworker and a brother-in-law of a steelworker. I'm also a proud member of the Mesabi East Teachers Union. I am here to speak strongly in support of the PolyMet project. I adamantly believe that mining and caring for the environment are not two mutually exclusive ideas. We can have well-paying mining jobs and make sure that our air is clean and our water is safe to drink. Diversifying our economy is incredibly important, but will only work if we take advantage of the foundational resources such as mining that we already have in abundance. I am a third generation Iron Ranger who wants his son and daughter to live on the land where they were born. I do not want them to make the tough choice to have to leave this area in search of employment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
160	Lance Kupka	Citizen	PolyMet has gone above and beyond the requirements to make sure that this project is safe. The science is sound and proven. Much like our existing mayor Dave Lislegard, I would not support this project if it was not done in an environmentally responsible manner. We have the technology to build this operation right. Let's move this project ahead and do this the right way.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
161	Lance Kupka	Citizen	I have been a teacher at Mesabi East for 17 years. I watched as our population has slowly faded away. Stores have closed. People have moved away in search of greener pastures. When LTV shuttered it doors in 2001, Mesabi East lost over $400,000 of funding that was provided by taxes. I have watched as our graduating classes have went from well over 100 students to approximately 50 to 60 students. We need this project for the well-being of our communities and the future of the Iron Range. I was born on the Iron Range and will probably die on the Iron Range. I will give my very last breath to make sure that this area sustains and thrives in the future. I look forward to the day when we can proudly look back at this project and say that we did things the right way, we provided good jobs for people in the area, and we ensured the sustainability of the Iron Range. Please move forward with this permitting process. We have have waited far, far too long for this to happen. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
162	Tom Wright	Citizen	I'm Tom Wright. I would like to defer my time to Mike Geisdorf.	This comment simply defers speaking time to another individual. No response needed.
163	Mike Geisdorf	Citizen	My name is Mike Geisdorf. Last name is G-e-i-s-d-o-r-f. Commissioners, I want to thank you for coming to our community. I know it's been a long road for all of you. And your staff has probably been enduring this as well as all the rest of us. So I want to thank you for coming in. The one thing, it's a very long process, the permitting that has been very obviously I think making problems to both pro and anti mining has been the delivery of process, that as you guys at the MPCA and DNR and other permitting agencies have shown getting to this point. I want to encourage you to continue to effect and then issue these permits in a timely manner so the residents of northeast Minnesota and PolyMet (inaudible) and our young people can get the jobs it produces.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
164	Mike Geisdorf	Citizen	If there is any kind of takeaway from all of this, it's been that whether the anti mining crowd likes it, if a company like PolyMet has the wherewithal to do it by following the existing law and statutes, that copper-nickel mining can be permitted regardless of the voracious opposition. At what point will the opposition see the futility in furthering this fight? At what point will the opposition recognize the opportunity to create something positive not just for northeast Minnesota but for the world? And I think Ross Peterson was right, they are afraid that PolyMet is actually going to do this correctly. And we all know they are.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
165	Mike Geisdorf	Citizen	The world is changing how it looks at this kind of mining. They are looking at the United States and us in particular to lead that change. And that is exactly what PolyMet is doing right here in northern Minnesota. And for those that say this has never been done right before in the United States, that's just simply not true. We have a living example of it with the Eagle Mine in northern Michigan and the Flambeau Mine in Wisconsin has done very well. And to this day that mine site is a park that is used by the community there in Ladysmith. I wanted to point that out. So we can create a world-class mine with top of the line controls and unequal environmental safety right here in the middle of the forests and lakes of northeastern Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
166	Mike Geisdorf	Citizen	I'm going to ask the anti mining crowd, once again, where will you get your copper-nickel from? What third world nation would you prefer to see that mining being placed in? If you've seen some of the mining sites in some of these third world nations, would you prefer that? Our sustainability friends want these modern communities to (inaudible) at someone else's expenses. I encourage the MPCA and the DNR permit the following into statute and law. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

167	Diane Kromer	Citizen	My name is Diane Kromer, K-r-o-m-e-r. I am a resident of Ely, Minnesota and I thought it very important for me to spend my birthday today here in support of PolyMet. I just want you to listen to the engineers and the chemists who have spent 14 years working on this project and listen to the experts in the field. And I would like to defer the rest of my time to Nancy McReady.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
168	Nancy McReady	Citizen	Hi. Nancy McReady, N-a-n-c-y M-c-R-e-a-d-y. I'm president of Conservationists With Commonsense. I've followed and reported on PolyMet and the NorthMet project with the CWSC and the Ely Echo since 2004. I haveattended community readiness meetings, open houses, presentations and hearings and have learned about PolyMet's process, their environmental safeguards and their financial reassurance that would be updated annually. In those early days of information on PolyMet, few, if any, anti copper-nickel mining activists attended the meetings. Only in the last two years have they been speaking against all aspects of the permitting process and copper-nickel mining. The main arguments against copper-nickel mining or sulfide mining, as they call it, are that it might, may or could pollute area lakes, rivers and streams. They say they want it proven that it can be done safely. But when we cite Flambeau in Wisconsin, Stillwater in Montana or Eagle Mine in Michigan, they aren't satisfied. PolyMet's ore body has a low sulfur content of less than 3 percent compared to the Flambeau which was at 30 percent. They do not acknowledge the new mining technology that's been used in other parts of the United States and in Canada. The opposition will bring up Mount Polley in British Columbia and the horrible breach of its tailing ponds in 2014. They don't say how many times the mining company applied for water discharge permits beginning 10 years earlier that the ministry didn't address. This is what lead to the breach of the tailing pond's wall. The walls that were far steeper than what PolyMet proposes for their double-wall tailing pond. They also bring up Gold King in Colorado in 2015. The EPA deliberately released toxic water into the Animas River from a mine that's been idle since 1920. It was cheaper to release the water than to build a wastewater treatment facility, and there were no reports of any fish loss. And within weeks the Animas River was open to tourists, rafters on the rivers, fishermen on the lakes, on the rivers and on the streams that were affected. An independent study of water quality in the Animas River after the spillage shows major human health concerns were short-lived. The lawsuit against Reserve Mining Company over taconite tailings dumped into Lake Superior were deemed asbestos-like fibers. Today we have Black Beach near Silver Bay where millions of tons of tailings washed ashore. This beach is now hailed as the most beautiful beach on Lake Superior. Accidents happen, there are no guaranties against that, but they are addressed and and mitigated.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
169	Nancy McReady	Citizen	CWCS believes the State has been very thorough in its permitting process. We trust the science and the findings of the State agencies' experts which show the PolyMet NorthMet project will protect human health and the environment.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
170	Aaron Stolp	Citizen	My name is Aaron Stolp, S-t-o-l-p, from Duluth. I am born and raised on the Iron Range. And I believe in hearing both sides to any story, but after 13 years of hearing opposition to this, while PolyMet has followed the letter of the law in their permitting process, I encourage the State agencies to take a closer look at some of the arguments against this project to help realize it's time to continue forward with this permitting process.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
171	Aaron Stolp	Citizen	Opposition point number one: We often hear that there is too much copper already available in the world and we have more than enough copper for all of our needs. To that argument, I say false. I'd like to know the source that can show us that we have enough copper for the development that we need for the next 20 years, 30 years and beyond. And even if this were the case, to that I would say, so what. I could make the same argument that there is already too much craft beer available for us in Duluth. But if a new brewery wants to open up and if they go through the proper permitting process, they have the right to do that. Opposition point number two is the misleading verbiage that we often hear about this process. Precious metal mining is often referred to as sulfide mining by opponents. I would like to ask if they are aware that all metal and ore mining involves exposing sulfide rock. And this deposit we are focusing on here has no higher sulfide content than any other successful, non-polluting mine site in the country.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

172	Aaron Stolp	Citizen	Or how about the gentleman who came to the gym here tonight from North Oaks who gave us a complete apples versus oranges scenario of mines that did not go through the rigorous permitting process that the State of Minnesota is requiring PolyMet to do. It's nothing more than another scare tactic to hinder economic progress here and what too many people from out of town like to consider their own personal playground. None of us here in support of PolyMet want polluted water. That's ludicrous. And after 13 years of following the rules and setting a high standard, I encourage the approval of these permits as a way to promote responsible industrial development in our region. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
173	Jack Mattila	Citizen	My name is Jack Mattila. It's M-a-t-t-i-l-a. No "r." And I would like to defer my time to Tony.	This comment simply defers speaking time to another individual. No response needed.
174	Tony Hansen	Citizen	Good evening. My name is Tony Hansen, H-a-n-s-e-n. I'm a resident of Duluth, Minnesota. A lifelong, born-and-raised resident. It's important for me to come here today because the proposed PolyMet project has a potential to create job opportunities that will benefit my friends, my family for years to come. I urge the Minnesota Pollution Control Agency and the DNR to grant these permits in a timely manner because our communities need job growth. The NorthMet project will create an estimated 1000 good paying jobs that would greatly benefit everyone here. This will be done by the creation of 360 full-time mining jobs in operations and the creation of an additional 600 plus related spinoff jobs. In bringing forth these jobs, you would also bring an estimated $720,000,000 of wages and benefits to our families, friends and community members. This project also carries with it the potential for 2 million hours in construction. So the benefits of just growing the business. This project will support our current local industries and bring new potential industries to our communities. These industries include manufacturing, technology, green energy, green technology, retail, automotive, restaurants, construction. Just to name a few. Having a good job is one of the most powerful determinants of a quality life. And I want to make sure that my community, my friends and my family have both.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
175	Tony Hansen	Citizen	The science behind this engineering marvel shows that the PolyMet project can meet or exceed all environmental regulations and standards at the same time of creating these jobs. The Rotary guiding principles are: Is it the truth? Yes. By fact, what you guys have proposed and done with the evidence and fact checking, we can do this in an environmentally conscious manner. Is it fair to all concerned? Absolutely it is. It brings forth opportunities that are abundant to us now and into the future. Will it build goodwill and better friendships? Absolutely. This brings our community together today here to have a meaningful conversation that we can get positive feedback from. Will it be beneficial to all concerned? Yes, it will. That means it's a no-brainer to move forward with this economic improvement to our area. Thank you for your time.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
176	Dave Kromer	Citizen	My name is Dave Kromer, D-a-v-e K-r-o-m-e-r. I didn't really have much prepared until I listened to some of this stuff tonight. And I really appreciate the work that you guys did. I'm looking at all those papers and I'm saying that's a lot of stuff to go through. I still oppose it. I would never vote for it. That's what we're up against. We need to talk to these kids that are here. That's our future. We lost a generation already to the years that we have wasted. Let's not waste another generation.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
177	Justin Dallas	Citizen	Hello. My name is Justin Dallas. I'm from Knife River. I just want to say a few words here after hearing everyone tonight. I think this is a question of conscience. The word is conscience. You know, you think to yourself what is your source and what do they gain to stand -- or what do they stand to gain from what they are telling you? Well, we hear about science on this side and we hear about science on that side. And I do believe that we need jobs. We need to mine. We need to do this. But, at the same time, we need to do it right. It's easy when there has been a dry spell to take anything that comes to you, but it's not always the first thing that comes along that you want to go for. We shouldn't settle for less and we shouldn't settle for long-term damage to get something now. We must be more critical of how applicable the opposed science is. In light of the formidable amount of recent failures, we must take all the time necessary to make sure that we are doing it right. We need the resources, we need the jobs, we need to show the rest of the world how it's done, so we need to do it right. We need to take the time to do it right. We should not gamble with our children's future. We should make sure that we are going to get these things pushed through. We are going to help these fine people that live in this area. But we need to do it right. It's a matter of conscience and we need to make sure that the science is right and the people that stand to gain aren't just pushing something through that's going to hurt us in the long run. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
178	Todd Lyden	Citizen	Hi. I'm Todd Lyden and I support PolyMet. And I will concede my time to Jerry Fryberger.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

179	Jerry Fryberger	Citizen	My name is Jerry Fryberger and I'm from Duluth. And I was born and raised in Duluth. I went to school in Duluth. And unlike Tom Rukavina, my friend, I'm not an Iron Ranger, but I'm a (inaudible) and I'm passionate about the Iron Range people. I'm passionate about the communities across the Range. PolyMet, a project that Minnesotans should be very, very proud of, particularly the co-lead agencies that have painstakingly studied this thing, and they have done a superlative job. The Corps of Engineers, the Department of Natural Resources, the State of Minnesota, the U.S. Forest Service and MPCA and the EPA, you have done a wonderful job. I know they are all not represented here, but I'm very, very proud of -- I was paddling in the Boundary Waters Canoe Area in 1946 long before many of you were born. So I understand the environment. Over the past 11 years of responsibly addressing the environment and the processing challenges and the expenditure of in excess of $300,000,000, we have watched this project's gradual development. And continuing in the rich heritage of Minnesota's mining industry, a major contributor of America's industrial growth and national security, Minnesota should be extremely proud of this project. "..." A milestone has been reached here in the tremendous efforts of PolyMet and the co-lead agencies in this project. The progress PolyMet has made in the last 11 years is a wonderful, wonderful milestone as they develop Minnesota's first copper-nickel non-ferrous mining project. A milestone, an important milestone, which is our mining industry is no longer being judged how mining was done more than a century ago back in the 1870s or even decades ago. But rather by state- of-the-art present mining technology and enlightened environmental standards based upon the science of our 21st century. You have done a superlative job, folks. We are very proud of you. I'm proud to be a Minnesotan and I really support it. Thank you much.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
180	Chad Sarh	Citizen	My name is Chad Sarh. This here is my son Cody. We are here to support PolyMet. We are going to defer our time to Jodi Pierkarski because it's getting late and I've got to get him home to bed.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
181	Jodi Pierkarski	Citizen	Hello. My name is Jodi Piekarski, J-o-d-i P-i-e-k-a-r-s-k-i. I'm from Grand Rapids, Minnesota. It was important for me to come here today. I have spent ever since high school graduation working in either the paper or polymer industry. During those over 20 years I have observed with the proper permitting and environmental oversight that industry and environmental regulations can coexist together to create positive impact for a community. Minnesota has some of the strictest environmental standards of any state. If mining is going to occur, we want it to be done in a state and country that cares about the environmental impact. I urge the MPCA and the DNR to grant these permits in a timely manner because the permitting conditions, which were created through a comprehensive environmental review process, follow the monitoring, operating, reporting and inspection requirements for the mine during all phases of construction, operation and closure. Together the permits provide the framework for mining and environmental protection to coexist together. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
182	John Rebrovich	Citizen	My name is John Rebrovich, R-e-b-r-o-v-i-c-h. I am a third generation miner on the Range and our family has been mining for over 80 years up here. I'm also assistant to the director of United Steelworkers District 11. Our district covers nine states in which we represent miners in just about every one of them. One of the states that were mentioned was Montana. And, actually, I heard the Stillwater Mining Company mentioned. And I use that as an example because they, too, when they opened up, they had the East Boulder Mine on one side of the mountain and the Nye on the other. Very sensitive rivers run right next to it. The Yellowstone River. You can throw a rock from the parking lot right into the river. So you can imagine when that mine opened up we heard a lot about the same things that are going on here. They went through a stringent, rigorous environmental impact statement that's done here and they met the standards. But the fight was still going on. They started to mine. They showed that there was no pollution that was coming. And the regulators were right. They did it right. Now, what the mine did was talk to the environmentalists and said, look, come on in here and look what we are doing. Don't just raise heck or make false statements and file lawsuits and on and on and on. We meet the vigorous environmental standards that are here. Come and look at what we are doing. And they formed what they called after many, a couple of years of talks the Good Neighbor Agreement. This Good Neighbor Agreement is transparent with everybody. And the environmentalists, the union and the company worked together to show that this can be done safely. Thank you. I hope you support PolyMet.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

183	Steve Giogi	Executive Director, Range Association of Municipalities and Schools	Good evening. Steve Giorgi, G-i-o-r-g-i. I'm from Mountain Iron. I'm the executive director for the Range Association of Municipalities and Schools. This is not my first rodeo at one of these hearings conducted by Commissioner Stine or Commissioner Landwehr. And, unfortunately, in the past, we have not always been in agreement. But tonight RAMS and the 72,000 residents who are members of our association stand here in support of all of the work that you have done on this project. The reason we are here tonight is because those two commissioners and their departments have done the environmental research and checked all of the standards. They have worked with PolyMet rigorously, we believe a little bit too long, but we have come to the right conclusion. That it's time to issue these permits. They have met the standards. They have met the tests. And these are the right things to do at this time. And I'm going to have some more remarks tomorrow down in Duluth. Hopefully, I will get a chance. We have got resolutions coming in from a lot of Range communities, from some groups, from our board. We have already passed a resolution of support for these permits and we will submit them for the record. But tonight I'm going to ask this crowd, mostly supporters here, to give these people a hand. Because they have done the work. We thank you for your dedication and hard work and making us get to this point and we hope this is the last delay and the permits do get issued. And it almost worked out perfectly, because you started the hearing with the mayor of Aurora, a good friend of mine, Dave Lislegard, and I was hoping we could wrap it up with a round of applause. But you are probably going to draw a couple of more names. But thank you. Thank you for your hard work on this.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
184	Robert Peterson	Citizen	Hi. My name is Robert Peterson. The last name is spelled P-e-t-e-r-s-o-n. I'm a senior here at Mesabi East High School. I sometimes question why my dad has only moved a mile in his whole life. I mean, it's kind of weird, he's 46 and he's only moved a mile his whole life. But then I think about today and the opportunities he has here on the Iron Range. I mean, growing up and graduating from Mesabi East High School is what I'm going to be doing here in June. Which my dad also did. He works at a mine now and we have a great life here on the Iron Range. When I think about my future, unfortunately, I don't see it on the Iron Range. As I've grown up up in my life, I've seen businesses close and doors close. It's not something I want to put a family towards when I know that the economics are unstable. My dad works in the mines. Which is a great job when they are open and running. But you never know when a layoff is going to happen. For example, the Mesabi Nugget is now not running when it was up and running not less than two years ago. What I would really like to see is to see PolyMet go through so I can come back here after college and the Air Force and raise my family and live here happily. So I urge you guys to pass these permits. Thank you for your time.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
185	William Whiteside	Citizen	My name is William Whiteside, W-h-i-t-e-s-i-d-e. Thank you all for being here. I'm really impressed to see this crowd still hanging out here after all this time with dedication. I think that you have all had a chance to appreciate the high caliber of people that we have here in northern Minnesota. "..." So I would like to just say there has been mining in North America in copper for thousands of years. Thousands. We went through a period of time where we industrialized and we had a learning curve, which we got through. And these minerals that are in this area, the copper and precious metals, they were known before I was born. One of the first things I remember was exploration. ".. We could get it done and we could keep our environment. We could make a good living. We can produce important products for the world, for our country. And this whole area here has been extremely important to this country. We have provided the backbone to preserve liberty in the world from our iron mines that built the ships that saved the world from becoming a totalitarian swamp. You know, just the disaster of World War II, for example. And we can still provide these rich resources for all the technology that we need to go forward and to live in a society that is going to be free and be able to use our intelligence to have good health, to have good transportation, to have good education, we need these resources. And so we need to go forward with this. We have the technology. We can provide for our ownselves a more diverse economy in this area and hopefully we will be able to capitalize on that with further industries to utilize these materials that we will be producing. Thank you very much. Let's go forward.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
186	Nick Rowse	Citizen	My name is Nick Rowse and I live at 10704 Prescott Court, Burnsville, Minnesota. I am here to advocate and bear witness for the continued, strict protection of the Boundary Waters Canoe Area Wilderness, specifically from the NorthMet Mining project as proposed by PolyMet Mining and in their nationally owned mining company.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
187	Nick Rowse	Citizen	For 33 years, I have lived and worked in Minnesota and specifically have experienced the joy and recreation provided by the Boundary Waters Canoe Area Wilderness. Whereas, copper and nickel mining will expose subsurface rock to air and water erosion resulting in acid mine runoff...	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

188	Nick Rowse	Citizen	..... whereas, air pollution will degrade air quality for recreation within the Boundary Waters Canoe Area Wilderness; whereas, significant noise will result from blasting and degrading quiet recreation within the Boundary Waters Canoe Area Wilderness; whereas, air quality is a high priority on federal land, specifically on nationally recognized wilderness areas such the Boundary Waters Canoe Area Wilderness; whereas, the State of Minnesota must protect wilderness values provided by the Boundary Waters Canoe Area Wilderness for current and future generations of Minnesotans; whereas, large-scale mining on more than 4000 acres of currently forested land will result in releasing air pollution over the Boundary Waters Canoe Area Wilderness,.....	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
189	Nick Rowse	Citizen	....and; whereas, the Fond Du Lac Tribe of Lake Superior Chippewa, the Grand Portage Band of Lake Superior Chippewa and the Bois Forte Band of Chippewa will suffer the loss of wild ricing leading to the degradation of their livelihoods in waters downstream at the proposed project due to changes in water quality.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Because the authorized discharge from the WWTS is limited to 10 mg/L and the required engineering controls will prevent unauthorized discharges, the project as designed will not harm wild rice.	
190	Nick Rowse	Citizen	One more whereas. These tribes were treated unfairly by the Corps of Engineers and the Minnesota Department of Natural Resources during the environmental review process.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
191	Nick Rowse	Citizen	Because the long-term integrity of tailing ponds in copper-nickel mines worldwide has proven to be inadequate, resulting in irreparable water pollution, the Minnesota Pollution Control Agency must deny the NPDES/SDS water quality permit. There is no failsafe technology to contain mine waste material in perpetuity, which will result in degradation of water quality in the Boundary Waters Canoe Area Wilderness.	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
192	Nick Rowse	Citizen	Finally, the wilderness values given to people across this nation must be the highest priority. Wilderness can never be replaced. That's it.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
193	Tom Peterson	Citizen	My name is Tom Peterson. I'm disappointed the way the governor has been handling this process on money to northern Minnesota. We gave $500 million to the Vikings stadium, and I think he should be giving $500 million to the Iron Range. They think there is 350 jobs are going to be over the long run here. And if you figure 350 jobs dividing that into the $500 million for the stadium is $17,000,500 a year, and that's enough for 28 years of well-paying jobs for the Iron Range. So they can start an Olympic training facility, they can build factories for the solar panels, they could do a number of environmental projects.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
194	Tom Peterson	Citizen	We don't need to bring these toxic metals to the surface. They are buried underground for a reason. For human species to survive on this earth, we couldn't be walking on coal and mercury and oil and lead. That's why they are all buried underground, and that's how the human species has survived. To bring this stuff to the surface is just another ecological nightmare. We have ruined our planet. There is no going back. And now to have this project, just one more foot in the grave, for the world is appalling.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
195	Todd Dobesh	Citizen	Good evening. My name is Todd Dobesh from Minneapolis, Minnesota. The City of Lakes. It has come to my attention after numerous years that the DNR is finally ready to reach its resolution on the PolyMet mining issue and the permits regarding that. I've been following it. I've been following it in depth and I have heard both reasons for and against it, and I feel that the principalities for the permit have been both false and self-effacing and that there are so many ways that they misrepresent the facts and play on people's emotions.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
196	Todd Dobesh	Citizen	I understand why in this tight-knit community of the North Shore a good paying job is important and both the State and the organizations at the behest or behooth, I don't know what it is, of the taconite mining industry have been self-serving and misrepresented the fine people and culture that's engrained so deeply in this community. The very organizations that they bring forth out of obligation to their covenant with the people for economic development and opportunity in lieu of tax write-offs in reality are politically strong armed to rebate those charges back to the mining principalities. I could go on	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

197	Todd Dobesh	Citizen	But I believe PolyMet, which is a shell organization, is a crock of shit because they refuse to list the Swiss venture capitalists who would benefit in this top-heavy, winner-take-all profiteering scandal. And I would cite that they should man up and identify themselves to the American public and the other principalities of this argument so that we can see them for what they are, which is self-serving oligarchs. Yours truly, Todd Dobesh.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
198	Michael Link	Citizen	I live in Willow River, Minnesota. I live in a state forest. I'm surrounded by areas in which we manage and use our resources, and I support that. I'm also a professor of environmental studies for Hamline University in St. Paul. I was formerly the director of the Audubon Center in Sandstone, Minnesota. I have guided in the Boundary Waters. I have explored this entire land. And in 2010 with my wife walked around Lake Superior. When we walked around Lake Superior it was a culmination of a career of over 40 years in environmental studies and environmental concerns. We did it because we cared about freshwater, we cared about this vulnerable landscape that we are in with a geology that is not very forgiving when we put pollution in our waters or do things to alter the landscape. We did it to raise consciousness amongst people in three states, two countries about Lake Superior and about that great land we call the border lakes. We have now reached a point where it's essential for us to speak up and say no to PolyMet, no to this mining that will create a sulfate disaster in our great state and the watershed of lake Superior.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
199	Michael Link	Citizen	We have had the opportunity to wander in this land with a lot of different people, including a number of graduate students and teachers who we have helped to explore and see the sensibility and the fragility of the landscape. When they talk about PolyMet and the potential for being safe, we know it's a lie. It's a lie because we have something going on in numerous states around this great America and in numerous provinces in Canada and in places in South America and other countries where they face the same issue and no one has ever resolved the problem with the sulfide. Even now, we are told to feel good because there will be a bond put up to protect and maintain the waters that we'll potentially pollute for over 500 years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
200	Michael Link	Citizen	It's easy for the PolyMet and even the DNR scientists to lie because none of them will be alive during the status of this threat to our conditions, to our water and to our future life. This isn't just an issue of jobs in the old Iron Range. It is a world issue. And, yes, we use copper and we use other minerals in the things that we are sold and have become part of or daily lives. But that's not a justification for destroying the future for stealing from our grandchildren, for making other generations have to face the problems that are created by our generation.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
201	Michael Link	Citizen	We need to have the courage to speak up, we need the courage to say if I have to be without a smart phone, I will live without a smart phone. We have to know that decisions we make today aren't about us. I'm 72. My grandchildren are the ones who are going to face this and their children. And I care more about them than I do about a 20-year job that PolyMet might offer as a bribe to be able to get to come in and rip up our landscape. Tohave a corporation that isn't even from the United States controlling the assets of the United States is wrong. In 1986, I was with Sigurd Olson at a hearing in Ely in which we spoke up for the wilderness and the beauty of that landscape. During that same year, I was with Bud Hinselman in Washington, D.C. as we worked to protect that land through the wilderness bill. Sigurd Olson said to me that we cannot afford to loose any of these battles. Because the Boundary Waters is always going to be a target for somebody to develop. But once we lose, there is no going back. We can't put back what is destroyed. And so my stand today and for the rest of my life will be do not destroy our land, take care of our resources, do not sell out the beauty and the importance of our natural landscape for quick profits and promises that can't be fulfilled. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

202	Maureen Skelly	Citizen	Hello. I'm Maureen Skelly. I'm a native Minnesotan. I'm a grandmother and an educator. I worked on Isle Royal, which is an international biosphere preserve and lived in Grand Marais. I presented at the International Water Conference at Eisenhower Hopkins High School and organized for the Women and Water Rights conference at the University of Minnesota. Five hundred years, 500 years is 2050. No, 2520 is 500 years from now. That is if we would say that a generation is 100 years, that would mean that the people that are going to inherit the water monitoring from this project is our grandchildren, our great grandchildren, our great, great grandchildren, our great, great, great grandchildren and our great, great, great, great grandchildren. We are leaving a potentially horrible toxic mess for all these people yet to come in the future for a 20-year mine for 360 jobs. Perhaps 900 jobs. History will probably look back on us as short-sighted, greedy, incapable of self- sacrifice and disrespectful of future generations.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
203	Maureen Skelly	Citizen	I am requesting that PolyMet receive no permits until they explore as a compromise the dry stacking process. I teach my grandchildren in workshops in their elementary schools that as native Minnesotans in the land of 11,000 lakes and source of the largest river in North America bordering the largest freshwater lake in the world that it is their duty and responsibility to protect the water in this area. We all want the miners to have good jobs. With all the money that has come into the state with the Super Bowl, can't we put our heads together and provide some jobs training programs or come up with some new projects so the people that live up there will have good jobs. It's not impossible.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
204	Maureen Skelly	Citizen	All this infrastructure for mining was mentioned. Well, how about using some of the infrastructure that the roads and the buildings for the mining, how about enticing a solar company to come up here. How about wind. How about maybe building a new hospital. There are options. We don't have to have this be the only source of income for desperate people. The grandmothers say no, you do not propose a proposal -- it is unacceptable to have a proposal that will pollute potentially where the water has to be monitored for 500 years. We can't even see what's going to be happening 50 years from now. We are in a time of population growth, we are in a time of climate change. It is the wrong time and it is the wrong proposal for this area of the country. This is also larger than jobs in northern Minnesota. And we love the miners and appreciate all the people that really believe in this project that really have tried hard. But it could very well happen that people from all over the world will be coming here for water. So we don't know what the future will bring. Anyway, I guess that's all I have to say right now. But I really, really encourage the compromise of dry stacking and say no to a project where the water has to be monitored for 500 years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
205	Kathleen Crowley	Citizen	Speaking as a lifelong Minnesotan, as a mother and grandmother and someone who spent 4 1/2 months walking the entire shoreline of Lake Superior, the greatest reservoir of freshwater in the world, my problem with this mine proposal is that I consider it morally wrong to propose implementing a type of mine that has historically been proven to cause or create toxic wastewater that lasts for hundreds of years. There has not yet been an example of a copper-sulfide mine that has not leaked or leached its toxins into surrounding watersheds or streams.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
206	Kathleen Crowley	Citizen	Minnesota's greatest resource after its people is our freshwater. There is nothing in the natural world that is more precious.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
207	Kathleen Crowley	Citizen	We are told to believe a foreign mining company that says, quote, "trust us," end quote. We know what we are doing when they cannot point to one example that has been without failure. If the mines don't leak, they leave behind poisonous holding ponds that must be, quote, "managed," unquote, for 500 years or more. And this is confirmed by the mining companies themselves. This is insane. Our country has only been in existence for two and a half centuries and we are supposed to believe that this company will fund and provide supervision of said poisonous waters for hundreds of years.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.	
208	Kathleen Crowley	Citizen	In Butte, Montana there is one such pond and every year countless waterfowl die when they land in it. What do the people promoting this mine think about the future when our state bird, our beloved loons, mistake the PolyMet holding ponds for lakes? These are birds that already face environmental challenges. The last thing they need is this kind of threat.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

209	Kathleen Crowley	Citizen	We have been told this mine will have a lifespan of 20 years. And then what? What do the people in the Iron Range do next? This is classic bust and boom mentality. With all the intelligent, hardworking people in Minnesota, I just can't believe we can't find a better, longer-lasting solution to their difficult economic problems.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
210	Kathleen Crowley	Citizen	As a mother and grandmother, I care desperately about the future health of our water resources. I have three grandchildren living in Duluth and we love Lake Superior. And the PolyMet mine is in the Lake Superior watershed as well as the watershed of the incomparable Boundary Waters. I beg the DNR to consider its responsibility for protecting our precious waters far into the future and deny this mining permit.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
211	Maureen Allen	Citizen	This is Maureen Allen. I am from Minneapolis. I live in Stillwater. I am an enrolled tribal member of the Ho-Chunk Nation and I came here with my mother who this is an important subject for her, so I tagged along. She's a second-time cancer survivor and the environment is very important for her, so it's important to me. The only thing I really wanted to say was I think if the company does any mining in Minnesota, they should be under their legal name not under a subsidiary or umbrella company. I think it's PolyMet Minnesota and I think they should have the name of the company for everything. All legal documents should have the main company name on it. All legal documents. And I believe that company is out of Switzerland. I'm not sure. That's all I really wanted to say.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
212	Anja Curiskis	Citizen	My name is Anja Curiskis and I am here to urge the DNR to deny the permit to mine for PolyMet and urge the MPCA to deny all PolyMet pollution permits and certifications. Water is life. We do not want to risk our precious resource. I believe there is room in Minnesota for better industries. Industries that do not threaten our safety or well-being. I would ask only why risk our most precious resource for the profit of the few. Thank you.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
213	Stephanie Pearson	Citizen	So my name is Stephanie Pearson. I grew up in Duluth. My paternal great grandfather immigrated from Sweden to mine and log in Tower, Minnesota. My family had to move away because mining is not a sustainable activity. And I since went on to become an editor at Outside Magazine, a nationally renowned publication.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
214	Stephanie Pearson	Citizen	Two years ago, Outside assigned me a story about Lake Superior because they realized that it's one of the most pristine bodies of water left on the planet and that the potential for recreating and the wilderness potential is unparalleled. And as one of the people I interviewed for the story told me, that this is some of the best and most strategic water on the planet. John Downing, the director of the Minnesota Sea Grant, told me that wars have been fought for thousands of years over water like this. So I would ask why are we voluntarily putting this resource at risk? And that's all.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
215	Tom Thompson	Executive Board, Northstar Chapter of Sierra Club	Hello. My name is Tom Thompson, and I'm on the executive board for the Northstar chapter of the Sierra Club. I live halfway between where we are today and where PolyMet is proposing to be built. Some argue that we need more copper for our gizmos: Our cell phones, our wind generators, our electric lines, our TVs, our Game Boys, our hybrid cars that need copper. So is there a shortage of copper? I looked at the copper markets yesterday, and they didn't look like there was a shortage. If anything, the copper market was down, not up. Furthermore, copper dispersed -- production is dispersed throughout the world, not just here. I don't think there's a need to fear that there won't be enough copper for our gizmos. Why not increase recycling efforts? And it should be noted that there is progress towards wireless electric transmission. Apple has pledged not to use mined materials in their products, and Subaru brags about all their parts being recycled. And it should be noted that there is progress towards wireless electric transmission. Apple has pledged not to use mined materials in their products, and Subaru brags about all their parts being recycled. Another argument says that this country has more strict protections than most other countries, so do it here. To me, this is a comment on the sad state of affairs for the world, since I believe that ours are far from what they should be. However, if this is true, I would like to see the list of foreign mines operating with inferior protections that will be closed should PolyMet be built. What? There isn't one? No other mines will close?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

216	Tom Thompson	Executive Board, Northstar Chapter of Sierra Club	That means that however good PolyMet might be or not be, it will add to the total amount of pollution from copper-nickel mining in the world, not lower it. Regardless, PolyMet will add to the pollution going into the waters of northeast Minnesota, Lake Superior, and the Boundary Waters. In the scheme of things, PolyMet is not needed. There is no apparent shortage of copper in the world. So if a copper-nickel mine really isn't needed that much, what do Minnesotans and Americans get out of it? A permission slip will be given to a foreign corporation to dig gigantic holes, pile rocks into huge mountains, destroy thousands of acres of habitat, forests, wetlands, and recreational areas, creating giant lakes full of toxins and heavy metals, and to allow sulfides into our rivers and streams, threatening wild rice and increasing the methylation of mercury, infecting fish eaten by many, including children. Thus, much of the water we consider the -- much of the area that we consider the bedrock of Minnesota where people live and thrive will, in effect, become a mining -- a sulfide-mining industrial zone. No permits. Thank you.	The status of the global copper market is, legally, not a consideration of the NPDES/SDS permitting process; any permit issued must comply with state and federal pollution control and permitting regulations. Treatment of PolyMet's discharge through the WWTS using membrane treatment technology (e.g., reverse osmosis) and where enforceable operating limits for sulfate and various metals apply, will minimize effects on downstream water quality. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. It should be noted that the project is located in the St. Louis watershed and will not affect BWCA's watershed.
217	Brad Boos	Citizen	My name is Brad Boos, from Moose Lake, Minnesota, and I support PolyMet. And I want to defer my time to Commissioner Keith Nelson.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
218	Keith Nelson	Commissioner, St. Louis County Board	Good afternoon. I am Commissioner Keith Nelson, currently serve as the chair of the St. Louis County Board. Commissioner Landwehr, imagine the day that I would come in front of you and thank you. I don't think you imagined that, some years back. With that said, I truly do want to thank you for the science, for the work that you've done on this project. It is -- the people of St. Louis County, that I have been so proud to serve for these last 14 years, truly appreciate the efforts that have been made.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
219	Keith Nelson	Commissioner, St. Louis County Board	For my the friends out there in labor, for my friends out there with blue hats on, I cannot thank you enough for the patience that you have had. I hope that this is the last time we have to meet on a project which has significant merit and which has proven itself both in science and in process. To my dear friends out there with the orange bandannas, I have to tell you: I like a good cowboy, I like a good cowgirl, and you are my friends. I hope that as this process moves forward and this project moves forward, you will join me in the prosperity that this county is certainly going to see as a result. With that, and since this organization -- this -- or the rules of this event are that we can't clap after people are done, I'm going to cede the last minute of my time to my friends out there in labor who want to use their two hands to clap now and work later at PolyMet.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
220	Mike Casey	Citizen	I'm Mike Casey. I'm going to cede my time to Ricky DeFoe.	This comment simply defers speaking time to another individual. No response needed.
221	Ricky DeFoe	Citizen	Thank you, Mike. My name is Ricky DeFoe, R-I-C-K-Y, D-E-F-O-E, from the city of Cloquet. If we take a look out at this lake out here, the Ojibwe call it "gichi Ojibwe gami," "the great sea of the Ojibwe." Now, we talk about fealty. Who do you owe your allegiance to? Do you owe it to death, which is when we pollute, we continue to do these things as proposed? Or do you owe your fealty to life? Now, we talk about who is in the -- the Commissioner's -- who are the plutocrats? Who are the kleptocrats? Who are the bureaucrats? Who do they owe their fealty to? We often wonder. And then we say -- I was raised here in Duluth in the hillside. 35 years of my life. I know a little bit about a book, and in that book, it says the iniquities of the father will be met on by -- in the third and fourth generation, the kids. So I wonder about those things. Do we need to shine a light on those whose fealty it is about death? So we realize we are here about life, water. Mother Earth is crying about all the damage from pillaging in the rape of our Mother Earth. Life. We talk about a world view. Mainstream America's world view is dominion over all things, hierarchy of life, and an almighty, transcendent God, and we know that the ambiguity, the conflict, the tension that is coming now is a reflection of those things that are unresolved because of the dysfunctional cosmology, a dysfunctional world view.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
222	Ricky DeFoe	Citizen	These folks, the State of Minnesota, owe their fealty to death. When we take a look at when we're destroying waters such as pristine Lake Superior -- who's known throughout the world -- our planet, our Mother Earth, we have to begin to think in terms of life, not destruction. So we sound out to yous: Who do you owe your fealty to again? Anishinaabe have a world view where all things are interdependent on one another. Our world view is one that has the "Great Mystery," and then we come down to the star world, and then the moon, the sun, and finally to our Mother Earth. And on our Mother Earth, we have orders of things -- we have orders of things: The rock nation, the plant nation, the animal nation, and last, man. We can't live without them; they can live without us.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

223	Jim Sanfferer	Citizen	My name is Jim Sanfferer. I was born and raised in Minnesota. I'm a veteran. I spend many days hunting and fishing in northern Minnesota. My family -- my son has a home on Lake Vermillion. I don't think anybody appreciates the land, the water, the trees, and nature anymore than I do. I spend a lot of time hunting and fishing, and I love it up here. However, we do have a need -- it was several years ago when we were at war with -- in Europe and in the Pacific, and it was the ore that came out of our hills here that really, probably, saved this country, in making the planes and the tanks and the ships and everything that was needed for our military to be successful. Today, we're still at war. We have people in this world that would like to put away with our entire way of life. And with the rocket boy, now, and his little rocket with the atomic bomb on it, he can hit our nuclear -- oh, shake your head -- he can hit our nuclear -- our electrical grid, and he can put us all out in no time. We can't let that happen. War today -- or -- our military today uses a lot of new technology. We have unmanned aircraft, we have satellites, we have all kinds of computers. Just about every part of the military industry uses technology and computers to -- for their -- for their efforts. So it is our obligation to provide them with the materials that they need to be successful, and that's all these special, precious metals that we have here under our feet today. We do not want to buy from oversees because that's exactly what will happen. We have it here; let's use it. God bless the military men and women today, God bless the mining industry in northern Minnesota, and God bless the U.S.A. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
224	Tonia Kittelson	Friends of the Boundary Waters Wilderness	Hi, there. I'm Tonia Kittelson. I'm with the Friends of the Boundary Waters Wilderness. Thanks for letting us speak tonight. We strongly urge you to reject the Poly Met-NorthMet sulfide-ore mine proposal permits that are in front of you right now. You're considering some pretty serious stuff, so I appreciate your critical review of it. You asked us to content -- asked us to comment on content that is new or unresolved at this state, and there are a few that I'm going to list right now.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
225	Tonia Kittelson	Friends of the Boundary Waters Wilderness	One is that I ask you to require PolyMet to use the best available technology for storing mine waste, and that would be dry stacking. That's currently the industry's best standard for storing mine waste versus storing it in a liquid form, kind of a waste, the slurry that's stored behind an earthen-built dam. The earthen dams are actually old technology and are the main reason why so many sulfide-ore mines seriously polluted in the past. PolyMet has promised to use best industry standards, and dry stacking is recommended, so the permits you are currently considering allow PolyMet to use the old technology.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
226	Tonia Kittelson	Friends of the Boundary Waters Wilderness	Another is: Given that acid mine drainage from PolyMet mine dam that cracked -- collapsed in 2014, that pollution traveled 400 miles And I mentioned this last night in Aurora, but it's worthy of repeating here: I'm asking that you determine how far that that acid mine drainage pollution will travel into Lake Superior. From where the PolyMet mine sits, if you go 200 miles downstream, you get to our lift bridge, which is just outside of the DECC here, and another 200 miles past that goes out into Lake Superior, and that's 400 miles. So maybe PolyMet mine pollution goes not quite that far, but maybe it goes further. But as citizens of this state, I think we deserve to know how far that reach of contamination extends before you make a decision.	This comment pertains to issues considered in the development of the DNR Dam Safety permit. Regarding potential contamination from the discharge from the WWTS, the discharge is required to meet Operating Limits for sulfate, copper, arsenic, cobalt, lead, nickel and mercury at the point of discharge at the project site. The permit also states that the discharge must not violate water quality standards; again, this would be at the point of discharge. In addition, the project will include other engineering controls such as stockpile liner systems and seepage capture systems that are designed to control wastewater and runoff from the facility to prevent the pollution of downgradient water. Consequently, impacts to the St. Louis River and Lake Superior will not be discernable.
227	Tonia Kittelson	Friends of the Boundary Waters Wilderness	I request that you require an updated financial analysis. The last one was done in 2008. It's been 10 years, and no one -- not -- and no one should -- and no one, including the State of Minnesota, should make a decision based on 10-year-old financial information.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.

228	Tonia Kittelson	Friends of the Boundary Waters Wilderness	Lastly, I request that you require PolyMet to prove it can capture and collect 90 percent of its wastewater before you make a decision. No other metal mine has ever captured 90 percent, let alone suggested that they could. Mines usually promise high and perform low, meaning they usually promise 60 to 80 percent capture rate, but fall short of their promises by about 25 to 30 percent. PolyMet plans to use the same technology that other mines have used -- nothing new, nothing better -- yet claims it will achieve what has never been achieved before, so please reject the permit application and require that proven technology be used to capture 90 percent of wastewater. 10 percent of billions of gallons of wastewater is bad enough. It's too much pollution to allow in our public waterways. Please do not allow more than that. Thank you.	The containment systems function on the principle of maintaining an inward hydraulic gradient across the barrier wall that is part of the system design. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the capture system. The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. The comment questions the efficacy of controls of the seepage capture systems required in the NPDES permit at the Mine Site and Plant Site. The same issues were raised in the EIS and DNR, in consultation with MPCA, considered those issues. The comment does not raise any new facts for MPCA to consider at the permitting stage, it merely disagrees with MPCA's conclusion.	
229	Paula McCabee	Advocacy Director, Water Legacy	Thank you. Good evening. I'm Paula Maccabee, the advocacy director for Water Legacy. I live in St. Paul, but Water Legacy is based in northeastern Minnesota. All of our board members either were born in or live in northeastern Minnesota.	Background statement for comments to follow. No response needed.	
230	Paula McCabee	Advocacy Director, Water Legacy	I'm a bit of a technical person, so I'm going to focus on some specific technical issues in the permit to mine and the Minnesota Pollution Control Agency water pollution permit. And based on the technical information that I've read, I believe the PolyMet copper-nickel mine threatens Minnesota waters, downstream property owners and communities, the St. Louis River, Lake Superior, and Minnesota taxpayers. Now, you need to know that even if everything goes as planned, the PolyMet mine project would result in over 15 million gallons per year of untreated, contaminated pollution seeping into Minnesota groundwater, and from groundwater into wetlands and streams. PolyMet's mine pits, its tailings waste, and its waste rock piles, that's permanent. All have no liners underneath, and it would seep contaminated water for centuries, if not forever.	See response to Comment Water-740.	
231	Paula McCabee	Advocacy Director, Water Legacy	When the Minnesota DNR said, back in March of the 2016, that PolyMet's environmental impact statement was, quote/unquote, adequate, it relied on claims made by PolyMet that it would capture more than 90 percent -- no -- more than 99 percent of the polluted seepage at its tailings waste site. Now, PolyMet's claims were based on phony modeling. The only examples they gave of an unlined tailings dam was the Tar Sands tailings dam, which, since then, has resulted in billions of dollars of cleanup in Canada. Now -- so PolyMet used phony modeling, and we were hoping we'd see the DNR put in their conditions that no permit to mine unless you keep the promise and prove that you've captured over 99 percent of the pollution. But the DNR does not have any conditions for seepage captured, and PolyMet can break its promises without any consequences.	The effectiveness of the FTB seepage containment system was evaluated in the EIS. The permit has been revised to include the barrier design specifications (i.e., thickness, permeability) that were evaluated in the EIS and that it be constructed and operated so as to maintain an inward hydraulic gradient across the barrier. The containment systems function on the principle of maintaining an inward hydraulic gradient across the barrier wall that is part of the system design. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the capture system. The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. The MPCA has revised the language of the permit to state that if an inward gradient is not reestablished within 14 days of detection of an outward gradient, it is a violation of the permit. The permit also requires that the effectiveness of the seepage capture system be evaluated on an on-going basis.	
232	Paula McCabee	Advocacy Director, Water Legacy	The Minnesota Pollution Control Agency draft water pollution permit is just as weak. The MPCA wouldn't limit pollution through groundwater that seeps up into wetlands and streams and harms water quality, fish, or wild rice. In fact, the Minnesota Pollution Control Agency doesn't even propose to monitor at those really close-by wetlands and streams, so PolyMet could pollute Minnesota surface water for decades with acid mine drainage, sulfate, and toxic metals and no one would be the wiser.	See response to Comment Water-723.	
233	Paula McCabee	Advocacy Director, Water Legacy	That is not what we want from either the DNR or the PCA. We are counting on you to protect us.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

234	Paula McCabee	Advocacy Director, Water Legacy	Now, here's something even more dangerous for any of you who live downstream. The DNR permit turns a blind eye to another huge risk: The threat that PolyMet's dirt dams, that are supposed to hold back tailings waste, would collapse. PolyMet is only being required to put up $10 million for what could be hundreds of millions of dollars in liability. Thank you.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.
235	Kristin Larsen	Friends of the Cloquet Valley State Forest	Hi. I'm Kristin Larsen, with Friends of the Cloquet Valley State Forest, and speaking for me today is Jan Kehoe (phonetic), and Jan is the supervisor of North Star Township.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
236	Jan Kehoe	Supervisor, North Star Township	Hi, yes, my name is Jan Kehoe. I'm a wetlands scientist and a past president of the Society of Wetland Scientists. I'm going to speak today in -- with concern about the permit to mine -- okay? I'm short. A couple of things. First of all, the wetland loss around the mine has been grossly underestimated in the narrative document because the analog model that was used has scientific flaws through analysis of a bedrock type that's not present there, and so I think that the damage to wetlands around the mine will be much greater in scope and geographic area, and that's a concern.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
237	Jan Kehoe	Supervisor, North Star Township	The second concern I have is that the construction of the mine and operation will result in 1,000 acres of wetland loss that will not be replaced because the mitigation bank that's planned to be used -- that is, the Superior Mitigation Bank -- is comprised largely of healthy wetlands. And so the peatland types that the mine will destroy will not be restored in the mitigation area. They'll be -- credits for mitigation are going to be comprised entirely of preserving natural wetlands, so this results in the total loss of 1,000, or even more acres, of wetlands overall during the project. So I'll be very brief. I'd like to ask the DNR and the MPCA to deny the permit until they can show that there will be no net loss of wetlands. Thanks.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
238	Catherine Kohlmeier	Citizen	I'm Catherine Kohlmeier, and I cede my time to Rich.	This comment simply defers speaking time to another individual. No response needed.
239	Rich Staffon	Duluth Chapter of the Izaak Walton League	My name is Rich Staffon, R-I-C-H, S-T-A-F-F-O-N. I'm speaking for the Duluth chapter of the Izaak Walton League. I can remember when the lower St. Louis River in Duluth was an industrial wasteland. It was not fishable, swimmable, or drinkable. Thanks to the Clean Water Act and after spending nearly half a billion dollars, the river has been restored to the point that it is now an economic asset, rather than a liability for Duluth. It does not seem consistent policy to us to spend so much money to clean up the lower river and then issue permits to create an industrial wasteland in the headwaters.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
240	Rich Staffon	Duluth Chapter of the Izaak Walton League	Copper and other minerals are valuable for our economy and society, but they're not more valuable than water. Water is essential to everything we do. Protecting watersheds is how we safeguard our water. The land where PolyMet wants to build their mine was purchased with the Weeks Act for the very purpose of protecting the headwaters of the St. Louis River. It defies common sense that we can sustain this watershed while building a toxic mine in the midst of the headwaters. This is a forested, swampy, stream-laden landscape, an ill-suited place for Minnesota to experiment with the risky business of copper mining.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
241	Rich Staffon	Duluth Chapter of the Izaak Walton League	If it is so important that we mine these minerals, the permit should at least require PolyMet use the best available technology, such as dry stacking of tailings, rather than storing them in a flooded tailings basin that we know will leak into surface and groundwater, and if the dikes fail, send a slurry of contaminated water right into the river.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
242	Rich Staffon	Duluth Chapter of the Izaak Walton League	One of the duties of DNR is to promote the mining of our state's minerals. Because of this bias to support mining, we ask that a contested case hearing be held as a check to make sure that the facts around copper and nickel mining are complete and accurate.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Requests for a contested case hearing were evaluated according to current state law.
243	Rich Staffon	Duluth Chapter of the Izaak Walton League	And as a check on the safety of the mining itself, we ask that the permit require that all employees who mine, transport, and process the ore be regularly monitored for the uptake of pollutants. They are the canaries in this mine, and monitoring their health would be the best way to determine if the standards are being enforced and are actually protecting the workers and our environment.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

244	Rich Staffon	Duluth Chapter of the Izaak Walton League	Finally, we're especially concerned about the way industry and our state legislature has been able to thwart the enforcement of existing water quality regulations. What good are these permits if they will not be enforced? We recommend that before mining, Minnesota should consider recycling copper as a better way to meet our needs for this metal. If there's no shortage today, we believe it would be prudent to not issue a mining permit at this time, leave these minerals in the ground, and wait until mining technology is advanced so we can mine them safely. It is time for somebody to stand up and just say no. Thank you.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
245	Janet Draper	Citizen	I'm Janet Draper, and I cede my time to my wonderful city counselor, Gary Anderson.	This comment simply defers speaking time to another individual. No response needed.
246	Craig Olson	President, Duluth Buildinng and Construction Trades Council	Good evening. Thank you for the opportunity to speak here tonight. My name is Craig Olson. I am president of the Duluth Building and Construction Trades Council. I represent approximately 16 -- 6,000 men and women that work in the construction industry in this region. Many of them are here tonight, and I want to thank our brothers and sisters from the Building and Trades Movement to be here -- be here with PolyMet and to stay strong with us through this process. The State has thoroughly reviewed the NorthMet project, and PolyMet has proved the project permit conditions protect Minnesota's environment by creating hundreds of living-wage jobs in the area in a state that really needs them right now.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
247	Craig Olson	President, Duluth Buildinng and Construction Trades Council	Northeastern Minnesota has the potential to be a global powerhouse of responsible, strategic metals mining. The NorthMet Project will bring new life to an idle taconite plant and mine. With this new life, the region will rebound, communities will grow, jobs will be created. It's estimated that 650 construction workers will be employed on this project alone and an additional 350 jobs in operations once the mine is open. Estimates are that there are 200 -- or -- 2 million hours of construction. 2 million hours. This is equivalent to the Minnesota Twins stadium in Minneapolis. Think about the good jobs that were created when the new stadium was built. We have the trained workforce, the existing roads, the rail, the piping, the power, the tailings dams, and other infrastructure already in place.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
248	Craig Olson	President, Duluth Buildinng and Construction Trades Council	There is no better time or place to build the mine. The NorthMet ore body is part of a world-class resource. It's located in the middle of a mining zone where mining has occurred for more than 135 years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
249	Craig Olson	President, Duluth Buildinng and Construction Trades Council	I, along with my union brothers and sisters, have been waiting a long time, and, quite frankly, have been waiting long enough. It's time for the State to finalize and issue the permit so that we can get these projects underway to get our people back to work. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
250	Lynne Pickart	Citizen	Good evening. My name is Lynne Pickart, L-Y-N-N-E, P-I-C-K-A-R-T. Tuesday night, a lot of us went to the caucuses, right? A lot of us went to the caucuses? Yes, we did. We did our civic duty, we participated, we brought up sulfide mining, and we presented resolutions against sulfide mining. Of course, a few folks at our caucus didn't like that, and one lady pointed out that it isn't called "sulfide mining." It's called "copper-nickel mining." I beg to differ. What Minnesota gets out of sulfide mining is sulfide slush, acid mine drainage that is full of mercury, arsenic, lead, asbestos-like fibers, toxic stuff. We get air pollution, gigantic waste piles, tailing pipelines, and the 24-hour around-the-clock light and noise pollution. Most of the copper, nickel, platinum, gold will go someplace else. Most of it will go to China. One of the folks at the caucus -- this is a good place to go for information -- said that we don't even need the copper here. Most of it could be recycled copper. How about that? Minnesota gets big holes in the ground as big as cities, as deep as forever. When they're all done in 20 years, what goes into the holes, I wonder? Water? Dirty water? Minnesota gets higher taxes to pay for the cleanup that they left behind, long-term costs, contamination of fish and wildlife. Minnesota gets America's biggest polluting industry. I live in Duluth; I love Duluth. I actually moved here, but my spirit lives in the Boundary Waters, waiting for me.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
251	Jody Starch	Citizen	Hello. My name is Jody Starch. I'm a Local 49er from Mantorville, Minnesota, and I support PolyMet, and I defer my time to Senator Tom Bakk.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

252	Tom Bakk	Senator, MN District 03	Good evening. I'm Senator Tom Bakk. The PolyMet mine will be in my senate district. Thank you to all of the Department people, all of the PolyMet people that were not only employees, but contractors that have persevered over a decade of going through this process.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
253	Tom Bakk	Senator, MN District 03	And I think what we all need to understand is everything in life has some risk, so all of you that are -- all of you that are concerned -- all of you that are concerned, let me share a couple observations with you. I would bet you that in 1961, when NASA launched Alan Shepard into space, there was a whole lot of engineers that were very worried if he was going to come back. Other examples of 1962 John Glenn, Neil Armstrong, firefighters, policemen, immigrants. Immigrants are examples of risk and using the Iron Range to raise their family.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
254	Tom Bakk	Senator, MN District 03	And now let me just conclude by saying: All of you in blue hats -- and especially those of you who I saw pictures in the Mesabi Daily News today, young people wearing blue shirts -- dream big, just like they dreamed big when iron ore mining started in Minnesota and we ended up winning two world wars. Dream big, that some day we build the factories that make the pipe and make the wire and the Range is reborn. Because it can be done, but it will not be done without some level of risk, because everything in life carries some risk. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
255	Alyssa Hoppe	Citizen	My name is Alyssa Hoppe, and I cede my time to Henry Mott.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
256	Henry Mott	Professor, St. Cloud State University	Good evening. I'm Henry Mott. I'm professor of environmental engineering at St. Cloud State University, formerly of the South Dakota School of Mines and Technology, 35 years where I've been following environmental systems, and I think I've figured out how things move in the environmental systems.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
257	Henry Mott	Professor, St. Cloud State University	This closure plan that PolyMet has proposed is fatally flawed. We look at history, and there's 57 metal mines in 15 states right now that are producing acid rock drainage, and they will produce that acid rock drainage in perpetuity. They've used 1950s technology, and it just don't work. They've left rock piles on the surface, they've left processing pits open on the surface, they've left high walls, and they've left pits open to fill with acid rock drainage. PolyMet's plan is not that much different. They want to dump waste rock in the pit with no isolation measures. That will be a problem in perpetuity. They want to leave processing waste and open pits on the surface. Murphy will have his way with that eventually. They want to cover waste rock piles with thin plastic membranes. Microbial activity, root penetrations, freeze-thaw cycles will have those membranes looking like American flags that have been on flagpoles continuously for two years. So -- and then they want to leave the pit open. They want Minnesota's own version of Montana's Berkeley Pit: PH 2.5, toxic groundwater, unsolvable in perpetuity.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
258	Henry Mott	Professor, St. Cloud State University	All right? So what do we do? There's all these blue hats over here; all these orange flags over here. How can DNR bring those two groups together? They can say, "Now, in the future, if we're going to mine sulfide-bearing ore in Minnesota, we'll put the waste back into the repository." They can build that repository with an earthen barrier around the periphery. It will take 5,000 years for water to get through that earthen barrier. They can put a lake on top of that repository. They can have that lake have organic sediments. Oxygen will never get in. No oxygen gets in; no acid rock drainage will ever be produced. Now, DNR, there's lots of good rock. Let's drag some of that rock. Let's put some walleye-spawning areas in that lake. Let's use the rest of the rock. Let's use the rest of the overburden. Let's create some topography on the rock -- around the lake. Let's plant some trees.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comment generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
259	Anna Urbas	Citizen	Hi. I'm Anna Urbas, and I'm a resident of Ely, Minnesota, and I support PolyMet, and I defer my time to Representative Rob Ecklund.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

260	Rob Ecklund	Representative, MN House 03	Good evening. I'm State Representative Rob Ecklund, International Falls, Minnesota. Let me start with a few facts about copper and the everyday use we've all become accustomed to. Automobiles have an average of 44 pounds of copper in normal mid-sized cars, the average luxury and hybrid cars have 99 pounds of copper, the electric cars average 150 pounds, and Tesla tops them all with 186 pounds. The average wind turbine contains 6- to 7,000 pounds per turbine. We've all been accustomed to the joys of doing our work through the new technologies in the modern world. I would venture to guess that the vast majority or people present tonight have a smartphone in their pocket. Every smartphone contains more than 25 different precious minerals. Friends, it's really hard to be pro-green energy but still be anti-mining. I'm a guy that likes to enjoy some of the great microbrews that our state has become so famous for. I also enjoy touring these places. If you ever take a tour of a microbrew operation, just take a quick look at all the stainless steel and copper that it takes to put together even a small microbrew operation. These materials have to be mined somewhere. I would personally rather have them -- have the mining take place where we can be assured of the environmental standards that are the most stringent in the world, and that the workers' safety will be taken care of by the best labor standards anywhere.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
261	Rob Ecklund	Representative, MN House 03	Thank you to the DNR and MPCA for holding this public hearing. I am in favor of this project moving forward. We have the strictest and most stringent environmental regulations of any state or country in the world. My view of this project is that it can be done through science and research, and that we can safely mine copper and nickel and all the other precious metals available in the Duluth complex. It should move forward. To deny this project will just make us more reliable on imports from third-world countries that have little regard for environmental regulations or the working conditions of their employees.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
262	Rob Ecklund	Representative, MN House 03	Again, thank you for this public hearing, and I would like to close with a couple of thoughts: We won two world wars by mining on the Iron Range. Let's take this mining one step further. After the permit to mine is issued, let's make this area the destination for industry that could further develop the copper and nickel resource. There is no reason that we cannot build the electric cars, wind turbines, microbrew vats, that our new green economy is going to demand, right here in northern Minnesota where the resource, pride, and our great work ethic already exists. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
263	Adam Lantz	Citizen	Good evening. My name is Adam Lantz. I work with Minnesota Industries. We support responsible mining, and we support PolyMet. I would like to defer my time to Harry Melander.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
264	Harry Melander	President, MN Building and Construction Trade Council	Commissioners, good evening. My name is Harry Melander, 353 West 7th Street, St. Paul, Minnesota. I'm here as the president of the Minnesota Building and Construction Trade Council's chair and founding board member of Jobs for Minnesota. And I'm also here today, like the orange and the blue, because we all care about Minnesota. Our state has gone through a permitting process -- a thorough permitting process -- for the Poly Met-NorthMet Project. We, as Minnesotans, trust the science and the findings of our state experts, which shows that this project will protect Minnesotans and also our environment.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
265	Harry Melander	President, MN Building and Construction Trade Council	About the builders: The skilled laborers, the men and women of the building trades who will build this project and meet and exceed all the state and federal environmental requirements. To our Rangers, the miners: A well-trained professional and knowledgeable workforce that has more than 130 years of experience mining responsibly and taking care of our backyard. On the jobs: This project will create hundreds of job opportunities for workers to provide for their families and to bolster the economy of the Iron Range community and beyond. These job opportunities will bring well-paid, long-term, dependable jobs that are fit for highly skilled workers that are needed within this community.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

266	Harry Melander	President, MN Building and Construction Trade Council	Additionally, PolyMet trusted the process that they were asked. It has invested millions of dollars because they agreed with the process and have followed through with it. PolyMet has followed the State's strict regulatory reviews and permitting process. It has done everything that you and we have asked. I urge the MPCA, the DNR to grant these permits in a timely manner. It's time for the State to finalize these permits and allow Minnesotans to get to work. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
267	Bill Erzar	Citizen	My name is Bill Erzar, B-I-L-L, E-R-Z-A-R. I'm a lifelong resident of Ely and the Boundary Waters Canoe Area around which Ely has always been a part. And I'm a former school board member in Ely who has seen our school population dwindle. I'm a proud Air Force veteran and a retired, proud, union steel worker. I support PolyMet, and I defer my time a Lori Fedo.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
268	Lori Fedo	President, Hibbing Area Chamber of Commerce	Thank you. Good evening. My name is Lori Fedo, L-O-R-I, F-E-D-O, and I have been president of the Hibbing Area Chamber of Commerce for over 25 years. I've lived in or around mining communities my entire life, and I now live in French Township, just 30 miles north, as the crow flies, from the proposed PolyMet Project. PolyMet has been under -- or -- has been in this process for half of my career, and I'm kind of old. I strongly support the PolyMet Project because I believe PolyMet will mine safely in our region. I believe in the strength of the environmental scientific community of our region and our industries, and more importantly, I believe in the people who are behind both.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
269	Lori Fedo	President, Hibbing Area Chamber of Commerce	We have a track record of mining safely for more than a century, and I believe we will continue to do so. Industry is continually innovating and must, to stay operational and relevant. Our community can be a part of this innovation. As we move towards using more sustainable energy sources, we will depend heavily on the mining industry to supply the materials we need. As consumers, we can provide these materials from overseas, or we can produce them here. We have the metals, we have with resources, we have the workforce, we have the infrastructure. PolyMet will be part of keeping this wealth in our communities and our nation and in our state.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
270	Lori Fedo	President, Hibbing Area Chamber of Commerce	I also trust our state's regulatory agencies have done their job to analyze the project accurately and fairly, and PolyMet is working through the process outlined by the agencies. It is time to move this project forward. Our chamber and all the northern chambers of commerce and business community stand at the ready to help be a part of this exciting project that will strengthen our region and provide jobs for our people. Thank you.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
271	Laura Kircher	Member, Bettere in our Backyard	My name is Laura Kircher. I'm a lifelong Minnesota resident and a member of the grassroots group called Better In Our Backyard which supports responsible, economic, industrial development that drives our economy in northeastern Minnesota. The state we're in tonight has some of the strictest environmental standards of any state. The regulatory process for the NorthMet Project, which has been very thorough, shows that the company can meet and operate within these standards. Our area has been mining for over 135 years, and safety and the environment are at the forefront of our work.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
272	Laura Kircher	Member, Bettere in our Backyard	Better in Our Backyard rejects the notion that the copper, nickel, cobalt, and precious metals we all consume should only be sourced from countries that lack the laws, means, or will to protect their environment, As a Minnesotan and a resident of St. Louis County, the economic benefits cannot be repeated too much. The NorthMet Project will create 360 full-time jobs. These are good, high-paying jobs that support families. This project will create secondary job needs, creating 600 additional opportunities for residents. Iron Range needs these jobs. They have the expertise and the available talent to fill these roles and inject energy into their communities. The county needs this project. St. Louis County will see $515 million in benefit. That has an incredible impact to schools, roads, and county services. I urge the MPCA and the DNR to grant these permits.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
273	Harvy Van Horn	Citizen	My name is Harvey Van Horn, and I'm actually going to cede my time to Michael Pfau.	This comment simply defers speaking time to another individual. No response needed.
274	Mary Thompson	Citizen	Mary Thompson from Duluth. I cede my time to Virgil.	This comment simply defers speaking time to another individual. No response needed.

275	Chris Urbas	Citizen	I'm Chris Urbas, a resident of Ely, Minnesota, born and raised. I support PolyMet, and I defer my time to Tony Kwilas.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
276	Tony Kwilas	Director of Environmental Policy, Minnesota Chamber of Commerce	Good evening. My name it Tony Kwilas, K-W-I-L-A-S, and I am the director of environmental policy at the Minnesota Chamber of Commerce. First of all, I'd like to thank the Department of Natural Resources and the Pollution Control Agency for having this consolidated draft public hearing on the draft permit to mine, the draft air permit, the draft water -- or NPDES permit -- and the 401 certification. Because this is the perfect example of one of the efficiencies that the chamber has been asking for: Instead of having four separate public hearings, to have one consolidated hearing, and we thank you for listening to us and having -- this is one, just, perfect example of when we think of efficiency in the system. Second of all, I'd like to thank you for having multiple public hearings, which you didn't have to do, and went above and beyond what was required in state law. But we thank you for doing that, and especially having it in the region where the proposed project is located. Hearing from stakeholders that have daily interactions with this proposed project is invaluable.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
277	Tony Kwilas	Director of Environmental Policy, Minnesota Chamber of Commerce	The environmental review and environmental permitting process has been adhered to by state statute and rule. Some say, along with the chamber, that it's taken too long and cost too much, but no one can argue that this process has not been followed and closely adhered to.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
278	Tony Kwilas	Director of Environmental Policy, Minnesota Chamber of Commerce	We have a tremendous opportunity before us to develop a world-class resource, the NorthMet ore body, and in turn, capitalize on one of the largest economic development project proposals in this state in recent years, all the while protecting the great natural resources that we all enjoy. The economic impact to this project is invaluable and could create over 600 construction jobs and 360 permanent jobs at the facility. There will be numerous auxilliary benefits also to local cities, counties, school district.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
279	Tony Kwilas	Director of Environmental Policy, Minnesota Chamber of Commerce	In regards to the four permits -- on the permit to mine, I'd like to thank the Department of Natural Resources, Commissioner Landwehr and Assistant Commissioner Naramore, for your staff for putting together this document. I know it was no easy task.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
280	Tony Kwilas	Director of Environmental Policy, Minnesota Chamber of Commerce	But the most important part of that permit to mine is the financial assurance provision. The financial assurance provisions ensure that the state of Minnesota will be protected from the process when the facilities and the mine are properly closed and maintained. It is important to note that this provision could be revisited yearly and adjusted by the State.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
281	Tony Kwilas	Director of Environmental Policy, Minnesota Chamber of Commerce	In regards to the draft air permit, the company has set -- has met all the details required by the draft air permit. The potential emissions are identified and have set limits on those and they are legally enforceable.	This comment addresses the air quality permit. No changes were made to the draft NPDES/SDS permit in response to this comment
282	Tony Kwilas	Director of Environmental Policy, Minnesota Chamber of Commerce	On the draft water quality permit, or the NPDES permit, we thank you for establishing the specific limits and protection of surface and groundwater. But in the end, it is clear that the process established by the State --	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
283	Emily Norton	Citizen	My name is Emily Norton. I'm a citizen of Duluth, and I'm out here asking the DNR to oppose the permits to mine, all the things the scientists have said. What's at stake here, from a DNR standpoint, is the pristine wilderness that we want to preserve, and I don't think we will regret preserving the wilderness, but we're probably going to regret the mine. I would like to defer the rest of my time to Bridget Holcomb, who will speak for Duluth for Clean Water.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

284	Bridget Holcomb	Citizen	My name is Bridget Holcomb, B-R-I-D-G-E-T, H-O-L-C-O-M-B. I'm from Duluth. This is my first sonnet, and I think it's appropriate that I wrote my first sonnet for public servants, and I recognize that these public servants have enough flex in the law. You can make this decision either way. How much was hushed to get us to this day? How far would be the breaking point for you? Contort the draft and with it science lay. Whatever reason facts tell us to do. You do your job but still reach to sleep fair, so keep the struggles with all laws concealed. Deep dives minutia of design and their false sense of calm kill qualms about the real. But what alone soft voice resolved could say? No model holds the world and all its flaws. The thought of ground you stood and lives you changed be foremost on your mind retirement day. Before you lies a whistle and our home. Our eyes ask: Who has the courage to say no? Thank you.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
285	Kevin Lee	Citizen	Thank you. My name is Kevin Lee. The last name is L-E-E. I've heard a lot today about this project complying with the highest standards in the world, so I'd like to talk about that for just a moment. In 2015, there was a panel of expert mine engineers that issued a report that outlined how we can learn from the mistakes of the past. Most of the mining industry listened. PolyMet and Glencore have not.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
286	Kevin Lee	Citizen	The first item on this expert's list: Don't store mine waste with water, but PolyMet won't listen. They want a permit to create a mine waste lake 900 acres large, 250 feet in the air, and keep it there forever. The Mining Association of Canada, an industry trade group, now requires its members to have their mining practices audited by outside experts. PolyMet won't do this. The government of British Columbia requires outside review of mine waste dam designs. Poly met does not.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
287	Kevin Lee	Citizen	The Canada Mining Innovation Council says you need to make sure that surrounding communities have realtime access to water quality data. PolyMet won't do this. Here in the States, the governments of Maine, Michigan, and New Mexico will not permit mining operation that has to be maintained in perpetuity.	Comment noted. Monitoring data considered in the development of the draft permit and required by the draft permit documents are publically available. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
288	Kevin Lee	Citizen	PolyMet's water permit application says that maintenance and water treatment will be required forever. Montana not only requires that permits are reviewed by outside experts, they require that mine waste dams have what's called a "factor of safety" of at least 1.2. PolyMet allows 1.1, and when you get to 1, the dam collapses. We deserve better than this.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
289	Sally Munger	Citizen	I'm Sally Munger, and I'm ceding my time to Gay Trachsel.	This comment simply defers speaking time to another individual. No response needed.
290	Gay Trachsel	Member, League of Women Voters of Duluth, Natural Resources Committee	My name is Gay Trachsel, G-A-Y, T-R-A-C-H-S-E-L. I'm from Duluth. I am a member of the League of Women Voters Duluth Natural Resource Committee. We have a public policy position that states that we promote an environment beneficial to life through the protection and wise management of natural resources in the public interest. Also, to preserve the physical, chemical, and biological integrity of the ecosystem and to support measures to reduce pollution to protect surface water, groundwater, and drinking water.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
291	Gay Trachsel	Member, League of Women Voters of Duluth, Natural Resources Committee	According to your own statements, the purpose of a permit to mine is to control the possible adverse environmental effects of mining by ensuring orderly construction and development of a mine, sound operational practices, and reclamation of mined areas. These are some of the things that I think have not been fully addressed with PolyMet.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
292	Gay Trachsel	Member, League of Women Voters of Duluth, Natural Resources Committee	The design of the tailings basin is the cheapest, and it has a history of failing. Pollution, due to seepage, can still contaminate the surrounding water and last for years, maybe forever. We don't know. How will PolyMet satisfy the 10-milligrams-per-liter sulfate standard when existing mines are not even being held accountable today?	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

293	Gay Trachsel	Member, League of Women Voters of Duluth, Natural Resources Committee	Reclamation is the act of returning something to a former, better state. I see no path to this happening unless you believe what is in Butte, Montana, the nation's biggest body of toxic water from a flooded copper mine, the Berkeley Pit, is reclamation. It is a Superfund and is under the EPA's remediation, not the company that's produced the toxic water. In the latest decision by EPA Director Pruitt on Bristol Bay to protect salmon from copper mining, he states, "It is my judgment at this time that any mining projects in the region likely pose a risk to the abundant natural resources that exist there." I would think that 10 percent of the fresh water in the world, Lake Superior, might deserve at least the same protection salmon fish are getting in Alaska. The world's water supply is dwindling due to climate change, pollution, and overpopulation. The only conclusion at this time is that sulfur-copper mining poses too many risks today.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
294	Dennis Goode	Citizen	Hi. My name is Dennis Goode, and I would like to cede my time to Paula Maccabee.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
295	Bob Tammen	Citizen	I'm Bob Tammen. I see time's a flying, for which some will be grateful. But I'm from Soudan, Minnesota. Bob Tammen, T-A-M-M-E-N, and I worked in the mines in Minnesota and, as well, upper Michigan, Montana, and North Dakota. I've seen a lot of mining communities, and I don't see many healthy economies. I don't see many healthy mining communities. We don't know if we have any real benefit from mining in Minnesota at the state level. I know you asked for technical reasons to analyze this permit, so I would suggest that we need to do an adjusted net savings accounting. Now, this is a widely used process when countries that depend on natural resources -- a lot of them are very poor, so you do an adjusted net savings accounting to see if the costs balance with the benefits. Now, we know the costs of mining in Minnesota, about a quarter of a billion dollars to build a bridge over there at Highway 53. We know that we rebate up to -- it's been a quarter of a billion dollars since '93, we rebate right back to the mining industry, so I think we should do that accounting. I don't believe the State of Minnesota should make the decision on mining without knowing if we're actually going to get a benefit for the great state of Minnesota. And the other thing I would mention, that in the accounting, they account for mineral depletion, wetland destruction, carbon sequestration. There are a lot of costs to mining, so we're destroying wetlands for little benefit. And I hate to think that I live in a state that would dynamite a cathedral to create a job salvaging bricks. Thank you.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
296	Rose Hoene	Citizen	My name is Rose Hoene, spelled R-O-S-E, H-O-E-N-E, and I'm here to stand with the water and ask you to not permit this to happen.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
297	Rose Hoene	Citizen	And I want to talk about seven generations of sustainability and where that concept comes from. This is not a new concept; this is a very old concept. It originated with the Iroquois, the Great Law of peace from the Iroquois nation, the Haudenosaunee, who, by the way, our Constitution is based on theirs. They talk about looking forward, for our children, seven generations. I wonder what it looked like here 500 years ago. Sometimes I like to daydream about that, and I wonder what it will look like 500 years from now. What PolyMet is proposing, 500 generations from now would be 25 -- 500 years from now would be 25 generations. The Haudenosaunee people, in their wisdom, were looking at 7. We need to look even beyond that at this point.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
298	Rose Hoene	Citizen	We need to be thinking about not just us, immediate gain, jobs. I'm not against jobs. We all need jobs, we need to live, but not through the loss of water, because water really is life, and every single one of us needs to be thinking forward.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
299	Rose Hoene	Citizen	One of the great leaders of the Haudenosaunee -- who, by the way, I lived with for many years -- is a chief named Oren Lyons who's often quoted. He says, "We're looking ahead, as is one of the first mandates given us as chiefs, and as people, to make sure that every decision that we make relates to the welfare and well-being of seven generations to come." What about the 7th generation? What about the 25th generation 500 years from now? Where are you taking them, and where are you taking us?	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
300	Lauren Sandbulte	Citizen	I'm Lauren Sandbulte from Duluth, Minnesota. I defer my time to Mark Giese.	This comment simply defers speaking time to another individual. No response needed.

301	Mark Giese	Citizen	My name is Mark Giese. I'm not a person who -- G-I-E-S-E -- I'm not a person who would normally speak in public, but I will because we need to encourage everyone to support PolyMet in the final stages of the permit process. I was born and raised in northern Minnesota. My wife and I decided to raise our family here too. I attended school in Aurora, so did our children. I've worked in the mines, as did my father, uncle, and great-uncles. My family have all been avid outdoor enthusiasts. The last 30 years, I've resided on a small lake on the Embarrass River chain. It's located downstream from the old Erie and LTV mine site, which is the proposed site of the PolyMet Project. We use the lake to hunt, fish, kayak, boat, and swim. We also take trips to the Boundary Waters and enjoy the outdoors, pristine waters, and fishing. Contrary to what opponents of this project portray, residents in this area, including my family, friends, neighbors, coworkers, and customers are all concerned about our environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
302	Mark Giese	Citizen	We've been mining Minnesota for close to a century and a half. Our watershed is one of the cleanest in the nation. We've also utilized some of the old mining pits in our region for water sources and recreational purposes. It is clean water because we live in a state that monitors mining activities. Companies are held responsible and not given the opportunity to jeopardize the environment without severe ramifications. PolyMet has been thorough in following the governmental regulatory review through this long permitting process.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
303	Mark Giese	Citizen	The PolyMet Project will mine ore from the Duluth complex. It is a world-class resource of precious metals located in the midst of existing mining operations. It will produce metals that are essential to our lives: Appliances, electrical components, power plant equipment, dental instruments, and numerous necessary items that are built with copper, nickel, platinum, and other precious metals, metals that can be resourced locally by environmentally responsible mining. This is not the old sulfide-extraction method often referenced by opponents, but a new technology which will make it possible to tap this valuable resource safely. Modern copper and nickel mines have shown they can operate without polluting and comply with state and federal standards, protecting our air and water. There's no better place to construct this mine.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
304	Mark Giese	Citizen	There's no better place to construct this mine. Our region has a trained workforce, existing roads, rail, power, tailings basin, and infrastructure to minimize the environmental impact as compared to starting a new greenfield operation.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
305	Mark Giese	Citizen	I believe organizations like the Clean Water Action group are needed, but our region has the cleanest water in the state, and I believe it's because we're heavily regulated. The Clean Water Action group focuses on protecting our lakes, streams, and rivers in other regions of the state that currently have contamination issues, and continue to protect our watersheds from exotic species.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
306	Mark Giese	Citizen	PolyMet Project will be monitored throughout the whole process, including construction, operation, and closure of the mine. In the permit to mine, there are financial assurance provisions to assure taxpayers are protected. I encourage everyone, including the opponents to this project, to examine the comprehensive permit conditions which have been structured to meet strict environmental guidelines.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
307	Mark Giese	Citizen	Thank you for considering my comments. I urge the MPCA and the DNR to conduct a timely review of the comments and issue the permits PolyMet needs to produce metals we use every day. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
308	Anja Curiskis	Citizen	My name is Anja Curiskis, A-N-J-A, C-U-R-I-S-K-I-S, and I've got someone who's actually prepared tonight, John Gappa.	This comment simply defers speaking time to another individual. No response needed.

309	John Gappa	Board Member, Friends of the Boundary Waters Wilderness	Good evening. My name is John Gappa, G-A-P-P-A. I live in St. Paul. I served as a corporate chief financial officer, and I've been actively following the financial assurance aspects of this proposed project. I also serve on the board of the Friends of the Boundary Waters Wilderness. Governor Dayton has stated that permitting the proposed PolyMet Project will occur only if it protects the taxpayers of Minnesota with adequate financial assurance. While the DNR's latest financial assurance requirements are much improved, they still do not provide the financial projections -- the protections that Minnesota taxpayers deserve. The DNR's analysis shows that the first year of mining creates a cleanup bill of $588,000,000. After 11 years of mining, the cleanup exposure is over a billion dollars. At the conclusion of mining, the remediation costs and the costs of treating polluted water for 100 years is $782 million, and these estimates assume that everything goes according to plan. To protect the taxpayers of Minnesota, I recommend that the DNR, first, significantly increase the up-front cash contributions required in the financial assurance package. As it stands, the total cash requirements by the ninth year of operation total $26 million, a mere 3 percent drop in a billion-dollar cleanup bucket. DNR's own consultants state that it would be very difficult for PolyMet, or even a major mining company, to obtain the financial and -- financial instruments required. Second, require PolyMet to complete an updated definitive feasibility study examining the project's ability to meet the cash-contribution requirements. This study should be subject to public review and comment, and information learned from the study should be incorporated in the final permit to mine.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
310	John Gappa	Board Member, Friends of the Boundary Waters Wilderness	PolyMet has proposed paying itself first by contributing only $2 million a year during most profitable years of mine operation while deferring its cleanup payments until after most of the productive ore is mined. By delaying the cash cleanup payments, the State runs the risk of PolyMet privatizing the profits and socializing the cost of this project. Finally, if PolyMet fails to meet any of its financial assurance requirements, the DNR needs the options that have -- needs options similar to all corporate credit agreements, which carry the following conditions: First, prohibit the payment of dividends to mine shareholders if the agreement -- if the financial assurance agreements are not being met. They should also prohibit the payment of bonuses, stock options, or other incentives to executives of the mine if the financial assurance is in default. And finally, require full cash funding of all financial assurance obligations in the event the mine is sold. In conclusion, significantly more of the financial assurance package needs to be funded with cash, rather than difficult-to-obtain financial instruments. To adapt an old saying: In God we trust, PolyMet, please bring cash.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
311	Blanche Wilcox	Citizen	Hi, my name is Blanche Wilcox, and I defer my time to J.T. Haines.	This comment simply defers speaking time to another individual. No response needed.
312	J.T. Haines	Citizen	Hi, my name is J.T. Haines. I live in Duluth, and I'm a volunteer with Duluth for Clean Water. I spent some of my early years growing up on the Iron Range in Mountain Iron. I have very fond memories of growing up in Mountain Iron. The basic comment that I want to make today is that those of us in this area, we live downstream of this proposal, and as such, I think that the very serious concerns you're hearing from downstream communities need -- deserve special respect. I have three brief comments about the permits.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
313	J.T. Haines	Citizen	First, as you know, medical professionals around the state have called for a health impact assessment on this project to measure cumulative impacts to humans. That study has not happened. I view this as a failure in the process and something the draft permits do not adequately address.	Comment noted. The issue related to a health study was addressed as part of the EIS process.
314	J.T. Haines	Citizen	Second, the U.S. Forest Service recently found that 28 percent of dams for this type of mining failed in the U.S. That rate is unacceptable in a water-rich environment. Since this process began, agencies have updated climate data which confirms increasing frequency of heavy precipitation events in our area. My understanding is that these draft permits do not address the increased risk of dam failure to downstream communities. That is clearly a failure in this process.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

315	J.T. Haines	Citizen	Third, and finally, there has been no emergency response-planning education with downstream communities like Fond du Lac, like Cloquet, Esko, Duluth, and others. The threat of dam failure is high, and the threat of spills and leaks is, essentially, 100 percent. It is unconscionable that downstream communities have not been educated and informed about dam failure rates, inundation analysis, and emergency response planning. How has that not happened? This is a fundamental failure in the process, and the permits should be denied on that basis alone. This has been a long process, but I think it's important that we remember -- are we okay here?	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
316	J.T. Haines	Citizen	Thank you. I just want to acknowledge this has been a long process, but I think it's really important, Commissioners, that we recall that this is the moment of decision, and it's required of all of us, elected officials and commissioners, that we give it a fresh look with the final details now, and I expect you to do that.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
317	J.T. Haines	Citizen	And I want to say that I regret that my advocacy for the children of this area feels like advocacy against the children from my old home town. That is not my intent. I like to think that as Minnesotans we could agree that if our jobs harm or threaten our neighbor's children, as painful as it might be, maybe those aren't the right jobs.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
318	J.T. Haines	Citizen	Glencore is not a good company. They have a horrible record of mistreating labor and the environment. I think it's obvious they would say anything for profit. I do not trust them. I don't think anyone in here should trust them, either blue hat or orange scarf.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
319	J.T. Haines	Citizen	Commissioners, we believe this process has failed in fundamental ways, especially with regard to downstream communities. I urge you to reject the permits. If this goes forward, I believe we will have sold Minnesota to the lowest bidder and nothing would ever be the same again. We need a better option. Thank you.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
320	Korii Northrup	Member, Fond du Lac Band of Lake Superior Chippewa	Okay. My name is Korii Northrup, K-O-R-I-I, Northrup. I come from the Fond du Lac band of Lake Superior Chippewa. I live over there on the reservation. I've been there about four years, but I was born and raised in Duluth, so, you know, obviously, Duluth has a big part of my heart. I've heard a lot of people talk today about 500 years from now, and I stand here in front of you as, sort of, a relative 500 years from the past. 500 years ago, we didn't worry about poisoned water. We didn't worry that we would not have enough wild rice to feed our families. We didn't worry about game. We came here to our promised land, the Anishinaabe people. You know? Not just my reservation, but across all of mining country. Not just in this state, but in other states as well. You know? 500 years ago, we all lived together, community. We looked out for each other, and there was no such thing as profit. And, you know, to me, I'd like to get back to that, you know, where we all are living in the promised land again and we're all snowshoeing and hanging out and going fishing and, you know, telling each other stories and stuff. Because, like, to me, you know, that's a better use of our time than having to come to meetings and hearing and judges and, you know, things of that nature. You know, I'd rather share my last dollar with a stranger than say, "I need a profit." I don't need a profit. I need to help my fellow man. I need to be here to share this beautiful place, this beautiful life, with everyone around me. And, you know, 500 years in the future, I would like it to go back to the way it was 500 years in the past, so thank you for listening.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
321	James Kramar	Citizen	Hello. My name is James Kramar, K-R-A-M-A-R. I'm a resident of Hoyt Lakes, Minnesota, and I support PolyMet. And I defer my time to Peter Haines.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
322	Peter Haines	CEO, GPM	Hello. My name is Peter Hains. I'm the CEO of GPM, a 40-year-old pump company located in Duluth. We manufacture the world's toughest submersible slurry pumps. They're cased in cast iron, they're loaded with copper-wound motors and alloy steels that contain copper and nickel. We support over 50 families regionally and over 1,000 families if you factor in our 48 North American distributors and our local marketing partners. We all support mining.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

323	Peter Haines	CEO, GPM	Description of daily life with aspects of daily life that require natural resources (electricity, oil heating, water, wastewater. And how much of detail life uses copper. Like it or not, if you live in a house, an apartment, a mobile home, or any type of man-made dwelling, then, by default, you support copper and nickel mining. Everything you use every day is manufactured and produced by equipment that's made from steel alloys that contain varying fractions of copper and nickel. That means if you consume electricity, use natural gas or propane, turn on a faucet for water, eat food or beverage products that you've purchased, if you flush a toilet, ride a bike, drive a car or a truck, by default, you support copper and nickel mining.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
324	Peter Haines	CEO, GPM	Minnesota surpasses all states in protecting and leveraging our natural resources. From a first-person standpoint, the Boundary Waters are as pristine and fresh today as they were the first time I went there with my dad 50 years ago. If you live in Minnesota, you need to support PolyMet. You need to support mining. You can't live as you do today without copper and nickel metals that PolyMet	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
325	Alex Haveron	Citizen	Hello, my name is Alex Haveron, I'm a resident of Duluth, Sheet Metal Local 10. I support PolyMet and I defer my time to Mike French.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
326	Mike French	Citizen	Good evening. My name is Mike French and I'm a civil engineer with LHB here in Duluth. I'm here to speak as a member of the consulting engineering and environmental services community and for the industrial clients that I have the privilege of serving. There are many passionate voices speaking tonight and those that have spoken for many nights over many years now on this topic. To that lengthy conversation I'd simply like to add my three points.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
327	Mike French	Citizen	One, as an engineer, I'm a big fan of process. That is, following rules, procedures and the implementation and guidelines of best practices. Guidelines and rules are important in that they take the guesswork out of problems, not controversy, but they take away the randomness. It is in this mind-set that I wish to voice strong support for the approval and completion of PolyMet's permit to mine on the basis of following the procedures.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
328	Mike French	Citizen	Mining is a significant part of our shared heritage in Minnesota. And I have to say that I've only been a Minnesotan since 2004. So, in my 14 years of being a Minnesotan, I've never known a period when PolyMet wasn't working on getting their permits. It's quite a time. As time has progressed the rules and standards that administer mining continue to evolve, whether on the matter of worker safety or environmental impact mitigation. We have state agencies and federal agencies that establish and enforce standards and lay out a clear path for reviewing and issuing permits. If an enterprise like PolyMet is committed to following the rules, to funding its environmental committments, to ensuring worker safety, then it needs to be allowed to engage in that business. In the absence of following our own established rules, how is any enterprise to have confidence that they would want to locate in Minnesota? I believe our permitting and review process is robust and it works. It's time to end the debate and move forward with the permit to mine.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
329	Mike French	Citizen	Two, I support allowing PolyMet to advance their project as it relates to the benefits of improvements to regional infrastructure. We've heard many calls for approving this project on the basis of jobs. And I absolutely agree. But heavy industry like PolyMet supports us in many ways. Industry supports the expansion and protection of our harbor with products coming in and out. Heavy industry like PolyMet supports the construction and safety of rail. Heavy industry like PolyMet supports education and research, like that at NRRI. And heavy industry like PolyMet supports the robust electric infrastructure providing significant reliability for which all Minnesotans benefit. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
330	John Rosene	Citizen	Thank you so much. My name is John Rosene, I will proudly defer my time to Libby Bent.	This comment simply defers speaking time to another individual. No response needed.
331	Libby Bent	Citizen	Hi, I'm Libby Bent, downstream resident of Duluth. And I oppose the issuance of any permit. As my father observed, the sheer complexity of the chemistry, hydrology, and geology involved in sulfide mining without irreversible pollution in our water rich environment boggles the mind. It's never been done because the cost would be huge, far in excess of the value of extracted metals. A more far-fetched industrial initiative is difficult to imagine.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

332	Libby Bent	Citizen	So, what is going on? How did this plan make it past a federal law designed to protect watersheds, headwaters on forest service land? A state law requiring sulfide mines to be maintenance free on closure and treaty rights to hunt, fish and gather on a sea of territories requiring high biodiversity lands.	Comment noted. The draft permits were developed according to current state and federal law. The comments does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
333	Libby Bent	Citizen	Why was the call for a health impact assessment ignored, even as 30,000 health professionals requested one? Why are warnings from mining engineers that the tailings basin design is risky and unsafe going unheeded?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
334	Libby Bent	Citizen	The proposed upstream design to store a slurry of toxic mine waste on top of unstable wetland soils is a Mount Polley recipe for disaster. The Mount Polley review panel warns it is not enough to tweak around the edges of what we've been doing. We cannot continue to use technology that is fundamentally -- Hello? Yes? Okay. All right. These are not problems of the past. Dam failures are increasing and PolyMet has not analyzed the increased risk of dam failure from higher precipitation events due to global warming.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
335	Libby Bent	Citizen	Perhaps most troubling, where is the analysis of the value of one of the world's largest fresh water deposits? Water is becoming desperately scarce worldwide. 40 states could face clean water shortages in the next ten years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
336	Libby Bent	Citizen	This decision will broadcast Minnesota's priorities. Do we embrace a blue economy and lead the way in mining landfills for strategic metals and investing in copper and precious metal recycling? Or do we trade multi-billion gallons of our fresh water every year for deposits containing less than 1 percent minerals, transforming our lake country into a sea of toxic waste?	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
337	Libby Bent	Citizen	The rest of the world is choosing. El Salvador prizes water over gold saying, "We are the first country to evaluate the cost and benefits of metallic mining and say no." Buffalo, New York is transforming their city from rust to blue, embracing an economy based on the Niagara River and Lake Erie. And Minnesota, 50 years of cleaning up the St. Louis River, only to become the land of sky tainted waters? As my dad would say, it boggles the mind. This decision is irreversible. For our future and for the greatest lake in the world, we cannot get it wrong. Please do not check one more box. Please reject these permits.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
338	David Ivonen	Citizen	Like many of the other people here, I'm not really accustomed to public speaking, but this is an issue that's really tough for me. I grew up on the Iron Range, Chisholm. My grandfather drove or engineered trains from The Range to the Superior area. Another grandfather worked in the underground mines, a pioneer in Ely, spent a lot of time in and around the Boundary Waters. I've seen it transform people's lives. I've seen it bring people from different social and economic backgrounds together. But dollars to doughnuts, bottom line, water is more precious than copper. We need it, we do need copper, we have other ways to get it currently.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
339	David Ivonen	Citizen	We have companies' bad track records, Glencore. Should the Twin Metal mines follow, we've got Antofagasta, even worse. If you let this abomination in our door, please make sure they put down at least a half a billion deposit with most of their profits paying for the rest of it year after year.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
340	Kate Harrison, for Rebecca Otto	State Auditor	Kate Harrison, H-a-r-r-i-s-o-n. I'd like to read a statement from Rebecca Otto, state auditor and candidate for governor, on PolyMet draft permit to mine. "The draft PolyMet permit to mine allows PolyMet to store mine waste in a dangerous, outdated way that puts people and water downstream at risk.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
341	Kate Harrison, for Rebecca Otto	State Auditor	"I oppose the draft permit for PolyMet's sulfide mine proposal because PolyMet has not listened to the public and experts who oppose the dangerous way it stores mine waste and the hundreds of years of pollution and the over one billion that is at stake.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

342	Kate Harrison, for Rebecca Otto	State Auditor	"The draft permit sets a one billion figure needed to reclaim the site and pay for long-term water treatment during the middle of the proposed mining. "However, reliance on bonds PolyMet has not proven they can acquire, failure to require PolyMet to update their financial feasibility study, and the low two million per year required contributions to the long-term water trust fund in the first half of the proposed mine mean taxpayers are not protected.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
343	Kate Harrison, for Rebecca Otto	State Auditor	"The draft permit assumes PolyMet will achieve an impossible level of capturing polluted water and use reverse osmosis water treatment for at least 55 years after the mine would close. Environmental review showed that water could be polluted for over 500 years. "The NorthMet Environmental Impact Statement asserted PolyMet would capture and treat over 90 percent of the contaminated groundwater, but the draft permit does not require it. "If PolyMet does not capture and treat polluted water, people downstream will suffer from water polluted with arsenic, mercury, copper, nickel, and other heavy metals. "The draft PolyMet permit to mine does not protect the public interest, puts people downstream at risk, and leaves taxpayers unprotected. As drafted, the PolyMet permit to mine doesn't protect Minnesotans and should be rejected by the Minnesota DNR."	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
344	Laurel Melby	Citizen	I'm Laurel Melby, spelled L-a-u-r-e-l, M-e-l-b-Y. I'm from Duluth, Minnesota, but I raised my family in Finland, Minnesota and I love a place called Lake Vermillion. I have harvested wild rice for 37 years with my husband. And I believe it is the canary in the mine and we need to listen now, not when it's too late.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
345	Laurel Melby	Citizen	I request that the DNR does its job by requiring this permit process to be done completely, followed completely.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
346	Laurel Melby	Citizen	And I believe what they can see is that no sulfide mining has been done anywhere near reasonable cleanliness without extreme pollution. And I concede the rest of my time to Greg Benson.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
347	Greg Benson	Citizen	Hi, I'm Greg Benson, I'm a resident of Duluth and a business owner. I'm going to read really fast. I'm here representing 100 small businesses in the north, we're the Downstream Business Coalition. We employ nearly 1,211 people. We're continuing to grow and reinvest in both our companies and our community. This equates to adding jobs and real dollars to the local economy. To continue this our businesses depend on the health of the Lake Superior watershed. We are pro iron ore mining and pro jobs. We support and benefit from ferrous mining, which originally built this economy in the north. We rely on mined products in our businesses.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
348	Greg Benson	Citizen	As primarily owner/operators, we are pro worker and pro quality of life and we have and will continue to rely on union labor as we expand our facilities. But because we are so dependent on the health of our water, we are concerned about copper-nickel mining.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
349	Greg Benson	Citizen	The proposed PolyMet NorthMet copper-nickel mine and others like it are vastly different from ferrous mining, as we've been hearing all night. I'm going to just jump ahead here.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
350	Greg Benson	Citizen	We trust that PolyMet intends to meet all applicable regulations, but our concerns are based on the track record of similar projects. We welcome them to show us one metallic sulfide mine of this type that has operated for ten years and been closed for ten years. Even the state-of-the-art now closed Flambeau mine touted by PolyMet supporters as a mine that operated without polluting local waters has now been shown to have caused significant groundwater and surface water pollution.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
351	Greg Benson	Citizen	There is an alternative to the boom and bust extraction economy that benefits foreign corporations and leaves local communities worse off in the end. Our locally owned small businesses are proof positive that a more sustainable model is possible. We will continue to reinvest the wealth we create in new jobs over the next 20 years and beyond. We call on our state and local politicians to do this. And Senator Bakk, how many of those spaceships actually blew up?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

352	Beth Bartlett	Citizen	Hi, my name is Beth Bartlett, B-e-t-h, B-a-r-t-l-e-t-t, I live in Duluth. I'd like to address two specific issues. The first is that the 1854 treaty ceded territory goes right through the Duluth rock complex in question. And there has been no consultation with the tribes about the rights to hunt and fish and gather in this territory.	Comment noted. The draft permits were developed according to current state and federal law. The comment does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
353	Beth Bartlett	Citizen	The indigenous people of this region will be disproportionately affected by any toxic contamination of water, fish and wild rice, resulting in harm to their health, livelihoods, culture, and well-being.	Because the authorized discharge from the WWTS is limited to 10 mg/L and the required engineering controls will prevent unauthorized discharges, the project as designed will not harm wild rice.	
354	Beth Bartlett	Citizen	Apparently PolyMet is a Canadian corporation who feels no need to uphold U.S. law and is quite willing to violate these treaties. The U.S. public citizens, as citizens of Minnesota, it is all of our duties to ensure that those treaty rights are upheld.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
355	Beth Bartlett	Citizen	It is also the ethical responsibility of all of us who are settlers to do everything in our power to do no further harm to the Anishinaabe land, people and religious and spiritual practices, to take every opportunity to do what we can to support the restoration of these.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
356	Beth Bartlett	Citizen	Second, one of the bodies of water into which toxic contamination would flow is the St. Louis River, as we've heard all night. This puts all of us living in Duluth and the Duluth region, especially those in Fond Du Lac, at risk.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
357	Beth Bartlett	Citizen	We've heard a lot about heavy metals, I imagine you've heard about it over and over again. But do we really know what any of these do? So, just to focus on one, mercury and methylmercury. We need to learn from the Minamata disaster in Japan in the late 1950s where mercury levels in the flesh of fish in contaminated water were more than a million times higher than that of the water they swam in. In Minamata, the first signs were cats going crazy and dying. In humans, methylmercury poisoning first causes hands and feet to tingle, then it becomes increasingly difficult to hold objects, becomes difficult to speak and hearing becomes muffled, general paralysis sets in, hands become gnarled, swallowing becomes difficult and death soon follows. In the womb the placenta can magnify levels of toxic chemicals even more. Developing organs are extremely sensitive to damage. Methylmercury interferes with the critical period of brain cell migration, resulting in high rates of miscarriage, severe physical maldevelopment and mental impairment to those babies who do survive.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
358	Beth Bartlett	Citizen	And I don't think any of you would wish this on anyone, let alone all of the many generations of children yet to be born, not only of humans, but of deer, moose, walleye, all beings that depend on clean, fresh water for life. In this water rich environment, all beings are at risk for generations to come.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
359	Beth Bartlett	Citizen	And as for the lessons from Minamata, the Japanese government stated that having learned vital lessons from the misery caused by Minamata disease and other painful manifestations of pollution as a consequence of this misconceived priority, that's their term, it's Japan's sincere wish to see other countries becoming fully aware of the importance of environmental consideration based on Japan's experiences and lessons learned and establishing a sustainable society without experiencing the misery of pollution like Minamata disease. I urge you not to let this project become yet another misconceived priority and not issue permits for the PolyMet mine project. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
360	Kathy Heltzer	Citizen	My name is Kathy Heltzer, H-e-l-t-z-e-r. I yield my time to Bill Hansen from Grand Marais, Minnesota.	This comment simply defers speaking time to another individual. No response needed.	

361	Bill Hansen	Citizen	Commissioners, deputy commissioners, thank you for letting me testify today and your time. I'd also like to especially thank the community mediators for their time and service and the ASL interpreters, who have been doing a great job up here. So, thank you very much. My name is Bill Hansen, H-a-n-s-e-n. My parents founded Sawbill Canoe Outfitters at the end of the Sawbill Trail in Tofte in 1957. My wife Cindy and I bought the business from them 35 years ago. We made a dignified living over those years, raised four children, and sold the business to our daughter and son-in-law two years ago. In addition to my small business career I've involved myself as deeply as I can in regional economic development over the last three decades. I've been fortunate and honored to serve as a Trustee and Board Chair of the Northland Foundation and the Entrepreneur Fund. These organizations have been long-time partners with private companies, lending institutions, government agencies in creating jobs in Northeastern Minnesota. These partnerships have spanned every sector of the economy, including mining services, tourism, health care, manufacturing, service industries, and so on. I'm honored to have played a modest role in supporting diverse local economic development. My very first vote at my very first board meeting at the Northland Foundation was in favor of providing an emergency loan to a struggling small company called Cirrus Designs. Initially I welcomed the prospect of precious mineral mining in our region, but as the PolyMet project has moved through the study and approval process, I've become convinced that it's simply bad economic development.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
362	Bill Hansen	Citizen	Northeastern Minnesota has a long history of backing economic development projects that end badly. The chopsticks factory is the poster child, but unfortunately there's been many other examples, large and small, of which you are aware. I believe PolyMet is another economic developmental mistake promising prosperity and wealth, but very unlikely to deliver on those promises.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
363	Bill Hansen	Citizen	In my opinion it boils down to what kind of community do we want to leave to our grandchildren and great-grandchildren. Do we put our trust in huge foreign-owned corporations with long histories of labor and environmental violations, leaving a trail of depressed communities and perpetual pollution? Or do we roll up our sleeves, invest in ourselves and build a regional economic system that's diversed, resilient, sustainable, respectful to our people, our environment, our health, our communities, and our long-term future? We can do better. And as a good friend of mine said in this very room in 2002 at the AFL-CIO convention, "We all do better when we all do better." Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
364	Sam Hodel	Citizen	My name is Sam Hodel and I'd like to concede my time to Josh Skelton.	This comment simply defers speaking time to another individual. No response needed.	
365	Josh Skelton	Citizen	Good evening. My name is Josh Skelton, S-k-e-l-t-o-n, and I reside in Coleraine, Minnesota, but I grew up in Hoyt Lakes. My wife and I are both chemical engineers licensed professionally here in the state of Minnesota. And we've made a very conscious decision to locate our family here where we don't believe there's any better quality of life. I'm here tonight to urge the Minnesota Pollution Control Agency and the Department of Natural Resources to grant these permits in a timely manner. Because the proposed PolyMet NorthMet project would provide consequential impacts to our region and our way of life.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
366	Josh Skelton	Citizen	In a time where our region has been decimated from a lack of professional opportunity, this NorthMet project brings hope in the form of an estimated a thousand jobs. These types of jobs and wages that come from building and operating and maintaining a project of this scale will have long-term benefits on a region where the very social and moral fabric that makes it so unique has become storied in history books instead of the reality in our own front yards. The ability to work and live in this area has been hanging in the balance as the science and technology proposed with this mining operation has been vetted deeply and with the review of your agencies deemed adequate to provide a framework to protect all that we cherish.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
367	Josh Skelton	Citizen	Your work has been important to help us assure that those same things we hope draw and retain our families will be with us for a long time and not just a season and we can co-exist with this mining operation. It's time to put these great mines to work. And as a result, bring in and retain employees of the future to become the great pillars of our communities to help lead our schools, businesses, churches, and community organizations. It's time to write a new chapter in our history that shows the region can persevere, they can reinvent. And building from a long tradition like iron mining propagate state-of-the-art technologies, once again serving our nation and leading the world in safe, efficient and responsible practices.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	

368	Josh Skelton	Citizen	Worldwide demand for copperas material will continue to build with our appetite and strategic goals to reduce our own carbon footprint and modernize our way of life. If we are serious about transforming our energy landscape to meet these goals, like integrating more renewables and advanced technologies for our energy production and delivery, responsibly mining these materials will be critical to address any global threats. Copper is an essential material to build these energy systems in the future and being able to rely on a domestic source with high accountability for impacts on the environment will allow us to meet those needs with the highest integrity.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
369	Josh Skelton	Citizen	Being from Hoyt Lakes and living in the region, I'm eager to see the former LTV facilities refurbished and modernized and returned to operation, bringing back hundreds of good paying jobs and helping to lead the charge on making our world a better and safer place. I urge you to get these permits issued in a timely manner, we have no more time to waste.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
370	Ryan Sistad	Citizen	I'm Ryan Sistad, I fully support the PolyMet project, but I'll be deferring here to Craig Fellman.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
371	Craig Fellman	Citizen	My name is Craig Fellman, C-r-a-i-g, F-e-l-l-m-a-n, I'm from Duluth. I appreciate the opportunity to speak on the draft permits here today for the PolyMet NorthMet project. And I appreciate that PolyMet is going to provide over 70 million in federal, state and local taxes, 15 million, which is going to go locally and fund every different school district. And I appreciate the 500 million dollar economic impact we'll feel throughout Northern Minnesota, which is very vital for us. And so are the jobs that it's going to create, 600 indirect jobs and 360 direct jobs. NorthMet project is needed in Northern Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
372	Jerry Fryberger	Chairman, Hallett Dock Company	Thank you. I appreciate the representatives from the MPCA and the Department of Natural Resources State of Minnesota. My name is Jerry Fryberger, F-r-y-b-e-r-g-e-r. I'm Chairman of the Board of Hallett Dock Company, a local company. And I'm a lifelong resident of Duluth. And I am one of these people who thinks that our co-lead agencies and along with PolyMet and all kinds of other consultants have done a superlative job.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
373	Jerry Fryberger	Chairman, Hallett Dock Company	I am very proud to be a Minnesotan. I'm very proud of the PolyMet project and the thoroughness and the level of excellence that happened. Over the past 11 years of responsibly addressing the environmental and processing challenges, we have watched this project gradually develop from its infancy when we did the initial drilling to define the extent of the oil reserve to the design of mine, power, rail and other structure -- project infrastructure, decades of unprecedented in-depth respectable research of the mining process to ensure protection of our air and water from possible toxic waste.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
374	Jerry Fryberger	Chairman, Hallett Dock Company	The enlightened visionary and responsible corroboration of regulatory agencies, namely the EPA, the Corps of Engineers, the U.S. Forest Service, the Minnesota Department of Natural Resources, and the Minnesota Pollution Control Agency have done a superlative job of working together and working through the difficult challenges of this new operation, continuing the rich heritage of Minnesota's mining industry and major contributor of America's industrial growth and national security, Minnesotans should be proud of this project.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
375	Jerry Fryberger	Chairman, Hallett Dock Company	After more than a decade of persevering effort and expenditures in excess of 300 million dollars to develop environmentally responsible mining and processing practices, PolyMet will arguably be the benchmark of copper-nickel mining, not only in Minnesota, but in North America as well. They will provide the minerals necessary to produce the technological advances in support of our nation's ever increasing standard of living while providing the jobs and taxes to support our local Iron Range communities. An important milestone in which our mining industry will now no longer be judged upon mining -- how mining was done more than a century ago, 1870s, or even decades ago, but rather by the state-of-the-art of present mining technology and enlightened environmental standards based upon the science of this 21st century. Thank you very much.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
376	Todd Lyden	Citizen	My name is Todd Lyden, I'm a strong supporter of PolyMet NorthMet project. And I defer my time to Pat Mullen.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
377	Pat Mullen	Senior VP, Allete	Good evening. My name is Pat Mullen, I'm senior vice president of external affairs for ALLETE, which is the parent company of Minnesota Power. What a special high-quality environment and beautiful outdoors we have here in Northeastern Minnesota. The Boundary Waters and the Superior National Forest are gems that attract millions of visitors to our region and form a playground for people lucky enough to live and visit here.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

378	Pat Mullen	Senior VP, Allete	Some people frame the decision on PolyMet's permits as pitting the economy against the environment. And for a number of reasons I believe those can co-exist. PolyMet's mining proposal is an opportunity that shouldn't be squandered. The economic benefits of this project are significant and will help support hundreds of families in Northeastern Minnesota for decades to come. Hundreds of new good paying jobs and millions of dollars in spending right here in Northern Minnesota, as well as new tax revenue for state and local governments.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
379	Pat Mullen	Senior VP, Allete	Minnesota has some of the toughest environmental standards in the nation. PolyMet's permit conditions determined after more than a dozen years of environmental review set the requirements for monitoring, operating, reporting, inspections for the mine during construction, operation, and closure. These permit conditions and requirements are fair and reasonable and include protections for our environment and our health. Through the environmental review and permitting process PolyMet has demonstrated that it can meet those tough Minnesota standards.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
380	Pat Mullen	Senior VP, Allete	Closing a mine safely will cost a lot of money. And the permit to mine protects Minnesota taxpayers financially, too. It doubles the bankruptcy proof, financial assurance amounts from one year to two, showing how the state and PolyMet have gone to extra lengths to ensure taxpayers are protected in case of a bankruptcy.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
381	Pat Mullen	Senior VP, Allete	And at the mine the processing facilities are properly closed and reclaimed. Taken together, the permit conditions and financial assurances provide a path for mining and environmental protection to co-exist while making sure the mine will be safe and responsibly closed when that time comes.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
382	Pat Mullen	Senior VP, Allete	From a utility perspective, the metals PolyMet will produce are essential to our quality of life and especially to the production of clean energy. Copper is a critical component of the transformation of the nation's energy landscape. It's used in large quantities with wind turbines and solar rays and used in the wires needed to get that carbon-free energy to customers. Electric cars require copper, too, along with nickel, a key ingredient in the batteries that fuel them. As our nation moves ever forward in clean energy, we're going to need more and more of these metals. Mining these metals in the United States and right here in Northeastern Minnesota under our tough standards, rather than a far-away country that might not offer the same environmental protections, makes good sense for our nation.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
383	Pat Mullen	Senior VP, Allete	Let's open a new chapter for mining on the Iron Range with PolyMet and not squander the opportunities so we can prove that copper-nickel mining and clean environment can co-exist while also boosting the fortunes of a part of Minnesota that could use some good financial news right now. Thank you for your time and the opportunity to address this important issue.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
384	Anna Yliniemi	Citizen	Hello, my name is Anna Yliniemi and I have been participating in this process for close to a decade. And when I first got involved we were lowering the sulfate standards. And then we were studying the impact on wild rice, millions of dollars on the impacts. And then we are changing land exchange legislation. And it's one thing after another. And we've supposedly got these strong mining laws that we don't necessarily follow. And they get changed behind closed doors. And the process hasn't been transparent.	Comment noted. The draft permits were developed according to current state and federal law. The comment does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
385	Anna Yliniemi	Citizen	And there's a lot of misconceptions. These precious metals, this copper, it's not coming to us, it's going to the open market. And it's only 10 percent of the open market, so it's unlikely to ever come back to us and impact us. There's a lot of really slippery language. I personally have been studying extreme weather events around the world and they are on increase. Just this weekend in Australia, 152 milliliters of water -- sorry, 152 centimeters of water in a 24-hour period has parts of the region completely shut down. Flooding in South America, extreme weather in Russia. The jet stream is changing. We don't understand all these things. Yet, when I went downstairs and spoke to the water people, they said that they do look at 30 years of highs and lows. But we know right now that in the next 15 years everywhere in the world is expected to be getting an increase in these hundred-year events. So, that means we don't know what to expect out of these changes.	Permit review did consider extreme storm events. Mine water sumps and ponds typically have normal operating capacity for the 100-year, 24 hour precipitation event (approximately 5.2 inches), and have additional capacity within the freeboard as a safety factor. In the case of a larger 500-year or 1000-year storm event, water can be transferred to the Equalization Basins if needed, where sufficient freeboard capacity is available to contain the aggregate volume of a 1000-year storm event (estimated at 7.0 inches of precipitation in 24 hours) without an overflow.

386	Anna Yliniemi	Citizen	Climate change is real. We know it's here. It's one extreme to another. It's a thaw and it's a freeze and it's a thaw and a freeze. In New Brunswick, Canada just this weekend a small creek froze up and then they had a warm spot. And it caused everything to thaw and more rain to fall. Well, the creek was ice jammed, so it flooded a parking lot. And then, the temperature dropped to 20 below zero, plus a windchill. The cars were frozen in place. What if that happens with this PolyMet mine? What kind of accommodations are being made for these extreme conditions that our urban engineers don't even understand? Thank you so much for the opportunity. I hope that we continue to have this public comment process long into the future.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
387	Catherine Pruszynski	Citizen	I'm Pruszynski, Minneapolis. And I'm ceding my time to Allen Richardson.	This comment simply defers speaking time to another individual. No response needed.
388	Allen Richardson	Citizen	My name's Allen Richardson, A-l-l-e-n, R-i-c-h-a-r-d-s-o-n, from Duluth. I want to say, it's one of my least favorite things to be in a state of political opposition with members of the labor movement. I really and truly dislike it. I feel like it's a -- it's a false dichotomy and that we're being maneuvered against each other. And I sincerely hope that we can come together to build an economy that does not require an open-ended amount of water treatment. Hopefully working together we can build a more resilient future than that. And I'm here to -- my opinion as a citizen is to give a vote of no confidence in the PolyMet project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
389	Allen Richardson	Citizen	I will say that I'm glad that what we share with our labor brothers and sisters is we come from a culture of science. And I wanted to invoke the CO2 question on this project. So, over 20 years of mining PolyMet would release 15.8 million tons of CO2 equivalent pollution, which is more than ten million tons from burning fossil fuels. And on an annual basis, PolyMet's CO2 equivalent pollution would be 700,007, 342 tons per year, which is more than a quarter of the carbon footprint of all of Duluth, including commercial, industrial, residential, transport, and waste sectors.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
390	Allen Richardson	Citizen	I -- I remember well in August of 2014 when the Mount Polley copper-nickel tailings dam in Canada blew out, releasing 6.3 billion gallons of polluted water. And I'm certain that they had a long Environmental Impact Statement, that the Mount Polley mine was heralded as a state-of-the-art facility at the time. And I'm sure that those folks love their families and there probably were a lot of outdoorsmen that worked on that project, but that's one hell of a mess.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
391	Allen Richardson	Citizen	I just want to say that based on environmental review documents, the hydrometallurgical waste facility that's attached to this project would have sulfate concentrations above 7,300 milligrams per liter, which is 700 times Minnesota's wild rice sulfate standard. And over 20 years of operations that would hold 3,280 pounds of highly toxic mercury. Again, speaking directly to my brothers and sisters in labor, I would hope that you would expand your concept of solidarity to include the wild rice protection that is enshrined in treaty law, which is the true law of this land. Thank you for your time.	The permit specifies that the HRF be operated as a closed-loop system and prohibits a discharge from the HRF system to surface waters or to the FTB pond. The HRF will be constructed with a double liner system with a leachate collection between the two liners. This means that there will be essentially no leakage to groundwater from the facility. The permit includes detailed requirements on the investigation of the subsurface at the proposed site and the preparation of the foundation for the HRF. In addition, the permit requires MPCA review and approval of the final plans and specifications for the liner system before it can be constructed.
392	Larry Bogolub	Citizen	Good evening. My name is Larry Bogolub from St. Paul, Minnesota. I am a full union teacher in Minneapolis teaching at the Northrop Environmental School. I do not want to see the PolyMet proposal go forward. And I'm going to cede my time over now to Nancy Schuldt. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
393	Nancy Schuldt	Water Quality Specialist, Fond du Lac Band	: Thank you. Can I speak from the yellow mic? MODERATOR GOURLAY: As long as it's on. NANCY SCHULDT: Is it on? MODERATOR GOURLAY: Yes. NANCY SCHULDT: Thank you. I'm Nancy Schuldt, N-a-n-c-y, S-c-h-u-l-d-t. I live in Duluth, but for the last 20 years I've worked for the Fond Du Lac Band as their water quality specialist. And it's been a long 12 years of trying to understand what this project is going to do and how it can potentially be done in accordance with state and federal rules. Along with my other tribal counterparts we spent a lot of time preparing and submitting very detailed, very extensive, very substantive comments for the last 12 years.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

394	Nancy Schuldt	Water Quality Specialist, Fond du Lac Band	And yet, it's been really frustrating to see so little of that expertise that has come from the tribes reflected in the environmental review, the results of that environmental review. And now as I'm reading through these massive documents, I wouldn't call it efficiency personally to have to review four major permits at one time, but there's very little of that reflected in what I'm seeing coming out in permits right now. So many of those major differences of opinions were kicked down the road until permitting. And I don't see them resolved or addressed in the permits so far.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
395	Nancy Schuldt	Water Quality Specialist, Fond du Lac Band	There's a big question that the tribes raised back in August and we can't get a simple answer to a question about how many acres of wetlands will actually directly be impacted by this project. It seems like it's awfullyl late in the game to have questions hanging over something that is so fundamental to all four of the permits that we're talking about tonight.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Detailed responses to specific written comments are addressed in the "Water" and "401" sections of the Response to Comments.
396	Nancy Schuldt	Water Quality Specialist, Fond du Lac Band	And as a downstream water quality regulator, the Band can say that we fundamentally disagree with the 401 certification. We know that the existing mines and the way they are regulated in this state with all of its stringent environmental regulations are polluting waters already. And there's nothing in the proposal for this project and the permits for this project that give me any kind of confidence or provide any evidence that this project will control its water pollution either.So, I'll be submitting another round of substantial and extensive comments on all four of these permits. Thank you.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Detailed responses to specific written comments are addressed in the "Water" and "401" sections of the Response to Comments.
397	Nancy Deever	Citizen	Nancy, N-a-n-c-y, Deever, D-e-e-v-e-r, Duluth. (Other language spoken). Water is life. In the '90s I chose to leave this land of water, don't ask me why, and move to the arid Southwest. I lived for several years in Silver City, New Mexico, next to one of the largest open pit copper mines in the country. It didn't disgust me, it didn't bother me because it was what it was. It had been there a long time, as many copper mines are.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
398	Nancy Deever	Citizen	The western United States is very arid, it's a different geology, different everything compared to our land of waters and watersheds and water everything. So, I was -- I had to learn something very important out there, whiskey is for drinking, water is for fighting. That is one of their mantras. Also, water flows uphill to money in New Mexico because of water rights. We don't have that problem here, but water is really, I think, at the bottom of the contention here. I have -- I'm an environmental researcher in -- mostly in native plants and botany, but I have a real strong background in teaching water quality and hydrology, it's my love because I'm an aquarium, what can I say. And I have been on the fence since I moved back here about seven years ago and heard about this project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
399	Nancy Deever	Citizen	Mining companies everywhere do not have a good reputation. And people who make their living from them know that. They understand that. It's not a happy situation. In Cobre, New Mexico where I knew people, they -- you know, the mine gave them work. I actually worked in the mine doing some botanical research for the company. My husband was a forest service employee. So, I know my way around some of those places.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
400	Nancy Deever	Citizen	And coming back here and listening to the testimony, this is brand new for me, I've never spoken to a public audience like this, but I'm going to remind you of something that's the focus of all this.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
401	Nancy Deever	Citizen	The results of all this are because the -- I guess the argument on both sides is really because of our most precious resource. We cannot replace it, we cannot remake it. When certain things happen to water it -- we can't fix it. Water is life. So, I would just like to point out that no matter which side of the debate you're on, water always wins. Nature is smarter, stronger and more resilient than we give her credit for.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

402	Nancy Deever	Citizen	So, I just want to remind -- when I taught science I told my kids -- how many of you played rock, scissors, paper? Okay. What beats all three of those elements when you play that game? Water. It melts the paper, erodes the rock and rusts the scissor. Folks, no matter what side you're on, water is going to win.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
403	Doug Christy	Citizen	I'm Doug Christy, you spelt the name wrong, but that's all right, it's -t-y. And I'm from Grand Rapids. I'm a proud union member and a representative for Sheet Metal Workers Local 10 for Northern Minnesota. I'm going to give my time up to Dave Lislegard.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
404	Dave Lislegard	Mayor of Aurora	Hi, my name is Dave Lislegard, L-i-s-l-e-g-a-r-d. And I am the mayor of Aurora, Minnesota. And I think it's very well known the struggles that our community has had, but I want people to know that we truly do care to do the right thing the right way. My grandfather -- my grandfather built the Erie Mining Company. My dad worked there, I worked there. And we're hoping that many of our family members can continue to work there. My message is to all of you, I respect you guys for your caring. We may not agree, but I think that as long as we can have this open dialogue and communicate in a professional and polite manner that we can come to some sort of resolve.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
405	Dave Lislegard	Mayor of Aurora	And I don't believe that it's all or nothing. And I want to leave saying thank you for all of your hard work as the agencies. I want to thank the company for doing their due diligence and for the state of Minnesota.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
406	Dave Lislegard	Mayor of Aurora	This isn't just for our region. And I want Duluth and Lake Superior to know that our goal, the agency's goal and the company's goal is not to pollute the water that goes to Lake Superior. That is not our goal, in all due respect. Our goal is to do the right thing the right way and provide jobs. So, I thank you for your due diligence, our communities thank you for your due diligence. I appreciate it. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
407	Scot Bol	Citizen	Hi, I'm Scot Bol. I believe the research shows that sulfide mining has not been done safely ever. And to watch it for 500 years? I don't know. No one here is going to be that person that's going to do that.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
408	Scot Bol	Citizen	Brothers and sisters, I want us to figure out how we can help the common good. Now, I hope a lot of you would want that also. Let's have jobs for everyone. There's better ways. Following the dark money, following the 1 percent's analysis is shortsighted. We have to create jobs in another way. It turns out, you know, the science is helping us in many ways. It's pointed out that climate change is real. We need to create other alternative energy. There can be so many millions of jobs with this. They retooled after World War II -- during World War II after the bombing of Pearl Harbor. So, let's retool and move away from all these fossil fuels. We can do it. We can create jobs in other ways.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
409	Scot Bol	Citizen	But following the corporate analysis, the dark money, the 1 percent's ideas of where we should get our jobs, this kind of mining is not safe, it's not been done. So, we have to look at other ways. There's so many other options. We have to look for the common good. Right now we allow three people in this country to have more wealth than half of our nation. That's in Forbes magazine, I'm not making this stuff up. That hurts my mind to conceptualize that. Three people have more wealth than half of our nation? We need to distribute our wealth better than that. I think that along with having a minimum wage we have to have a maximum wage. I don't see how we can allow three people to have as much money as half of our nation. So, we have to do better at looking out for the common good	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

410	Scot Bol	Citizen	We need to retool, create alternative energy jobs. We have to say no to sulfide mining, it's just too great a risk. We can't risk our water. I know those that are desperate for a paycheck have a hard time grasping this because they're blinded by the possibility of a job. We made people too desperate. I know that I've worked with some folks on the food shelf and there's a lot of folks that are desperate for a meal. And I'm sorry folks on the Iron Range are looking so hard for jobs. They're losing their kids moving away because there's not jobs. There's other ways. We can do a new deal. We can do like we did -- a green new deal would be a beautiful thing for creating the jobs, a lot of possibilities. There's so many other options. We have to think beyond what the corporation's analysis has given us. I think that's about it. Let's take care of each other.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
411	Jessica Bleichner	Citizen	Hello, my name is Jessica Bleichner, J-e-s-s-i-c-a, B-l-e-i-c-h-n-e-r. I'm from Brainerd, Minnesota. This is hard for me to do, so excuse my warbly voice. I am a Minnesota master naturalist volunteer specializing in youth education about watersheds and water quality. I do water quality monitoring volunteering. So, this is a topic that's very near and dear to me. My issue with this mine and this location is because of the watershed. Every watershed has a pour point and an entry point.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
412	Jessica Bleichner	Citizen	They're trying to put this mine in at the very top of the watershed. So, it can pollute anything downstream. What's downstream? Some of our only clean water that is not at all contaminated in the entire state. I encourage you to look at the RAPs reports for local watersheds. A RAPs report is from the Pollution Control Agency, it's a watershed restoration and protection strategy. Please take these into consideration as you're making your decision because there's not a single RAPs report in the state that encourages further pollution and contamination of our waterways. We have very little fresh water in the entire world. Minnesota is already looking to export some of our water resources. This is an incredibly valuable resource, far more valuable than anything that's below our ground, any mineral, anything. Like everybody says, water is life, we need it to live.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
413	Jessica Bleichner	Citizen	I have my children here with me tonight that I educate, along with many others in the community. And what we teach them is that it's very important to take very, very, very high considerations as to what kind of developments that we are going to be making to affect these future resources. The risk is just far too great with this mining proposal. Water is a closed dynamic system, so nothing ever leaves it. What we put into it we generally cannot take out.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
414	Jessica Bleichner	Citizen	So, risking what very, very, very little clean water we have left on this planet as a resource just does not make sense for our future generations.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
415	Jessica Bleichner	Citizen	With that also in mind, this is a boom and bust system, this is not going to be a long-term benefit to our state, in my opinion. So, when it busts, who's left with the cost? It's not going to be us, it's going to be our kids.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
416	Jessica Bleichner	Citizen	I care so very much about our future generations. What are they going to have to drink? What are they going to have for life if we contaminate everything? We can't do this, please. Also, this is public land. How is leasing this to a private company going to benefit me wanting to access these public lands? How can I benefit from that forest? How can I benefit from these lakes that are public lands that are supposed to be accessible by everybody if it is under the control of a private corporation? I just want to say thank you to all of the water protectors that have been working just as diligently for the decade that this has been going on. I've been here with you for five years of it, let's keep on going. Please take this into consideration.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
417	Kim Davis	Citizen	Hi, I'm Kim Davis, K-i-m, D-a-v-i-s, I'm from Shakopee, Minnesota and I support the water. I'm going to turn this over to Paul Christianson.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

418	Paul Christianson	Citizen	Hi, good evening, I'm Paul Christianson, Kim's husband. Thank you very much for the opportunity to speak. I will keep it very short since we're at the end of the session. I'm a U.S. Navy veteran for clean water. My wife and I own property in Lake County and we will be building a house and moving to this region in about five years. And this type of mining does not belong in Minnesota. The toxic pollution from the mines will last hundreds of years, as we've heard. There's no guarantee that it will be cleaned up, even though they say it will. PolyMet and Glencore are only in this for short-term profit. Please do not issue the permits. Thank you.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
419	Julius Salinas	Citizen	My name is Julius Salinas, J-u-l-i-u-s, S-a-l-i-n-a-s. And my father was a World War II combat vet, my uncles were combat vets. And there's Purple Hearts involved there. In 1971 and '72, those summers I worked at U.S. Steel. I made eight bucks an hour and I sure appreciate that. I support miners, but I do not support this mine.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
420	Julius Salinas	Citizen	Insurance companies are in business to make money and they've proved to be very successful. They do well because they do their homework, reviewing the science and mathematical probability associated with risk before they're willing to accept them.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
421	Julius Salinas	Citizen	According to PolyMet's own research the proposed copper-nickel mine would be in production for 20 years, but the waste water and tailings from the operation would need to be treated for as much as 500 years and contained for as long as the water -- or the waste materials remain toxic. As of this day every sulfide mine in a water rich environment has contaminated surface and/or ground water as a result. This proposed mine would also violate treaty rights granted to indigenous peoples by the U.S. government.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
422	Julius Salinas	Citizen	Due to its incredibly high probability of contaminating the land and resources in ceded territories, this is not a sound decision, the largest sources of Super Fund liability to U.S. taxpayers or mines exactly like the one PolyMet is proposing. With the EPA concluding that the probability of potential failure of water collection and treatment of the proposed PolyMet mine is 93 percent, is there really any question of its practicality? From a business perspective this is an intolerable risk. There's not an insurance company on the planet that would accept this risk. If an insurance policy covering the cost of hazardous cleanup was negotiated, the premiums would be so high that no private company would be willing to -- willing or able to pay it.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
423	Julius Salinas	Citizen	The risk is clear, but is being clouded by the promise of money. How much is a clean environment worth to our descendents? How much money will it cost to have clean water and healthy habitat for plants and animals?	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
424	Julius Salinas	Citizen	The toxic liquid waste will need to be treated for 500 years. What are the odds of just one leak in 500 years? The proposed mine project is a con.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
425	Julius Salinas	Citizen	The business plan is to go through the motions of appearing to care for the health of people, communities and the environment in order to receive required approvals that both unnecessarily expose every living thing in the Lake Superior watershed. Irreparable damage when the toxic waste is -- 99 percent is waste. This is not a sound decision and --	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
426	Alex Spitzer	Citizen	Hello, my name is Alex Spitzer, I'm a senior at the University of Minnesota. I'm studying environmental law. I'm originally from Chicago. One of the main reasons I wanted to come to the university of Minnesota is because Minnesota has been known for its progressiveness when it comes to environmental issues. And I refuse to stand by and let Minnesota be bullied into disregarding its environmental principals by corporations like PolyMet and Glencore.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
427	Alex Spitzer	Citizen	These corporations don't care about what happens to Minnesota citizens, which is why it is your responsibility to intervene and protect them. Anyone who truly looks at and understands the science behind this project would undoubtedly see that it would be devastating for our state.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

428	Alex Spitzer	Citizen	Copper-nickel mining is not like other mining. It is much more environmentally risky and dangerous than other kinds of mining. There has never been a copper-nickel mine built on a water rich environment that has not resulted in toxic water pollution. The U.S. Environmental Protection Agency has concluded that during the time the sulfide mine is operating, the rate of failure of pollution in collection systems is 93 percent. After the mine closes, there's been a 100 percent rate of failure of pollution collection. Seepage from PolyMet's copper-nickel sulfide mine, pits, tailings and other waste containing sulfate and toxic heavy metals would last for over 500 years.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
429	Alex Spitzer	Citizen	That is long -- PolyMet would have to be treating the seepage for over twice the age of this country. Claiming that PolyMet would responsibly take care of the pollution for that long is foolish. Additionally, PolyMet has admitted that millions of gallons of contaminated waste water from the mine site and tailings site would be released untreated into ground water. The seepage would pollute drinking water, wetlands, rivers and would increase downstream mercury contamination of fish. We need to stand our ground and protect Minnesota natural resources, taxpayers, and downstream properties. I love Minnesota and I would like to live here the rest of my life. I am not asking you, I am begging you, not just for me, but for my future family as well, please do not allow these foreign corporations to come here, destroy our environment and poison our communities.	The project includes engineering controls such as stockpile liner systems, seepage capture systems and wastewater storage and conveyance systems that are designed to limit and manage impacted water from the facility so that it does not impact groundwater or surface water. The effectiveness of these controls was evaluated in the EIS and the water quality permit requires their installation/operation. The Annual Comprehensive Performance Evaluation Report required by the permit will provide an assessment of the performance of the engineering controls, including liner systems, using permit-required monitoring results and internal operational data to ensure that pollution of groundwater and surface water does not occur.	
430	Brian Hanson	CEO, APEX	Well, it's not very often I get the last word, so that's great. My name is Brian Hanson, B-r-i-a-n, H-a-n-s-o-n. I'm a resident of Duluth and I grew up in Grand Rapids. I'm also the CEO of APEX, private sector led business development engine for Northeast Minnesota and Northwest Wisconsin. APEX investor members represent over 80 of the most influential companies in the region with a collaborative approach to promoting sustainable economic growth. Today I'm here to urge the DNR and MPCA to respect the long, fair, and informative process that's been completed by issuing the permit to mine, along with related permits for the PolyMet NorthMet project. And please do so in a timely manner.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
431	Brian Hanson	CEO, APEX	Back in 2013 APEX invited PolyMet's CEO, Jon Cherry, to speak with our group about the NorthMet project. Mr. Cherry informed our group about the quality of the copper, nickel, and precious minerals deposit. He talked about the massive recycling effort required to reuse the existing mining facilities of former LTV plant. He informed us that construction alone would require two million hours of work with thousands of tradespeople on site. He also spoke with pride about the 360 family sustaining jobs and 600 additional indirect jobs estimated to be created by the project.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
432	Brian Hanson	CEO, APEX	All of that was great, but you know what was particularly interesting to the people in that room, people like me learning about the project, the permitting process and the protection of our environment. Mr. Cherry shared the details of four state and federal agencies working together on an array of permits designed to protect our environment. He talked about how PolyMet's staff and consultants, many of whom live and work right here in Duluth, working together to create a plan that would address potential issues and provide a basis for solid permits. Based on the information provided and with the input of APEX members, including chemists, engineers, and scientists, APEX members concluded that a resolution of support for the PolyMet NorthMet project was in order. And that resolution was passed in January of 2014.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
433	Brian Hanson	CEO, APEX	Since then APEX has closely and carefully monitored the project, including the draft environmental EIS, the final EIS, and now these draft permits. In my assessment, the correct steps have been taken to move forward with the NorthMet mine permits. The DNR and PCA are issuing draft permits because PolyMet's mine can comply with strict state and federal environmental standards while protecting our land and water. Their detailed work includes more than ten years of diligent study and review. Let's get on with it folks. Thank you.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
434	Doretta Reisenweber	Citizen	Water is life for you, me - all life. You of all must enforce proper stewardship of water for the future. Thank you Dorie R	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

435	Doretta Reisenweber	Citizen	Whether I read the PolyMet Fact Sheets or the thousands of pages of draft permit, I find serious shortcomings... shortcomings indicating minimal control, if that, by the agencies charged with regulating the PolyMet draft permits. Who is in charge? Polymet or the DNR/MPCA? It appears the former, which is untenable.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
436	Doretta Reisenweber	Citizen	Concerns about the PolyMet Fact Sheets follow. In the Project Overview, page 1 regarding the 3 phases---particularly 2/ Mining operations: Apparently monitoring of water is to occur only during the mining phase. During construction Duluth Complex ores which are high in sulfide would be disturbed, thus increasing the chances of polluting groundwaters, surface waters and wetlands especially in the event of extreme precipitation. Those waters should continuously be monitored within, along the perimeters and beyond the perimeters of the company's property both prior to and during the many aspects of construction, not just during the mining operations and closure phases. It would be environmentally responsible, if the company would be required 1. to monitor and 2. to report on water quality (in real time) to the enforcing agencies throughout all phases: construction, operation and closure. Insist on that or deny the permits.	The monitoring requirements of the NPDES/SDS permit are effective upon issuance of the permit; this would include the construction period. Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
437	Doretta Reisenweber	Citizen	Another concern is found on page 2 : " PolyMet's goal is to transition to non-mechanical treatment, if the company is able to demonstrate to the satisfaction of the DNR and MPCA that a non-mechanical system could comply with all water quality standards." However, the DNR and MPCA are charged both with promoting and with protecting natural resources, thus setting up internal conflicts which might prevent the duty to protect the environment. I have often heard that the state legislature may establish a separate agency to be charged with the environmental protection aspect of such industries, leaving the DNR and MPCA to work separately on the promotion of natural resources for industries. Is the permit/contract written in such a manner as to transfer the job of environmental protection to a separate or different agency? If not, please correct the appropriate, binding legal documents to that effect to protect the public's interest.	The permit does not authorize a discharge from an unproven or innovative treatment system. MPCA has reviewed the proposed WWTS technology and determined that it is capable of achieving the required effluent quality. The MPCA has added language to the permit to require construction of the WWTS components as proposed in the application. Construction of anything other than what is described in the permit will require a modification of the permit, with public notice and comment. The permit complies with state and federal permitting rules and is independent of speculation on the future of state regulatory agencies.
438	Doretta Reisenweber	Citizen	Next please consider RECLAMATION. The DNR/MPCA should not accept an indefinite time line such as suggested here: " ..... mining so areas can be reclaimed as soon after initiation of operation as practical." The company should reclaim immediately, or provide the agencies an acceptable explanation forthwith of the specific extenuating circumstances delaying the reclamation.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety and DNR Water Appropriation permits. No changes were made to the draft permit in response to this comment.
439	Doretta Reisenweber	Citizen	Along with that the DNR should require that the company's specific plan and timeline remediate all reclamation problems in a prompt manner, of course, pending agency approval.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
440	Doretta Reisenweber	Citizen	Another situation not referred to in the PolyMet plans or draft permits, prompts this concern. "What if other mining companies (for example Twin Metals/Antofagasta, Teck or Encampment) use the processing plant and operate beyond PolyMet's suggested twenty years? What would be the controls on PolyMet's responsibility for mine closure? Would it be, is it, mandated to devolve to other companies? What legally binding assurances are there of reclamation, if and when PolyMet is no longer involved? Please make sure reclamation is fully covered regardless of ownership.	A proposal by another entity to utilize PolyMet infrastructure would be subject to separate environment review and permitting for that proposal. The extent to which such a proposal could affect the terms and conditions of the PolyMet permit would also be subject to review, and may result in supplemental environment review of the PolyMet project and/or modification of the PolyMet permit, with public notice and comment.

441	Doretta Reisenweber	Citizen	Further, I note that wetlands mitigation would use wetland bank credits "as appropriate." The state agencies charged with oversight should delineate what "as appropriate" means and not leave the determination in the hands of the permitee. The agencies need to demand specifics and accountability. It seems there is a long history within the agencies of passing the buck and not demanding accountability. This is not acceptable on the agencies' part. In the case of PolyMet, the DNR and MPCA are dealing with Minnesotans' water quality. Deny these permits.	Comment noted. This comment primarily relates to the 401 certification. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
442	Doretta Reisenweber	Citizen	I would be remiss not to mention the reclamation "happy talk" --- to wit: 'provide for subsequent land uses such as wildlife habitat, timber production and recreation.' From my reading about sulfide mining over the past years, AMD seepage and, worse yet, major breaches leading to environmental devastation have occurred in New Guinea, South America, Mt. Polley, BC, Canada, and elsewhere throughout the world. What "subsequent land uses" is PolyMet planning? Even Minnesota, is not exempt from the laws of nature, no matter what one believes to be the strength of our ever-degraded environmental protection laws, much of which came from our own state's lawmakers. Take special note of Reps. Nolan, Emmer and Walz legislation and our illustrious president for the recent legislative and executive travesties inflicted upon Minnesota---HR 3115 and HR 3905 and the evisceration of the EPA.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
443	Doretta Reisenweber	Citizen	The reclamation section further goes on to claim there would be "monitoring and maintaining of bodies of water....and other features of the environment....." ....."Reclamation activities would be reported and reviewed on a yearly basis..." YEARLY? The reporting should be monthly or, better yet, weekly even during the non-growing season. Dirt might be moved, water channels and roads disturbed, etc. Require that the accounting be accurate and up-to-date. Keep the mining company accountable to the agencies. I suggest weekly reports, even if they simply report "no change at such and such area from date of last report."(Specifics provided, of course.) Our water is at serious risk from PolyMet's proposed mining project. Weekly reports to agency staff tasked with evaluating the reports at the onset and throughout reclamation on positively or negatively affected aspects and areas should be required to be sent to and evaluated by agency staff tasked specifically with evaluating the reports and enforcing violations or "slip-ups." Looking the other way or letting problems slip through the cracks and fissures is not acceptable on either's part. Our water quality is at grave risk.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
444	Doretta Reisenweber	Citizen	Another aspect of concern is DAM SAFETY. I've commented on it in previous letters, except for the portion on Minnesota Rules 6115.0410, subp. 8 ...."potential hazard to health, safety and welfare of the public and the environment....." (That certainly pertains to the PolyMet mine proposal)....."availability of alternative sites..." (From what I have learned, the low-grade ores which PolyMet proposes to mine are found pretty much throughout the WORLD, so why site it here in water-rich Minnesota/ Why sell that precious water at less than pennies per gallon all the while risking the pollution of the quality water we currently enjoy? Why? Because vast, VAST amounts of water are required for hardrock sulfide mining. VAST AMOUNTS OF WATER! Now consider the cumulative appropriations of water should Twin Metals/Antofagasta, Teck and Encampment begin mining the Duluth Complex. Such a drawdown would surely conflict with Minnesota statutes or regulations.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety and DNR Water Appropriation permits. No changes were made to the draft permit in response to this comment.
445	Doretta Reisenweber	Citizen	White Bear Lake, MN, has already experienced an OVER APPROPRIATION of water (Aug. 2017 news coverage of lawsuit). Who in the DNR oversaw this? Who might OVERLOOK this PolyMet situation? Maybe too many divisions over too many years were working on the problem and miscommunicated, but, in the White Bear Lake over appropriation, there were citizens who tried to get someone to pay attention and fix the problem, before it became any worse. That is what the public comments on the PolyMet draft permits are for, too. I shall be more than charitable and circumspect now remembering it is human to make mistakes. It is not difficult to wonder, if someone in one or both agencies were to become unable to perform the difficult tasks assigned thus unfortunately resulting in the selling short of our precious water quality and our natural resources with the resultant perpetual (admittedly 500 years) water pollution. This is unacceptable. Deny the permits.	Comment noted. This comment pertains to issues considered in the development of the DNR Water Appropriation permits. No changes were made to the draft permit in response to this comment. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
446	Doretta Reisenweber	Citizen	Deny PolyMet draft dam permits. Looking at the revised permit to mine, p. 354, Flotations Tailings Basin, lines 10-12 discuss a PMP rainfall event (35" in 72 hours) as rare and "estimated to range from 100,000 to 1 billion years.(Reference (46)). Climate change is real---aninconvenient truth the drafts should not overlook. "Facts do not cease to exist, because they are ignored." (Aldous Huxley) Recent extreme rain events in the US and throughout the world demand review and recalculation. The 100,000 to 1 billion year time frame is ridiculously far off the mark. It does not appear to be a typo. Deny the permits.	Permit review did consider extreme storm events. Mine water sumps and ponds typically have normal operating capacity for the 100-year, 24 hour precipitation event (approximately 5.2 inches), and have additional capacity within the freeboard as a safety factor. In the case of a larger 500-year or 1000-year storm event, water can be transferred to the Equalization Basins if needed, where sufficient freeboard capacity is available to contain the aggregate volume of a 1000-year storm event (estimated at 7.0 inches of precipitation in 24 hours) without an overflow.

447	Doretta Reisenweber	Citizen	Turning to p. 355, paragraph 3, lines 5-8 the dubious assurance is given that "As noted previously there will be an emergency overflow system based on industry standard practices...." How is one to believe best practices or even standard industry practices would be followed, when the proposed plans are for an upstream type tailings basin dam and for wet tailings both of which are NOT RECOMMENDED industry practices? In fact since the Mt. Polley, BC breach in 2014, those practices are repeatedly cited as specifically NOT recommended, most recently in November of last year by the UNEP (UN Environmental Programme).	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.
448	Doretta Reisenweber	Citizen	What other suspect or substandard practices are the permits masquerading as standard practice? On p. 357, 11.4.7.1 Existing Conditions describes construction atop the decades- old LTV tailings site. How does that make for a solid foundation? On page 359 the last two lines read "is designed to keep the hydraulic head on the lower liner system very low." "Very low??" The document should specify" below what scientific metric of low whether in inches or centimeters." Accurate measurements matter when attempting to construct systems to prevent toxic overflows.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit and Permit to Mine. No changes were made to the draft permit in response to this comment.
449	Doretta Reisenweber	Citizen	Page 361 notes that "prior to the start of operations, as required.... PolyMet will develop.....in accordance with..." a stormwater permit. Why is the plan not already required? Why is it not already developed so it can be examined now during consideration of the permit? Why try to squeeze the toothpaste back into the tube---only in this case it is toxins back into the basin. Who is writing these draft permits? Does the industry not yet have a plan, because it has never having mined before, or because the permittee thinks he can get by with it? Is it standard practice to wait and see just how far the industry can push the permitting process and common sense?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit and Permit to Mine. No changes were made to the draft permit in response to this comment.
450	Doretta Reisenweber	Citizen	These draft permits keep putting the cart in front of the horse...waiting until they are forced to act, when, lo and behold, it might be too late to act effectively to prevent long-lasting, negative impacts. Someone keeps putting the fox in charge of the chicken coop....the permittee in charge of writing the permits. How irresponsible! Minnesota's water is at risk and yet the citizens are expected to trust that PolyMet will be able to do it right, and that the agencies will enforce protections. Look at Table 11-1on page 364---8 boxes contain "N/A." If that means not available, as it commonly does in other material, how can the DNR or the MPCA or any other expert reviewing the chart find that to be sufficient information on which to grant any permit? In what business model would "N/A" be deemed acceptable for an industry, posing such grave environmental risks? Deny these draft permits.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit and Permit to Mine. No changes were made to the draft permit in response to this comment.
451	Doretta Reisenweber	Citizen	I have been direct about my concerns. The DNR and the MPCA are responsible to the people of Minnesota, both to current and future citizen/stakeholders, for maintaining our clean water legacy. Copper-nickel sulfide mining companies are beholden to their shareholders to maintain a profit margin. But at whose expense and to what lengths are the copper-nickel sulfide mining companies willing to go to make money? Less than 1% of the ore mined contains the minerals the mining companies are seeking. Metal markets fluctuate. Mining booms and busts leaving communities broken and resources depleted, destroyed, even devastated in the case of copper-nickel sulfide mining. Deny the permits.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
452	Doretta Reisenweber	Citizen	Would PolyMet or any of the other mining companies want to operate in Minnesota, if we truly had stringent environmental protection laws? Environmental laws have been all but eviscerated since the Clean Water Act. Each state legislative session for some years has attempted to whittle away at Minnesota's environmental protection statutes and regulations. Another question to consider is would PolyMet or the other mining companies want to mine these low grade ores here, if Minnesota had very little water? I think not. Water is required in abundance to mine. Water which Minnesota apparently is willing to sell for cheap---$8 for how many thousands or is it millions of gallons??? Water is life. Do not give away future generations' clean water legacy. Deny all of PolyMet's draft permits. Please, protect the waters. A sustainable future for Minnesota depends upon this. Deny PolyMet's draft permits. Thank you for deliberating over these questions and concerns. Yours for maintaining our water legacy.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

453	Doretta Reisenweber	Citizen	To the MN DNR and the MN PCA: Once PolyMet operations contaminate the water, no amount of financial assurance will return the treated water to the original purity of the waters in their pre-mining state, but then, who would know? Were water quality baselines established as part of the permitting process? Of course, water quality is not the issue in these comments. The issue of concern in these comments is the lack of financial protection in the permitting process. Hence I ask the agencies to deny the PolyMet permits.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
454	Doretta Reisenweber	Citizen	Something to consider is that PolyMet, which has no mining experience whatsoever itself, has not pointed to any copper-nickel sulfide mine, which has operated for even ten years without polluting the water. No amount of money, if financial assurances and bonds, etc. were more than empty promises, has been shown to return to the original purity the water in the closed sulfide mine sites, which top the EPA's SuperFund list, the clean-up costs for which are estimated to be up to $54 Billion. Deny the permits. Minnesota's taxpayers including those downstream would be put at financial risk from the DNR's lax permitting. A 27% upstream dam failure risk, such as PolyMet's upstream-type dam plans call for, is too big a risk for centuries of water pollution. Deny the permits.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
455	Doretta Reisenweber	Citizen	DNR's permit indicates that PolyMet could receive a permit by putting up a mere $75 million, when the cost of PolyMet's closure and treatment for the first operating year is estimated to be $544 million. Where did the $544 million come from? [DNR, Draft Conditions, PTM] How many years would it take to earn that amount? That is scarcely 14 cents on the dollar.[ibid.] Who is the DNR working for-- PolyMet or the people? The Minnesota DNR should not be enabling this risky business knowing full well the very real potential for failure. Let PolyMet itself or Glencore ante up the money, but do not grant PolyMet a penny. Deny the permits. The Minnesota rule 6132.100 on copper-nickel mines demands up front "financial assurance" to cover closure and long-term treatment in case the project folds the first year of operations prior to a mining permit being issued. Yet, reports I have read indicate Trump issued an executive order to the EPA early in December of 2017 requiring no financial assurance from hardrock and coal mines. If the president were to have rescinded the financial assurance requirement, might that put Minnesota requirements in a predicament? [Earthjustice, Dec. 04,2017, "Trump EPA Abandons Safeguards Protecting Taxpayers from Mine Cleanup Cost: Agency decision leaves communities at risk and taxpayers facing multi-billion dollar bill for toxic releases."] How would such an executive order affect Minnesota law? We need a solid answer in the tumultuous times of the Trump administration. PolyMet has estimated it would require $72.6 million merely to clean up existing pollution at the old LTV taconite tailings site, before even taking into account the clean-up costs of PolyMet's newly-generated pollution. [PolyMet Form 20-F Annual Financial Report to U.S. SEC, for year endng Jan. 31, 2016] That looks like the DNR is telling PolyMet it is OK to put up less than $3 million to cover costs for PolyMet's own copper-nickel mine, before it receives a mining permit. Who benefits from that sort of financial deal-making? Not the taxpayers. Not the agencies, which are not liable for any problems. Who benefits? It appears to be the mining company. Is that a surprise, when the mining company also appears to be writing the permits? I object to state agencies granting an under-resourced, under-financed company like PolyMet with zero mining history carte blanche. Deny the permits.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

456	Doretta Reisenweber	Citizen	Before even considering a permit to mine application, Minnesota law 6132.1100 requires that a copper-nickel mining company verify that it has liability insurance "in an amount adequate to compensate persons who might be damaged as a result of the mining operation or any reclamation or restoration connected with the operation." It's supposed to protect both folks who own land downstream and the employees. However, neither agencies nor the people seem to have any idea what the actual costs of PolyMet's potential environmental liability insurance would be. Nonetheless, the DNR would grant PolyMet a permit to mine with a mere $10 million in liability policy to cover leaks, spills and dam failure. [DNR, Draft Conditions, PTM] What?! In the thousands of pages nowhere are mentioned the costs and dangers to downstream property owners, the drinking water, the whole of the Fond du Lac reservation, or the cities from Hoyt Lakes downstream to Duluth and Lake Superior were the dam to fail. No health impact study, no economic impact study....Irresponsible! No, not until a year after deposit of tailings do the DNR draft permits require PolyMet to compute liability costs. Wouldn't those costs be borne by Minnesota taxpayers, if PolyMet fails to have enough insurance until a year after tailings are deposited? If this were a boat, it would have so many leaks, it could not float. Deny the permits. Why should the above lack of sufficient liability insurance be a red flag for the Minnesota DNR? The Imperial Metals company had put up $73 million in bonds for the failed Mt. Polley mine in British Columbia, Canada. That is $63 million more than the DNR is requiring for PolyMet's proposed NorthMet, a very similar mine. Indeed that was not enough. So far, reclamation costs for the 2014 Mt. Polley dam collapse has run over $100 million. After four years it is still not "cleaned up." In November of 2017, Moody's rated Imperial Metals as "a very high default risk." So how would PolyMet rate with Moody's? Look at the similar and sharp downward trajectory PolyMet's plan and the DNR's draft permit for PolyMet to mine place Minnesota on. Both indicate catastrophic dam failure risk and underfunded financial liability. There are dangerous similarities between Mt. Polley and PolyMet. Deny the permits.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
457	Doretta Reisenweber	Citizen	I enclose the comments of four Minnesotans who KNOW finance. First is an article featuring the findings of the DNR's three independent financial experts. It is entitled "Listen to state's hired sharks on PolyMet draft permit."[Duluth News Tribune. p. 5, 2/7/18] The article concludes: "Unfortunately, the draft PolyMet permit ignores some of the sharks' key recommendations, and the resulting risk to Minnesota taxpayers is unacceptable." I repeat, deny these permits. Also I enclose a copy of Rebecca Otto's statement to the DNR on PolyMet's draft permits. It was read at the February 8, 2018, hearing in Duluth. Otto makes it abundantly clear that these permits should be denied. Minnesota's current State Auditor concludes: The draft PolyMet permit to mine does not protect the public interest, puts people downstream at risk, and leaves taxpayers unprotected. As drafted, the Polymet permit to mine doesn't protect Minnesotans and should be rejected by the DNR. Both of the attached provide thoughtful, expert commentary urging the DNR to deny these permits. For myself as well as current and future Minnesotans, I urge you to deny PolyMet's draft permits. Thanking you for your attention, I am yours for a better Minnesota, <Refer to original comment file to review the referenced attachments.>	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
458	Doretta Reisenweber	Citizen	Again I write to urge the agencies to deny PolyMet's draft permits to mine. Over 40% of our state's waters are considered impaired or polluted. Governor Dayton's bill would invest $167 million to update aging water treatment systems and protect bodies of water around the state. This much-needed action will help provide clean drinking water and protect the land of ten thousand lakes for generation to come."Ken Martin in the dfl Dispatch, 2/23/2018 The above statement about "protecting bodies of water" is not true for northeastern Minnesota. While the rest of the state's waters were given at least hope for help, Governor Dayton ignored the plight of the St. Louis watershed withhis support of PolyMet. Furthermore, Dayton's expressed desire to protect the Boundary Waters Canoe Area Wilderness from copper-nickel sulfide mining confused many who thought that there was only one copper-nickel mine proposed and that it would harm the BWCAW. Few paid attention to the fact that PolyMet was the first such mine proposed and would, if permitted, negatively impact the entire St. Louis watershed all the way to and into Lake Superior.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
459	Doretta Reisenweber	Citizen	I am not alone in my contention that if PolyMet is granted permission to mine, a legal precedent for such mining will have been set and other copper-nickel sulfide mining companies within the Duluth Complex (Twin Metals/Antofagasta, Teck, Encampment) will demand the right to mine as well. Both agencies appear to willfully neglect looking at the big picture. The cumulative effect of copper- sulfide mining operations on the waters of the Duluth Complex would harm the watersheds of the St. Louis River, the Mississippi, and the Rainy River. It would devastate the waters of the whole area including Lake Superior containing 10% of the world's fresh water as well as the BWCAW.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

460	Doretta Reisenweber	Citizen	Governor Dayton's proposed $167 million toward the replacement of aging water treatment systems may seem like a lot of money toward a worthy cause. It is, but it IGNORES THE COST OF NOT PROTECTING OUR CLEAN WATERS IN MINNESOTA'S NORTHEAST. An ounce of prevention is worth a pound---make that tons---of cure. Have the agencies considered the cost of allowing the waters of northeastern Minnesota to become polluted by toxins from copper- nickel sulfide mining? Have the agencies factored in costs for "trying" to treat the water basically forever, human health impacts (due to rising mercury levels and heavy metals), devastation of plant and animal life, the elimination of the way of life for those peoples whose lives depend to large degree on "living off the land?"	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
461	Doretta Reisenweber	Citizen	It appears that the DNR and MPCA have allowed PolyMet/Barr Engineering to dictate what will and will not be considered in the permits. If that is the case, it is irresponsible. How often have both agencies looked the other way only to have the people face huge environmental and health costs? Cases in point include US Steel's SuperFund site in the St. Louis River and the millions being spent trying to clean it up in recent years, the state's court battle with 3M over PFC's and the greatly reduced fine brought to light just this past week, the exceedance of water withdrawal from Forest Lake-August 2017, and numerous variances and violations overlooked for decades. It is time the people demand strict protection of our waters. From all of the facts environmental organizations and citizens are putting forth and from what I have learned, I insist that the agencies deny PolyMet's draft permits and protect future generations' water.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
462	Croitiene n. ganMoryn	Citizen	Dear Mr. Stine, Arguably, the Minnesota DNR had an excuse for its weak PolyMet draft Permit to Mine. There are state laws saying that part of the DNR's mission is to encourage minerals development. The mission of the Minnesota Pollution Control Agency (MPCA) is to protect the environment and Minnesota citizens from pollution.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
463	Croitiene n. ganMoryn	Citizen	The MPCA draft water pollution permit for the PolyMet sulfide mine doesn't set limits on polluted seepage through groundwater to drinking water or surface water.	See response to Comment Water-510.
464	Croitiene n. ganMoryn	Citizen	The MPCA draft water pollution permit for the PolyMet doesn't even provide appropriate monitoring; PolyMet discharge in violation of the Clean Water Act could go completely undetected.	See response to Comment Water-711-A.
465	Croitiene n. ganMoryn	Citizen	The MPCA draft section 401 certification ignores the deficiencies in the water pollution permit and erroneously claims that the PolyMet sulfide mine project would not violate water quality standards or degrade Minnesota water quality.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
466	Croitiene n. ganMoryn	Citizen	State agencies refused to evaluate impacts on human health from the PolyMet mine project using an open and public health impact assessment (HIA) process, even though 30,000 Minnesota medical and health professionals asked for an HIA to assess pollution threats including brain damage to fetuses, infants and children from mercury contamination of fish.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). The issue related to a health study was addressed as part of the EIS process. No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
467	Croitiene n. ganMoryn	Citizen	Now, the MPCA draft section 401 certification accepts PolyMet's "exclusions" and junk science to erroneously claim that the PolyMet sulfide mine project would not endanger the environment and human health.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
468	Croitiene n. ganMoryn	Citizen	I oppose this permit! Please DENY the PolyMet permit!	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
469	Amelia Kroeger	Citizen	Dear Commissioner Stine, MPCA's draft water pollution permit misses on setting contamination limits on PolyMet waste facilities seepage to wetlands and streams and doesn't even require monitoring for the quality of surface water, thus violating the Clean Water Act.	Comment noted. Monitoring data considered in the development of the draft permit and required by the draft permit documents are publically available. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

470	Amelia Kroeger	Citizen	MPCA is allowing PolyMet to skew forms allowing them to deny any threats to water quality including wetlands, wild rice, mercury in fish, and threats to the health of people. There is something dreadfully wrong when a company can be allowed, gratis, to contaminate our water. The MPCA needs to protect our waters from sulfide mine pollution!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
471	Amelia Kroeger	Citizen	I strongly urge the MPCA to deny water pollution (NPDES/SDS) permit and deny the Section 401 certification for the PolyMet copper-nickel mine project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
472	Amelia Kroeger	Citizen	The proposed NPDES/SDS permit is weak and fails to control the biggest threat from sulfide mining – the seepage of contaminated wastes to groundwater and then to drinking water and surface water from mine pits, waste rock stockpiles, tailings basins and other sulfide mine waste storage facilities.	The project includes engineering controls such as stockpile liner systems, seepage capture systems and wastewater storage and conveyance systems that are designed to limit and manage impacted water from the facility so that it does not impact groundwater or surface water. The effectiveness of these controls were evaluated in the EIS and the water quality permit requires their installation/operation. The Annual Comprehensive Performance Evaluation Report required by the permit will provide an assessment of the performance of the engineering controls, including liner systems, using permit-required monitoring results and internal operational data to ensure that pollution of groundwater and surface water does not occur.
473	Amelia Kroeger	Citizen	The Section 401 certification relies on PolyMet's assumptions, exclusions and misleading information to claim that the PolyMet sulfide mine would not violate water quality standards, degrade water quality, and endanger the environment and human health.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
474	Amelia Kroeger	Citizen	The PolyMet draft NPDES/SDs permit and draft 401 certification would conflict with federal and state laws and would jeopardize Minnesota water quality, natural resources, health and finances.	The permit complies with Clean Water Act requirements identified by EPA, including permit coverage for all pollutant discharges expected from the facility. The permit contains limits consistent with 40 CFR part 440.
475	Amelia Kroeger	Citizen	*The MPCA draft water pollution permit for the PolyMet sulfide mine wouldn't set limits on polluted seepage through groundwater to drinking water or surface water.	See response to Comment Water-510.
475-A	Amelia Kroeger	Citizen	*The MPCA draft water pollution permit for the PolyMet wouldn't even provide appropriate monitoring; PolyMet's pollution seeping from groundwater and welling up in wetlands and streams in violation of the Clean Water Act could go completely undetected.	See response to Comment Water-711-A.
476	Amelia Kroeger	Citizen	*The MPCA draft section 401certification would ignore the deficiencies in the water pollution permit and erroneously claims that the PolyMet sulfide mine project would not violate water quality standards or degrade Minnesota water quality.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
477	Amelia Kroeger	Citizen	*The MPCA, along with other State agencies refused to evaluate impacts on human health from the PolyMet mine project through an open and public health impact assessment (HIA) process, even though groups representing 30,000 Minnesota medical and health professionals asked for an HIA to assess threats including brain damage to fetuses, infants and children from mercury contamination of fish.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
478	Amelia Kroeger	Citizen	*Now, the MPCA draft section 401certification would accept PolyMet's exclusions, assumptions and junk science to erroneously claim that the PolyMet sulfide mine project would not endanger the environment and human health.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
479	Amelia Kroeger	Citizen	Please accept your Agency's mission as a protector of Minnesota waters, fish, wild rice, wildlife, wetlands and human health not the protector of foreign mining companies seeking profit at our expense. On behalf of the people of Minnesota and clean water, I ask you to reject and deny the draft water pollution (NPDES/SDS) permit and the draft 401 certification for the PolyMet copper-nickel sulfide mine project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

480	Gary G. Kohls	Citizen	Here are my reasons that the PCA should reject PolyMet's permit applications for their earthen tailings dam, their liquid slurry pipeline pumping operation and their open pit sulfide mine near the headwaters of the St Louis River:	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
481	Gary G. Kohls	Citizen	For starters, it is critically important to understand that the foreign Penny Stock company called PolyMet has a current share price of $0.63 per share, down from $1.50 per share in 2014. PolyMet, a total amateur in the business, has never operated a single mine in its short corporate life nor has it earned a single penny from mining. Their only income comes from selling shares to speculators and borrowing money from investors to pay their executives and employees. In addition, PolyMet, being an inanimate money-making corporation (that by definition has no conscience), cannot be trusted to tell the public about all the risks to the environment (including wildlife, fish, water, soil and air) that their exploitation of the earth could generate.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
482	Gary G. Kohls	Citizen	Therefore PolyMet can be expected to hide the fact that their operations could easily cause a massive environmental catastrophe similar to what happened at Mount Polley, British Columbia in 2014 (carefully study the article further below for the frightening details). Mount Polley was a state of the art copper mining operation and had a state of the art tailings pond with state of the art earthen dams holding back the millions of cubic meters of highly toxic heavy metals in the slurry that burst through and devastated, permanently, the downstream creeks, previously pristine lakes and rivers and destroyed billions of dollars of property and economic values.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
483	Gary G. Kohls	Citizen	Every citizen stakeholder that is potentially adversely affected by PolyMet's operation deserves to be fully informed by (theoretically) unbiased regulators such as the MN PCA about the potentially catastrophic pollution risk to the water users who happen to live downstream from the massive tailings lagoon, whose (eventual) 250 foot high earthen dam is at a high risk of failing in some way or other sometime in the near future, especially in the event of a large deluge of rain, an earthquake or a design flaw that could cause the earthen dam to dissolve, leak, over-top or structurally fail in some other way, including the probably high likelihood of being damaged by sabotage. The risks will exist for 500 years (or eternity, whichever comes first for human life on earth), since the toxic metals (see list below) in the lagoon will never degrade into non-toxic forms.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
484	Gary G. Kohls	Citizen	In addition, the vulnerable pipeline that will carry the toxic sludge from the processing plant to the slurry pond is at high risk of sabotage, with serious environmental contamination that could possibly be even worse than the bursting of a dirty frack oil pipeline such as could happen from the foreign pipeline company Enbridge as it transports dirty oil from the tar sands in Canada or from the Bakken oil fields in North Dakota. I don't believe that PolyMet has dealt with the possibility of sabotage.	The project, including the pipeline referenced in the comment, is on private property upon which public access is not authorized. The pipeline in question is within the main processing area where project activities are concentrated and unauthorized access would be easily detected. Further, if the pipeline was damaged, any spills would flow to the disposal facility and would not leave the site.	
485	Gary G. Kohls	Citizen	Up to this point, both PolyMet and Twin Metals (and all of the governmental agencies that have been involved in the approval process) have been seriously neglectful in educating the public about all the potential lethal dangers of either the pipeline or the massive amount of toxic liquids that will forever cause the deaths of any water bird that lands on the lake-like lagoon (a la Butte, Montana's ever-lastingly poisonous mining tailings "pond" and the nearby defunct Berkeley open pit mine [now a toxic "lake"] that has had its water pumps shut down and is now nearly filled to the brim with poisonous water that has high levels of dissolved toxic metals and a pH approximating that of stomach acid!).	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
486	Gary G. Kohls	Citizen	It seems to me that the MN PCA (and the DNR and Forest Service) would be exceedingly naive if it trusts PolyMet's promises to treat the water from the tailings pond by some unaffordable, piein- the-sky reverse osmosis or other de-watering plan that has not yet been tried on a commercial level. Those promises are theoretical and should not be trusted.	Reverse osmosis is a long-established water treatment technology that is used in a wide variety of applications, including mining, world-wide. To demonstrate that membrane treatment technologies were capable of meeting treatment targets for the PolyMet project, the company conducted a 6-month pilot testing program using seepage water from the existing tailings basin. For a portion of the test, additional metals were added to the test influent to more closely simulate projected effluent quality (i.e., wastewater that would be expected from the mining of sulfide-bearing ore). Results of the pilot testing were used in MPCA's engineering review of the treatment system design, and MPCA determined the proposed design is capable of providing the necessary level of treatment.	

487	Gary G. Kohls	Citizen	To more fully understand the importance of the ongoing Butte, Montana disaster, I attach below an aerial view photo of Butte's serious SuperFund site that will be impossible for the EPA to remediate. Every attempt to de-acidify or alkalinize the tailings lagoon has failed miserably. And now, the future of the city of Butte, which was once happily promised jobs, jobs, jobs by the copper bosses, is extremely bleak. Butte, whose rivers and streams experience regular fish kills due to the copper mine-caused water contamination, is becoming de-populated. Could the same thing happen to downstream communities in northern Minnesota? (See my article about the Butte environmental catastrophe that was published at http://www.scoop.co.nz/stories/HL1612/S00062/poisoned-snow-geese-in-butte-toxic-nature-of-coppermining. htm.)	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
488	Gary G. Kohls	Citizen	The DNR, the PCA and the Forest Service are surely ethically - and also legally, I hope - obligated to adequately educate and fully inform every citizen that relies on the drinking water that is in the nearby aquifers about all of the dangers of extracting (and grinding up into a fine powder) low-grade copper sulfide or nickel sulfide ore (99+% of which is hazardous waste material), whether the risks are catastrophic or minor.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
489	Gary G. Kohls	Citizen	One cannot expect the full disclosure of all risks by any corporation, whether it is a major trans-national mining corporation like Glencore or Antofagasta or a rookie Penny Stock company like PolyMet or Twin Metals (neither one of which have ever earned a penny at mining anything). Of course, their share-holders and corporate executives would not stand for totally full disclosure, because such information could adversely affect their investments or the company's prestige.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
490	Gary G. Kohls	Citizen	Regulatory agencies like the PCA and DNR are ethically obligated to inform those of us whose precious and increasingly threatened water is at high risk of being contaminated, especially if the culprits are foreign corporations that have investors who don't live here. The St Louis River – and thus Lake Superior – is definitely at risk of contamination if the dam fails or the pipeline breaks or the pipelines are sabotaged. Any such failure – whether gradual or sudden - will impact millions of people, animals and plants downstream.	The DNR's Dam Safety permit addresses dam safety issues. Pipeline sabotage is unlikely since the project, including pipelines, is on private property upon which public access is not authorized and where security is provided. Pipelines in the main processing area are in a heavily trafficked area and unauthorized access would be easily detected. The pipeline from the mine site to the plant is buried making any attempt at sabotage difficult. Regarding potential pipeline breaks, the main pipeline from the mine site to the plant side has been upgraded from its original design to increase its factor of safety. Spills from pipeline breaks in the plant area would generally flow to a disposal facility (e.g., the FTB) and not leave the site.	
491	Gary G. Kohls	Citizen	In the worst case scenario (the Mount Polley scenario), the St Louis River watershed (and therefore Lake Superior) will be poisoned to such a degree that it will never be remediable or usable for fishing, hunting, farming, wild rice harvesting, canoeing, swimming and drinking by those overwhelmingly large numbers of area residents that will never benefit from a copper mine. Even a trillion dollar escrow account posted by PolyMet would be woefully inadequate to meet the costs of futilely trying to clean up an environmental catastrophe such as happened at Mount Polley. The chances of the failure of an earthen tailings dam with walls that are planned to rise to 250 feet high which would result in an massive environmental disaster in northern Minnesota will significantly increase every time the dam needs to be raised. The gradual raising of an earthen dam to the towering heights of 250 feet (just try to imagine that!) by large bulldozers that will probably use the easily available sand and soil from the area (probably including the finely-ground-up powdery tailings material that would otherwise be part of the liquid sludge that winds up inside the lagoon). Please study the state-or-the-art tailings lagoon at Mount Polley, which had soluble walls that only rose to 130 feet. Any earthen dam wall is at risk of dissolving in a torrential rain, and the raising of each bulldozed level will necessarily have to be narrower and narrower and therefore increasingly more likely to leak, liquify, over-top and/or burst.	The conditions of permits required by both DNR and MPCA are designed to minimize impacts from day-to-day activities as well as minimize the risk of catastrophic failures occurring. For example, the design of wastewater sumps and storage basins authorized bythe NPDES/SDS permit takes into account the accumulation of water from large storm events. Dam safety issues are directly addressed in the DNR's Dam Safety permit and financial assurance conditions are included in the DNR's Permit to Mine.	
492	Gary G. Kohls	Citizen	The public needs to understand that the liquid slurry that is piped into the lagoon by a pipeline system of undesignated length or safety will contain toxic levels of some of the following common sulfide-mining, highly toxic heavy metal by-products (that are only safe if they remain buried in the ground as un-processed sulfide ore). The poisonous waste metals that commonly occur – mixed in where copper sulfide and nickel sulfide ores are mined include Lead, Arsenic, Zinc, Cadmium, Vanadium, Antimony, Manganese and Mercury, most of which often exist as sulfide ore, as opposed to the mostly oxide-containing ore bodies where iron mining is done. The above list of hazardous waste minerals were the ones that were present in large quantities in the contaminated sludge in the sludge lagoon that first totally destroyed Mount Polley's Hazeltine Creek and then heavily and permanently contaminated Polley Lake, Quesnel Lake and then the Quesnel and Fraser Rivers. en route to the Pacific Ocean	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

493	Gary G. Kohls	Citizen	Duluth residents, representing the largest concentrated population that could be adversely affected by a copper/nickel tailing's lagoon disaster upstream, need to be fully informed that, in the event of a leak or full-fledged collapse of the dam, the fishable, swimmable St Louis River and eventually Duluth's drinking water from Lake Superior will be contaminated, perhaps mortally and irretrievably. The over 100,000 people who would have their lives disrupted heavily out-number the small number of miners who would be "lucky enough" to land on of the scarce, temporary jobs that might destroy their lives and livelihood. Earthen dams are notorious (albeit well hidden from public view) for dissolving and collapsing, especially in the presence of certain weather circumstances that are out of the control of any mine operator. One only has to consider the frequent flash floods that result from a sudden deluge of rain similar to the one Duluth experienced a few years ago - and which are increasingly common all over our warming, climate-unstable planet. To back up this testimony, I offer the following videos - plus an eye-opening article about the Mount Polley environmental disaster of 2014, which should make the DNR decision-makers reject PolyMet's permits. Mount Polley is considered the worst environmental catastrophe in the history of Canada. And it was man-made (actually corporate-made). Thank you for your attention. Gary G. Kohls, MD, Duluth, MN	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
494	Gary G. Kohls	Citizen	This comment is supplemented by supporting articles and video links.	Conclusion statement. No response needed.
495	Lori Andresen	Save Our Sky Blue Waters	These comments and requests are being submitted on behalf of the following conservation organizations: Save Our Sky Blue Waters, Save Lake Superior Association, Wetlands Action Group. On 3/16/2018 , I emailed copies of these documents to the MPCA' s Anne Moore and the info.pca(a),state.mn.us email address listed on the MPCA website. I talked with numerous individuals at the MPCA offices, including Anne, about when the public comment period ended for the PolyMet project. Staff I spoke with at the MPCA assumed it must be midnight, since the website said the MPCA's public comment period for the PolyMet NorthMet draft permits was open until March 16, 2018. The website does not give a definitive time for when the comment period closes, just the March 16 date. The MPCA's website does not say the comment period closes at 4:30pm, which is totally misleading to the general public. How many people weren't able to send/upload their comments because the MPCA did not specifically say what time on 3/16/2018 the comment period closed and found out too late to submit a comment because the MPCA shut down the website portals early? Thank you,	The public notice for the draft permit clearly states on page 1 that the public comment period ends at 4:30 p.m. on March 16, 2018.
496	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	These comments are being submitted on behalf of the following conservation organizations: Save Our Sky Blue Waters, Save Lake Superior Association, and Wetlands Action Group (hereinafter, "Organizations"). The Organizations submit these comments and Petition and Request for a Contested Case Hearing on the Minnesota Pollution Control Agency (MPCA) proposed Clean Water Act Section 401 Water Quality Certification for the Section 404 (Wetlands) Permit for PolyMet Mining, Inc.'s proposed NorthMet Project. The Conservation Organizations believe that the NorthMet Project may result in water quality standard violations on several bases. Some of these are covered by the Petition for Contested Case Hearing on the NPDES/SDS Permit that will be submitted by Minnesota Center for Environmental Advocacy, et al. We are also requesting a contested case hearing on the Water Quality Permit for the proposed PolyMet - NorthMet Mine.	Background statement for comments and petition for contested case hearings to follow. No response needed. Specific comments are addressed individually.
497	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	Save Our Sky Blue Waters (SOSBW) is a Duluth based grassroots non-profit organization dedicated to protecting the waters, forests, wildlife and local communities of Minnesota's Arrowhead Region. The Arrowhead Region has been known as one of the most magnificent areas of the state, for its majestic forests, wetlands, and waters and because it contains the headwaters of three great watersheds: north to Rainy River, east to Lake Superior, and south to the Mississippi. The protection of these valuable resources is SOSBW's core mission. SOSBW developed in response to proposed copper-nickel sulfide mining and exploration in northeastern Minnesota and has consistently participated at all levels in the ongoing environmental review and approval process involving the proposed PolyMet NorthMet Mine proposal. Protecting the health of the St. Louis River watershed and Lake Superior is a key component of the mission of SOSBW. Save Our Sky Blue Waters' members live, depend upon, enjoy, recreate, fish, eat and gather locally from the lands and waters, and own prope1iy in the area that would be adversely impacted by PolyMet's proposed mine.	Background statement for comments to follow. No response needed. Specific comments are addressed individually.

498	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	Save Lake Superior Association (SLSA) is headquartered in Two Harbors, MN with members residing in the three states and a province on Lake Superior's shoreline and watershed. SLSA has about 250 members , many of whom fish and recreate along the North Shore of Lake Superior, in its watershed, and in the St. Louis River estuary. The mission of SLSA is to prevent further degradation of Lake Superior and to promote its rehabilitation. SLSA was formed in 1969 to stop the discharge of taconite tailings into Lake Superior by Reserve Mining Company. This waste material contains many of the same toxins such as mercury and asbestos fibers that would be generated by the mining and processing of sulfide ore by PolyMet. As stakeholders SLSA is concerned about the potential destruction of natural habitat and the pollution of both air and water in the watershed of Lake Superior, and ultimately the Lake itself, should PolyMet be permitted. Lake Superior and its watershed are downwind and downstream from current taconite and proposed sulfide mining, both of which emit these toxic substances. Even now SLSA's members, friends, and families, especially children, must limit their fish consumption due to the continuing pollution. Many are unaware of the danger and continue to consume fish as part of their daily diet. SLSA's members, and others ho visit the local parks, streams, trails, shoreline, and the lake itself , are unknowingly exposed to these toxins. The release of more toxins by new mining operations would exponentially increase the pollution of the air we breathe and the water we drink.	Background statement for comments to follow. No response needed. Specific comments are addressed individually.	
499	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	Wetlands Action Group (WAG) represents citizens of Northeast Minnesota seeking to protect the region's waters, wetlands and watersheds. WAG became active following an improper decision by St. Louis County commissioners in 2006 to enter into an agreement for a wetlands mitigation plan for the PolyMet mine. Legal action by WAG and local citizens nullified this agreement. WAG has continued to follow, make comments, and attend meetings and hearings on the PolyMet proposal along with simultaneous wetland actions set in place to facilitate mining. Its members and supporters depend upon the water, wetlands, forests, and ecological resources of our area, and its mission is to preserve these resources for present and future generations. WAG's members who recreate , fish, eat wild rice, live in this area, or otherwise enjoy the Arrowhead region would be harmed by PolyMet's mine if it were approved. Our groups believe the permits for PolyMet's proposed sulfide mine must be denied. The proposed permits cannot and do not protect future generations from the long-term impacts of sulfide mining.	Background statement for comments to follow. No response needed. Specific comments are addressed individually.	
500	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	PolyMet's permits are written to allow contamination up to the site's boundary line, which encompasses many square miles. In Minnesota, groundwater belongs to the public even when it is located within private property, just as surface water does. The permits need to address how polluted water from the PolyMet site will impact ground water.	The permit includes provisions intended to prevent the groundwater from being polluted. See response to Comments Water-510 and Water-248. The permit ensures that groundwater outside the seepage capture system will not become polluted.	Because no new facts were presented, the MPCA adequately addressed the issue, and there is no reasonable basis for a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *See Matter of Solid Waste Permit for the NSP Red Wing Ash Disposal Facility* , 421 N.W.2d 398, 404 (Minn. Ct. App. 1988) (hereafter "Red Wing"); *In the Matter of Amendment No. 4 to Air Emission Facility Permit* , 454 N.W.2d 427, 430 (Minn. 1990) (hereafter "Amendment No. 4") (holding that the petitioner must show evidence can be produced contrary to the proposed action) . In addition, the MPCA has adequately addressed the issue. Therefore, a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C). *Cf. In re City of Owatonna's NPDES/SDS Proposed Permit Reissuance for Discharge of Treated Wastewater* , 672 N.W.2d 921, 929 (Minn. Ct. App. 2004) (hereinafter "City of Owatonna") (holding "a genuine question concerning whether the MPCA adequately addressed the disputed fact issues" provides grounds for a hearing). Furthermore, this comment does not fall within the scope of the NPDES permit or 401 certification.
501	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	The Environmental Impact Statement (EIS) promised that an underground wall built to contain and collect groundwater in the most polluted areas will be at least 90 percent effective. The permits deem the system acceptable if it works under "average annual conditions," effectively disregarding the potential for snowmelt and heavy rainfall to flush pollution through cracks in the wall. The permits provide no standards and no fines if the system fails -- even if surface streams become polluted as a result.	The MPCA has removed the "temporary conditions" language and has revised the language of the permit in light of the comment to state that if an inward gradient is not reestablished within 14 days of detection, it is a violation of the permit. The permit also requires monitoring of the Category 1 stockpile paired wells/piezometers weekly following a 100-year storm event to ensure that monitoring and any necessary preventative maintenance occur promptly. In the event of noncompliance with the permit, the assessment of penalties is determined through the MPCA's enforcement process. As with any NPDES/SDS permit in Minnesota, penalties are not "pre-established" as a term of the permit. MPCA enforcement actions include corrective actions to be taken by the regulated party.	Because no new facts were presented, the MPCA adequately addressed the issue, and there is no reasonable basis for a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4; cf. City of Owatonna* .

502	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	The most disturbing aspect of this plan is that there is no end point. Modeling suggests that the underground barriers will need to stay intact -- along with a continuously operating pump-and- treat system -- for centuries. Also continuing for a thousand years or more are the dangers presented by the tailings basin dam. It is unconscionable to allow more liquid tailings to be stored on an outdated and contaminated existing tailings basin. We object to the State of Minnesota sanctioning this threat to future generations living downstream.	The NPDES/SDS permit requires the submittal ofan Annual Comprehensive Performance Evaluation Report which specifically requires the annual assessment of the perfiormance of individual engineering controls and the implementation of adaptive management, mitigation or corrective actions before potential impacts actually occur. This annual assessment is required each of the five years of this permit issuance and some updated adaptation of this is likely in future reissuances of the permit. (These future reissuances of the permit will be subject to public review and comment prior to reissuance.) The DNR administers Minnesota Rule 6132 and their Permit to Mine for the facility includes financial assurance conditions that, in part, address the long-term maintenance of necessary controls. Dam safety issues are addressed in the DNR's Dam Safety permit.	This may raise a factual issue, but the commissioner does not have jurisdiction to determine adequacy of conditions in the Permit to Mine. The MPCA commissioner cannot grant a hearing on the Permit to Mine contents. Minn. R. 7000.1900, subp. 1(B). Because there is not a reasonable basis underlying the claimed dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
503	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Air emissions have not been adequately addressed. These include arsenic, mercury, sulfur, blasting compounds, and metals and dust from the blasting, hauling, crushing, and hydrometallurgical process.	This issue has been fully addressed in the environmental review process, the air quality permit and, as it may relate to water quality, in the Cross-Media analysis. This comment does not raise issues that fall within the scope of the NPDES/SDS permit. The NPDES/SDS permit regulates point source discharges to water.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
504	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Synergistic effects upon human and environmental health have not been addressed. •Cumulative impacts are missing, resulting in weak and/ or faulty environmental conclusions (errors).	Health impacts were considered during the environmental review process. See FEIS section 7.3.4. The NPDES permit and 401 certification do not provide for conducting the health impact assessment requested. The cumulative impacts issue has been fully addressed in the environmental review process and the Cross-Media analysis. This comment does not present any specific facts to support the position that cumulative impacts are missing or that environmental conclusions are faulty. This comment does not fall within the scope of the NPDES permit or 401 certification.	This comment does not fall within the scope of the NPDES permit or 401 certification.
505	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Air emissions will exacerbate water quality violations, but have not been figured in.	This issue has been fully addressed in the Cross-Media analysis, which led to conditions in the 401 certification. This comment does not present any specific facts to support the commenter's position or to provide a reasonable basis to dispute the MPCA's conclusion on the permit. The NPDES/SDS permit regulates point source discharges to water.Therefore, the comment is outside the commissioner's jurisdiction for this NPDES/SDS action.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
506	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Rail spillage is not adequately considered, although this would have broad ramifications for toxicity to the environment and water resources.	This issue has been addressed in the 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
507	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•It is contradictory to consider wetlands as mitigation for toxic metals without considering the over-all impacts to the ecological health of the wetlands themselves, and the biosystems that are dependent upon them.	This issue has been addressed in the 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
508	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Baseline monitoring/modeling must be done on wetlands that would be impacted by PolyMet's mining.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
509	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Mercury is a concern for the entire Great Lakes basin. No new or increased loads or discharges of mercury should be allowed. The conclusion that this project will not contribute additional mercury to the Lake Superior basin is in error.	See response to Comment Water-198.	Because no new facts were identified, the MPCA adequately addressed the issue, and there is no reasonable basis for a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4; cf. City of Owatonna* .

510	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Nickel modeling must be redone, especially due to the fact that nickel will be the hardest to extract from the ores, so there will likely be high amounts left in plant residues.	This issue has been fully addressed in the Cross-Media analysis. See the 401 response to comment document. The nickel that is not extracted from the ore is primarily the nickel that is associated with the silicate mineral olivine. Nickel in olivine is specifically addressed in the cross-media analysis.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
511	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Seasonal and other fluctuations in water cycles must be considered in wetlands' ability to sequester toxic metals.	This issue has been addressed in the Cross-Media analysis and is not an NPDES/SDS permit issue. See the 401 response to comment document.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
512	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•Aluminum must be accurately addressed in spillage models.	This issue has been addressed in the Cross-Media analysis and is not an NPDES/SDS permit issue. See the 401 response to comment document.	This issue has been addressed in the Cross-Media analysis and 401 certification and is not an NPDES/SDS permit issue. See the 401 response to comment document.
513	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	•It is not sufficient to address water quality problems after they develop.	The MPCA relies on its technical review of the permit application and plans submitted to determine if proposed wastewater treatment systems will adequately treat waste from the proposed industry. The MPCA has reviewed the available information, including an engineering review, and concluded the permit conditions can be met and the WWTS will function as designed. The incorporation of adaptive management as a failsafe does not invalidate the requirements for compliance. Adaptive management is regularly used in complex environmental scenarios to ensure standards are met while allowing flexibility. In this case, the underlying requirement must be met; the adaptive management is intended to develop strategies to maintain compliance.	Because no new facts were identified, the MPCA adequately addressed the issue, and there is no reasonable basis for a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4; cf. City of Owatonna* .
514	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	We also ask that MPCA and MDNR consolidate all of the permits and issues into one hearing. There is a great deal of overlap between the permits, including the 401 Certification.	Comment noted.	Comment noted. Requests for a contested case hearing were evaluated according to current state law.
515	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	Conclusion: The PolyMet EIS, and subsequent draft permits and proposed 401 Certification, evade the seriousness of pollution impacts to the air, surface, and waters of the NorthMet site and surrounding wetlands, forests, and waters--and the co-existant aquatic, plant, and wildlife species--as well as impacts to human health. This environmental process, as it now stands, will only lead to the continued degradation of the envifonment and water of northeast Minnesota--for all future generations. Please protect the future of the people, wildlife and waters of northeastern Minnesota by saying "no" to this mine plan.	Conclusion statement to the above individual comments. No further response needed.	Comment noted.
516	Elanne Palcich, LeRoger Lind, Bob Tammen	Wetlands Action Group, Save Our Sky Blue Waters	Incorporate by Reference The Conservation Organizations incorporate by reference our comments on the PolyMet NorthMet Mine and Land Exchange EIS; the Comments ofMCEA et al. on the NorthMet Dam Safety Permits submitted to the DNR on October 16, 2017; the Joint Petition of MCEA et al. for a Contested Case Hearing on the NorthMet Permit to Mine Application submitted to DNR on February 28, 2018; the Comments and Objections ofMCEA et al. to the DNR on the NorthMet Mine Project Permit to Mine Application submitted to the DNR on March 6, 2018; Friends of the Boundary Waters et al. Petition for Contested Case Hearing on Section 401 Certification for the NorthMet Mine. The Conservation Organizations request that these documents be considered as part of our comments. We are submitting the Friends of BWCAW_CED Petition for CCH (2).pdf as part of our comments and petition. Thank you for the opportunity to comment on this proposed project, which has enormous implications for the Superior National Forest, the Arrowhead region, the state of Minnesota, and the Lake Superior watershed. We believe that a contested case hearing(s) is necessary to correct errors for the draft Water Quality Permit and 401 Certification.	Comment noted.	Comment noted. Requests for a contested case hearing were evaluated according to current state law.
517	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	WaterLegacy is a Minnesota 501(c)(3) non-profit organization founded to protect Minnesota's water resources, wetlands, wildlife, habitats and the communities that rely on them, particularly from the threat of copper-nickel mining in sulfide-bearing ore in Northeastern Minnesota. Many of plaintiff's board members, advisory committee members and supporters live in Northeastern Minnesota and use the Superior National Forest and the waters and habitats of the Embarrass River, Partridge River and St. Louis River watersheds for a variety of recreational and aesthetic purposes including hiking, canoeing, kayaking, cross-country skiing, horseshoeing, dog- sledding, wildlife viewing, solitude and photography.	Background statement for comments to follow. See detailed responses to comments below.	

518	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Several of WaterLegacy's members have canoed up the South Branch Partridge River and the Partridge River from forest roads and have otherwise walked and canoed onto the site of the proposed PolyMet NorthMet Copper-Nickel Mine Project ("PolyMet Project"). They have enjoyed the proposed PolyMet mine site and the sinuous reaches of the Upper Partridge River in proximity to the site for their beauty, for recreation, for hunting, and to gather wild plants.	Background statement for comments to follow. See detailed responses to comments below.
519	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Many members of WaterLegacy have gathered wild rice or have fished downstream of the proposed PolyMet Project in the Embarrass River and Embarrass River chain of lakes, the Partridge River, Colby Lake and the St. Louis River. Some of these members belong to environmental justice communities and rely on the wild rice they gather and on wild-caught fresh fish from these watersheds for sustenance. Some of our members have conducted scientific investigations of waters and habitats in the Partridge River and St. Louis River downstream of the proposed PolyMet Project. At least one of our members works as a wilderness guide, specializing in immersive wilderness experiences that include teaching plant and animal ecology, tracking, hunting, and traditional gear and transportation. He has taken at least two groups canoeing and portaging up the Partridge River toward the proposed PolyMet mine site.	Background statement for comments to follow. See detailed responses to comments below.
520	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Some of our members live in Hoyt Lakes, and drink municipal water drawn from Colby Lake. Other members of WaterLegacy own lakeshore property within the Embarrass River chain of lakes or riparian property on the Embarrass River or St. Louis River downstream of the proposed PolyMet Project, where they recreate, swim, canoe, kayak, cross-country ski, fish, support sustainable ecological practices, and obtain moral and spiritual as well as economic value from preserving the property they own. Other members of WaterLegacy are doctors and other health professionals concerned about the impacts of PolyMet pollution on the health of their patients and the Northeastern Minnesota communities in which they live and serve.	Background statement for comments to follow. See detailed responses to comments below.
521	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	WaterLegacy's mission, goals and objectives would be adversely impacted by the MPCA's approval and issuance of the Draft NPDES/SDS Permit MN0071013 ("Draft NPDES/SDS Permit"). Our mission, goals and objectives would also be adversely impacted by the MPCA's approval and issuance of the Draft Clean Water Act Section 401 Certification ("Draft 401 Certification"). As explained in our Comments below, issuance to PolyMet of a permit for its water pollution and MPCA certification to the federal government that the State of Minnesota supports a federal Clean Water Act permit for PolyMet wetlands destruction would severely impact Minnesota water resources in the Partridge River, Embarrass River and St. Louis River watersheds, the quality of water in Minnesota's Lake Superior basin and the health and well-being of plant, animal and human communities who rely on these fresh water resources.	Background statement for comments to follow. See detailed responses to comments below.
522	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The interests of WaterLegacy's individual members in a wide range of recreational, aesthetic, cultural, life-sustaining, economic and spiritual activities would be adversely affected by MPCA action to approve and issue the Draft NPDES/SDS Permit and/or to approve and issue the Draft 401 Certification for the PolyMet Project. Not only our members who own or rent property immediately downstream of the property, but many other members of WaterLegacy have continuing and important connections with the waters and natural resources on the site of and downstream of the proposed PolyMet copper-nickel mine project. WaterLegacy's members intend to continue their recreational, aesthetic, cultural, life-sustaining, economic and spiritual activities connected to the waters and other natural resources that would be adversely affected by issuance of a water pollution permit and Clean Water Act certification to PolyMet for its proposed open-pit copper-nickel sulfide ore mining and processing project.	Background statement for comments to follow. See detailed responses to comments below.
523	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Specific Actions Requested from MPCA by WaterLegacy I .WaterLegacy requests that the Minnesota Pollution Control Agency ("MPCA") reject and deny the Draft NPDES/SDS Permit MN0071013 ("Draft NPDES/SDS Permit") for the PolyMet1 NorthMet Copper-Nickel Mine Project ("PolyMet Project")	The MPCA will consider the request before making its final decision.
524	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	2.WaterLegacy requests that the MPCA reject and deny the Draft Clean Water Act Section 401 Certification ("Draft 401 Certification") for the PolyMet Project.	The MPCA will consider the request before making its final decision.
525	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	3WaterLegacy requests that the MPCA grant our Petition for Contested Case Hearing submitted in furtherance of WaterLegacy' s mission and the representation of our members whose individual interests would be impaired by the approval and issuance of the Draft NPDES/SDS Permit and/or the Draft 401 Certification for the PolyMet Project.	The MPCA will consider the request before making its final decision.

526	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Summary of WaterLegacy Comments Opposing Draft Permit and 401 Certification The PolyMet project is Minnesota's first copper-nickel sulfide ore mine project to reach the permitting stage. Many other copper-nickel mine projects are in various stages of exploration and feasibility analysis in Minnesota. It is understood both that the PolyMet project would serve as the "snowplow" behind which other copper-nickel mine projects would advance and that the standards set for the PolyMet NPDES/SDS permit and Section 401 Certification would become precedent for future copper-nickel projects. For this reason, it is particularly important that the MPCA "get it right" and establish standards that will protect natural resources across a broad swath of northeastern Minnesota, from southwest of Duluth to the Boundary Waters watersheds.	Background statement for comments to follow. See detailed responses to comments below.
527	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Getting it right will be no easy task. Sulfide mining for copper, nickel, gold and other metals, also known as "hardrock mining," has a very poor track record. There is no sulfide mine in a water-rich environment, like that in northeastern Minnesota, which has operated and closed without polluting surface water and/or groundwater with acid mine drainage and/or toxic metals. In 2009, the U.S. Environmental Protection Agency ("EPA") in identifying the hardrock mining industry as the first priority for financial responsibility rules under Superfund statutes, estimated that this sulfide mining industry is responsible for polluting 3 400 miles of streams and 440 000 acres of land.2 PA also estimated that the metal mining industry (copper, nickel. gold, lead and zinc) was responsible for nearly 1.15 billion pounds or approx imately 28% of the total 2007 Toxic Release Inventory that U.S. industry was required to report.3	Background statement for comments to follow. See detailed responses to comments below.
528	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	It cannot be assumed that the sulfide mining Superfund sites highlighted by EPA to have a potential remediation cost as high as $54 billion4 were attributable to "direct discharge" of pollutants to surface waters. Many of the most extreme cases where sulfide mine projects have had toxic results requiring hundreds of millions of dollars to remediate remained as a legacy of seepage from mine pits, waste rock stockpiles and tailings facilities long after the company had filed for bankruptcy, leaving its liabilities for the taxpayers.5In the course of analyzing the potential for a copper mine in Bristol Bay, Alaska, the EPA cautioned that 13 out of the 14 copper mines operating in the United States had experienced "failures to collect and treat seepage that resulted in water quality degradation." Such degradation had resulted from various factors, including "including inadequate pre-mining data, poor prediction of mitigatjon needs, inadequate design , improper operation, and equipment failure." 6 The EPA emphasized that prediction failures resulted in water collection and treatment failure, despite permits including "mitigation measures intended to prevent such occurrences."7	Background statement for comments to follow. See detailed responses to comments below.
529	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Many of the factors singled out by EPA as leading to prediction failures and thus to water quality degradation would sound eerily familiar to anyone who has followed the PolyMet environmental review process: waste rock leachate concentrations derived from humidity tests, use of simplifications to model surface-water and groundwater hydrology, water quality models that assume that mining would not affect background water quality, use of average receiving water flow without considering low dilution during low-flow periods, water quality criteria that fail to address chemical interactions or are out of date, non-representative tested rock and tailings samples, and the absence of tests for sensitive aquatic insect species.8	See detailed responses to comments below.
530	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Overall, the EPA concluded that the probability of potential failure of water collection and treatment during operations for a copper mine is 93%. Post-closure collection and treatment failures are yet higher and, if the mine site were to be abandoned, EPA concluded that sulfide mining's track record suggested that failure of water collection and treatment becomes "certain." 9	Background statement for comments to follow. No response needed.
531	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition to the precedent-setting nature of the PolyMet Project and the history of water degradation experienced at similar mines, a special challenge is facing the MPCA and the State of Minnesota due to the State's poor history in regulating mining pollution. For decades, despite a formal agreement with the EPA to prioritize mining permits, the MPCA has failed to update expired mining permits and variances and to enforce violations of water quality standards resulting from mining seepage from tailings and waste rock storage and from mine pits. In response to these failures ofregulation, in July 2015, WaterLegacy filed a formal Petition for Withdrawal of Program Delegation from the State of Minnesota for NPDES Permits Related to Mining Facilities. '0 The EPA prepared a comprehensive protocol to investigate this petition in March 2016,11 and its investigation is still pending. Since July 2015, the MPCA has neither reissued any of the State's expired mining permits nor enforced violations of surface water quality standards at existing mines resulting from seepage from mine pits or waste facilities. The Minnesota Legislature has enacted special interest legislation preventing the MPCA from listing impaired waters or requiring permittees to spend money in order to comply with Minnesota's sulfate water quality standard that protects wild rice.12 The MPCA has also issued 401 certifications even in the most egregious case where mining company seepage from mine pits and tailings waste had resulted in violation of Minnesota water quality standards, the company had violated its permit for a quarter of a century, and the permit had been expired and out of date for over a decade.13	Background statement for comments to follow. No response needed.

532	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In the context of mining industry failure to protect water quality, the MPCA's deficits in controlling water pollution, and the unrelenting pressure upon Minnesota regulators to approve permits and certifications irrespective of their likely and foreseeable impacts on water quality, the PolyMet Project Draft NPDES/SDS Permit and DRAFT 401 Certification stand out in stark relief. Neither the draft Permit nor the draft 401Certification comply with applicable state or federal law. Neither the draft Permit nor the draft 401 Certification would protect Minnesota water quality, environmental resources or human health. And neither the draft Permit nor the draft 401 Certification should be approved or issued by the MPCA.	See detailed responses to comments below.
533	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The NPDES permit process reflects the state's delegated authority under the Clean Water Act, Section 402.14 While states are given leeway to enact more stringent standards or procedures than required by the Act to protect and clean up their waters, state statutes and rules must, at a minimum, satisfy and conform to the Act and EPA regulations.15	Background statement for comments to follow. No response needed.
534	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Requirements for issuance of a National Pollutant Discharge Elimination System (NPDES) permit are spelled out in the Clean Water Act and its implementing regulations. These federal laws define the waters of the United States to which the Clean Water Act permitting requirements apply and the nature of point sources and their discharge.16 Federal regulations also require that a state NPDES permit prevent discharge that causes or contributes to an exceedance of state numeric or narrative standards, including antidegradation, and define the process by which a state determines whether a discharge has the reasonable potential to cause or contribute to such exceedances.17 These legal standards, along with corresponding state laws, will be discussed in more detail in the various discussion sections of these comments pertaining to the Draft NPDES/SDS Permit for the PolyMet Project.	Background statement for comments to follow. No response needed.
535	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although states are entitled to waive 401certification, once a state determines not to waive 401certification, findings to issue or deny 401certification must comply with state law and with federal Clean Water Act. Federal regulations as well as Minnesota rules require that a Section 401 certification only be issued if "there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards." 18 Minnesota rules also require that the MPCA deny section 40 l certification upon making the factual findings that also justify revocation of a permit or refusal to issue or reissue a permit.19 These include findings, with respect to the facility or activity to be permitted or certified that "the proposed permittee or permittees will not comply with all applicable state and federal pollution control statutes and rules administered by the agency, or conditions of the permit,"20 or that "the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by a modification of the conditions of the permit." 21 These grounds for refusal to issue a permit and for the denial of a 401certification apply to the PolyMet copper-nickel mine project and the decisions currently pending before the MPCA.	See detailed responses to comments below.
536	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The bases for WaterLegacy's position that the MPCA is obligated under law to reject both the Draft NPDES/SDS Permit and the Draft 401 Certification are summarized below. 1.The Clean Water Act requires the MPCA to set enforceable NPDES permit limits to prevent discharge through groundwater to hydrologically connected surface waters from causing or contributing to a violation of State surface water quality standards, including degradation, applicable to waters of the United States.	See detailed responses to comments below.
537	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	2.The Draft NPDES/SDS permit for the PolyMet Project violates the Clean Water Act and its implementing regulations by failing to perform appropriate analysis or establish permit conditions to prevent discharge to surface water through hydrologically connected groundwater from causing or contributing to an exceedance of Minnesota water quality standards.	See detailed responses to comments below.
538	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	3.The Draft NPDES/SDS permit for the PolyMet Project violates the Clean Water Act and Minnesota law by providing inadequate monitoring to detect if PolyMet discharge through groundwater causes or contributes to violations of Minnesota water quality standards or results in unpermitted discharge.	See detailed responses to comments below.
539	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	4.The Draft NPDES/SDS permit for the PolyMet Project violates the Clean Water Act, its implementing regulations and Minnesota law by failing to set limits for direct discharge to surface water with the reasonable potential to cause or contribute to violation of Minnesota water quality standards.	See detailed responses to comments below.
540	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	5.The PolyMet Project is likely to cause or contribute to violations of Minnesota water quality standards for mercury, increase mercury impairments, and degrade water quality by increasing mercury levels, precluding NPDES permit issuance or assurances for 401 certification under federal and state law.	See detailed responses to comments below.
541	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	6.The antidegradation analysis performed for the PolyMet Project with respect to pollutants other than mercury and methylmercury is inadequate for NPDES/SDS permitting or for Section 401 certification.	See detailed responses to comments below.

542	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	7.The Draft 401 Certification for the PolyMet Project is premature given the substantive deficiencies of the Draft NPDES/SDS Permit; the absence of an up-to- date Section 404 application; and the lack of a current evaluation of the effects of Project water appropriations on the Upper Partridge River headwaters.	See detailed responses to comments below.	
543	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	This comment is supplemented with a lengthy discussion section and a Petition for Contested Case Hearing.	Comment noted. Requests for a contested case hearing were evaluated according to current state law.	
543-AA	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	This comment is supplemented with a lengthy discussion section and a Petition for Contested Case Hearing.	Comment noted. Requests for a contested case hearing were evaluated according to current state law.	
543-AB	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Clean Water Act requires the MPCA to set enforceable NPDES permit limits to prevent discharge through groundwater to hydrologically connected surface waters from causing or contributing to a violation of State surface water quality standards, including degradation, applicable to waters of the United States. ... The surface waters potentially impacted by sources of contamination from the Poly Met mine site and tailings site are waters of the United States, under traditional Clean Water Act definitions, Supreme Court decisions and federal regulations.33 The Partridge River, Embarrass River and Second Creek and connected lakes are traditional navigable waters that are currently used, or were used in the past or may be susceptible to use in interstate and foreign commerce, and tributaries to such waters in the headwaters of the St. Louis River, the largest United States tributary to Lake Superior, which is an international as well as interstate water body. The creeks at the PolyMet mine site and plant site, to the extent they are not traditional navigable waters, are tributaries to such waters; the wetlands at the Poly Met mine site and plant site are wetlands adjacent to traditional navigable waters and to tributaries to such waters; and the creeks and wetlands at both locations are waters the use, degradation or destruction of which could affect ·waters. The Whitewater Reservoir is an impoundment of waters of the United States.34 As with the tailings pond in the Hecla Mining Co. case, the coal ash ponds and lagoons in the Duke Energy Carolinas and Tennessee Clean Water Network cases and the sedimentation pond requiring an NPDES permit in the Pocahontas Land Corp. case, there are many potential pollution sources at the Poly Met mine site and plant site where process waters and wastes will be confined and conveyed by pipes, ditches, channels, conduits, or other discernable, confined and discrete conveyances. These proposed point sources include the tailings storage facility and the hydrometallurgical residue facility at the plant site; and sumps, ponds, equalization basins, waste rock stockpile drainage liners and collection systems and, eventually, the mine pits themselves at the mine site. ... The Poly Met mine pits will also become unlined point sources for discharge to surface water through groundwater. During the operations phase of the project (or if early closure is required), the East Pit and Central Pit would be backfilled with Category 4, Category 2/3 and Category 1 waste rock and saturated overburden and flooded through pipes conveying water from the plant site in order to permit subaqueous storage of reactive mine waste.41 During closure whenever that begins the West Pit would also be flooded with water conveyed through pipes from the Poly Met plant ite.42	See response to Comment Water-723. This comment raises a legal issue, not a factual issue. The comment interprets federal law as applied to the facility.	This comment raises a legal issue, not a factual issue. The comment interprets federal law as applied to the facility. Because the comment raises legal and not factual issues, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
543-AC	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The EPA has repeatedly instructed MPCA that NPDES permits must identify, describe and regulate contaminated water from both mine site and plant site point sources discharged to surface waters of the United States through hydrologically connected ground water. The EPA's comments on the PolyMet preliminary supplementary draft environmental impact statement (PSDEIS) explained, "Section 301 of the CWA prohibits point source discharge to surface waters, either directly or via directly connected ground water, unless the discharge complies with a NPDES permit."43 EPA further advised that the Clean Water Act defines "discharge of a pollutant" as any addition of any pollutant to navigable waters from any point source;" as a result, "an NPDES permit is required at both the Mine and Plant Sites, with limits and monitoring requirements applied at the points of discharge."44	See response to Comment 543-AB.	See response to Comment 543-AB.

543-AD	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	EPA identified mine site sources of contaminated wastewater seeping from the mine property through groundwater that required regulation under an NPDES permit including mine pits, waste rock stockpiles, the ore surge pile, the Overburden Storage and Laydown Area, and wastewater equalization basins.45 The EPA explained that for "pollutants that leave the mine property via groundwater" a "level of detail" will be required for NPDES permitting "in order to determine water quality-based effluent limits and establish control and mitigation measures that ensure attainment of Minnesota's water quality standards in the Partridge River and other downstream surface. "46 The EPA emphasized that surface water criteria as well as groundwater criteria must be applied to mine site pollutants "when the contaminated groundwater enters the Partridge River."47 As the Poly Met environmental review process continued, the EPA underscored that surface water criteria become applicable at the first location where discharges reach surface waters, including jurisdictional wetlands: However, as EPA has stated previously, the pollutants originating from mine site features may discharge to jurisdictional wetlands and tributaries prior to reaching the Partridge River. CW A Section 301 prohibits any point source discharge of pollutants to waters of the United States, either directly or via directly connected ground water, unless the discharge complies with a NPDES permit. Waters of the United States include jurisdictional wetlands and tributaries. See 40 CFR 122.2. Recommendation: The FEIS should reflect the fact that a NPDES permit is required before the pollutants from the mine site reach waters of the U.S. (including jurisdictional wetlands and tributaries).48 In a spring 2015 memorandum to MPCA, the EPA was yet more pointed in its insistence that the MPCA's NPDES permit for the Poly Met Project specifically cover discharges to surface waters that will occur through subsurface flow or hydrologically connected groundwater. EPA began by stating, "EPA has consistently interpreted the Clean Water Act (CWA) to apply to discharges of pollutants from a point source to surface water, including those that occur via hydrologically connected ground water. 49 EPA stated that the memo's " clarification on discharges that occur via subsurface flow or hydrologically connected groundwater that EPA provided in the aforementioned federal register notice" was occasioned by MPCA's statement that the need for NPDES permit coverage at the mine site would depend on when "a point source discharge" adds pollutants to waters of the U.S.50 The EPA reiterated that "the Partridge River is not the first receiving water of mine discharges"51 and noted that, in conversations with the Agency, "MPCA confirmed their understanding that the wetlands associated with the Partridge River and the tributaries to the Partridge River are waters of the U.S. and may be the first waters receiving pollutants from mine site features.' 52 EPA repeated again the flaws in PolyMet's modeling and what must be included in an NPDES permit for the Poly Met project in order to comply with the Clean Water Act: Since the model predictions are based on the pollutants traveling the entire distance between the mine site and the Partridge River via a subsurface flow path, we note that pollutants may reach surface waters sooner than predicted in either or both of two ways. First, pollutants may be discharged to wetlands in close proximity to the mine site, a potential that is not considered by the modeling work that supported EIS development. Second, pollutants from discharges may reach the Partridge River evaluation locations sooner than predicted because the path pollutants travel to those locations may not be entirely in the subsurface. A complete NP DES permit application must include information detailing when and where pollutants originatingfrom mine site activities and features will enter surface waters (40 CFR §. 122.21 and 124.3).53 Although the MPCA has yet to comply with the EPA's instructions, for at least five years the EPA has also advised the MPCA in connection with the U.S. Steel Minntac tailings storage facility that "Section 301 of the CWA prohibits point source discharges to surface waters, either directly or via dir ctly connected grow1d	See response to Comment 543-AB.	See response to Comment 543-AB.
			Although the MPCA has yet to comply with the EPA's instructions, for at least five years the EPA has also advised the MPCA in connection with the U.S. Steel Minntac tailings storage facility that "Section 301 of the CWA prohibits point source discharges to surface waters, either directly or via dir ctly connected grow1d water, w11ess the discharge is in compliance with an NPDES permit 54 When the MPCA posted a pre-public notice draft NPDES permit for the Minntac tailings basin in 2014, the EPA cautioned that tbe Clean Water Act re^uired an NPDES permit for "the full extent of the discharges to surface water from this facility." 5 In 2016, when the MPCA proposed a draft NPDES permit for the Minntac tailings basin that only applied surface water quality standards to surface seeps, the EPA was yet more pointed: We are concerned that this draft permit as written does not address, under MPCA's approved National Pollutant Discharge Elimination System (NPDES) program and in accordance with the Clean Water Act (CW A), all discharges to surface waters from this tailings basin ... In this case the tailings basin is a point source which, according to MPCA's own documentation is discharging pollutants to nearby surface waters in the Sand and Dark River watersheds via direct, unmonitored surface seeps and subsurface pathways.56		
543-AE	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As explained in more detail in the next section, the proposed unlined Poly Met tailings basin, unlined Category 1 waste rock stockpile, unlined mine pits, and unlined overburden storage and laydown area and pond would all provide discharge pollutants to groundwater that is hydrologically connected to surface water. Even lined sedimentation ponds, sumps and basins for wastes and wastewater at the mine site and plant site would have some degree of discharge to groundwater from liner leakage that must be evaluated to determine propagation to the nearest surface waters in proximity to pollution sources.	See response to Comment 543-AB.	See response to Comment 543-AB.
543-AF	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Clean Water Act requires the MPCA to set enforceable NPDES permit limits to prevent Poly Met mine site and plant site discharge through hydrologically connected groundwater to surface waters, including proximate wetlands, creeks and tributaries in the Partridge River and Embarrass River watersheds from violating surface water quality standards.	Any discharges that are not specifically authorized by this permit are prohibited. Additionally, the MPCA added a prohibition against WWTS discharges that violate water quality standards. See response to Comment Water-723 for further discussion on groundwater-surface water interaction.	To the extent this comment questions the need for limits for hydrologically connected groundwater, it raises a legal issue. The scope of NPDES coverage under the Clean Water Act is a question of law and a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A). To the extent this comment questions the efficacy of the pond liners, it raises a factual issue, but the comment does not raise new facts. The MPCA has already considered the liners needed to protect water quality and imposed permit limits to do so. Because there are no specific new facts, there is no reasonable basis for a dispute and a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .

543-AG	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Draft NPDES/SDS permit for the PolyMet Project violates the Clean Water Act and its implementing regulations by failing to perform appropriate analysis or establish permit conditions to prevent discharge to surface water through hydrologically connected groundwater from causing or contributing to an exceedance of Minnesota water quality standards. Although the MPCA NPDES/SDS Fact Sheet acknowledges that there are mine site and plant ite features with the potential to affect groundwater,69 there is no information in any of the volumes of PolyMet's NPDES/SDS Permit Application characterizing the chemical composition of various wastes or sources of potential pollution to groundwater or surface water. Neither the MPCA's Fact Sheet nor the Draft Permit identify the chemical composition of any potential pollution source or even the chemical composition predicted for various waste streams constituting the influent for the Poly Met wastewater treatment system (WWTS). ' Without such information, any exercise in determining reasonable potential is, at best, wishful thinking. Even for discharge subject to water quality treatment, the resulting effluent is a function of the initial level of contamination as well as the efficacy of removal. Where pollutants will be released to groundwater untreated from thousands of acres of permanent unlined tailings and waste rock stockpile facilities, as well as stored in highly contaminated basins, detailed information on the concentration of contaminants, the volume of their likely release, and the paths by which they would soonest reach surface waters is essential to determine which pollutants in which sources have the reasonable potential to cause or contribute to a violation of water quality standards.	Wastewater flow rates, wastewater concentrations, and groundwater flow paths were all considered in the EIS. The GoldSim modeling conducted for the EIS included a range of flows and concentrations from the various pollution sources as inputs into the model. See EIS at 5-9. These inputs were all evaluated as part of the EIS; DNR and its third-party contractor found it to be reliable. MPCA supports the EIS modeling conclusions reached by DNR. MPCA independently reviewed the WWTS design, including engineer review. The commenter did not provide any facts to undermine that conclusion. The WWTS Design and Operation Report submitted as part of the permit application included information on WWTS influent flow and quality.	This comment raises a factual issue; however, no new information is identified. Because there were no new facts raised, the comment did not provide a reasonable basis for a dispute and a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-AH	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Data contained in other Poly Met permit applications and in environmental review documents is relevant and representative data that should have been used by the MPCA to analyze the reasonable potential of PolyMet's discharge to hydrologically connected groundwater to violate surface water quality standards.	The comment identifies other information the MPCA should consider, such as other permit applications and the EIS. MPCA did fully consider information from the EIS and to the extent that information from other permit applications was relevant to the NPDES/SDS permitting process, that information was also considered by MPCA.	This comment raises a factual issue; however, no new information is identified. Because there is no reasonable basis for a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-AI	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition, it cannot be emphasized enough that the MPCA and other regulatory agencies should have required monitoring of proximate stream and wetlands hydrology for the past thirteen years to identify the most likely pathways for discharge to groundwater to reach surface water and the geologic conditions influencing that flow. Arguably, the failure to require such monitoring, before permit issuance as well as during operations provides an insurance policy to PolyMet that Clean Water Act violations and harm to ecosystems or human beings won't be detected and proven for decades. By then, Poly Met could well be long gone.	Monitoring has been conducted over the past 13 years at numerous locations. The comment states that additional data should have been considered in drafting the permit. The EIS incorporated a wide range of water quality and other data in its effects analysis. This same data, plus additional data collected during the permitting process, was considered by MPCA and was sufficient for permitting purposes. The comment also indirectly argues that the proposed monitoring is inadequate. The draft permit provides for a monitoring program that will be sufficient to appropriately assess the performance of engineering controls as well as to monitor the overall environmental effect of the project. In addition, the draft permit requires an annual assessment of the suitability of the monitoring program, and requires the proposal of additional/alternative monitoring locations in the event the original program is not sufficient, based on the ongoing collection of data (including flow rates, flow direction and water quality). See also response to Comment Water-711.	This comment raises a factual question; however, it does not provide a reasonable basis for dispute. The comment did not raise any new facts for the MPCA to consider and no new information is presented. Therefore, there is no reasonable basis for a dispute and a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-AJ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The data below, although not intended to be complete, suggest that failure to conduct a reasonable potential analysis and set appropriate limitations on effluent that can be discharged through groundwater places wetlands, streams, rivers and downstream lakes in the Partridge River and Embarrass River watersheds at grave risk. PolyMet's modeling of seepage concentrations at the tailings toe is likely to understate actual tailings chemistry. Leachate from copper-nickel tailings from MinnAMAX bulk sampling was not considered in modeling of Poly Met North Met ta il ings seepage.72 Mi.nnAMAX tai lings leachate contained levels of cobalt more than 30 times the tailings seepage concentration predicted for the Poly Met project, levels of nickel more than 21 times the predicted Poly Met concentrations, and sulfate concentrations more than 11 times higher than predicted Poly Met concentrations. 73	The DNR did consider the MinnAMAX data as part of the GoldSim modeling process for the EIS, the results of which were directly considered in the NPDES permitting process. See FEIS at 5-62.	This comment raises a factual question; however, no new information is identified and a contested case hearing would not aid the commissioner. Because the information was considered, there is no reasonable basis for dispute and a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .

543-AK	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although the MPCA seems to have accepted PolyMet's claims,78 experts challenged these assumptions during the course of environmental review. Geologist J.D. Lehr criticized the "cursory and simplistic treatment" of the role that bedrock fractures play in the transmission of groundwater at the tailings site, the assumption of a "no-flow boundary" beneath the tailings waste facil ity and the resulting implication that groundwater flow tlu·ough bedrock at the tailings site "Is so insignificant that it can be conceptually ignored."79 Mr. Lelu- also explained that geology at the tailings site would not be favorable for a trench to be ' keyed into" bedrock and cobbles (often huge boulders) would impede construction of an effective slurry trench.80 Anthony Runkel, the Chief Geologist for the Minnesota Geological Survey, echoed the concern that fracture zones of relatively high hydraulic conductivity and multiple flow systems within bedrock had not been modeled.81 He noted that faults are known to be common across much of mapped extent of the Giants Range Batholith, including in the plant site/tailings basin area, and nearby fractures in the same bedrock have transported pollutants for miles with significant environmental effects. 82 Engineer and hydrologist Donald Lee cautioned that lack of data on bedrock groundwater at the tailings basin precludes calculation of how much groundwater is currently flowing in bedrock at the site; in addition, increased seepage and hydraulic head created in the tailings piles during PolyMet operations could result in more water flowing deeper into groundwater.83 Dr. Lee explained that Poly Met s claim that a sl.urry wall would be nearly impermeable for the indefinite future were unjustified.84 After reading predictions for tailings basin performance, Dr. Lee determined, "The analytical support for these conclusions is based on assumptions of performance that are not justified or supported by data. "85 For more than five years, Water Legacy requested disclosure of any evidence received from Poly Met showing that the inexpensive slurry system it proposed could achieve the claimed capture efficiency. PolyMet's 2017 Permit to Mine Application cites a single three-page Barr memo from 2012 to support its claims that a cutoff wall and containment system is commonly used and will capture seepage from its tailings basin. 86 However, this 2012 memo doesn't support PolyMet's claims for seepage capture efficiency. Instead it provides a cautionary tale.	To the extent that the comment relates to the capture efficiency of the FTB and Category 1 seepage capture systems, it raises a factual question, but provides no reasonable basis for dispute. The comment questions the efficacy of controls required in the NPDES permit and presumes failure of control systems without justification. The same issues were raised in the EIS and DNR, in consultation with MPCA, considered those issues. See RGU Consideration of Comments on the FEIS at 169. See response to Comment Water-711, explaining why maintaining an inward gradient ensures no release.	The comment does not raise any new facts for the MPCA to consider at the permitting stage, it merely disagrees with MPCA's conclusion. Therefore, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* . To the extent that the comment relates to the capture efficiency of the FTB and Category 1 seepage capture systems, it raises a factual question, but provides no reasonable basis for dispute. To the extent that the comment relates to the purported need for an evaluation of reasonable potential on seepage, it is a legal issue. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
543-AL	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The only mine tailings seepage example offered as an example of successful use of slurry walls to keep mine tailings seepage out of downgradient water is the Fort McMurray tailings pond seepage containment system in Alberta Canada. To quote Barr, Another example is the installation of a soil-bentonite cutoff wall around the perimeter of a mine tailings pond located in the province of Alberta, Canada. The cutoff wall is approximately 100 feet deep and 3 feet wide, and has a hydraulic conductivity ofless than lxl0-7 cm/sec. The cutoff wall was used lo isolate /he tailings pond from downgradient surface water features including wetlands and the Athabasca River. 87 However, information available since 2012 demonstrates that Fort McMurray tar sands tailings seepage containment has had disastrous results. Canadian news media reported four years ago that federal research found that "toxic chemicals from Alberta's vast oil sands tailings ponds are leaching into groundwater and seeping into the Athabasca River" despite a seepage collection system that includes ditches and cut-off walls to capture seepage and runoff water groundwater interception wells and pumps to return captured water to the tailings ponds.88 Canadian federal research u ed chemical profiling to confam that the source of contaminants in the Athabasca River was oil sands process-affected water from tailings ponds welling up through groundwater to the Athabasca River. 89 In 2014, it was reported, "Industry is working to address the tailings seepage issue, budgeting more than $1 billion in tailings-reduction technology."90 By January 2018, provincial regulators estimated that cleanup of oil sands facilities represented a $27 billion liability.91 Unsurprisingly, "Critics say the industry could end up sticking taxpayers with the bill, estimated at $27 billion."92 Minnesota has some experience with seepage containment at taconite tailings basins. Pollutants from the U.S. Steel Minntac tailings basin have seeped from groundwater to downstream wetlands, rivers and lakes, affecting water quality and beneficial uses for a quarter of a century.93 At the LTV SMC tailings facility, surface seepage collection has been unsuccessful in preventing groundwater seepage of pollutants to Second Creek. Given the unknown bedrock conditions beneath PolyMet's proposed tailings basin, its location on historic wetlands,94 and the immediate proximity of downgradient wetlands, it cannot be assumed that seepage escaping through or beneath PolyMet's proposed dirt trench collection system would not daylight to surface water and cause or contribute to exceedance of water quality standards.	See response to Comment 543-AK.	See response to Comment 543-AK. In addition, whether groundwater that reaches surface water is within the scope of the NPDES permit program is a legal issue. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).

543-AM	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	On the south side of the tailings facility, the need for a reasonable potential analysis is even more obvious. South Toe seepage daylights to surface water almost immediately. As stated in the Poly Met FEIS, Along the southern side, bedrock and surface topography create a narrow valley at the headwaters of Second Creek. Due to this topography and experience on the site, it is expected that all existing seepage from the Tailings Basin to the south emerges as surface seepage within a short distance of the embankment toe.95 The MPCA's NPDES/SDS Fact Sheet confirms that "seepage from the tailings basin is continuing,"96 and that "pumpback systems are effective at capturing and removing surface seepage, but they are not designed to capture the seepage from the existing tailings basin to the surficial groundwater aquifer."97 Yet more problematic, the MPCA reveals, "Unlike the seepage capture systems along the northern and western sides of the tailings basin, the South Seepage Management System will capture almost exclusively surface seepage. "98 Based on the underlying hydrogeology, groundwater seepage from the south side of the Poly Met copper-nickel mine tailings facility could be voluminous. Geologist J.D. Lehr examined U.S. Geological Survey topographic maps from 1949 that predate taconite tailings basin construction. These maps show that about one-third of the area currently beneath the southern portion of the Tailings Basin or about 1,000 acres, historically drained to the south and formed the headwaters of Second Creek.99 These maps illustrate the historic and potential drainage flow100 :	To the extent that the comment relates to the capture efficiency of the FTB South seepage capture system, it raises a factual question, but provides no reasonable basis for dispute. The comment questions the efficacy of controls required in the NPDES permit and presumes failure of control systems without justification. The comment notes that existing flow from the south side of the basin is greater than zero, but also cites the fact sheet statement that the goal of the existing system is not to eliminate discharge. The same issues were raised in the EIS and DNR, in consultation with MPCA, considered those issues. See RGU Consideration of Comments on the FEIS at 169.	The comment does not raise any new facts for MPCA to consider at the permitting stage, it merely disagrees with MPCA's conclusion. Therefore, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* . To the extent that the comment relates to the purported need for an evaluation of reasonable potential on seepage, it is a legal issue. Whether groundwater that reaches surface water is within the scope of the NPDES permit program is a legal issue. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
543-AN	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Recent Data Monitoring Reports, long after surface seepage pumpback at the SD026 south outfall of the existing LTVSMC was instituted, confirm that flow from the tailings facility may remain at high levels. During 2017, flow at the LTV SMC measuring station SD026, where the tailings basin constitutes the headwaters of Second Creek averaged 3 3 .6 million gallons per month. Applying the gallons per minute (gpm) metric to the 2017 DMR data, south side tailings flow to Second Creek averaged 766.8 gpm. Even in 2016, a year where seepage collection may have been more effective, flow from the existing L TVSMC tailings basin to the headwaters of Second Creek averaged 140 gpm.101 As noted above, to date Poly Met and the agencies have predicted O gpm of groundwater flow from the tailings basin to Second Creek. 102 Although MinnAMAX data previously cited suggests that Poly Met underestimates the level of tailings seepage contamination,103 even PolyMet's predictions predict solute concentrations in South Toe Tailings Basin seepage far exceeding Minnesota water quality standards. The Poly Met Permit to Mine Application predicted mine year 20 South Toe concentrations of nickel at 1,249 parts per billion (µg/L) -- more than 24 times the aquatic life surface water quality standard of 52 µg/L, and levels of copper at 695 parts per billion - nearly 75 times the water quality standard of 9 .3 µg/L. Lead, a particularly dangerous neurotoxin with no safe level, would reach levels of 100 parts per billion -- more than 31 times the aquatic life water quality standard of 3.2 µg/L. South Toe Tailings Basin seepage is also predicted by Poly Met to have sulfate concentrations of 553 parts per million (mg/L) - more than 55 times the water quality standard of 10 mg/L applicable in downstream wild rice to protect wild rice for wildlife as well as human beneficial use. 104 The MPCA has provided no justification for its failure to perform a reasonable potential analysis to determine, under the Clean Water Act and the Great Lakes Initiative, whether PolyMet's discharge to groundwater of nickel, copper and lead, among other pollutants would cause or contribute to exceedances of Minnesota water quality standards in Second Creek.	See response to Comment 543-AK above. The factors listed in the comment were considered during the EIS review of the information provided. MPCA considered these same factors while preparing the draft permit.	See response to Comment 543-AK.

543-AO	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The most egregious failure to conduct a reasonable potential analysis and set water quality-based effluent limitations to protect surface water pertains to PolyMet's proposed tailings facility, including but not limited to its discharge to Second Creek through groundwater. However, there are other sources of contaminated seepage to groundwater that similarly require analysis and potential control. Even under PolyMet's assumptions that lower-sulfur rock can be readily characterized and sorted, Category 1 waste rock stockpile seepage contain solute concentrations far exceeding water quality standards. In Mine Year 20, PolyMet predicts that nickel concentrations in Category 1 seepage would be 2,228 µg/L, nearly 77 times the surface water quality standard of 29 µg/L, and copper concentrations would be 237 µg/L, more than 45 times the water quality standard of 5.2 µg/L. Sulfate concentrations would be 1,393 parts per million (mg/L), 139 times Minnesota's water quality standard that protects wild rice downstream in the Partridge River. Concentrations of lead would be 11 µg/L, more than eight times the aquatic life water quality standard of 1.3 µg/L and concentrations of arsenic, a class 1 carcinogen, would be 100 µg/L, nearly twice the water quality standard of 53 µg/L to protect aquatic life and 50 times the downstream water quality standard of 2 µg/L applicable to Colby Lake. 105 By Mine Year 75, chemical concentrations in Category 1 seepage would not have attenuated. Nickel concentrations would increase slightly to 2,230 µg/L, approaching 77 times the water quality standard of 29 µg/L, and copper concentrations would remain at 23 7 µg/L, more than 45 times the water quality standard of 5.2 µg/L. Arsenic would remain at 100 µg/L, nearly twice the aquatic life standard of 53 µg/L and 50 times the downstream health-based standard of 2 µg/L. In addition, by Mine Year 75, sulfate concentrations would double to 2,793 mg/L, 279 times the wild rice sulfate standard of 10 mg/L. Lead concentrations would increase nine times to a level of 100 µg/L, a level which is 77 times the water quality standard of 1.3 µg/L. 106 The Category 1 waste rock pile is proposed as a 526-acre permanent, unlined facility. 107 The Poly Met FEIS predicted that, during operations, more than 98% of groundwater seepage from the Category 1 waste rock pile would be captured by the containment system or flow through groundwater into the mine pits. 108 PolyMet and the FEIS also assumed that the geomembrane cover that would eventually be placed on the rock pile would reduce infiltration by more than 99% (from 360 gpm to 2.8 gpm). I09	See response to Comment 543-AK above. The factors listed in the comment were considered during the EIS review of the information provided. MPCA considered these same factors while preparing the draft permit.	See response to Comment 543-AK.
543-AP	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although the FEIS characterized the Category 1 seepage capture system as a "low-permeability cut-off wall keyed into bedrock," I1 0 Poly Met has proposed that "compacted soil" could serve as the barrier for seepage capture. 111 The Category 1 drainage system would rely only on gravity for seepage collection, and Poly Met admitted that along the west, north, and east sides of the stockpile, there may be areas where drain pipe could not be installed at an elevation low enough to ensure that groundwater will not flow beneath the cutoff wall. 112 Dr. Lee evaluated the efficacy of the proposed seepage collection system for the Category 1 waste rock pile: The gravity driven drainage system for moving collected water to the NE and SW corners of the stockpile with subsequent pumping to the WWTF will not work as currently proposed. The bedrock surface is uneven and not uniformly sloped ... The conductivity of the cutoff wall for the Category 1 facility is quite high ... The effect of freeze thaw and other degradation mechanisms on the long-term performance of the cutoff wall have not been fully considered in the modeling. The degradation of the cutoff wall over hundreds of years is a certainty, but the consequences are not established. 113 Dr. Lee concluded,"[T]he proposed drainage system is unlikely to work as anticipated." 114 Neither the PolyMet NPDES/SDS Permit Application nor the Permit to Mine Application specifies limits on the amount of untreated seepage that will be released from the Category 1 waste rockpile. Poly Met defers setting "the required performance of the groundwater containment system" to final designs not included in its permit application. 115 Although PolyMet claims that geomembrane cover systems are widely used the Company admits, there has not been significant demand for geomembranes in waste rock stockpile covers. 116 The longest studies on geomembrane degradation cited by Poly Met were 10 years in duration, 117 but the geomembrane Poly Met proposes would have to resist degradation for hundreds of years, if not forever. PolyMet's claims for the efficacy of the Category 1 seepage collection system are based on the same Barr 2012 Containment Memo on which PolyMet used to claim tailings seepage success. I18 PolyMet cites no examples demonstrating that an inward gradient has been maintained for decades, let alone hundreds of years, to prevent leakage of groundwater through a soil or slurry trench.	See response to Comment 543-AK above. The factors listed in the comment were considered during the EIS review of the information provided. MPCA considered these same factors while preparing the draft permit.	See response to Comment 543-AK.

543-AQ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	There are other features at the Poly Met plant site and the mine site which raise serious concerns about discharge through groundwater to hydrologically connected surface water. The hydrometallurgical waste facility (HRF) would receive 313,000 tons ofresidue annually119 and would contain highly toxic and concentrated wastes. Neither PolyMet's NPDES/SDS Application nor the Company's Permit to Mine Application disclose the chemical composition ofHRF residues. However, PolyMet groduced a technical report everal years ago chara terizing hydrometallurgical waste residue. 20 This report di closed that copper concentrations in the residue would be 945 parts per million121 - more than 100,000 times Minnesota's water quality standard for copper (9.3 parts per billion) set to protect fish in surface water near the proposed plant. 122 Total sulfate would be 13.78% of the residue or 14.91 % when residue is combined with gypsum: 123 in other words, residue would have a staggering 138,000 to 149,100 mg/L of sulfate. The level of sulfate in HRF residue would, thus, be more than 10,000 times Minnesota's wild rice sulfate standard of 10 mg/L,124 applicable downstream in the Partridge River. Poly Met has also identified a number of toxic and reactive chemicals that would be used as hydrometallurgical plant consumables. 125 PolyMet's Facility Mercury Mass Balance Analysis states that 164 pounds of mercury would be deposited in the HRF each year. 126 If the Poly Met autoclave processing were to operate for 18 years, as currently proposed in the PTM Application, 127 by the time it closes the hydrometallurgical residue facility would contain an astonishing 2,952 pounds of mercury. To get a sense of the significance of this amount of mercury, the water quality standard for mercury in Minnesota's Lake Superior basin is 1.3 nanograms per liter (ng/L); and one would need more than 450 billion nanograms to equal just one pound.	To the extent that the comment relates to the design of the HRF, it raises a factual question, but provides no reasonable basis for dispute. The design components of the HRF were raised in the EIS and DNR, in consultation with MPCA, considered those issues. See RGU Consideration of Comments on the FEIS at 188. The issue of foundation stability was considered in the EIS and requirements for a detailed process of investigation, design and MPCA approvals are included in the draft permit to address that issue. The MPCA and DNR worked with a third-party consultant to evaluate the stability of the HRF foundation and construction methods. In addition, the MPCA added language in part 5.181.234 of the draft permit to state that if the MPCA determines that site conditions at the proposed HRF location preclude the construction and operation of the HRF in compliance with applicable water quality standards, construction of the HRF at that location is prohibited.	The comment does not raise any new facts or analysis for MPCA to consider, it merely disagrees with MPCA's conclusion. Therefore, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* . To the extent that the comment relates to the purported need for an evaluation of reasonable potential on potential seepage from the HRF, it is a legal issue. Whether groundwater that reaches surface water is within the scope of the NPDES permit program is a legal issue. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
543-AR	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although the HRF has a liner system, its location on an unsuitable site and an unstable foundation make this liner system vulnerable to stress deformation and failure, as well as dam instability. The pro~o ed sjte for the hydrometallmgical residue facility would be located on 36.1 acre of wetlands, 1 8 a site tbat is unsuitable for a facility storing highly concentrated and toxic wastes. Although location of industrial solid waste facilities on wetlands is generally prohibited tmder Minnesota law 129 in 2015 mining jndu try lobbyists successfully secured a loophole that creates an exemption for disposal of mining wastes. 130 Engineers retained by the Minnesota Department of Natural Resources (DNR) to review HRF safety have cautioned, "The soft ground beneath the proposed residue facility consists of up to 30 feet of slimes peat and tailings concentrate. This will not be an adequate foundation for the 80 foot high basin. 131 The review explained, "The ba in will have a geomembrane or geosynthetic liner. The liner could deform and fail if the existing underlying material cannot support the material added to the basin."132 The HRF is a permanent waste facility, and its liners would have to perform for hundreds of years, if not forever. DNR' s Area Fisheries Supervisor has expressed concerns about downstream hazards that would result from release of waste from the HRF, particularly over the long term: How long does such a liner last and what happens when it inevitably degrades as nothing lasts forever? Even if it takes 200 years, the waste will still be there and in its location would be very susceptible to leaching into nearby wetlands and groundwater. There is no mention of the expected longevity of the liner and leakage system in the long term closure description. There is mention of a monitoring plan but no mention of how the liner could be maintained or repaired or replaced ... I don't understand how a liner could be replaced, or even repaired, under a 97 acre site with 50 feet of fill on top ... The Hydrometallurgical Re idue Facility is a concern to Fisheries because of its potential impact on water quality as the system ages. 133	See response to Comment 543-AQ.	See response to Comment 543-AQ.

543-AS	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The mine site sumps, ponds, and equalization basins are all potential sources of seepage to surface water through hydrologically connected groundwater as a result of liner leakage, while the mine pits and the overburden laydown and storage area are unlined sources of potential contamination. The equalization basins will have a single liner and a rate of leakage approximately 10 times that of the ore surge pi le and ategory 2/3 waste rock t ckpile. 134 Solute concentrations in the mine site East ("Low" Concentration) and West (High Concentration) Equalization Basins are useful to understand the level of contaminants that would result from copper-nickel mining in the Partridge River headwaters. The East Equalization Basin would aggregate seepage from the mine pits, haul roads, rail transfer hopper and Category 1 waste rock stockpile. During operations, this "Low" Concentration Basin would contain wastewater more than three orders of magnitude above water quality standards. Copper concentrations of 7,410 µg/L would be 1,425 times Minnesota's water quality standard and nickel concentrations of 24,600 µg/L would be 848 times the water quality standard. Manganese concentrations of 2,223 µg/L would be 22 times Minnesota's health-based limit in drinking water. 135 The West Equalization Basin would aggregate seepage from the Ore Surge Pile and the Category 2/3 waste rock stockpile. During operations, this Basin would contain reactive wastes more than four orders of magnitude above water quality standards. The wastewater in this Basin would have copper concentrations of 110,000 µg/L, more than 21,150 times Minnesota's water quality standard that protects aquatic life; nickel concentrations of 405,000 µg/L, more than 13,965 times the water quality standard; and lead concentrations of 361 µg/L, nearly 278 times the water quality standard. Manganese concentrations of 39,500 µg/L would be 39.5 times the Minnesota's health-based limit. 136 Sulfate concentrations in the East Equalization Basin would be 2,450 mg/L, 245 times the wild rice sulfate standard, and sulfate concentrations in the West Equalization Basin would be 9,010 milligrams per liter (mg/L), more than 900 times the wild rice sulfate standard applicable downstream in the Partridge River. 137 The MPCA failed to perform a reasonable potential analysis for any mine site or plant site discharge to surface water through hydrologically connected groundwater. The Draft NPDES/SDS Permit also provides no enforceable conditions that would control such discharge.	The design components of the wastewater collection and storage system at the Mine Site were raised in the EIS and DNR, in consultation with MPCA, considered the issues in the comment. See RGU Consideration of Comments on the FEIS at 175. The proposed equalization basin design was reviewed by MPCA and determined to be consistent with requirements applied statewide for similar industrial wastewater pond applications.	The comment does not raise any new facts for MPCA to consider, it merely disagrees with MPCA's conclusion. Therefore, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* . To the extent that the comment relates to the purported need for an evaluation of reasonable potential on potential seepage from the EQ basins, it is a legal issue. Whether groundwater that reaches surface water is within the scope of the NPDES permit program is a legal issue. Therefore, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
543-AT	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Draft NPDES/SDS Permit appears to allow Poly Met to discharge water from its tailings facility to surface waters through hydrologically connected groundwater. The Draft Permit only states that there will be "no direct discharge from the FTB (Flotation Tailings Basin) Pond to any receiving waters"138 and that "Direct discharge to surface waters from the FTB Seepage Containment System is prohibited."139 The Draft NPDES/SDS Permit imposes no limits or enforceable requirements for Poly Met to improve the South Seepage Management System, which is known to be ineffective in capturing groundwater seepage at the headwaters of Second Creek, let alone to achieve the promised 100% collection rate. The Draft Permit merely says, "During Project operations, Poly Met will upgrade the existing system to enhance the degree of seepage collection as necessary."140	The commenter questions whether controls required in the NPDES permit are enforceable. The MPCA revised the language of the permit in light of the comment to state that a direct discharge from the south seepage management system to former SD026 is prohibited. See draft permit at 5.175.52. In addition, the MPCA has added the following requirements to the permit to address concerns regarding requirement for constructing/upgrading the South Seepage Management System: "The Permittee shall construct the FTB South Seepage Management System as an upgrade or replacement of the existing temporary surface seepage pumpback system located upstream of former Cliffs Erie outfall SD026. The South Seepage Management System shall be designed and constructed to collect seepage from the FTB in this area such that there will be no direct discharge of seepage to surface waters."	Because there is no issue of fact, no specific new facts were raised, and the MPCA adequately addressed the comment, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-AU	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although the Draft Permit states, "The Permittee shall maintain an inward hydraulic gradient across the FTB Seepage Containment System as determined from water level measurements from the paired monitoring wells and piezometers," this condition is qualified to take into account "temporary conditions that may result from short-term precipitation or snowmelt events."141 Should either a decrease in pumping rates or monitoring detect that an inward gradient is not being maintained at the tailings seepage containment system, this engineering failure would not constitute an enforceable violation of the Draft NPDES/SDS permit. Such a finding would merely trigger a long and non-exclusive list of potential mitigation measures and submittal of a Seepage Containment System Corrective Action Evaluation Report. 142 A permit violation could, theoretically, be found if PolyMet reported in an Annual Comprehensive Performance Report that an inward gradient was not being maintained to prevent impact to ground or surface waters from the tailings seepage system, submitted a mitigation plan, the MPCA disapproved the plan and PolyMet did not address the MPCA's disapproval within a deadline specified at that time. 143	The commenter questions whether controls required in the NPDES permit are enforceable. The MPCA revised the language of the permit in light of the comment to state that if an inward gradient is not reestablished within 14 days of detection, it is a violation of the permit. The permit also requires monitoring of the Category 1 stockpile paired wells/piezometers weekly following a 100-year storm event to ensure that monitoring and any necessary preventative maintenance occur promptly.	Because there is no issue of fact, no specific new facts were raised, and the MPCA adequately addressed the issue, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-AV	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The MPCA Fact Sheet states for the hydrometallurgical residue facility that "no leakage is expected through the lower composite liner."144 But the Draft NPDES/SDS Permit imposes no limit on discharge of HRF pollutants through groundwater. The Draft Permit only says, "Direct discharge from the HRF Pond and/or the HRF Leakage Collection system to surface waters or to the FTB is prohibited."145 The Draft Permit provides a lengthy investigation work plan for a preload design, but no specifications that would result in revocation of the authority already granted in the permit that the "HRF is permitted to receive hydrometallurgical residue and process water."146 Both the DNR and the MPCA propose to issue permits for the HRF, although neither agency nor permit has resolved concerns regarding the site, its unstable foundation, and the risks of dam instability and liner deformation releasing highly toxic wastes from the HRF.	The commenter questions whether controls required in the NPDES permit are enforceable. In light of the comment, the MPCA added language in part 5.181.234 of the draft permit to state that if the MPCA determines that site conditions at the proposed HRF location preclude the construction and operation of the HRF in compliance with applicable water quality standards, construction of the HRF at that location is prohibited.	Because there is no issue of fact, no specific new facts were raised, and the MPCA adequately addressed the issue, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .

543-AW	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Draft NPDES/SDS Permit states for the mine site Category 1 seepage containment system, as with the tailings system, that "The Permittee shall maintain an inward hydraulic gradient across the Category 1 Waste Rock Stockpile Groundwater Containment System as determined by comparing water level measurements from the paired monitoring wells and piezometers" and that this condition should take into account "temporary conditions that may result from shortterm precipitation or snowmelt events." 147 If monitoring detects that an inward hydraulic gradient is not being maintained at the Category 1 seepage containment system, this engineering failure, as at the tailings basin, would not be an enforceable violation of the Draft NPDES/SDS permit. The finding could lead to potential mitigation measures. 148 But, irrespective of the ineffectiveness of containment, the only way a permit violation could be triggered would be if PolyMet disclosed in an Annual Comprehensive Performance Report that failure to maintain the inward gradient resulted in a "measurable" impact to groundwater, proposed a corrective plan and schedule, the MPCA disapproved the plan and PolyMet failed to address the Agency's d1. sapprova1.1 49	See Response to Comment 543-AU.	See Response to Comment 543-AU.
543-AX	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	It is unclear whether the Draft NPDES/SDS Permit for the mine site is intended to prohibit indirect as well as direct discharge to surface waters. The Draft Permit states, "There will be no discharge of mine water or other process wastewater to surface waters from the Mine Site," 150 and "The Permittee shall not discharge any process wastewater from the Mine Site to surface waters under this permit."151 However, the Draft Permit also states, "This permit does not authorize a direct discharge from the Mine Site Equalization Basins or any other industrial mine water pond system to surface waters," 152 the Draft Permit also states with respect to the Category 2/3 Waste Rock Stockpile, Category 4 Waste Rock Stockpile, OSLA, Ore Surge Pile, and Equalization Basins, "The Permittee shall operate and maintain its engineering controls associated with these infrastructure facilities to ensure there is no discharge to surface waters from the Mine Site." 153 These inconsistencies in language could interfere with enforcement.	The commenter questions whether the "prohibition of discharge" provisions in the NPDES permit are enforceable. In light of the comment, the MPCA reevaluated and clarified the phrasing of the requirements in the permit prohibiting a direct discharge from the mine site/FTB pond/FTB seepage capture system and believes the requirements are enforceable. See parts 5.175.51, 5.175.52 and 5.175.75 of the draft permit.	Because there is no issue of fact, no specific new facts were raised, and the MPCA adequately addressed the issue, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-AY	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The EPA has emphasized to the MPCA that, if the PolyMet NPDES permit does not cover discharge through groundwater to hydrologically connected surface water "then the company will be discharging without a permit in violation of the CW A."154 The EPA explained, repeating discussions that the Agency had had many times before with both the MPCA and PolyMet: [T]here is no minimum threshold of predicted pollutant load needed to trigger the requirement to submit a permit application. The CW A [Clean Water Act] does not include exemptions that would limit NPDES permit coverage to only "excess" wastewater discharges that are deemed to have a "statistically significant" impact on receiving waters at property boundaries. There is no exclusion or exemption for discharges from facilities based on technology or engineering ontrols. Failure to obtain NPDES coverage for discharges of pollutants to waters of the United States would place the discharger at risk of violating the CWA. 155 Of course, a violation of the Clean Water Act could only be prosecuted if it were detected. That is why monitoring of surface water quality in relationship to groundwater seepage of pollutants is so important.	The MPCA clarified the phrasing of the relevant "no discharge" requirements throughout the permit to read "there shall be no direct discharge to surface waters...." This phrasing is explained in the Fact Sheet at 63. The scope of NPDES coverage under the Clean Water Act is a question of law.	Because there is no issue of fact, no specific new facts were raised, and the MPCA adequately addressed the issue, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-AZ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Draft NPDES/SDS permit for the PolyMet Project violates the Clean Water Act and Minnesota law by providing inadequate monitoring to detect if Poly Met discharge through groundwater causes or contributes to violations of Minnesota water quality standards or results in unpermitted discharge. In the environmental review process, modeling was set up to exclude data on where and when pollutants in bedrock or surficial aquifer groundwater would first day light to surface water. The Poly Met FEIS states, "Several decisions were made while setting up the GoldSim models. An approach was taken not to represent in those models the interactions between bedrock groundwater and surficial deposits groundwater, or between groundwater and wetlands."156 Although the EPA has stated in writing for five years that such an analysis was necessary in order to prepare an NPDES permit in compliance with the Clean Water Act, 157 the MPCA did not require PolyMet to rectify this deficiency. There is no information in PolyMet's NPDES/SDS Application evaluating the most likely locations - whether based on hydrogeology, fractures, flows or monitoring data - where Poly Met mine site and plant site discharge of pollutants to groundwater would first reach surface water. The Draft NPDES/SDS does not grant Poly Met an exemption from the Clean Water Act requirements that regulate discharge of surface water through hydrologically connected groundwater. However, the Draft Permit makes it highly unlikely that PolyMet would face any consequences for discharging unpermitted pollutants through groundwater to waters of the United States. In effect, by requiring deficient monitoring of surface water and groundwater, the Draft Permit would Poly Met to evade the law's prohibitions.	The EIS evaluated possible flow paths through groundwater to reach surface water. See EIS Table 5.2.2-22 and 5.2.2-23. The draft permit requires monitoring along these flow paths to identify any groundwater that could reach surface waters with adequate notice to mitigate the effects.	This comment raises a factual issue regarding adequacy of the monitoring network and states conclusions regarding the permit; however, the comment does not identify specific facts and no new information is presented. Because the comment does not provide evidence to dispute MPCA's analysis, the comment does not provide a reasonable basis for dispute and a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* . To the extent the comment raises issues of compliance with the Clean Water Act or state law, it raises legal issues not subject to a contested case hearing. Minn. R. 7000.1900, subp. 1(A). To the extent this comment questions the adequacy of the EIS (as opposed to the adequacy of the draft NPDES permit), the comment is outside the jurisdiction of the MPCA commissioner and is not the subject of this action. Minn. R. 7000.1900, subp. 1(B).

543-BA	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Failure to provide sufficient monitoring to evaluate compliance with surface water quality standards conflicts with regulations implementing the Clean Water Act. Federal regulations, applicable to state NPDES permits, require monitoring "sufficient to yield data which are representative of the monitored activity." 158 State compliance evaluation programs should be capable of identifying noncompliance with permit requirements, verifying the adequacy of sampling aud monitoring and protecting surface waters and public health. 159 tate must also have remedies for enforcement of violations of State permit and program requirements. 160 These regulatory requirements would be meaningless if a state's monitoring was so deficient that no violations would be detected. Minnesota rules similarly requires that every permit issued by the MPCA contain monitoring requirements "that are sufficient to yield representative data to determine whether there is compliance with the terms and conditions of the permit or compliance with Minnesota and federal pollution control statutes and rules." 161 Minnesota statutes contain civil and criminal penalties to enforce violation of MPCA permits, 162 remedies that would become moot if permit violations could not be detected.	See response to Comment 543-AZ. With respect to legal requirements for developing a permit, the permit complies with federal and state requirements for NPDES permits.	See response to Comment 543-AZ.
543-BB	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although any mine site discharge to surface water through hydrologically connected groundwater may be permit violation under the Clean Water Act, mine site surface water quality monitoring seems to be designed to preclude detection of such a violation. The map below163 shows the mine site layout, along with the potential sources of contamination. Lined features, which could leak to groundwater, include the Ore Surge Pile and the Category 2/3 Waste Rock Stockpile (yellow), sumps and ponds (small pink squares) and the Equalization Basins (blue). These sumps, ponds and basins could also overflow during heavy rain events. Unlined features with higher seepage rates to groundwater include the Category 1 Waste Rock Stockpile (yellow), the West, Central and East Mine Pits (grey) and the Overburden Storage and Laydown Area (yellow lines). Mine pits would not seep during dewatering but could seep to groundwater during temporary as well as final closure or due to seasonal and rain events. The proposed PolyMet mine site contains many wetlands and several small creeks that could be hydrologically connected to the sources of mine site contamination of groundwater. This map illustrates some of these proximate surface water features: 164 The map below shows the location of the only surface water monitoring sites near the mine site proposed in the Draft NPDES/SDS Permit: 165 Proposed monitoring sites for baseline conditions are shown in green and proposed sites to identify surface water impacts are red. The sites on Longnose Creek and Wyman Creek are intended to monitor impacts of ~ills or leakage from the raj I way and pipeline corridor between the mine site and the plant site. 1 6 The single surface water site proposed to monitor impacts from discharge through groundwater to surface water from the entire mine site is identified on this map as SW004c. This monitoring site is located on the Partridge River approximately a mile south of the mine site. 167	The comment concludes that the monitoring location is inadequate to detect groundwater discharges by relying on facts already considered by the MPCA. The MPCA evaluated the surface water monitoring needed at the facility during the development of the permit, considered the facts presented in the comment, and determined that the proposed location was adequate to evaluate effects from the mine site. Also see response to Comment Water-711-B.	To the extent this comment questions the adequacy of the EIS (as opposed to the adequacy of the draft NPDES permit), the comment is outside the jurisdiction of the MPCA commissioner and is not the subject of this action. Minn. R. 7000.1900, subp. 1(B).
543-BC	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Surface water quality monitoring to detect impacts to surface water as a result of both direct discharge and discharge through groundwater to waters of the United States at the tailings waste facility is similarly deficient. The Draft NPDES/SDS Permit would authorize 11 discharge outfalls at the four-and-a-half mile square tailings facility, each of which is indicated in orange and is at or near the edge of the facility. As the map shows, the Draft NPDES/SDS Permit would provide five surface water quality, monitoring stations, the nearest one of which is about a mile from the northern edge of the tailings facility. 168 As evident in the map above, there are streams originating much closer to the tailings facility than the surface monitoring stations selected. In addition, similar to the mine site, there are wetlands up to the very edge of the sources from which tailings site contamination would originate - both the discharge outfalls and the seepage containment system.169	The MPCA evaluated the surface water monitoring needed at the facility during the development of the NPDES/SDS permit and determined that the monitoring in the draft permit is adequate to evaluate effects from the plant site and that additional surface water monitoring in wetlands is not necessary. The comment considers the same information that the MPCA considered and reaches a different conclusion. In addition, the MPCA's 401 Certification for the project does include wetland monitoring. Also see response to Comment Water-711-B.	Because there are no new facts to consider, and there is no reasonable basis for dispute, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BD	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	After several commenters explained that seepage could also escape from the east side of the tailings facility due to changes in elevation and hydraulic head, Poly Met represented and the Poly Met final EIS asserted that the collection system on the east side of the tailings facility would capture 100% of both surface seepage and groundwater seepage. 170 The Draft NPDES/SDS Permit proposes no surface water monitoring sites to the east of the tailings facility .	The MPCA evaluated the surface water monitoring needed at the facility during the development of the NPDES/SDS permit. The comment considers the same information and reaches a different conclusion.	Because there are no new facts to consider, and there is no reasonable basis for dispute, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .

543-BE	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Draft Permit suggests that monthly inspection of HRF pond and HRF leakage collection system will "evaluate the effectiveness of the liner and Leakage Collection System."171 Although there are monitors for internal waste streams at the hydrometallurgical residue facility (HRF), there are no monitoring sites at all that could detect liner leakage at the HRF: no bedrock groundwater monitoring sites, no surficial aquifer monitoring sites and no surface water quality monitoring sites. 172	The MPCA evaluated the surface water monitoring needed at the facility in the development of the NPDES/SDS permit. The MPCA evaluated the groundwater monitoring needed at the facility, including the FTB and Category 1 stockpile, in the development of the permit. The comment considers the same information and reaches a different conclusion.	Because there are no new facts to consider, and there is no reasonable basis for dispute, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BF	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Similarly, there are no monitoring sites of any kind - groundwater or surface water -- to detect leakage of the Equalization Basins, the highly contaminated single-lined ponds on the southern edge of the Poly Met mine site. The MPCA relies on typical liner characteristics to assume, without verification, that leakage will be minimal, and will affect neither groundwater nor nearby surface water. 173	The MPCA evaluated the surface water monitoring needed at the facility in the development of the NPDES/SDS permit. The MPCA evaluated the groundwater monitoring needed at the facility, including the equalization basins, in the development of the permit. A monitoring well is located immediately adjacent to the basin system, so additional wells to monitor effects from the Equalization Basins are not necessary. The permit requires an annual evaluation of the suitability of the existing groundwater monitoring network, based on actual data, to adequately monitor groundwater flows from the mine site. The comment considers the same information and reaches a different conclusion.	Because there are no new facts to consider, and there is no reasonable basis for dispute, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BG	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Poly Met Draft NPDES/SDS permit must be revised to include many additional surface water monitoring sites on the mine site and in wetlands and streams in proximity to mine site sources of contamination in order to determine if Poly Met is violating the draft permit prohibition of discharge of pollutants to surface water. Surface water monitoring sites should consider the groundwater contours of the mine site, which reflect a reduced groundwater gradient on all sides of the mine, 174 the 100-year flood plain for the mine site that overlaps the Category 1 seepage containment system and its sump, 175 and the many faults and fractures identified at and in the vicinity of the mine site, shown on this map as well as on the attached exhibit. 176	The MPCA evaluated the monitoring needed at the facility, including around the tailings basin and Category 1 stockpile, in the development of the permit. As described in response to Comment Water-711, the primary purpose of the paired piezometers and monitoring wells located adjacent to the barrier in the FTB and Category 1 stockpile capture systems is to monitor water levels to verify that an inward gradient across the barrier is being maintained. Monitoring of the monitoring well pairs for sulfate, chloride, specific conductance and TDS is sufficient to assess whether any uncaptured seepage is moving beyond the barrier; additional monitoring for metals is redundant and not needed.	Because there are no new facts to consider, and there is no reasonable basis underlying a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BH	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	These, and all other monitoring results from the Poly Met project, should be immediately posted online so that members of the public will have timely and transparent information as to the compliance of Mim1esota's first copper-nickel sulfide mine with Minnesota water quality standards and the requirements of the federal Clean Water Act.	All monitoring data is reported to the MPCA on monthly Discharge Monitoring Reports (DMRs) which is posted online on the MPCA website (available at https://www.pca.state.mn.us/quick-links/eda-surface-water-data) and is also available by request to the agency.	Because there is no factual dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
543-BI	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Surface water monitoring sites located in wetlands should specifically measure sulfate, mercury, methylmercury and water fluctuations, among other parameters to address concerns about increased mercury contamination resulting from the PolyMet project.	See response to Comments 543-BC and 543-BG.	See response to Comments 543-BC and 543-BG.
543-BJ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The PolyMet Draft NPDES/SDS permit must also be revised to include multiple surface water monitoring sites in wetlands adjacent to the tailings waste facility and the closest points of creeks to determine whether tailings seepage containment failure is resulting in discharge to surface waters. Such monitoring should reflect groundwater contours at the tailings site 177 as compared to the eventual height of the tailings deposits, as well as the faults and fractures identified at and near the tailings site. 178	See response to Comments 543-BC and 543-BG.	See response to Comments 543-BC and 543-BG.
543-BK	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	MPCA's current plan to have only three surficial aquifer monitoring wells downgradient of the tailings site179 is also insufficient. Additional monitoring sites in the plant site surficial aquifer are required to identify likely flowpaths from groundwater seepage to surface water. Such monitoring of surface and groundwater is also important to assess the impacts on both human health and natural resources in the event of spillage, overflow or partial or complete dam failure at the tailings site. Surface water monitoring sites located in wetlands should specifically measure sulfate, mercury, methylmercury and water fluctuations, among other parameters to address concerns about increased mercury contamination resulting from the Poly Met project. Locations of groundwater monitoring sites should be re-evaluated to ensure that they follow potential pathways from sources of contamination along faults and fractures. In particular, the Draft NPDES/SDS Permit should locate surficial groundwater monitoring stations radiating out from the seepage collection systems for the Category 1 waste rock seepage at the mine site and the tailings seepage at the plant site.	See response to Comment 543-BE.	See response to Comment 543-BE.

543-BL	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Poly Met Draft NPDES/SDS permit should also include strategically located groundwater and surface monitoring sites to ascertain whether the liners for the HRF are leaking. Particularly since this waste facility is proposed to contain highly toxic wastes, including a large mass of mercury, on an unsuitable site with an unstable foundation, effective leakage capture must be verified, not assumed. Similarly, the Draft NPDES/SDS Permit should require surficial groundwater and surface monitoring sites to ascertain whether liners for the Equalization Basins and other mine site sources of contamination are performing as hoped.	The MPCA evaluated the surface water monitoring needed at the facility in the development of the NPDES/SDS permit. The MPCA evaluated the groundwater monitoring needed at the facility, including the HRF, in the development of the permit. The comment considers the same information and reaches a different conclusion. However, in light of the comment, a provision has been added to the permit that requires the HRF Liner Plan to include a specific analysis of the suitability of the proposed monitoring to detect leakage from the HRF. The final permit includes language requiring the permittee to include into the HRF design a lysimeter under the HRF sump or other monitoring device capable of monitoring potential impacts and to assess the suitability of the proposed monitoring prior to construction of the HRF. Any potential leachate bypassing the HRF double liner system would be captured by the FTB Seepage Capture System and treated prior to discharge.	Because there are no new facts to consider, and there is no reasonable basis for dispute, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BM	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition to the deficiencies in the location of monitors, there are gaps in the nature of parameters proposed to be monitored. The Draft NPDES/SDS Permit sets a priority on groundwater monitoring at and around the seepage containment systems at the tailings facility and the Category 1 waste rock stockpile and in monitoring to detect northward flow. The parameters tested in these monitors should be expanded. The Draft Permit proposes that monitoring at the tailings seepage trench and the Category 1 seepage trench would include only water levels within the containment trench, would include no metals or parameters indicative of copper-nickel mining or processing outside the trench. 180 Such limitations would hamper the use of seepage data to determine whether pollutants found in bedrock groundwater, surficial aquifer or in surface water monitoring originated from seepage failure and whether action would need to be taken in order to avoid violation of water quality standards. In order to determine the role of seepage in contamination of groundwater or surface water, metals including at least the following should be monitored at both the tailings seepage system and the Category 1 seepage system: arsenic, cadmium, copper, lead, mercury, nickel and zinc. In addition, an effort should be made to identify and monitor for parameters that are chemical signatures for the Poly Met mining project.	The MPCA evaluated the monitoring needed at the facility, including around the tailings basin and Category 1 stockpile, in the development of the permit. As described in response to Comment Water-711, the primary purpose of the paired piezometers and monitoring wells located adjacent to the barrier in the FTB and Category 1 stockpile capture systems is to monitor water levels to verify that an inward gradient across the barrier is being maintained. Monitoring of the monitoring well pairs for sulfate, chloride, specific conductance and TDS is sufficient to assess whether any uncaptured seepage is moving beyond the barrier; additional monitoring for metals is redundant and not needed.	Because there are no new facts to consider, and there is no reasonable basis underlying a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BN	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Another, even more significant deficiency in the quality of monitoring is the monitoring to evaluate northward flow, which will only detect water levels and no other parameters. 181 Given potential changes affecting hydrology from operations at the Northshore Mine Peter Mitchell Pit, even if changes in water levels were detected in groundwater north of the Poly Met mine site, attribution would be difficult absent additional information as to the constituents of that groundwater. Again, monitoring the suite of metals associated with copper-nickel mining and the particular rock formations at the proposed Poly Met mine site would provide evidence of the source of the flow and yield the data necessary to represent the monitored activity.	The MPCA evaluated the monitoring needed at the facility, including that needed to ascertain whether a north flow may occur in the future, in the development of the permit. Similar to the approach around the tailings basin and Category 1 stockpile described in response to Comment Water-711, the purpose of the north flow path wells is to monitor the hydrogeologic conditions such that it can be confidently predicted whether a north flow path may develop in the future. This can be accomplished by monitoring current and future groundwater elevations along the potential north flow paths; monitoring of groundwater quality is not needed to accomplish this purpose.	Because no new facts are presented, and there is no reasonable basis underlying a dispute, a hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .

543-BO	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Draft NPDES/SDS permit for the PolyMet Project violates the Clean Water Act, its implementing regulations and Minnesota law by failing to set limits for direct discharge to surface water with the reasonable potential to cause or contribute to violation of Minnesota water quality standards. Federal regulations require that any new copper mine project must comply with new source performance standards which provide technology-based effluent limitations (TBELs). 182 The only effluent limits contained in the Draft NPDES/SDS Permit for the Poly Met copper-nickel mine project are based on TBELs and apply to SD001, the monitoring station for surface discharge from the tailings site wastewater treatment system (WWTS). 183 Wastewater discharged at the contaminant levels allowed under new source technology based effluent limits (TBELs) for copper mining would far exceed Minnesota water quality standards. At the PolyMet copper mine tailings site, the new source TBEL for zinc is more than 4 times Minnesota's water quality standard (120 µg/L); the TBEL for arsenic is 9.4 times Minnesota's standard (53 µg/L); the TBEL for cadmium is 20 times Minnesota's standard (2.5 µg/L); the TBEL for copper is 16 times Minnesota's standard (9.3 µg/L); the TBEL for lead is almost 94 times Minnesota's applicable standard (3.2 µg/L); and the level of mercury in discharge allowed by the TBEL for mercury is more than 769 times the level to which mercurl i.s limited under Minnesota water quality standards for the Lake Superior Easin (1.3 ng/L). 1 4 Minnesota's water quality standards were enacted and approved by the EPA to implement Clean Water Act section 303 requirements to protect beneficial uses of water185 and federal and international agreements pertaining to the Great Lakes. 186 Each NPDES permit must include technology-based effluent limitations (TBELs), where applicable. 187 But these TBELs serve as a floor, not a ceiling: Generally, the Clean Water Act uses two different types of standards "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters": technology-based standards and water-quality standards. 33 U.S.C. § 1251(a). Technology-based standards set a minimum level of treatment that must be performed by those who discharge pollutants into waters. That level is predetermined by EPA to be both technologically available and economically achievable .... In contrast, water quality standards depend on the purpose for which a particular body of water is used. 40 C.F.R. § 13 I .3(i) .... States are primar ily responsible for creating and revising water quality standards, but they must al o submit those standards to EPA for approval. 188 Each NPDES permit must also include water quality-based effluent limits (WQBELs) and requirements in addition to or more stringent than technology based standards to the extent necessary to achieve water quality standards established under section 303 of the Clean Water Act, including state narrative criteria for water quality." 189 Federal courts have consistently held "If the TBELs are insufficient to attain or maintain water quality standards, the CW A requires NPDES permits to include additional water quality-based effluent limits ("WQBELs")." 190 Under federal regulations implementing the Clean Water Act, limitations must control all pollutants or pollutant parameters which "are or may" be discharged that a level which will have the reasonable potential to "cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." 191 Ey definition, a water designated as impaired for a pollutant or failure to attain a narrative criterion already represents an excursion above water quality standards.	See MPCA's detailed responses in response to Comments Water-717 through Water-720-E.	This comment raises a legal issue regarding applicability of water quality-based effluent limits. The comment questions MPCA's interpretation of the Clean Water Act. Therefore, a contested case hearing is not appropriate on this issue. Minn. R. 7000.1900, subp. 1(A). To the extent this questions the MPCA's substantive determination of the need for water quality-based effluent limits, it raises an issue of policy regarding the MPCA's chosen method to evaluate reasonable potential. See response to Comment Water-718-A. However, the comments did not introduce any new facts or provide a reasonable basis for the dispute that would meet the criteria for a contested case hearing. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* . MPCA's detailed responses in response to Comments Water-717 through Water-720-E and below demonstrate that there is no reasonable basis and a contested case hearing would not aid the commissioner on this issue. Minn. R. 7000.1900, subp. 1(C).
543-BP	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Minnesota rules require that an NPDES permit issued by the MPCA "must contain conditions nece sar1 for the permittee to achieve compliance with all Minnesota or federal statutes or rules." 19 As explai11ed in Section 2 of these comments, even using PolyMet's modeling and projections, if seepage from the Poly Met flotation tailings basin (FTB) were not treated, that discharge would cause or contribute to the violation of both State numeric and narrative water quality criteria. The MPCA has not disregarded the potential of Poly Met FTB pollutants to violate Minnesota water quality standards. What the Agency maintains is that the water quality treatment proposed and pilot-tested by Poly Met would reduce the levels of pollutants in FTB seepage sufficiently so that there would be no reasonable potential for direct discharge from the tailings facility to cause or contribute to violation of Minnesota water quality standards. 193	The comment interprets the Clean Water Act. The MPCA concurs that NPDES permits must comply with federal and state requirements. The final permit meets those requirements. To the extent this questions the MPCA's substantive determination of the need for water quality-based effluent limits, see response to Comments 543-BO and Water-718-A.	This comment raises an issue of law, not fact. The comment does not provide new facts or evidence for the MPCA to consider, and there is no reasonable basis underlying any dispute. Therefore, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BQ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	There are several problems with this rationale: A) PolyMet has not actually "pilot tested" treatment of influent similar to that proposed in its copper-nickel mine project, and the NPDES/SDS public record contains evidence of similar treatment at a similar scale; B) Even if the treatment proposed by Poly Met were likely to be effective in reducing other metals, there is a reasonable potential that effluent from its wastewater treatment plant would cause or contribute to violation of mercury standards for mercury in receiving waters that are already impaired by elevated mercury in fish and in the water column; C) The MPCA has performed no analysis to determine if the specific conductance predicted for WWTS effluent would cause or contribute to toxicity, reflected in fish assessment impairments in the Embarrass River; and 4) The NPDES/SDS Permit places no limitations on surface water discharge from the existing LTVSMC tailings facility, which will transfer to Poly Met prior to the construction of a seepage collection system or treatment facility. Each of these deficiencies must be corrected before an NPDES/SDS permit can be issued to PolyMet in compliance with federal and state law A) Undemonstrated treatment efficacy for copper-nickel mining influent. The MPCA Fact Sheet states that a reasonable potential analysis was conducted for a wide range of metals, "based on available data submitted with the permit application," including estimated effluent quality data reported in EPA Form 2D, results from the pilot testing of the proposed wastewater treatment technology, modeling projections from the FEIS, and design engineering modeling conducted after the FEIS. The MPCA apparently concluded based on this information that there is no reasonable potential that any parameter would cause or contribute to an excursion from water quality standards. 194	The comment relies on the information provided in the NPDES application, which the MPCA has reviewed and considered during permit development. Specifically, MPCA reviewed design modeling and pilot testing information referenced in the comment and determined it was sufficiently similar to the expected WWTS influent for the proposed project. The design modeling provided in the permit application accounted for variability in the volume and quality of the wastewater that are expected to occur as the Project progresses. It demonstrated the proposed design can be optimized so the discharge will meet the Operating Limits proposed in the draft permit. To demonstrate that membrane treatment technologies were capable of meeting treatment targets, the company conducted a 6-month pilot testing program using seepage water from the existing tailings basin. For a portion of the test, additional metals were added to the test influent to more closely simulate projected effluent quality. Results of the pilot testing were used in the MPCA's reasonable potential analysis and again, determined the proposed design is capable of meeting the Operating Limits proposed in the draft permit. The MPCA concluded that there is not reasonable potential for the discharge to cause or contribute to an excursion above water quality standards.	This raises an issue of fact, but the MPCA already considered those facts in developing the permit and made a policy decision using its expertise to calculate reasonable potential. Because the comment does not provide a reasonable basis for a dispute, and merely disagrees with the conclusions reached by the MPCA in its review of the information, a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(C).

543-BR	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The data cited by MPCA is deficient and is not the full extent of data available in this record to evaluate the reasonable potential for exceedances. The estimated effluent characteristics reported by PolyMet to the EPA on Form 2D are either "based on treatment target" or on the "GoldSim model WWTS influent."195 Stating that effluent characteristics will be based on a target a discharger hopes to attain is a tautology, not performance-based information. Even if PolyMet's influent modeling were verifiable, rather than based on exclusion of pertinent data, 196 a demonstration of removal efficacy would be required to find that there is no reasonable potential for exceedance. Absent effective removal, the concentrations of many parameters in predicted wastewater treatment system (WWT) influent far exceed applicable water quality standards. 197 Although the MPCA NPDES/SDS Fact Sheet refers to "pilot" testing of PolyMet's proposed wastewater treatment technology for tailings seepage, this is a misnomer. The only pilot treatment cited by PolyMet in its October 2017 NPDES/SDS Application is a 2013 test conducted for seven months on water from a seep and a shallow well at the existing LTV SMC taconite tailings facility, not on Poly Met copper-njckel mine flotation tailings. 198 Concentrations of parameters are quite dissimilar. Where the L TVSMC seepage had copper and nickel concentrations averaging less than 3 µg/L PolyMet WWTS influent is predicted to have copper concentrations up to 200 times higher and nickel concentrations up to 300 times higher. 199	The comment claims that MinnAMAX data was excluded and should have been considered in the permit development. As discussed above at response to Comment 543-AJ, the MinnAMAX data was considered in the GoldSim water quality model, which itself was part of the information that MPCA reviewed in developing the permit.	Because the comment did not identify new facts, or provide a reasonable basis for a dispute, a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BS	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The influent flow rate for this test ranged from 19 to 22 gallons per minute (gpm), more than two orders of magnitude smaller than the predicted flow rate (3,030 gpm) for the Poly Met wastewater treatment system.200 Some of the significant problems with reverse osmosis efficacy, such as fouling of membranes, would be more significant with higher concentrations of metals and higher flows than in a small-scale test using taconite tailings.	MPCA reviewed pilot testing information and determined it was sufficiently similar to the expected WWTS influent for the proposed project. To demonstrate that membrane treatment technologies were capable of meeting treatment targets, the company conducted a 6-month pilot testing program using seepage water from the existing tailings basin, which was described in the permit application. For a portion of the test, additional metals were added to the test influent to more closely simulate projected effluent quality. Results of the pilot testing were used in the MPCA's reasonable potential analysis, and again MPCA determined the proposed design is capable of meeting the Operating Limits proposed in the draft permit. The MPCA concluded that there is not reasonable potential for the discharge to cause or contribute to an excursion above water quality standards.	This raises an issue of fact, but the comment did not identify any new facts for the MPCA to consider. Because the comment did not identify new facts, or provide a reasonable basis for a dispute, a contested case hearing would not aid the Commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BT	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Poly Met seems to consider the results of this "pilot" testing sufficiently unreliable that it has proposed that wastewater treatment at its facility be considered "Adaptive Management:"201 Flexibility in operation of the mine water treatment trains will allow operators to adjust to changing or unforeseen conditions, as described in Section 2.2.4 of Reference (1). Because the actual water that will be generated by the Project will not be available until after the mine operations are initiated, pilot-testing with former LTV Steel Mining Company (LTVSMC) Area 5 pit water has been used to provide a basis for design (as described in Section 3 .1 of Reference (10)). The composition of the actual mine water that will be realized at the Mine Site will likely vary from the pilot-test water source. For these reasons, treatment equipment has been selected such that component operation may be modified to account for unforeseen changes in influent water quality, reaction kinetics, sludge characteristics, or other factors that may modify the underlying chemistry in the process unit . 202 A treatment technology that a discharger describes as requiring flexibility due to unforeseen changes in influent quality and other factors does not obviate the need for effluent limitations to prevent excursions above water quality standards. Adaptive engineering risks decades of uncertainty, contaminant release, violations and unforeseen costs.	The comment states a conclusion reached by the commenter. The comment did not identify new facts and the claimed issue is not material to the permit. The MPCA relies on technical review of the permit application and plans submitted to determine if proposed wastewater treatment systems will adequately treat waste from the proposed industry. The MPCA has reviewed the available information and believes the permit conditions can be met and the WWTS will work as designed. Whether PolyMet considers the pilot testing unreliable is not material to the permit, because the MPCA separately evaluated the pilot testing. Adaptive management is commonly required in NPDES permitting to address issues as they arise. The incorporation of adaptive management as a failsafe does not invalidate the conditions; it allows a more rapid response in case of a problem.	Because the comment did not identify any specific new facts, the dispute is not material, and there is no reasonable basis for a dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-BU	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	A treatment technology that a discharger describes as requiring flexibility due to unforeseen changes in influent quality and other factors does not obviate the need for effluent limitations to prevent excursions above water quality standards. Adaptive engineering risks decades of uncertainty, contaminant release, violations and unforeseen costs.	See response to Comments 543-BQ and 543-BS. The MPCA regularly reviews wastewater treatment systems of various sizes. The comment did not provide evidence suggesting why MPCA's conclusion may be incorrect.	This raises an issue of fact regarding the amount of information needed to make a decision, but the comment did not identify new facts for MPCA to consider or provide a reasonable basis for a dispute, so a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .

543-BV	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Pilot tests should have been required during the past 13 years since environmental review began, to test actual leachate from copper-nickel mine tailings. And now, in the permitting process, due diligence must be applied to review whether there are any similar treatment processes at a similar scale succeeding to such a degree as to support a massive new discharge source. As disclosed in the Form 2D information provided by Poly Met, existing secondary membrane treatment systems - those at the Eagle Mine and Calpine - are more than an order of magnitude smaller than what PolyMet has proposed.203 More information is needed to evaluate whether the Consol Buchanon Coal Mine primary membrane system (1900 gpm), required by EPA after $200 million in violations, has been constructed and, if so, what its operating removal rate has been. Similarly, the Queensland coal-seam gas desalination application (1,500 gpm) should be evaluated to determine its efficacy. The University of Queensland has reported, "Desalination of produced water is severely impacted by mineral scaling on reverse osmosis (RO) membranes." The University has begun a new project in May 2017 to address this problem.204	See response to Comment 543-BQ. The comment identified alternative facilities that MPCA could review, but MPCA has extensive experience in reviewing wastewater treatment systems and the suggested sites process different wastes. The comment did not include any specific information regarding the applicability of those sites to the proposed facility. The MPCA has experience permitting other facilities using membrane filtration and the comment did not demonstrate why the sites with which MPCA has experience would be any less applicable than the natural gas/desalination sites identified in the comment. The MPCA regularly reviews wastewater treatment systems of various sizes. The design modeling provided in the permit application accounted for variability in the volume and quality of the wastewater that will be expected to occur as the Project progresses. It demonstrated the proposed design can be optimized so the discharge will meet the operating limits proposed in the draft permit.	Because there is no reasonable basis for a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
543-BW	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Tailings seepage proposed to be treated by the Poly Met wastewater treatment system contains pollutants far exceeding Minnesota water quality standards. Absent clear evidence from a similar pilot or successful experience at a treatment facility of similar scale, there is a reasonable potential that high levels of pollutants in tailings seepage predicted by Poly Met for parameters including copper, nickel, lead and sulfate - would not be controlled sufficiently to comply with water quality standards.	See response to Comments 543-BU and 543-BV.	See response to Comments 543-BU and 543-BV.
543-BX	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Reasonable potential that direct discharge of mercury will exceed water quality standards and contribute to impairment of a Great Lake bioaccumulative substance of immediate concern. The MPCA's NPDES/SDS Fact Sheet states that a reasonable potential analysis for mercury was conducted as part of the permit application review and the Agency determined there is no reasonable potential for concentrations of mercury to cause or contribute to an exceedance of water quality standards.205 The MPCA also states generally that the degree of treatment necessary to accomplish an effluent concentration of 10 mg/L sulfate in the discharge from the WWTS will also result in the effective removal of other parameters of concern from the wastewater.206 But the Fact Sheet contains no discussion of any treatment methods, influent data, or any other information indicating that Poly Met surface water discharge will not cause or contribute to exceedances of water quality standards for mercury. The available evidence does not show that treatment proposed by Poly Met is capable of treating tailings seepage so that effluent that meets Minnesota's Lake Superior Basin 1.3 nanograms per liter (ng/L) water quality standard for mercury. This is particularly important since the receiving waters for Poly Met discharge, including the Partridge River and Embarrass Rivers; Embarrass, Sabin, Wynne, Esquagama and Colby Lakes; the Whitewater Reservoir and many downstream segments of the St. Louis River -- are all listed under the Clean Water Act 303(d) as impaired due to mercury.207 Under law, mercury is a bioaccumulative substance of immediate concern.208 The Poly Met Form 2D generally cited by the MPCA to suggest that wastewater treatment effluent will meet water quality standards bases projected compliance with mercury tandards on the "target' for mercury of 1.3 ng/L the Minnesota water quality standard. 209 As stated before, a claim that treatment will meet a target, without more, is an unsupported allegation.	The EIS concluded that the demonstrated ability of the NorthMet tailings to adsorb mercury, in combination with the previously documented mercury removal capabilities of the underlying taconite tailings, would be expected to result in an overall increase in mercury adsorption and subsequently lower concentrations of mercury in FTB seepage. (MPCA notes that this is an existing taconite facility.) Thus, the influent to the WWTS is expected to be approximately equal to the water quality standard of 1.3 ng/L. Further removal by the greensand filtration and reverse osmosis components of the WWTS is expected. MPCA used this information in conjunction with the results of the pilot testing and the design modeling in the reasonable potential analysis, and determined there is no reasonable potential for mercury from the permitted facility to cause or contribute to an exceedance of water quality standards. To address the commenter's concerns regarding mercury, the MPCA has added an operating limit of 1.3 ng/L for mercury, additional dissolved mercury monitoring, and requirement to submit a Mercury Minimization Plan in accordance with the Agency's mercury strategy.	The comment reviews the same information that the MPCA reviewed and reaches a different conclusion. Because the comment does not identify any new facts or other evidence to dispute the MPCA's conclusion, there is not a reasonable basis for dispute. A contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-BY	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In its NPDES/SDS Application, Poly Met states that the use of an "organic metal scavenger" with greensand filtration technology has been demonstrated to be capable of achieving Minnesota's water column mercury standard in other indu tries in the Iron Range.210 Although treatment proposed in the Draft Permit includes membrane separation and a greensand filter, it does not include an organic metal scavenger or other treatment specifi to mercury removal.211	Because of the expected low concentration of mercury in the influent to the WWTS, the use of an organic metal scavenger is not being proposed for the project. The influent to the WWTS is expected to be at approximately the water quality standard primarily because of the adsorption that filtration through the taconite tailings provides prior to the seepage water being collected in the FTB Seepage Capture System. Additional mercury removal is expected from the greensand filtration and the reverse osmosis components of the WWTS. The comment appears to have misinterpreted the intent of the reference to an organic metal scavenger in the antidegradation review. The statement in the review was included not to say it was being proposed, but to provide additional support that mercury removal to below 1.3 is technically feasible since it has been demonstrated elsewhere in Minnesota.	This raises an issue of fact, but the comment does not identify any new information. Because there are no specific new facts in the comment, and there is no reasonable basis underlying the claimed dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .

543-BZ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The only "pilot" test done by Poly Met, the seven-month test of LTVSMC tailings influent reported in 2013 by Barr, did no testing to evaluate mercury removal. Mercury was below detectible levels in the influent chosen for the test.212 Conclusions regarding mercury in Barr's report were based on literature and inquiries to the membrane supplier: Barr reported, "Mercury removal by RO membranes is highly dependent on the type of membrane used. Mercury rejections [the percentage removed by treatment] ranging from 22 to 99.9% have been reported. "213 The Barr 2013 report continued, Mercmy removal by RO is highly variable and dependent upon its speciation and the membrane selection. For these reasons, its removal is difficult to quantify."214 PolyMet's NPDES/SDS Application does not commit to any level of mercury removal efficacy for its proposed treatment. PolyMet states, "Some mercury removal is expected across the greensand filter. However, the influent concentration of mercury to the tailings basin seepage treatment train is expected to be below the WWTS discharge treatment target."215 To make this statement, PolyMet cites a "bench-scale study" of the effectiveness of flotation tailings in removing mercury216 and states that the concentration of future FTB seepage "is expected to be similar to the concentrations in the seepage from the existing L TVSMC tailings basin, which is approximately 1.0 ng/L."217	The comment relies on information that was addressed in the EIS and that the MPCA considered in developing the permit. The EIS concluded that the demonstrated ability of the NorthMet tailings to adsorb mercury, in combination with the previously documented mercury removal capabilities of the underlying taconite tailings, would be expected to result in an overall increase in mercury adsorption and subsequently lower concentrations of mercury in FTB seepage. See FEIS at 5.2.2.3.4, page 5-229. MPCA acknowledges that the referenced testing was of short duration, but no new information is presented that would lead the MPCA to conclude that the testing was invalid or to disagree with the conclusion presented in the EIS.	This raises an issue of fact, but the comment does not introduce any new facts. Because the comment does not provide new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-CA	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although neither PolyMet's Permit to Mine nor its NPDES/SDS application provides underlying data to evaluate these claims, documents obtained during the course of environmental review provide the missing information. Neither the bench-scale study of effectiveness of flotation tailings adsorption of mercury nor monitoring data from the existing L TVSMC tailings basin support PolyMet's claims that PolyMet's tailing seepage would have mercury concentrations below the levels required to comply with Minnesota's 1.3 ng/L standard. The only bench-scale study of mercury adsorption to NorthMet tailings was performed by NTS in 2006. This test was only eight hours long. Poly Met stated and the FEIS reported that this 480 minute test showed that NorthMet tailings would reduce mercury concentrations by 73 percent (from 3.3 ng/L to 0.9 ng/L).218 But the actual 2006 bench study both showed that plain water in a control flask (Jug D) reduced mercury concentrations by 22 percent in this short test and that the trend in the study, when it was discontinued after only eight hours, was that also mercury was desorbing from the tailings. From the fourth hour of the experiment, when mercury was beneath the detection limit, to the eighth hour when the experiment was discontinued, mercury concentrations may have doubled.219 Since PolyMet's tailings seepage will be a permanent feature on the site subject to fluctuations in chemical and water inputs, it is unreasonable to rely on a 480 minute test to predict that mercury will not desorb from tailings and increase concentrations in wastewater influent. PolyMet's claim that existing LTVSMC tailings seepage is below the 1.3 ng/L mercury water quality standard is also based on selective and misleading reporting of available information. Although PolyMet claims that passage through LTVSMC reduces mercury, FEIS data on existing conditions at the tailings site belies this claim. Mercury in the existing Cell 2E pond has a mean concentration of 1 .4 ng/L. Mercury in the toe of the existing tailings facility ranges as high as 153 ng/L and has a mean concentration of 4.9 ng/L. Using simple arithmetic, the FEIS shows that in passing through existing LTVSMC tailings mean mercury more than triples. 220 [Table 4.2.2-23] This failure of tailings to remove mercury is particularly salient given PolyMet's annual authorized appropriation of 1,800 million gallons per year from Colby Lake for use in the NorthMet beneficiation plant.221 Colby Lake water has an e timated mercury concentration of 5 to 6 ng/L.222 After the beneficiation process, its water would be released to the tailings pond.	The groundwater information presented in the comment was cited from the EIS (Table 4.2.2-13; pg 4-126) and was considered in the EIS evaluation. Additionally, if the clearly anomalous single value of 153 ng/L was removed from the calculation of the mean, the resulting mean would be 2.8 ng/L rather than 4.9 ng/L. If two additional values for which QA/QC criteria were not met were removed, the resulting mean would be 2.0 ng/L. This value is not meaningfully different from the projected tailings basin pond water and when the body of data is considered, including the number of nondetectable values reported from the wells, it supports the conclusion that the concentration of mercury in the influent to the WWTS is at or near the 1.3 ng/L water quality standard. Additional reductions are expected through treatment, as described in response to Comment 543-BX. The MPCA considered this information in its reasonable potential evaluation to support its conclusion that the seepage captured by the FTB seepage collection system (which is the influent to the WWTS) would have low mercury concentrations prior to treatment and that the filtration and membrane treatment provided by the WWTS would be able to reliably meet the mercury water quality standard.	This raises an issue of fact, but the comment does not introduce any new facts. Because the comment does not identify new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-CB	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The available information shows that Poly Met surface discharge from its WWTS, lacking treatment specific to mercury, has the reasonable potential to cause or contribute to the exceedance of Minnesota's Lake Superior Basin water quality standard for mercury and to impairments for mercury in the water column and in fish tissue in the Embarrass River, its chain of lakes and other downstream waters.	See response to Comments Water-722 through Water-722-B. The MPCA has revised the permit to include an operating limit for mercury of 1.3 ng/L. Although some downstream waters are impaired for mercury in the water column and in fish tissue, the MPCA determined that the discharge would not cause or contribute to an excursion above the water quality standards in the impaired waters.	This comment presents a legal conclusion, not an issue of fact. The comment does not provide any new facts. Because the comment does not identify new facts or a reasonable basis for dispute, and the MPCA has addressed the comment, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .

543-CC	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Reasonable potential that direct di charge to surface water will exceed narrative standard preventing aquatic toxicity and contribute to fishes assessment impairment. Federal regulations require water quality-bas d eft1uent limitations to ensure compliance with state narrative water quality criteria as well as numeric criteria..223 Where biologic indicators demonstrate impairments of aquatic uses, and new mining discharge would contribute to an existing violation of narrative water quality standards, that discharge is prohibited. An NPDES permit must set conditions to prevent further impairment not merely monitor for pollutants.224 The Embarrass River is listed under the Clean Water Act 303(d) program as impaired for fishes assessment from its headwaters to the St. Louis River, and a stressor identification has been done, including Spring Mine Creek and the Embarrass River, finding that, "Both of these streams are discharge points for mine pit dewatering, and water quality sampling results from these streams show elevated specific conductance and sulfate concentrations."225 Minnesota rules contain a numeric criterion for specific conductance to protect water quality for agricultural use.226 They do not yet contain numeric criteria to aquatic life from specific conductance; the combination of ionic pollutants lu,own to adversely affect fish and aquatic insects.227 However Minnesota rules do contai11 narrali e criteria requiring protection of aquatic life from the toxic effects of pollutants through site-specific numeric criteria in the absence of broadly applicable numeric standards in order to "protect class 2 waters for the propagation and maintenance of aquatic biota. '228 Minnesota's rules define "protection of the aquatic community from the toxic effects of pollutants" to mean "the protection of no less than 95 percent of all of the species in any aquatic community."229 This is the same extirpation standard used by the EPA to develop the hazardous concentrations of specific conductivity detailed in its 2011 Conductivity Benchmark Report, its 2016 Field-Based Methods report,230 and in peer-reviewed publications. During the PolyMet environmental review process, EPA advised that Minnesota's "narrative water quality standard - no toxics in toxic amounts - is relevant to NPDES permitting for the NorthMet project and its receiving waters" and that this narrative standard must be addressed in the NPDES permitting process "in the context of permitting regarding approaches to protecting aquatic life and habitat in receiving waters. "231 The Draft NPDES/SDS Permit contains no water quality-based effluent limitation for specific conductance and no chronic whole effluent toxicity limit.232 Even if a test on surface discharge at FolyMet's monitoring location were to demonstrate whole effluent toxicity, such toxicity would not result in a permit violation, but only in repeat testing.233 The MPCA Fact Sheet generically states that the Agency found no reasonable potential that Poly Met discharge would cause or contribute to a violation of water quality standards,234 but the Agency provided no analysis of PolyMet's predicted discharge of specific conductance nor its potential effect on fishes assessment impairments in Embarrass River receiving waters. Throughout the environmental review process, Poly Met refused to disclose predictions of specific conductance in any waste stream or the basis for such predictions. 235 Concentration tables in FolyMet's Permit to Mine Application236 and in PolyMet s ·orm 2D cli closul'es to the PA237 contained also contain no information on specific conductance. However, PollMet's NPDES/SDS Application contained specific conductance data near the tailings site.23 Surface water quality data on the north side of the tailings basin at Mud Lake Creek site (MLC-1) had an average specific conductance measured in µmhos/cm at 25 °C239 of 492, with a maximum of 1,362 µmhos/cm; at Trimble Creek (TC-1a) had average specific conductance of 723 µmhos/cm, with a maximum of 1,150 µmhos/cm; and at Unnamed Creek had average specific conductance of 793 µmhos/cm, with a maximum of 1,386 µmhos/cm. 240 Specific conductivity at PM-12.2, impaised by Spring Mine Creek but not by LTVSM tailings seepage, averaged 539 µmhoslcm of specific conductance with a maximum of 1600 µmhos/cm.241	See response to Comment Water-721. The 1.0 TUc WET limit in the permit addresses the narrative standard against toxicity in the discharge.	To the extent the comment addresses MPCA's rules, this comment raises an issue of law. To the extent it questions the reasonable potential analysis, it raises an issue of policy. Such an issue is not appropriate for a contested case hearing. Minn. R. 7000.1900, subp. 1(A). Because the comment does not identify new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-CD	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Based on the sensitivity data described below, existing specific conductance levels in the Embarrass River watershed are high enough to impair aquatic life.	The MPCA was aware of the referenced MPCA-produced report during the permit development and considered the comment. The MPCA revised the permit to include an effluent limitation for toxicity.	Because the comment does not identify new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-CE	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The level of specific conductance that Poly Met predicts from its modeling will be released in its wastewater treatment system (WWTS) effluent is 753-960 µmhoslcm. 242 Even if this prediction could be verified, it is high enough to contribute to an impairment of aquatic insects in the wetlands and creeks where effluent would discharge from the Poly Met tailings facility and to contribute to the fishes assessment impairment in the Embarrass River. The weight of evidence from EPA reports, peer-reviewed literature and data from the Minnesota ecoregion where the Poly Met Project would be located demonstrates that the level of specific conductance proposed to be released by the WWTS would exceed the level toxic to sensitive genera of aquatic insects (benthic macroinvertebrates) and the fishes that rely on them for food. A field-based method of determining aquatic life numeric criteria for specific conductivity was finali zed by the EPA in 2011 .243 Since 2011, environmental takeholders have reque ted that the MPCA set WQBEL limiting specific conductivity in wastewater discharge permits and conduct ruJemaking to set numeric criteria for specific conduct ivity to protect aquatic life.244	The MPCA was aware of the referenced predictions for effluent conductivity during the permit development and considered the comment. The MPCA revised the permit to include an effluent limitation for toxicity.	Because the comment does not identify new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-CF	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In 2015, retired Minnesota regulators Bruce Johnson and Maureen Johnson undertook a review of background levels of specific conductivity in a portion of northeastern Minnesota's Ecoregion 50, along with data pertaining to bentbic macroinvertebrate (aquatic in ects) in impacted and unimpacted water in the ecoregion.245 They concluded that the EPA prntocols for field-based specific conductivity criteria were applicable to Northeast Minnesota surface waters. In addition, they recommended adoption of a numeric criterion of 300 µSiem as a chronic value of yearround application in order to protect benthic macroinvertebrates according to the criteria (prevent 5% extirpation of invertebrate genera/protect 95% of genera) et by the EP A.246	The MPCA was aware of the referenced report during the permit development and considered the comment. The MPCA revised the permit to include an effluent limitation for toxicity.	Because the comment does not identify new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .

543-CG	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The EPA's Office of Research and Development reviewed the Johnson & Johnson Specific Conductance Evaluation and concluded in a memorandum dated February 4, 2016, that the weight of evidence supported the inference that effluents that increase specific conductivity to more than 300 µSiem are likely to extirpate more than 5% of genera common to both Minnesota and Appalachia the ecoregion EPA initially studied, and have adverse effects in northeast Minnesota waters.247 The EPA secured a broader set of data on benthic invertebrates and water quality from the MPCA to independently validate the conclusions reached in the Johnson & Johnson Evaluation. The EPA concluded as follows: [T]he inference that 5% extirpation of benthic invertebrates would occur at similar conductivity levels in central Appalachia and Ecoregion 50 in Minnesota was supported by analysis of an independent data set of paired benthic invertebrate and SC data from Ecoregion 50 in Minnesota. We estimated that more than 5% of genera would be extirpated in streams greater than 320 µS/cm. 248 In December 2016, after extensive peer-review, the EPA released to the public its field-based methods for States (and Tribes with Treatment as a State authority) to use in developing aquatic life criteria for specific conductivity in regions outside central Appalachia.249 Appendix D to the EPA' s 2016 report detailed the method that should be used by states to develop a numeric criterion for specific conductance where there is sufficient water chemistry and biological data to calculate extirpation concentrations and hazardous concentrations. The EPA reviewed biological and specific conductivity for 62 Ecoregions across the United States, including Minnesota Ecoregion 50 (Northern Lakes and Forests), where the PolyMet Project would be located. The EPA map below shows Minnesota's Ecoregions, along with paired biological and water quality sampling sites.250 Although data in other Ecoregions was less robust, EPA found sufficient data to recommend a provisional specific conductivity value for aquatic life in Ecoregion 50, the Northern Lakes and Forests region in northeast Minnesota. In the Ecoregion where Poly Met proposes to locate its copper-nickel mine and flotation tailings facility, based on 734 samples, the EPA recommended a provisional hazardous concentration of 320 µSiem to protect aquatic life from toxicity.25 1 Since December 2016, the EPA has published in peer-reviewed journals the scientific basis for establishing the proposed specific conductivity hazardous concentrations based on the weight-ofevidence process, the use of extirpation to evaluate tolerance of specific conductivity, and the step-by-step calculation to predict specific conductivity levels that extirpate freshwater aquatic benthic invertebrates. The EPA has also developed spreadsheet tools to conduct this analysis and predict stressor levels that extirpate genera and specie .252	The MPCA was aware of the referenced review during the permit development and considered the comment. The MPCA revised the permit to include an effluent limitation for toxicity.	Because the comment does not identify new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-CH	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Based on federal law, Minnesota narrative standards, existing specific conductivity concentrations in impaired receiving waters, and the application of the EPA's specific conductivity benchmark methods to Minnesota data consistent with peer-reviewed literature, there is a reasonable potential that PolyMet's surface discharge of specific conductivity from the WWTS would cause or contribute to violation of Minnesota water quality standards.	The MPCA was aware of the referenced MPCA-produced report during the permit development and considered the comment. The MPCA revised the permit to include an effluent limitation for toxicity.	Because the comment does not identify new facts or provide a reasonable basis for dispute, and the MPCA has adequately addressed the issue, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* ; *cf. City of Owatonna* .
543-CI	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Failure to set effluent limits for surface discharge from existing L TVSMC tailings. Although it seems at first glance that the Draft NPDES/SDS Permit precludes direct discharge to surface water from the PolyMet tailings basin, the actual limits are less inclusive. The Draft Permit states, "Water from the Tailings Basin will be recycled back to the Beneficiation Plant and will not be directly discharged during operations."253 The Draft Permit explains that the FTB (Flotation Tailings Basin) will contain flotation tailings generated during operation and will be constructed atop the existing L TVSMC tailings basin. The Draft Permit states "there will be no direct discharge .from the FTB Pond to any receiving waters."254 Similarly, "Direct discharge to surface waters .from the FTB Seepage Containment System is prohibited. "255 The Draft NPDES/SDS Permit prohibits deposit of nonferrous mining tailings in the FTB until its seepage containment system is operating, and requires PolyMet to maintain the existing pumpback systems for the former LTVSMC tailings basin until operation of the wastewater trea tment system has begun.256 These provisions of the Draft NPDES/SDS Permit are not problematic on their own. However, the failure of the Draft Permit to set water quality-based effluent limitations for direct discharge from the existing LTV SMC tailings basin prior to the construction of the FTB and its seepage containment system fails to comply with the Clean Water Act, its implementing rules or Minnesota water quality standards. During the pendency of construction or under a scenario where the PolyMet Project does not proceed for any reason, existing LTVSMC tailings seepage discharge to surface waters would have the potential to cause or contribute to exceedances of Minnesota's water quality standards. The MPCA must conduct a reasonable potential analysis for existing L TVSMC discharge, and the Draft NPDES/SDS Permit must water quality-based effluent limitations (WQBELs) for any parameters that have the potential to cause or contribute to exceedances of Minnesota's numeric and narrative water quality criteria.	The comment addresses conditions in an existing permit and consent decree. As explained in the fact sheet, the consent decree will continue to require pumpback until the containment system is constructed and will remain the regulatory control document until that time. See Fact Sheet at 75-78. The NorthMet permit does not authorize a discharge from the LTV tailings basin.	This comment does not raise an issue of fact related to the NorthMet NPDES permit. Because the existing permit is not the subject of this action, it is beyond the jurisdiction of the MPCA commissioner to grant a contested case hearing on that permit in this matter. Minn. R. 7000.1900, subp. 1(B). Even if it were within the commissioner's jurisdiction, the comment does not raise specific new facts or identify a factual dispute. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* .

543-CJ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The failure of the MPCA to establish WQBELs for the existing LTVSMC tailings discharge is particularly troubling given the Agency's assertion in a memo contained in the PolyMet Permit to Mine Application that should the Poly Met copper-nickel mine project never become operational (scenario II), no treatment or mitigation would be required for potential exceedances of mercury sulfate alkalinity, hardness, total dissolved salts and specific conductance at the LTVSMC tailings facility. 257 For mercury, the MPCA offered that high concentrations of mercury exceeding Minnesota water quality standards in surface water surrounding the L TVSMC Basin "are most likely due to influences from precipitation and background concentration, not from seepage from the existing Basin."258 Thus, under scenario II, "no treatment/mitigation is necessary in final closure for mercury. "259 For sulfate, MPCA proposed that high sulfate at the Basin "will likely not result in an exceedal1ce of the calculated sulfate standard (or alternative sulfate standard in the proposed rule) if the MPCA prop sed rule revision goe into effect."260 If the propo ed wild rice rulemaking revision were not completed, the MPCA offered, "another regulatory option available to the State would be to consider developing a site-specific standard based on the science at that time."261 In any case, under scenario II, "no treatment/mitigation for sulfate would be required for protection of wild rice."262 For a range of Class 3 and Class 4 pollutants from the L TVS MC tailings site - alkalinity, hardness, total dissolved salts and specific conductance, MPCA offered that the Agency "has made this rulemaking a high priority and expects to propose revisions in 2018." Ann Foss, the memo's author continued, "Based on current information, MPCA expects that these standards will either remain unchanged or become less stringent."263 MPCA also suggested that, even if the rules were not weakened, "At any point, the MPCA can consider other regulatory options such as site-specific standards (SSS), a use attainability analysis (UAA), a use and value demonstration (UVD), or a variance."264 Thus, if the Poly Met project did not become operational (scenario 11), "no treatment/mitigation for alkalinity, hardness, TD5 and specific conductance would be required. "265 Both factual and legal concerns are raised by this memorandum. Data comparing existing tailings pond and tailings toe mercury concentrations previously cited suggests that tailings as well as rainfall contribute to mercury exceedances. Sulfate standards based on the MPCA's proposed rulemaking are no longer applicable. In January 2018, an Administrative Law Judge, with the concurrence of the Chief Judge, disapproved both repeal of Minnesota's 10 parts per million (mg/L) wild rice sulfate standard and replacement of the standard with an equation-based formula. 266 Among other grounds, the ALJ concluded that repeal of Minnesota's existing wild rice sulfate standard would conflict with the Clean Water Act and its implementing regu 1a t1· ons. 267	The comment addresses a memo that was written to aid DNR in estimating future financial assurance needs for the Permit to Mine under a hypothetical future scenario. It does not relate to terms and conditions of the proposed NPDES/SDS permit. Although the Legacy Memo is not relevant to the draft NPDES/SDS permit, a recent supplement to the memo addresses the issue of the ALJ disapproval of MPCA's proposed wild rice sulfate standard.	This comment does not raise an issue of fact related to the NorthMet NPDES permit. The Permit to Mine is outside the jurisdiction of the MPCA commissioner, and a contested case hearing would not be appropriate. Minn. R. 7000.1900, subp. 1(B). To the extent the comment raises requirements of the Clean Water Act and state rule, those are legal issues rather than factual issues, for which a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A).
			Both factual and legal concerns are raised by this memorandum. Data comparing existing tailings pond and tailings toe mercury concentrations previously cited suggests that tailings as well as rainfall contribute to mercury exceedances. Sulfate standards based on the MPCA's proposed rulemaking are no longer applicable. In January 2018, an Administrative Law Judge, with the concurrence of the Chief Judge, disapproved both repeal of Minnesota's 10 parts per million (mg/L) wild rice sulfate standard and replacement of the standard with an equation-based formula. 266 Among other grounds, the ALJ concluded that repeal of Minnesota's existing wild rice sulfate standard would conflict with the Clean Water Act and its implementing regu 1a t1· ons. 267 A water quality standard may only be removed or made less stringent in compliance with the Clean Water Act and its implementing regulations, which require a scientific basis for the change and a demonstration that the uses of water for aquatic life, recreation and wildlife have all been preserved.268 There is extensive peer-reviewed science establishing that pollutants regulated in Minnesota under Class 3 and Class 4 rules (hardness, total dissolved salts and specific conductance) affect fish and other aquatic life so that removal or weakening of these standards would impair Clean Water Act protected uses.269 The EPA has advised MPCA that enforcement of Minnesota surface water quality standards is not discretionary under the Clean Water Act,270 and internal MPCA documents confirm that ' Minne ota is required to enforce the state assembled and federally approved water tandards, including the wild rice sulfate standard."271 Whether the duration prior to Poly Met operations is three years or an indefinite period, the MPCA has no discretion under applicable federal or state law to leave direct discharge from the existing LTVSMC to waters of the United States unregulated.		

543-CK	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Poly Met Project is likely to cause or contribute to violations of Minnesota water quality standards for mercury, increase mercury impairments, and degrade water quality by increasing mercury levels, precluding NPDES permit issuance or assurances for 401 certification under federal and state law. Benjamin Franklin once said, "Half a truth is often a great lie." The Poly Met cross-media analysis of project impacts on water quality relative to mercury272 and the MPCA's conclusion that PolyMet had demonstrated to the Agency's satisfaction that its sulfide mine would have no effects on mercury273 epitomize that maxim. The length of PolyMet's report may create an impression ofrigor, and there are selective pieces of the mercury methylation problem that are highly detailed. But, the cross-media analysis by Poly Met and its acceptance by the MPCA reflect a systematic and strategic exclusion of most of the factors that would result in a "perfect storm" of Poly Met Project impacts on mercury release, methylation and transport to downstream receiving waters impaired due to mercury in the water column and mercury contamination of fish. The ways in which mercury impacts are measured and modeled also minimize project impacts and increase the risk that the Poly Met project will degrade water quality and endanger the environment and human health. Under federal and Minnesota law, Section 401 certification for a Clean Water Act Section 404 wetlands dredge and fill permit can only be issued if there is a reasonable assurance that the activity as a whole will be conducted in a manner that will not violate applicable water quality standards.274 For receiving waters downstream of the Poly Met Project or water within range of its local air deposition of sulfate and mercury275 that are already impaired due to excessive mercury, the Draft NPDES/SDS Permit may not be issued, and certification may not be granted if the project would cause or contribute to violations of Minnesota s standards limiting mercury in the water column and mercury that bioaccumulates in fish tissue.276 For receiving waters not yet assessed as impaired due to mercury, the PolyMet Project cannot be permitted or certified if it would violate federal regulations and state rules by allowing activities that lower the high quality of water with respect to mercury, when there are one or more pract icable alternatives, including prevention or treatment, to prevent or lessen the degradation.277 In outstanding international resource waters (OIRWs) of the Lake Superior Basin, including all receiving waters downstream of the Poly Met project, if a designated use of the water body is impaired, "there can be no lowering of the water quality with respect to the GLI [Great Lakes Initiative] pollutants causing the impairment."278 In Lake Superior Basin waters impaired due to mercury in the water column or methylmercury in fish tissue, no further impairment is allowed. Minnesota rules also require that the MPCA deny section 401 certification if the permitted facility endangers human health or the environment and the danger cannot be removed by modifying permit conditions.279 Minnesota's section 401 certification and permitting requirements are particularly salient for the Poly Met Project, an activity that would contribute to water quality violations and lower water quality in mercury-impaired waters, degrade waters yet not assessed, increase the concentration of mercury in aquatic insects, fish, wildlife and the bodies of pregnant women, fetuses, infants and children, and endanger the environment and human health. Bioaccumulation of methylmercury in the aquatic food chain harms piscivorous (fish-eating) mammals and birds, along with insectivorous bats. 280 Vulnerable wildlife may include species protected by state law and under the federal Endangered Species Act, such as the Northern Longeared Bat, for which the proposed Poly Met site and adjacent areas are critical habitat.281 The harmful effects resulting from human consumption of methylmercury-contaminated fish are well-known. Dr. Margaret Saracino, a Duluth child and adolescent psychiatrist has explained the particular vulnerability of fetuses, infants and children to morbidity resulting from methylmercury exposure: When pregnant women eat fish high in methylmercury, the fetus is then exposed to this lipophilic heavy metal. The placenta is not protective and the blood brain barrier is not well formed until after age two years, which makes fetuses, infants and young children most vulnerable to methylmercury's neurotoxic effects. Neurons in the developing brain multiply at a rapid rate and are particularly vulnerable to toxic effects of heavy metals, hence brain damage is more likely to occur during this vulnerable time. Neurotoxicity is also transferred to the infant through breast milk. The adverse effects of methylmercury depend on timing and amount of exposure. Methylmercury is a strong toxin that influences enzymes, cell membrane function, causes oxidative stress, lipid peroxidation and mitochondria dysfunction, affects amino acid transport and cellular migration in the developing brain. Exposure in utero can cause motor disturbances, impaired vision, dysesthesia, and tremors. Even lower level exposure can result in lower intelligence, poor concentration, poor memory, speech and language disorders, and decrease in visual spatial skills in children exposed to methylmercury in utero. Fetuses, infants, and young children are four to five times more sensitive to the adverse effects of methylmercury exposure than adults.282 From 2007-2011 the Minnesota Department of Health (MDH) conducted a study of Mercury in Newborns in the ake Superior Basin.283 Tbis was a large study testing a total of 1,465 babies in Minnesota, Wisconsin and Michigan. About 30% of the Minnesota babies born in the study area were tested. In this study, 10% of the newborns in Minnesota's Lake Superior region had mercury levels above the EPA mercury dose limit, 3% of the Wisconsin newborns were above the mercury dose limit, and	The comment primarily contains background information and perspective on the 401 certification. See the 401 response to comment document for detailed responses.	This comment addresses the 401 certification. See the 401 response to comment document.
			From 2007-2011 the Minnesota Department of Health (MDH) conducted a study of Mercury in Newborns in the ake Superior Basin.283 Tbis was a large study testing a total of 1,465 babies in Minnesota, Wisconsin and Michigan. About 30% of the Minnesota babies born in the study area were tested. In this study, 10% of the newborns in Minnesota's Lake Superior region had mercury levels above the EPA mercury dose limit, 3% of the Wisconsin newborns were above the mercury dose limit, and none of the Michigan samples exceeded the mercury limit. Babies born during the summer months were more likely to have an elevated mercury level, which, the MDH explained, suggests that increased consumption of locally caught fish during the warm months is an important source of pregnant women's mercury exposure in this region.284 Minnesota medical, nursing and health organizations representing more than 30,000 health professionals requested an open and transparent public health impact assessment of risks from the Poly Met project. Among the public health concerns they identified were risks posed by increased methylmercury contamination of fish.285 Their requests for a heallh impact assessment were denied by State Agencies.		
543-CL	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The threat to water quality, aquatic life, wildlife and human health requires careful scrutiny of PolyMet's dismissal of mercury and methylmercury impacts. Our concerns are cumulative, and they reflect the following important errors and omissions in PolyMet's analysis: A) Exclusion of the impacts of sulfate and mercury groundwater seepage to wetlands and streams; B) Failure to evaluate the impacts of sulfate and mercury in surface water discharge or released to wetlands; C) Failure to analyze the effects of changes in wetland and stream hydrology on mercury release, methylation and transport; D) Exclusion of multiple sources of sulfur and sulfide air deposition at both the mine site and the plant site; E) Exclusion of mine site mercury deposition, water bodies closest to mercury sources, and mercury deposition to wetlands; (F) Misleading analysis of mercury methy lation in a single wetland of interest; (G) Modeling that systematically minimizes the cumulative potential for mercury and methylmercury impacts on water quality, aquatic life, fish, wildlife and human beings.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CM	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Exclusion of impacts of sulfate and mercury seepage from groundwater. The "water component" of PolyMet's cross-media analysis of mercury and methylmercury specifically excludes the effects of mercury concentrations in tailings basin seepage, which PolyMet assumes "will be collected by the FTB seepage capture systems."286 The impacts of mercury seepage cannot be included in the mercury analysis, since Poly Met has failed to characterize mercury in wastes or wastewater either during environmental review or in either its Permit to Mine or NPDES/SDS permit applications. Poly Met Permit to Mine Application appendices contained 26 separate tables estimating water quality in various Project locations where water contacts waste, from the tailings toe to mine pits and waste rock seepage. None of these tables estimated levels of mercury in the seepage or wastewater.287 In PolyMet's mass balance calculations for mercury, which provide its theoretical offset for mercury increases resulting from air deposition, average mercury concentrations in seepage and groundwater, among other sources of loading simply "were assumed constant between existing conditions and operating conditions."288	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-CN	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As described in Section 2 of these comments, there is no question that the Poly Met Project will result in potential sources of seepage with highly elevated concenh'ations of sulfate. 289 As with mercury seepage, sulfate seepage from either unlined sources (tailings storage, Category 1 waste rock stockpile, mine pits, OSLA peat storage area and pond) or lined sources (hydrometallurgical residue facility, mine site Category 2/3, Category 4 and Ore Surge piles and mine site sumps, ponds and equalization basins) none of these potential sources of sulfate loads were considered in PolyMet's cross-media analysis.290	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CO	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	There is no basis for PolyMet's claims for nearly perfect capture of seepaije from the unlined Category 1 waste rock stockpile and the unlined tailings storage facility.29 Although seepage from lined facilities is likely to have far less volume, contaminants at the hydrometallurgical residue facility (HRF) and mine site stockpiles, ponds and basins are likely to be concentrated and toxic.292	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CP	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The HRF is proposed on an unsuitable site and an unstable foundation and would receive 164 pounds of mercury per year, or as much as 2,952 total pounds of mercury in total.293	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CQ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As explained previously, the Draft NPDES/SDS permit would not require PolyMet to capture additional groundwater eepage from the south side of the tailings ba i.n not captured by the exi ting Cliffs Erie pwupback system.294 Groundwatet flow from this tailing site headwater of Second Creek averaged 766.8 gpm in 2017 and 140 gpm in 2016.295 In 2017 this groundwater seepage from the Second Creek south side headwaters alone was 38 times the total seepage predicted by Poly Met to escape uncaptured from containment systems at the tailings basin; even in 2016, the uncaptured seepage from the Second Creek south side of the tailings site was seven times the total predicted for the entire tailings site. 296 Sulfate concentrations predicted by PolyMet for South Toe tailings seepage are 553 mg/L, more than five times the average concentration of sulfate in LTVSMC tailings seepage.297	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CR	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	During environmental review, both Poly Met and regulatory agencies argued that there is no established relationship between sulfate and mercury methylation.298 However, it is now clear that the MPCA does not dispute that sulfate loading and resulting sulfide production increase both mercury methylation and to mobilize inorganic mercury release from sediments.299 Research by Amy Myrbo, Ph.D., co-authored by staff scientists at the MPCA, has demonstrated that increased sulfide production resulting from sulfate loading both increases release of inorganic mercury from sediment into the water and increases the proportion of mercury that is converted to toxic methylmercury.300 Dr. Myrbo found that in mesocosms with sulfate loading of either 100 mg/L or 300 mg/L, methylmercury increased 5.9 times as compared to the control experiment where no sulfate was added.301 Sulfate loading also increased release of inorganic mercury from sediments to the water, with a maximum increase at sulfate loading of 300 mg/L of 2.2 times over the experimental control. 302 It has long been suggested that that there is a "sweet spot" where sulfate and sulfide concentrations are optimal for mercury methylation. Dr. Myrbo concluded that there is substantial evidence that sulfide levels above concentrations of 300-3000 µg/L have an inhibitory effect on mercury methylation.303 It is not known whether sulfate loading at the concentrations predicted in tailings seepage or the Category 1 waste rockpile would be within the "sweet spot" for mercury methylation when they first reach wetlands or sediments. But, since Poly Met sulfate seepage would surface in the headwaters of Second Creek, the Partridge River or the Embarrass River, it is highly likely that this sulfate would also be carried downstream and diluted, creating a potential for sulfide formation and mercury methylation in downstream wetlands and sediments from the PolyMet site to the St. Louis River estuary.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CS	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Brian Branfireun, Ph.D., in his expert opinion on the Poly Met Project FEIS, concluded that "potential for seepage of sulfates and associated impacts to wetlands in the vicinity of both the project mine site and tailings basin" should not be discounted and that "Such seepage would enhance methyl mercury production in the project area and could also contribute directly to water quality impairments in sulfate-poor sediments downstream of the project site." 304 Dr. Branfireun explained that "the small tributaries that are more proximal to the proposed NorthMet mine site location clearly demonstrate sulfate-limited conditions. The mean sulfate concentrations in Longnose Creek, West Pit Outlet Creek and Wetlegs Creek are 0.91, 2.6 and 3.9 mg/L respectively." Increases in sulfate above these low background levels would promote mercury methylation in creek sediments in even in these relatively sulfate-poor and undisturbed tributaries. 305	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-CT	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The "wetland of interest" where sulfur compound air deposition was modeled by Poly Met is located south of the Dunka Road in an alder thicket.306 The location of PolyMet's wetland of interest 1. s shown on the map below. 307 This wetland location is immediately adjacent to the east of the Equalization Basins (blue), which have a single liner and south of the Ore Surge Pile (yellow) with its sump and pond (pink).308 With this proximity, even if liners work as planned, they may seep to adjacent wetlands.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CU	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Failure to evaluate the impacts of sulfate and mercury in surface water di charged or released to wetlands. In addition to assuming that no seepage would affect wetlands or stream sediments where methylation could take place, the Poly Met cross-media analysis failed to consider the impacts of surface water on mercury release and mercury methylation. This restriction of the scope of analysis will be significant in wetlands on and near the mine site, including the "wetland of interest" upon which Poly Met focused. Although complete information on stormwater management is not provided in PolyMet's NPDES/SDS Application, Poly Met is proposing that water that has contacted surfaces directly disturbed by mining, such as drainage collected on the liners of the Ore Surge Pile or Category 2/3 waste rock stockpile, will be intercepted by ditches, dikes, sumps, ponds and pipe, and will be conveyed by pipe to the plant site tailings facility or, in later years to help flood the East and Central mine pits.309 Water from construction and from the unlined Overburden Storage and Laydown Area (OSLA) that would contain peat as well as overburden, would also be channeled to the Construction Mine Water Basin, which also appears to be an unlined pool.310 Poly Met proposes that any mine site water not in direct contact with mining surfaces, OSLA storage or construction will be considered non-contact "stormwater." This stormwater will be given no special handling to protect surrounding waters from loading with chemical parameters. The stormwater "will be separated from mine water and controlled through a system of ditches, dikes and ponds· and will discharge off-site either directly or after being routed through on-site sedimentation ponds to reduce total suspended solids (TSS)."311 Neither the Poly Met cross-media analysis nor any other document pertinent to the Draft NPDES/SDS Permit or the requested 401certification evaluates the likely concentrations of chemical parameters in mine site "stormwater." However, it is likely, due to air deposition as well as any difficulty in routing water in ditches across the mine site, that mine site "stormwater" will have elevated levels of sulfate and metals, including mercury, as a result of mineral dust deposition.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CV	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Despite excluding from its analysis both the sulfide mineral deposition from blasting and that from wind erosion at the massive mine site waste rock stockpiles,312 PolyMet has predicted that total sulfide mineral deposition on some portions of the mine site within the watershed draining to its "wetland of interest" could exceed 1,000 milligrams per square meter per year (mg/m2/yr).313 This level is approximately four times that predicted by PolyMet for sulfide deposition to the "wetland of interest" itself.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CW	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	A technical memorandum prepared by Barr Engineering pertaining to PolyMet's "wetland of interest" explains that this wetland will not be dewatered or experience drying and wetting cycles exacerbating mercury methylation because water levels are assumed to remain constant. 314 Specifically, the memo explains that parts of the upland watershed on both sides of the Dunka Road will be removed by mine site infrastructure and will no longer contribute stormwater to the wetland, but, "Additional areas on the north of Dunka Road that do not currently drain to the wetland will have stormwater directed across Dunka Road and into the wetland during Project operations. "315 This drainage to the "wetland of interest," presumably by a culvert under the road as well as by ditching, is illustrated by this drawing.in the memo: 316 Neither the Barr hydrology memo nor the Poly Met cross-media analysis evaluate the effect of sulfate or mercury in mine site "stormwater" on mercury release or methylation within the "wetland of interest" or on any other wetlands to which mine site "stormwater" may be conveyed. However, from the perspective of solute chemistry, it is highly likely that all water channeled off the proposed PolyMet copper-nickel mine would effectively be "contact" stormwater. The consequences of this surface water drainage to the wetlands and streams adjacent to the proposed PolyMet mine must be considered in any cumulative analysis of the impacts of the mine on mercury release, methylation and transport.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-CX	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Similarly, the PolyMet cross-media analysis assumes that there will be no overflow from any mine site features affecting the concentrations of surface water flowing to and through wetlands on and near the mine site. As described previously, the mine site Equalization Basins, which are located immediately adjacent to the "wetland of interest" as well as other surface waters have high concentrations of a number of solutes. 317 Poly Met predicts that the "Low" Concentration (East) Equalization Basin would have markedly elevated sulfate levels of 2,450 mg/L and the High Concentration (West) Equalization Basin would have sulfate levels of 9,010 mg/L per year.31s To provide a basis for comparison, although wetlands sulfate sampling at the mine site has not been provided, the PolyMet FEIS did provide water quality data for the three creeks to the south and west of the mine site. Mean sulfate concentrations were 0.91 mg/Lin Longnose Creek, 2.6 mg/Lin the unnamed creek identified by Poly Met as West Pit Outlet Creek and 3.9 mg/Lin Wetlegs Creek.3 19 With more than tlu-ee orders of magnitude difference in sulfate concentrations, even a small leak or spill over from the Equalization Basins could have a substantial effect on mercury release from sediments and methylation in nearby wetlands and creeks.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CY	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The potential for overflow as a result of a storm event or flooding of mine site wastewater collection features is particularly salient since none of these features is designed to prevent overflow in the event of a maximum precipitation event. In fact, the Equalization Basins, the nearby pond for runoff of process water at the rail transfer hopper where ore is loaded, and the sumps collecting seepage from the Category 1 waste rock pile would be designed with only the capacity to contain a 100-year, 24-hour rainfall event.320 Various sumps and mine-water ponds containing highly contaminated mine process water would be designed for a 10-year 24-hour rain event with an overflow back-up to accommodate only a 100-year 24-hour rainfall; these include sumps and ponds for the Category 2/3 waste rock pile, the Category 4 waste rock pile an d t h e ore surge p1·1 e. 321 The 100-year 24-hour rainfall used for these designs appears to be 5.2 inches.322 That level of rain is approximately half of the highest locally reported rainfall resulting in widespread flooding in northeastern Minnesota in June of 2012.323 The overburden storage and laydown area (OSLA) on the south side of the site, which will contain excavated peat with the potential to release mercury as well mineralized overburden materials, would provide even less protection from flooding, since it is designed to accommodate only a 25-year 24--hour rain event.324 Prevention of overflow from the Equalization Basins and other wastewater storage locations at the mine site depends on pumping contaminated water through the pipeline between the mine and the plant site using pumps at the central pumping station.325 A sensor is proposed to provide a warning before Equalization Basins reach full capacity to prevent overfilling so that pumping to the plant site can be done at a faster rate.326	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-CZ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	However, no redundant pumps or pipelines are planned to protect water quality in the event of an extended power outage or a storm event exceeding the 100-year 24-hour design volume.327 In a heavy rainfall, Poly Met proposes an emergency operating procedure where temporary portable pumps may be used to return mine water in various sumps to the mine pits and temporarily stop pit dewateri ng.328 No additional plans to prevent Equalization Basin overflow are described. Neither PolyMet's predictions for the "wetland of interest" nor any other discussion in the crossmedia analysis evaluated the impact of overflow from pollutant sources on the mine site, either directly into wetlands or into channels for non-contact "stormwater."	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DA	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	PolyMet's cross-media analysis states that the intentional discharge from the wastewater treatment facility (WWT) at the Poly Met tailings site was included in the mercury massbalance calculations for the Partridge River and Embarrass River watersheds.329 However this analysis was constrained by unsupported assumptions and monitoring failures. First, the WWTS discharge concentration assumed in the mass-balance calculations was 1.3 ng/L, the water quality standard applied to mercury in the Lake Superior Basin.330 As explained in Section 4 of these comments, PolyMet's assumptions regarding low mercury levels in flotation tailings seepage are unsupportable and the Draft NPDES/SDS permit has required no treatment to effectively remove mercury before discharge of effluent to surface waters.331 Absent a water quality-based effluent limit on mercury intentional discharge, there is no basis to assume that mercury in tailings site discharge will not exceed 1.3 ng/L.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-DB	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition, the cross-media analysis fails to consider the impacts of loading inorganic mercury directly to wetlands, the primary sites for methylation. Despite more than 13 years of planning for the NorthMet project, Poly Met has apparently failed to monitor the wetlands into which treated tailings basin seepage would be discharged. As summarized in the Barr memo on mercury mass balance calculation to explain why degradation analysis would be performed a mile or more away from the north side of the tailings facility, rather than the Trimble Creek and Unnamed Creek headwater wetlands, "No mercury monitoring has been conducted in these wetlands. "332	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DC	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As discussed at length in Section 3 of these comments PolyMet's failure to monitor any wetlands near either the mine site or the tailings site and the failure of the Draft NPDES/SDS Permit to require such monitoring in the future will conceal any violations of permit conditions prohibiting discharge of untreated pollutants to surface water.333 PolyMet's failure to monitor existing mercury, methylmercury and sulfate levels in mine site and plant site wetlands has additional consequences for antidegradation analysis and evaluation of cumulative Project effects on mercury and methylmercury in receiving waters. The effect on antidegradation analysis is immediately evident. On the north side of the tailings site, where the nearest monitoring sites were creeks a mile or more away, mercury discharge at 1.3 ng/L predicted levels would not result in degradation. On the south side of the tailings site, at Second Creek (SD026), where there was monitoring data for existing conditions, predicted mercury discharge of 1.3 ng/L would more than double the 0.6 ng/L existing concentration of mercury. 334 Yet more significant, the MPCA's failure to require monitoring of wetlands for mercury, methylmercury and sulfate prior to permit approval and throughout the course of Poly Met operations, closure and maintenance prevents effective cumulative analysis of whether Project activities will cause or contribute to mercury impairments and endanger Minnesota's environment and human health.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DD	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Failure to analyze the effects of changes in wetland and stream hydrology on mercury release, methylation and transport. There is no question that the wetlands surrounding the Poly Met mine site and plant site are highly methylating environments. Dr. Brian Branfireun has explained that the methylmercury data collected by Poly Met during environmental review demonstrates that the ratio of methylmercury to mercury in the Partridge and Embarrass Rivers surface water sampling sites and mine site creeks are all indicative of a highly methylating environment. This data shows the fraction of methylmercury in the Partridge River as 2.2% at SW-001, increasing to 14.6% at SW-004a and remaining at about 10% at the next two stations. For the two surface water sampling sites on the Embarrass River, mean percentages of methylmercury are 10.4% and 8.8%. Although Wyman Creek, which is impacted by mining has the highest percentage of methylmercury (12.5% at PM-5), the relatively unimpacted mine site creek al o have high methylmercury ratios of 6.0% at Longnose Creek, 5.5% at proposed West Pit Outlet Creek and 9.6% at Wetlegs Creek.335	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-DE	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Dr. Branfireun also emphasized, "The high percentage of methylmercury in these surface waters speaks to sensitivity of their watersheds to both a) hydrological impact from a change in either surface or subsurface hydrology, and b) deposition of any additional sulfate either from surface water flows, or wet/dry atmospheric deposition."336 The data also shows that "surface waters in the small tributaries at the proposed mine site, the Partridge, and the Embarrass Rivers are all strongly influenced by the presence of wetlands in their watersheds." In fact, Dr. Branfireun stated that he is not professionally aware of any other surface waters where the fractions of methyl mercury as a percentage of total mercury are as high as the waters reported in documents prepared as part of Poly Met environmental review.337 Dr. Branfireun cited peer-reviewed literature explaining that in wetlands exposed to sulfate loading, "prolonged water table drawdowns lead to greater sulfate release in all treatments." As a result of a natural drought in experimental wetlands, wetlands drawdown increased methylmercury desorption and flux from peatlands, drove sulfate-reducing-bacteria activity that increased mercury methylation, and made sulfate "available for export to downstream aquatic systems (e.g. lakes and other wetlands) that could be equally susceptible to in situ net methylations."338 Based on his field experience and this important peer-reviewed study, Dr. Branfireun concluded for the NorthMet site that "a significant proportion of bog wetlands that are within the zone of drawdown from the proposed mine proposed development will also exhibit sulfate regeneration and increased export of methylmercury, under natural rewetting cycles as well as storm events. 339 Hydrologic changes at both the mine site and tailings site would increase mercury and methylmercury and release sulfate to downstream waters: [D]evelopment-induced change in hydrology, such as those proposed at both the NorthMet mine site and tailings basin, could amplify those drought-rewetting cycles (in terms of magnitude, frequency, or both). These implications should not be understated. Independent of any additional releases of uncaptured sulfate or mercury from the proposed NorthMet development, dewatering of wetlands surrounding the tailings basin through seepage collection and even modest impacts on water table position by underdrainage of mine site peatlands through open pit dewatering could increase total mercury, methylmercury and sulfate in the Partridge, Embarrass, and ultimately the St. Louis River. 340	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DF	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The drying and rewetting of peat overburden in the NorthMet unlined laydown area could also impact mercury release and methylation. Dr. Branfireun cautioned that this storage would "result in repeated flushes of methylmercury as well as inorganic mercury."341 Based on the ColemanWasik (2015) research, Dr. Branfireun cautioned, "The continuous process of drying and rewetting of overburden peat stockpiled in laydown areas may not only continue to release inorganic mercury, but may also continuously regenerate sulfate, and in anaerobic locations, promote methylmercury formation."342 Poly Met has not disputed that mine site wetlands, including the "wetland of interest" selected for review are highly methylating environments. The Poly Met cross-media report notes that potential export of methy lmercury from the "wetland of interest" under existing conditions was estimated at ~O. 08 to O .16 µg/m2/yr, which is 2 to 4 times higher than the estimates for similar boreal wetlands (0.03 to 0.04 µg/m2/yr) in the Marcell Experimental Forest studied in the peerreviewed literature. 343	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DG	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	One result of the elimination of dewatering, drying, and rewetting of wetlands from PolyMet's cross-media analysis was to remove the potential that this process would enhance weathering and permit the release of sulfide minerals over a period of years. This assumption affects predictions of the release of sulfide from chaJcopyrite particles although PolyMet's modeling that all sulfide in pyrrhotite particles will react within a year is protective. 44	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DH	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition, rather than analyzing the effects that hydrologic changes resulting from the NorthMet Project would have on the "wetland of interest" and other highly methylating wetlands, Poly Met proposed that targeted upland drainage would obviate the need to analyze the impacts of water fluctuations on its selected "wetland of interest." 345 Poly Met then failed to analyze the impacts of drying and rewetting on any other wetlands affected by dewatering at the mine site or due to tailings site seepage collection in any part of its cross-media analysis. This omission may be one of the most significant deficits in PolyMet's cross-media analysis. As Dr. Branfireun explained with respect to the Poly Met Project, "Even relatively small changes in water table position and wetting and drying frequency in the ombrotrophic wetlands at the NorthMet mine site have the potential to impact sulfate and methylmercury concentrations of receiving waters."346	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-DI	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Exclusion of multiple sources of sulfur and sulfide deposition at both the mine site and the plant site. Increase in mercury methylation as a result of sulfur and sulfide emissions and deposition is the primary factor addressed by the PolyMet cross-media analysis. But, even PolyMet's evaluation of sulfur compound emissions suffers from exclusions that distort and minimize the effects of sulfur compouncl on mercury methylation. PolyMet s air modeling for the cross-media analysis was pe1formed according to the modeling protocol appended to the report.347 This Protocol excluded many significant sources of sulfur and sulfide deposition. First, the cross-media modeling protocol excluded from analysis PM 10 fine particulates from either plant site stacks or vehicle exhaust, whether on the plant site or mine site,348 asserting that stack particulate emissions are assumed to include only smaller PM2.5 particles based on the control technologies for sources at the facility.349 However, both PolyMet's air emissions permit application and the draft air permit itself undermine this claim. For both PM 10 and PM2.s particles, emissions control technology markedly reduces potential emissions. 350	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DJ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	But, even with controls placed on stack emissions, Poly Met Project potential point source and fugitive air emissions of PM10 exceed those for PM2_5. As shown in the table below from the air emissions permit application, controlled point sources of particulates are much higher at the plant site than at the mine site and potential controlled point source total PM Io particulates would be 168.34 tons per year, as compared to 164.43 tons per year of PM2_5 particles.35 1 Controlled fugitive emissions sources at both the mine site and plant site, which include vehicle emissions as well as dust, model more than seven times as much PM10 as PM2_5 and include 262 tons per year of PMw fugitive emissions at the plant site, as well as 454.90 tons per year at the mine site.352 The significance of excluding PM10 air emissions when evaluating the effects of local sulfide mineral deposition on mercury methylation is even greater than would be evident by the tonnage of sources alone. PM10 particles are heavier and are more likely to be deposited locally than PM2.5, impacting wetlands and proximate watersheds. As Barr explained in the application for PolyMet's air emissions permit, "Fine particles {PM2.5 and smaller} and gases tend to remain suspended for long periods of time {days to weeks} and travel away from the emission source: they are generally not associated with local deposition."353	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DK	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	PolyMet's cross-media modeling protocol also excludes wet deposition of stack emissions, and models only the dry deposition of gas-phase/aerosol/fine particles (PM2.s), stating that, even if wet deposition sulfur emissions are important, since their volume is much less than that of dust, including them wouldn't change PolyMet's conclusions.354 This exclusion may only affect a few percent of the total sulfur mass, but once again the protocol decreases the likelihood that sulfur compounds in stack emissions will be deposited on local wetlands and watersheds.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DL	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Next, at the mine site, the cross-media modeling protocol excluded from analysis fugitive dust generated both by blast hole drilling and by handling of overburden, ore and waste rock.355 According to the PolyMet Permit to Mine Application, ore blasting will use approximately 8 million pounds of blasting agents (ammonium nitrate and fuel oil) annually, while planned waste rock movement, to place waste rock into stockpiles will use approximately an additional 7.3 million pounds of blasting agents.356 PolyMet's air emissions permit listed "blasthole drilling" as one of the primary sources of fugitive emissions. 357 Although there are no data in the record to quantify the significance of this omission, it is widely recognized that blasting is a large contributor to dust at open-pit mines: Modern surface mining often involves huge tonnages thus increasing the potential for greater dust hazard. Blasting is one of the operations that is carried out in most mines, and may produce very large quantities of dust. The dust cloud can be raised to substantial heights depending on the blasting parameters. The blasting dust cloud is normally visible for several minutes. Most of the dust settles in and around the mining area, although some may be dispersed to long distances before settling down. Some of the settled dust is raised again by mining activities such as moving vehicles. Depending on meteorological conditions this dust can disperse to substantial distances adversely affecting local communities."358	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DM	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Dust resulting from wind erosion at mine site Category 1, Category 2/3 and Category 4 waste rock stockpiles was also excluded from the cross-media analysis modeling protocol. 359 No rationale was provided in the modeling protocol or the cross-media analysis for this exclusion of sulfur deposition sources proximate to mine site wetlands. Tailings basin wind erosion from beaches was included in the modeling protocol. 360	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-DN	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Receptors within large rectangular boundaries surrounding the mine pits and also encompassing a number of wetlands that will remain intact during Poly Met mine operations were excluded from cross-media modeling. The rationale provided for this exclusion was that it would eliminate the "complications" with trying to model a receptor within an emission source.361 These various mine site exclusions may help explain why PolyMet's map of "total" sulfide mineral dust in Large Figure 7 has unexpectedly low predictions of sulfide in several areas. In addition to the red rectangles specifically mentioned for exclusion, sulfide mineral deposition depicted on vast areas adjacent to and downwind of the Project's massive mine pits and stockpiles would reflect neither blast hole drilling, blasting of rock for handling or stockpile wind erosion. 362	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DO	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The cross-media modeling protocol also excluded particles greater than 30 microns in diameter (PM30) on the grounds that these "larger" particles (at least 1/1,000 of an inch) would be less likely to disperse more than 20 to 30 meters from an emission source. 363 Although excluding PM30 from air emissions analysis is appropriate if the concern is inhalation risks or dispersal to a regional air shed, this exclusion minimizes the effects of dust and rail car spillage at the mine site, at the plant site, and along eight miles of tracks between them. Many sources of dust and spillage are less than 30 meters away from wetlands or are proximately upgradient from wetlands and streams that could be sites of mercury methylation. The Poly Met FEIS concluded that surface water quality in the mine site Upper Partridge tributary streams (sulfate-limited Wetlegs Creek, Longnose Creek, and proposed West Pit Outlet Creek) "would be affected by ore spillage from the rail caJ although the FEIS did not analyze how ore spillage to wetlands or creek sediments would affect mercury methylation.364 The FEIS did state, 'Approximately 543 acres of wetlands along the railroad corridor could be affected by releases of solutes resulting from rainfall contacting spilled ore and fines. "365 It is difficult to see these modeling exclusions as anything but a way to minimize rather than evaluate the effects of Poly Met Project sulfate deposition on mercury methylation. Based on maps of dust deposition and calculations of sulfate loading previously provided in environmental review or supplied for the draft air emissions permit, it is highly likely that modeling exclusions reduce the projections made for sulfide deposition in the "wetland of interest" selected by Poly Met and render these predictions unsound. Supplemental information from other parts of the Poly Met record is also useful to define which other wetland areas should have been investigated to obtain a more rigorous and comprehensive analysis of impacts on mercury and methylmercury exceedances and degradation that would result from permitting and certification of the Poly Met copper-nickel mine project.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DP	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Exclusion of mine site mercury deposition, water bodies closest to mercury sources, and mercury deposition to wetlands. The Poly Met cross-media analysis of mercury deposition adds to growing concern that its objective may be to dismiss concerns about Poly Met Project effects rather than evaluate them. This is accomplished by failing to analyze water bodies and monitoring locations likely to show effects from mercury deposition and by explicitly excluding mercury air deposition to wetlands. The Poly Met cross-media analysis states, "The primary potential source of mercury emissions for the Project is the Autoclave Stack, which will be located at the Plant Site." 366 Mercury emissions are concentrated at the plant site, particularly on the south side of the site, where the plant facilities are, contributing as much as 3 percent of mercury background concentrations south of the tailings site. The cross-media analysis notes that, in addition to increased surface discharge of mercury from the wastewater treatment system at Second Creek discharge point (SD026),367 "Mercmy deposition from Project air sources is also focused in the Second Creek watershed."368 Mercury air deposition isopleths are shown on the map below:369 The Poly Met cross-media analysis fails to evaluate mercury air deposition from plant site stack emissions at any site proximate to the emissions. The first site at which air deposition to Second Creek is evaluated is 11 miles downstream at MNSW8.370 The Poly Met cross-media analysis states, "mercury stack emissions (Autoclave; fuel combustion) have not changed from those estimated in 2012, building and stack parameters related to the autoclave have not changed, and the air model and meteorological input data have not changed appreciably." The 2012 modeling results were brought forward and used unchanged in the cross-media analysis. 371 In the intervening years neither PolyMet nor the MPCA saw fit to locate a monitoring site in closer proximity to mercury, sulfate dust and particulate air deposition in the Second Creek watershed.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DQ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Large Figure 13 above shows that the monitoring site on Unnamed Creek (PM-11) is within the isopleth showing elevated mercury deposition to wetlands. This site is listed in the cross-media table showing potential cumulative effect on total mercury loads and concentrations. But no methylmercury changes are calculated either at PM-11 or even at MNSW8. The table suggests that methylmercury load increased "is not assessed at these locations but is incorporated downstream," further from the site of potential impacts. 372	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-DR	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although most of the lakes in the Embarrass River watershed are farther away, Heikkilla Lake appears to be within the area where mercury stack emissions would represent up to 1 % of background, and Sabin Lake far outside it. The map below shows the locations of Heikkilla Lake and Sabin Lake.373 The exclusion of Heikkilla Lake from cumulative analysis is troubling. Poly Met argues that the lake may not support a fish population, so that Sabin Lake was a better candidate for cumulative analysis. 374 Since Sabin Lake is outside the isopleth showing impacts of mercury air deposition, it would seem like a less appropriate candidate for analysis.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DS	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition to modeling sites with less proximity to plant site air emissions, rather than closer sHes the Poly Met cross-medja analysis completely excludes the impacts of mercury air deposition to uplands or wetlands, except at the "wetland of interest.' 375 The analysis argues that "only mercury deposited directly to the water surface will result in an increase in water column mercury concentrations because mercury deposited to the terrestrial watershed will be retained in the watershed."376 However, the peer-reviewed literature is more complex and does not support the blanket exclusion from analysis of all mercury deposited to wetlands. The Harris et al. 2007 article cited in the Poly Met report cautioned that the "low level of new mercury export and methylation would not be expected to occur in all wetlands" and cited a pilot study in a wetland with a water table near the p.eat surface where "added spike mercury was quickly methylated and transported into the lake." 77 A report from the Mercury Experiment to Assess Atmospheric Loadings in Canada and the United States (METAALICUS) found that experimentally applied stable mercury isotopes migrated vertically and/or horizontally in peat and pore waters from an experimental plot to the lake margin. The authors concluded, When we couple the biogeochemical dynamics with the evidence of a surface hydrologic transport mechanism, we conclude that wetlands can be very dynamic environments for the transport and transformation ofrecently deposited Ig, contributing significantly to the total load to adjacent aquatic ecosystems in some watersheds.378	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DT	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although the PolyMet cross-media analysis summarized mercury emission estimates and speciation assumptions from various sources, mercury loading analysis was done based on the stack emissions modeled in 2012 and an estimate ofrelease of mercury from the mineral matrix of fugitive sulfide mineral dust.379 No mercury air emissions from mine site sources were considered, even though they are predominantly vehicle emissions, likely to be locally deposited and not particle-bound. The table below is derived from Table 2-1 in the PolyMet cross-media analysis.380 If local deposition of mine site mercury from vehicle emissions and fugitive dust were to be analyzed, this calculation would add up to 317.5 grams of mercury deposited to proximate mine site watersheds. When the "mercury mass balance" for the project is measured in tenths of a gram, exclusion of mine site local mercury deposition may be quite significant. Although excluding local mine site deposition may affect the results of the cross-media analysis, removing from the analysis any mercury deposition to uplands or wetlands makes a striking difference in the assessment of mercury risks. As with stack emissions from the plant site, except at the "wetland of interest," only emissions of dust to the area of "open surface water" were included in PolyMet's mercury calculations."381 As illustrated in the table below derived from PolyMet's Table 5-3,382 by restricting the calculation of mercury air deposition impacts only to open surface water, the cross-mercury analysis effectively reduced the perceived potential impact of mercury air emissions by more than 99 percent. Reviewing the Poly Met cross-media analysis of the effects of air deposition of mercury, it appears that unreasonable exclusions substantially and inappropriately minimize the effects of mercury air deposition on the wetlands and watersheds near the proposed Poly Met mine site and plant site.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-DU	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Misleading analysis of mercury methylation in a single "wetland of interest." The Poly Met cross-media analysis of mercury methylation in a single "wetland of interest" suffers from several flaws. The cross-media analysis, as every other analysis done by Poly Met to date, precluded consideration of the impacts of surficial aquifer seepage surfacing in wetlands and affecting mercury methylation by completely failing to analyze this important factor. Perhaps more striking, even as the cross-media analysis proposes channeling of mine site stormwater to maintain hydrology in the "wetland of interest," the analysis fails to consider sulfate loading from mine site surface water in calculating methylation potential. Although the cross-media analysis makes an exception and considers loading of mercury from fugitive dust to one designated wetland, the analysis excludes mine site mercury vehicle emissions, which (Table 2-1 on the preceding page) have six times the mass of mercury in mine site fugitive dust. Dr. Branfireun's report on NorthMet effects on mercury methylation included a quantitative analysis pertaining to the one factor for which numeric data was provided where Barr identified the mine site location with highest sulfate loading from du t deposition.383 Using Barr's numbers for sulfate deposition, validating assumptions for sulfate background with peer-reviewed literature and expressing both the background and NorthMet mine site sulfate deposition numbers in the same units, Dr. Branfireun calculated that the sulfate load from dust deposition at this proposed mine site location would be 12.6 kilograms per hectare per acre (kg/ha/yr) as compared to the background rate of 4.58 kg/ha/yr. The sulfate load would, thus be 3.76 times or 376% of the background deposition rate.384 Comparing this additional loading with peer-reviewed studies measuring methylmercury export after adding sulfate to experimental wetlands, and using the conservative assumption in the FEIS that all sulfur in dust is converted to sulfate, Dr. Branfireun calculated that methylmercury export from sensitive mine-site peatlands may be increased up to 1.88 times as a result of sulfate air deposition alone. Given the magnitude of this potential impact, he explained, even if less than the total sulfate deposited is liberated to the environment, "there will still be a substantial stimulatory effect on peatland m thylmercury production. "385 Based on the finding in the Coleman-Wasik 2015 study that portions of an experimental wetland recovering from high sulfate loading had methylmercury levels intermediate between those of unimpacted and current experimental treatments, Dr. Branfireun opined that sulfate loading impacts would continue even after deposition stops. "It can be expected that effects of elevated sulfate deposition on peatlands will persist to some degree even after additional sulfate loading has ceased. "386 Without quantifying the other factors, such as mercury and sulfate loading through water, changes in wetland hydrology or mercury air emissions, Dr. Branfireun explained that increased methylmercury export from methylating peatlands would be reflected "in methylmercury concentrations in the upper tributaries, and the Embarrass and Partridge Rivers, given the role these wetlands play in supplying water to these streams and rivers." Increased methylmercury "would also be expected to impact the upper St Louis River, given the direct hydrological connection and known methods of methylmercury transport."387	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DV	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	PolyMet's cross-media analysis concluded that the total potential atmospheric load of sulfate to the "wetland of interest" during operations is 6.4 kg/ha/yr, of which 1.55 kg/ha/yr is related to the Project. 388 The analysis contains no explanation of the differences between this result and Barr's 2015 sulfate load projections. The change from sulfate to sulfide mass and the more conservative assumption made in 2015 that all sulfur deposited is liberated to the environment, as contrasted with modeling that a fraction of the chalcopyrite particles will react,389 could substantially reduce predicted sulfate loading. Since the 2015 Barr report does not exclude dust sources from its analysis, the cross-media modeling protocol may also have affected predictions of sulfate loading. Finally, because the cross-media analysis is narrowly focused on dust from haul roads and rail transfer, the selection of wetlands south ofDunka Road may have reduced the predictions of sulfate loading. The maps in subsection (A) of this Section of comments390 show where the "wetland of interest" is located, next to the blue Equalization Basins and south of Dunka Road, and the map below shows haul roads with black cross-hatching.391 Large Figure 7 in the Poly Met cross-media report models sulfide dust levels range from 102 to 212 milligrams per meter squared per year (mg/m2/yr) in the "wetland of interest" while higher sulfide mineral dust levels can be found on the mine site itself. This map also suggests that background sulfide mineral deposition at the mine site may be less than 10 mg/m2/yr.392 In order to evaluate, rather than minimize project impacts on mercury, the assessment of impacts at the "wetland of interest" on the south side of the mine site must be redone. First, the sulfate and mercury loading to the wetland through surficial aquifer seepage must be calculated.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DW	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Then, if existing hydrologic condi tions at this wetland will in fact be maintained by channeling mine site surface water from the rail spur and raH transfer hopper side slopes 393 sulfate and mercury loading from this surface water must be added.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DX	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Third, mine site sulfide mineral dust loading should not exclude blasting or wind erosion, both of which are likely to take place at the Ore Surge Pile and Category 2/3 waste rock stockpile, in proximity to the wetland. Next, in addition to estimating the impacts of mercury in fugitive dust, as the cross-media report has already done, the impacts of mercury vehicle emissions on mercury methylation as well as on mercury loading must be calculated. Finally, in the interest of transparency, the cross-media analysis should clearly explain assumptions made and their effects, including the calculations used to estimate methylmercury production from total sulfate and mercury loading. It is likely that an analysis including these readily discernable contributors to mercury methylation would arrive at a very different conclusion as to the impact of Poly Met operations on the "wetland of interest" south of Dunka Road.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-DY	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Even more important, given the number of factors in PolyMet operations that could increase mercury methylation and the variability of inputs and wetlands types across a vast area at the plant site and the mine site, no analysis restricted to a single wetland could be adequate to evaluate methylmercury impacts. Selection of additional wetlands to study in depth should take into account sources and composition of seepage, locations of intentional surface discharge and mine site stormwater release, locations most likely to be affected by mine dewatering and tailings seepage collection, proximity to both point source and fugitive dust deposition of sulfur compounds, and mercury air deposition, considering deposition to wetlands as well as to open waters. If all of these factors are considered cumulatively, it is clear that wetlands should be studied at the plant site as well as at the mine site. In addition to the south mine site location already selected in PolyMet's cross-media analysis, a minimum of three other wetland of interest sites are recommended for analysis: a South Tailings Site wetland, a North Tailings Site wetland, and a North Mine Site wetland. The first additional wetland study area proposed is a South Tailings Site wetland, near the headwaters of Second Creek. As explained previously, the headwaters of Second Creek will be the site of groundwater seepage with highly elevated sulfate levels emerging within a short distance into a headwaters creek. 394 In addition, surface water discharge at the headwaters of Second Creek (SD026) expected to increase mercury concentrations and mercury deposition from Project air sources is also focused in the Second Creek watershed. 395 The PolyMet cross-media analysis suggests that, after the south mine site wetland, the highest sulfide deposition based on fugitive dust and PM2.s from stacks was in the watershed of Unnamed Creek, monitoring location PM-11 on the northwest side of the tailings basin.396 It is difficult to determine where the highest levels of dust deposition will be predicted at the mine site once modeling includes drill core blasting in mine pits; blasting of overburden, waste rock; and wind erosion from waste rock stockpiles on the mine site. There are also locations on the south side of the tailings site and on both the north and south sides of the mine site where PM 10 is at least three times the background level. 397 Cumulative cross-media analysis of the South Tailings Site considering mercury loading, mercury release from sediments and mercury methylation would include impacts of sulfate and mercury seepage through groundwater and direct discharge, sulfate deposition from dust and stack emissions and mercury air deposition. There are wetlands that would provide a South Tailings Site at which to model methylation. The wetlands include slu-ub swamps (alder thicket), deep and shallow marsh and small areas of coniferous and hardwood swamp:398	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-DZ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Selection of a North Tailings Site wetland would allow analysis of cumulative effects on mercury loading and methylation reflecting hydrologic changes from tailings seepage collection, sulfate and mercury loading from uncaptured tailings seepage, direct discharge of sulfate and mercury to wetlands, and air deposition of mercury and sulfur compounds through dust and stack emissions. 399	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-EA	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	A North Mine Site wetland would allow analysis of cumulative effects on mercury methylation resulting from sulfate and mercury loading through Category 1 seepage and East Pit seepage, hydrologic changes resulting from East Pit dewatering, sulfide deposition, including PM10, from vehicle emissions and fugitive dust from blasting and stocpile wind erosion, and mercury emissions from vehicles and mineral dust. North Mine Site wetlands near the East Pit and the Category 1 waste rock stockRile, include coniferous bog wetlands, are likely to be particularly methy lating enviromnents. 400	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-EB	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Modeling and analysi that systematically miinimize the cumulative potential for mercury and methylmercury impacts. Comments to this point have highlighted assumptions and exclusions that undermine the integrity of the cross-media analysis and suggest that it systematically minimizes the effects of the PolyMet mine project on mercury loading, mercury release from sediments, and mercury methylation and transport to downstream waters. This final section addresses two overarching issues that further undermine the application of PolyMet's analysis to support either an NPDES/SDS permit or Section 401 certification. First, PolyMet's mercury mass balance is erroneous as well as simplistic. Second, PolyMet's "cumulative" analysis reflects watershed-wide dilution of selected sources of loading rather than stream-watershed dynamics reflecting the full range of potential factors could affect mercury and methy lmercury production, release and transport. Although Poly Met' s cross-media analysis makes a brief and contrived foray into assessment of mercury methylation, its cumulative assessment returns to the mercury mass balance model promoted during the course of environmental review. Even without the level of detail contained in the cross-media report, Dr. Branfireun criticized the mass balance model as "cheaper and easier" method that "can be presented as definitive to a non-expert," emphasizing that "a mass balance model cannot by definition incorporate mechanistically the input and removal processes for mercury, and cannot address the biogeochemical aspects of mercury methylation across the landscape which are at the root of the potential impacts associated with the Poly Met proposal."401	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-EC	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	With PolyMet's method of deriving its mercury and sulfate mass balance calculations exposed more thoroughly in the cross-media analysis and NPDES/SDS application, this criticism seems prescient. As in the environmental review process, Poly Met claims that an increase in mercury resulting from project activities is more than balanced by the capture of stormwater and groundwater containing mercury in the Partridge River watershed and by water capture resulting from operation of tailings seepage collection affecting the Embarrass River watershed.402 In the NPDES analysis, Poly Met assumes that there are no project contributions to Partridge River watershed mercury loading at the mine site; there are only reductions in mercury as a result of capture of non-contact runoff and groundwater that contain mercury at concentrations above the Great Lakes standard (1.3 ng/L) under background conditions.403 No seepage, overflow or channeling of surface water from mine site lined or unlined sources of potential mercury loading are even considered.404 At Second Creek, PolyMet assumes mercury loading from the tailings site is only from treated wastewater discharge, even though an average of 140 gallons per minute seeped untreated from the ex.isling tailings basin to Second Creek in 2016 despite the pumpback system and an average of767 gallons per minute of untreated wastewater si milarly escaped capture in 2017.405 PolyMet also assumes, althou@h no mercury removal treatment has been tested, demonstrated or required for tailings seepage 4 6 that the only tailing ite mercw-y input i surface discharge with a mercury concentration of 1.3 ng/L, and credits the Project for the "loss" of mercury loading from Colby Lake pumping to the tailings site as a further reduction of mercury to the Partridge River watershed.407 No leakage from the large quantity of mercury in the hydrometallurgical residue facility is modeled. In the Embarrass River watershed, PolyMet's mass balance model assumes only 21 gallons per minute of tailings basin seepage and claims that mercury concentrations in the seepage will be only 1.5 ng/L to derive credjt for seepage capture. The only Project additions to mercury loading are small runoff and background groundwater redirections from a drainage swale.408	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-ED	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition to making the unsupportable assumptions noted above, all of which minimize Project mercury impacts, PolyMet's NPDES mercury mass balance analysis considers no mercury air deposition and no mercury methylation resulting from sulfate loading.409 The Poly Met cross-media analysis does not improve on the basic errors in the underlying mercury mass balance in order to estimate mercury methylation. It merely compounds them. As discussed previously in this section, the cross-media analysis considers no sulfate loading from bedrock groundwater, surficial aquifers or surface water affected by sulfate in estimating mercury methylation potential in any wetlands or sediments. The cross-media analysis does not evaluate the effects of hydro logic changes from seepage collection and mine dewatering on wetlands that are already highly methylating, as compared to the controls in peer-reviewed literature.410 Even where the cross-media analysis adds atmospheric deposition of mercury and sulfate to its calculations, the underlying assumptions and methods preclude significance in its findings. For mercury air deposition, PolyMet's cross-media analysis fails to model local deposition to the mine site, even though its own estimates identify 317 grams of mercury that could impact the Upper Partridge River watershed. Then, PolyMet's assessment excludes 100 percent of the mercury deposited to uplands and wetlands, reducing the watershed area modeled for mercury air deposition impacts by more than 99 percent.411	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-EE	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	A modest change in any of these assumptions would change conclusions reached about mercury impacts from the PolyMet Project. Even in evaluating mercury methylation resulting from sulfate air deposition, PolyMet's cross media analysis excluded stack emissions most likely to deposit locally (PM 1 o and wet deposition of finer particles and gases) and multiple sources of mine site and transportation corridor particles, including dust from blasting in mine pits and of overburden, waste rock and ore, dust from wind erosion of ore and waste rock stockpiles and any particles larger than 1/1000 of an inch in size.412 Poly Met further assumed that particles would only weather for a year, so that much of the sulfide deposited in mineral dust would not be released.413 Even with all of the exclusions and limiting assumptions applied by Poly Met, the single wetland of interest assessed by Poly Met was predicted to experience a 32% increase in sulfate loading as compared to background and a 16% increase in methy lmercury as a result solely of sulfide dust impacts.4 14	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-EF	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	However, for its "cumulative" analysis, the cross-media report did not estimate the various factors, including but not limited to sulfate air deposition, that would increase mercury methylation in localized wetlands and sediments impacted by the Project. Instead Poly Met diluted its calculation of sulfur air deposition - which already excluded numerous emission sources - over entire watersheds and concluded that sulfate increases from air sources were not sufficient to increase mercury methylation. 415 The analysis excluded seepage and surface water sources of sulfate or mercury loading to methylating wetlands and sediments, assumed project mercury loading was limited to wastewater discharge at 1.3 ng/L, and credited the Poly Met project with substantial reductions in methylmercury as a result of reducing flows in the Partridge River and Embarrass River watersheds. 416 Having reduced the perfect storm of factors with the potential to increase mercury release, methylation, and transport to the effects of dispersing some atmospheric sources of sulfate over large watersheds, the unsurprising if deceptive conclusion reached in the Poly Met cross-media analysis was that neither methylmercury increases in the water column nor methylmercury increases m'f i1hs would be significant. 417 PolyMet concluded that sulfate from Project air emissions could cause a small increase (0.003 to 0.005 ng/L) in water column methylmercury in the Partridge River and Embarrass River watersheds, but this small increase would not be "measurable."418 The only "measurable" change Poly Met admitted was an increase in mercury due to surface discharge of treated water at the headwaters of Second Creek (SD026).419 The MPCA accepted the conclusion reached in PolyMet's cross-media analysis that there would be no measurable change of mercury in water or fish as a result of sulfur deposition, without questioning the exclusions on which this conclusion was based.420 More generally, the MPCA also denied that the Project would result in measurable changes to water quality downstream in the St. Louis River.421	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-EG	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Poly Met cross-media analysis, however detailed in its calculations, appears to be willfully blind to the cumulative scope of project impacts on mercury in the water column and mercury in fish from mercury air emissions to wetlands as well as open waters; mercury loading from treated and untreated surface water and from seepage through groundwater; mercury release from sediments and mercury methylation resulting from sulfate seepage through groundwater, sulfate release from surface water, sulfur air deposition, and hydrologic changes affecting wetlands and streams at both the mine site and the tailings site. It is in PolyMet's interest to provide regulators and the public with a lengthy analysis of the elephant's trunk and to insist that it has proved that the elephant is a small and pliable creature incapable of crushing damage, let alone a rampage. We should know better. If the MPCA were to evaluate the full scope of mercury and sulfur compound emissions and releases that would result from the Poly Met Project, the impacts of hydrologic changes, and the mechanisms for methylmercury export and bioaccumulation to downstream waters, the Agency would be forced to conclude that there is no reasonable assurance that the Poly Met copper-nickel mine project would not contribute to mercury impairments in downstream waters, degrade downstream waters not yet designated as impaired for mercury, and endanger the environment and human health. As Brian Branfireun summarized at the close of environmental review, "It is my opinion that the NorthMet development could create a substantial risk of ecologically significant increases in water column and fish methylmercury concentrations in downstream waters, including the St. Louis River."422	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-EH	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The antidegradation analysis performed for the Poly Met Project with respect to pollutants other than mercury and methylmercury is inadequate for NPDES/SDS permitting or for Section 401 certification. Both federal and state laws preclude permitting of facilities or certification of activities that degrade water quality when there are one or more possible alternatives available to prevent or lessen the degradation.423 In the Lake Superior Basin, if the pollutants in question are not bioaccumulative chemicals of concern, Chapter 7050 antidegradation standards apply. The MPCA may not approve a proposed activity if prudent and feasible prevention, treatment, or loading offset alternatives exist that would avoid degradation of existing high water quality. Even if the MPCA finds that prudent and feasible prevention, treatment, or loading offset alternatives are not available to avoid degradation, a proposed activity shall be approved only when the commissioner makes a finding that degradation will be prudently and feasibly minimized and that the proposed activity is necessary to accommodate important economic or social changes in the geographic area in which degradation of existing high water quality is anticipated.424 Minnesota rules also set policy to prevent degradation of groundwater, requiring that industrial waste be controlled "as may be necessary to ensure that to ensure that to the maximum practicable extent the underground waters of the state are maintained at their natural quality." To relax this protection, a determination must be made not only that a change is justifiable by reason of necessary economic or social development, but that the degradation "will not preclude appropriate beneficial present and future uses of the waters."425 This analysis cannot be performed tautologically. It must consider all impacts of a project on water quality, not just those that the regulator has already decided will be prudently minimized under the existing plan for a facility that has been deemed necessary for an economic objective. The MPCA's analysis of degradation resulting from the Poly Met is deficient in at least the following respects: A) The MPCA fails to analyze the degradation of surface water and groundwater at the mine site and plant site that would result from releases of pollutants by the Poly Met project to bedrock groundwater and surficial aquifers; B) The MPCA fails to consider best practices that would serve as feasible and prudent prevention and mitigation measures to would avoid or minimize that degradation. A) Failure to analyze degradation resulting from release of pollutants to bedrock groundwater and surficial aquifers. In the first and second Sections of these comments, we detailed requirements under the federal Clean Water Act to protect waters of the United States from discharge through hydrologically connected groundwater and the deficiencies in FolyMet's proposed plans for mine site and plant site waste and seepage containment that may cause or contribute to a violation of Minnesota water quality standards.	The comment presumes failure of controls required in the NPDES permit. The MPCA has reviewed the available information and concluded the permit conditions can be met and will result in meeting water quality standards. The Annual Groundwater Evaluation Report required by the permit specifically requires an annual assessment of the current and future potential and timeframe for migration of groundwater towards surface water from the mine site and plant site. Also, as described in response to comment 37 above, the Annual Comprehensive Evaluation specifically requires that the performance of engineering controls be assessed for any impact to groundwater. Together, these annual reports provide early warning for the potential for impact such that adaptive management can be implemented before impacts occur. If the permittee does not comply with the permit, the permittee may be subject to enforcement action to correct the violations.	Because the comment provides no new facts and does not provide a reasonable basis underlying a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-EI	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The same deficiencies in siting and seepage containment at the tailings basin, deficiencies in seepage containment at the Category 1 waste rockpile, poor choices in location of hydrometallurgical residue waste storage, and failure to address movement of contaminants from mine pit walls would result in degradation of both surface water and groundwater and the mine site and the plant. Liner leakage and potential overflow of waste storage basins, particularly where they have not been designed to accommodate maximum precipitation, could contaminate the mine site surficial aquifer as well as mine site surface water. As noted previously in discussing mercury and methylmercury concerns, there is no assurance that mine site "noncontact" stormwater won't in fact be contaminated - by blasting, vehicle exhaust, dust, and air deposition - even that stormwater doesn't actually touch mine pits or stockpiles.	The comment appears to be based on incorrect assumptions. See response to 543-DJ and 543-DL. As shown in the Cross Media analysis, contributions from project-generated dust have little, if any, effect on downstream water quality.	Because there is no material fact in dispute, and no reasonable basis for a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A), (C); *see Red Wing; Amendment No. 4* .
543-EJ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Poly Met Project environmental review contained no analysis of propagation through fractures or faults in bedrock and only a minimal examination of the potential effects on water quality of pollutants propagating through surficial groundwater. The NPDES/SDS permitting record is yet more deficient. As summarized by the Agency, "The MPCA's review of the Antidegradation Evaluation presented in the NPDES/SDS permit application focused on the proposed discharge from the Plant Site WWTS. For the duration of the first permit cycle, and for at least the proposed active mining period of the project, this will be the only process water discharge to surface waters authorized under this permit."426	The issue of faults and fractures was addressed in the EIS and MPCA did directly consider this information in the groundwater nondegradation review associated with the NPDES/SDS permit. See FEIS section 3.2.2.1.2, page 3-33; Nondegradation Review at pages 1-2, 5, 17-19.	Because the MPCA adequately addressed the issue, and there is no reasonable basis underlying the claimed dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing ; Amendment No. 4 ; cf. City of Owatonna* .
543-EK	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The MPCA acknowledged that the discharge of treated effluent from the plant site wastewater treatment system (WWTS) would result in degradation of water quality parameters, but chose to disregard the environmental review modeling subjected to federal and public review in favor of a new Poly Met design model that would reduce findings of degradation.427 In any case, the MPCA assumed without analysis that neither increased levels of contaminants in Poly Met tailings seepage as compared to seepage from a closed taconite project, the level of groundwater flow that will remain despite the pumpback system at the headwaters of Second Creek, or the seepage that will escape capture from the dirt trench around the north side of the tailings basin that the Poly Met project will result in degradation. According to MPCA's overly trusting predictions, the Poly Met tailings plan will "cut off movement associated with former L TVSMC tailings basin" and thus result in an improvement in water quality for sulfate and salty parameters. 428 The MPCA did not discuss the effects of tai lings eepage on groundwater contamination with lead or surface water contamjnation with copper nickel and other metals toxic to aquatic life 429 which contaminants are far less elevated in existing tailings seepage. Although the Poly Met FEIS failed to determine where mine site surficial contaminants would first daylight to surface waters, this document provided a prediction of the level of contaminants in mine site surficial aquifer flow paths at the property line. These locations may be at or near the places where seepage first surfaces to wetlands. For the East Fit Category 2/3 flowpath, the Proposed Action aluminum is predicted at 339 µg/L, an increase to 576% of the modeled continuation of existing conditions (CEC) scenario and nearly three times the 125 µg/L water quality standard. Cobalt is predicted at 10.5 µg/L, an increase to 1, 117% of the modeled CEC scenario and more than twice the 5 µg/L water quality standard. For the Overburden Storage and Laydown Area at the old property boundary, aluminum is predicted at 139 µg/L, an increase to 236% of the CEC level, also above the 125 µg/L water quality standard. For the West Fit flowpath at the property boundary, a cobalt concentration of 3 3 .1 µg/L is predicted for the Proposed Action, which would be an increase to 3,521 % of the modeled CEC scenario and more than six times the 5 µg/L water quality standard. Lead concentrations in the West Fit Flowpath are predicted at 5.2 µg/L - an increase to 800% of the modeled CEC scenario and four times the applicable 1.3 µg/L water quality standard for lead.430 If the concentrations of solutes modeled for the CEC in the flowpaths when they reach the Partridge River are the same as CEC levels modeled for the same flowpaths at the property line,431 applying the ratios of relative differences provided in the FEIS, cobalt, aluminum, and lead would still violate applicable water quality standards at the point where they reach the Partridge River a mile away. In the FolyMet FEIS, cobalt reaching the Partridge River from the West Fit Flowpath could reach 24.3 times the CEC level, thus estimated at 22.8 µg/L -- four times the 5 µg/L water quality standard. Aluminum from the East Fit Category 2/3 Flowpath could be 2.9 times the CEC level, thus estimated at 171 µg/L -- considerably above the 125 µg/L water quality standard. Lead from the West Fit Flowpath could be 5.8 times the CEC level, thus estimated at 3.8 µg/L -- nearly three times the 1.3 µg/L chronic water quality standard for the Partridge River. Mine site seepage to the Partridge River would also reflect substantial increases in flowpath concentrations of chloride, sulfate, beryllium, cadmium, selenium, and zinc.432 The FEIS data cited above suggest a potential that substantial degradation of water quality would result from mine site seepage of pollutants. None of these sources of degradation were analyzed in the MPCA's antidegradation review.	The MPCA has reviewed the available information regarding modeled estimates of effluent and determined the design model was a more representative estimate of discharge concentrations. The FEIS model (GoldSim) included assumptions that overestimated the potential effects, which was appropriate for the environmental review process. As described in MPCA's antidegradation review, the MPCA determined that the design modeling provided a more realistic estimate.	This comment raises a factual issue, but the comment does not contain facts that provide a basis for dispute. Because the comment identifies no new facts and does not provide a reasonable basis underlying a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .

543-EL	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In the course of environmental review of the Poly Met project the Commissioner of the Minnesota Department of Health, Dr. Edward Ehlinger, expressed concern that fracture patterns may affect the Duluth Complex in St. Louis County, suggesting that fractures "may act as possibly conduits for higher rates of groundwater flow" through bedrock. 433 The map of tailings site fractures, first prepared by J.D. Lehr and then produced by a consultant for Poly Met, shows fault lines on both the northwest and northeast sides of the proposed Poly Met tailings basin.434 Since the proposed Poly Met plant and tailings site is located along the highest reaches of their Embarrass River subwatershed, groundwater in the surficial aquifer flows across the tailings site and toward the Embarrass River.435 Between the tailing site and the Embarrass River, there are 38 wells (all dots), only 23 (red dots) of which were sampled by PolyMet during the course of environmental review. 436 The Poly Met FEIS illustration of the groundwater flowpath from the tailings site flows toward many of these residential wells, as well as to the Embarrass River and its tributary creeks.437 Manganese contamination of groundwater and residential wells between the Poly Met tailings site and the Embarrass River raises particular concerns. EPA's secondary maximum contaminant level for manganese is 50 micrograms per liter (µg/L), and Minnesota's health-based limit on manganese in drinking water, based on neurotoxic effects on infants, children and adults, is 100 µg/L .438 Concentrations of manganese draining north toward residential wells would be 863.6 µg/L at the north toe; 1,311.5 µg/L at the west toe; and 1,378.2 µg/L at the northwest toe.439 These levels range from 86 to more than 137 times the groundwater level set by the Minnesota Department of Health to prevent deficits in learning, memory attention and motor skills.44" Concentrations of lead in tailings toe seepage would be 13.7 at the west toe and 57.8 at the north toe.441 The EPA's maximum contaminant level goal for lead is zero "based on the best available science which shows there is no safe level of exposure to lead. "442 The MPCA may have relied on the sanguine and unsupported assumptions in the PolyMet FEIS about the rate of seepage collection from unlined facilities to assume copper-nickel mine tailings seepage would not degrade groundwater. If these assumptions are the basis for MPCA's conclusions that degradation will be avoided, they should be reflected clearly and specifically as NPDES/SDS permit conditions, the violation of which will be directly enforceable. If neither the MPCA nor Poly Met wish to be bound by the performance specifications used to justify the choice of a dirt trench around an unlined mound as seepage containment, consideration of other and better practices to minimize degradation becomes essential.	See response to Comment 543-EJ above. All residential wells were sampled for which the property owner gave permission and access. The MPCA has reviewed groundwater well data in the region, and found natural background conditions for these parameters to be highly variable, including in the proposed project area. In addition, a holistic review of the entire dataset that considered "tracer" and indicator parameters showed that localized elevated concentrations of these parameters were not the result of seepage from the existing tailings basin. The MPCA did not make any specific statements on this topic in the Fact Sheet, but considered this during the EIS process and during permit development.	This comment raises a factual issue, but does not identify any new facts to refute the findings from the environmental review that the MPCA considered. Because the comment did not raise specific new facts, and there is no reasonable basis underlying a dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-EM	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Failure to consider best practices to prevent and minimize degradation. Focusing primarily on PolyMet's proposed treatment of tailings seepage with reverse osmosis, the MPCA determined "there is no prudent and feasible prevention, treatment, or loading offset alternative available to completely avoid degradation of these waters." The MPCA continued, "The only way the project could eliminate degradation would be to not discharge any water at all."443 WaterLegacy believes that, apart from the need to require specific treatment for mercury removal,444 reverse osmosis may be the best available technology to treat tailings and process wastewater. Although we believe that the economic benefits of the project are overstated, we understand that the environmental review record contains evidence to support the MPCA' s conclusion that the Poly Met Project would have economic benefits. In addition to endorsing the reverse osmosis water quality treatment system, the MPCA more generally concluded, after reviewing a list of alternatives adopted by Poly Met in the environmental review process, "The proposed project will implement the best technology in practice and treatment. "445 MPCA also determined that due to a "combination of controls and mitigation" the proposed PolyMet Project would meet rule requirements for protection of groundwater. 446	See response to comments Water-707-D and Water-720-E.The comment argues that alternative designs and practices should have been considered in the antidegradation analysis. Alternative project designs were considered during the EIS, which was found adequate by the Minnesota DNR and was not subsequently challenged. See FEIS section 3.2.3. The EIS found that the alternatives did not meet the purpose and need of the project, and/or did not have less impact. The MPCA's antidegradation review also considered the alternatives to the project, including those evaluated in the EIS. In its review of the overall design of the facility and the application of engineering controls and wastewater treatment technologies, MPCA did consider best practices that would feasibly avoid or minimize degradation. The draft permit includes requirements for the construction of engineering controls; these are consistent with the design reviewed for the antidegradation review. The antidegradation review took into account the operating limits for sulfate and other parameters that are included in the draft permit to conclude that feasible measures are being taken to minimize degradation.	Because the comment does not raise new facts, and does not provide a reasonable basis for dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .

543-EN	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	With respect to preventing the release of untreated wastewater and contamination to groundwater and surface water, we believe that many aspects of the Poly Met project reflect outmoded technology and unreasonable rejection of best available alternatives for siting, design and management. The MPCA's antidegradation review did not conduct sufficient analysis to determine that there are no prudent and feasible alternatives to prevent or minimize degradation. The Poly Met FEIS predicted that its tailings facility would produce 3,880 gallons per minute (gpm) of seepage,447 equivalent to 2,041,000,000 gallons per year. As detailed in Section 2 of these comments and in the preceding discussion in this Section, tailings seepage will be highly contaminated for many parameters that affect aquatic life, wildlife and human health. Despite PolyMet's representations, it is clear from experience at the LTVSMC tailing basin with the Second Creek pumpback system as well as the examples cited by Poly Met, that tailings seepage will escape capture and degrade both surface and groundwater at a much higher rate than in PolyMet's rosy predictions. Nothing in the Draft NPDES/SDS permit would prevent this disadvantageous outcome. A dry stack tailings facility on a liner system sited on a secure foundation, rather than on tailings and slimes, is the best available technology to limit the potential impacts of Poly Met tailings leachate and seepage on groundwater and surface water quality. Dry stack tailings disposal reduces seepage rates, as compared with slurry tailings. It is estimated that the seepage rate from slurry tailings is 6.4 gallons per minute (gpm) per acre, the seepage rate from paste or thickened tailings 0.06 gpm per acre and the seepag from dry filtered tailings 0.007 gpm per acre.448	See response to comment Water-720-E. Alternative tailings basin designs and locations were considered in the EIS process. See DEIS sections 3.2.3.1 and 3.2.4.1, and Table 3.2-2; FEIS section 3.2.3. Dry stacking of tailings, in particular, was addressed in the FEIS in thematic response to comment theme ALT 10 (FEIS, pg. A-314) where it was determined by DNR that this alternate technology does not have significant environmental benefit over the proposed project. The response concluded that: dry stacking of tailings would require a lined facility; construction of a liner over the LTV tailings would not be feasible; and constructing a new lined tailings basin in a different location would be counterproductive because it would increase footprint effects of the project. The MDNR found the EIS adequate and that decision was not subsequently challenged. The conclusions from the EIS were incorporated into MPCA's antidegradation review.	The consideration of alternatives was adequately addressed in the EIS and in the antidegradation review. Cf. City of Owatonna. Additionally, no new information is identified in the petition. No facts are presented that provide a reasonable basis for a dispute, and therefore a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-EO	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Although WaterLegacy understands that the MPCA may appreciate the opportunity to secure treatment of seepage from the LTVSMC taconite tailings basin, the Poly Met Project must stand on its own. Action can and should be taken separately by the MPCA to update and issue permits and compel remediation at many mining facilities operating and polluting under expired and unenforced permits, including but not limited to the LTV SMC tailings basin. A copper-nickel mine facility proposed in 2018 should not use a site and technology adopted in the 1950s and since shown to be inadequate to protect water quality even from less toxic taconite wastes. In addition to adoption of best available tailings waste storage practices, Water Legacy believes that there are several feasible and prudent measures that should be required by MPCA to prevent and minimize degradation of water quality under routine operations and to minimize the threat of yet more severe degradation.	The NPDES permit was written to meet the requirements of the Clean Water Act and state law, without reliance on the beneficial side effect of collection of the existing seepage.	The comment raises a legal issue, not a factual issue. It does not raise any new facts for MPCA to consider, and provides no reasonable basis for a dispute, so a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-EP	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	First, the MPCA should deny any NPDES/SDS permit that allows Poly Met to site the hydrometallurgical residue facility (HRF) on the site currently proposed. Even if all wetlands were excavated and a sound foundation built, the proximity to the flotation tailings dam could result in seepage to the HRF or instability of dams on the south side of the tailings basin.449 The threats of HRF liner deformation or dam instability are substantial and the results could be catastrophic; the feasible and prudent alternative is to find a better site. At the mine site, there are several feasible and prudent alternatives that would avoid or minimize degradation of water quality. Each should be required by the MPCA as conditions of an NPDES/SDS permit that will degrade water entering the Partridge River and may result in violations of water quality standards as well as degradation in surface waters more proximate to contaminant sources.	See response to Comments 543-AP through 543-AR. This comment does not raise any new facts for MPCA to consider, it merely disagrees with MPCA's conclusion. The design components of the HRF were raised in the EIS and DNR, in consultation with MPCA, considered those issues. The issue of foundation stability was considered in the EIS and requirements for a detailed process of investigation, design and MPCA approvals are included in the draft permit to address that issue.	The comment does not raise any new facts for MPCA to consider, and provides no reasonable basis for a dispute, so a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-EQ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Category 1 waste rock stockpile should be lined, if in-pit disposal has a legal impediment.	See response to Comment Water-707-C. The adequacy of the Category 1 waste rock stockpile design was assessed in detail in the EIS and the consideration of alternatives has been adequately addressed in the EIS. The MDNR found the EIS adequate and that decision was not subsequently challenged. The conclusions from the EIS were incorporated into MPCA's antidegradation review.	The consideration of alternatives was adequately addressed in the EIS and in the antidegradation review. *Cf. City of Owatonna* . Additionally, no new information is identified in the petition. No facts are raised that provide a reasonable basis for a dispute, and therefore a contested case would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-ER	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The overburden storage and laydown area (OSLA) and its associated pond should also be lined, and	This comment does not raise any new facts for MPCA to consider, it merely disagrees with MPCA's conclusion. The comment questions the efficacy of controls required in the NPDES permit. The same issues were raised in the EIS and DNR, in consultation with MPCA, considered those issues. See RGU Consideration of Comments on the FEIS at 420. The proposed equalization basin design was reviewed by MPCA and determined to be consistent with that required statewide for similar industrial wastewater pond applications. MPCA concluded that this design will protect water quality.	The comment does not raise any new facts for MPCA to consider, and provides no reasonable basis for a dispute, so a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .

543-ES	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	the Equalization Basins should have a dual liner system. All sumps, ponds and basins at the mine site should be designed and managed to contain a maximum precipitation event - rather than a 25-year or 100-year rainfall - without overflow, and a back-up system should be in place to prevent overflow of untreated wastewater should the primary system of pumps and pipes to the mine site fail.	This comment does not raise any new facts for MPCA to consider, it merely disagrees with MPCA's conclusion. The comment questions the efficacy of controls required in the NPDES permit. The same issues were raised in the EIS and DNR, in consultation with MPCA, considered those issues. See RGU Consideration of Comments on the FEIS at 175. The proposed equalization basin design was reviewed by MPCA and determined to be consistent with that required statewide for similar industrial wastewater pond applications. MPCA concluded that this design will protect water quality.	The comment does not raise any new facts for MPCA to consider, and provides no reasonable basis for a dispute, so a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C); *see Red Wing; Amendment No. 4* .
543-ET	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The Draft 401 Certification for the FolyMet Project is premature given the substantive deficiencies of the Draft NPDES/SDS Permit; the absence of an up-todate Section 404 application; and the lack of a current evaluation of the effects of Project water appropriations on the Upper Partridge River headwaters. In addition to the substantive grounds for denial of the Section 401 certification requested by PolyMet for its NorthMet copper-mine project, the MPCA should deny the Draft 401 Certification because it is premature due to substantial unresolved controversy regarding the Draft NPDES/SDS permit, the absence of an up-to-date Clean Water Act Section 404 application, let alone a draft permit, and due to the lack of any evaluation of the effects of Poly Met Project water appropriations on Upper Partridge River stream resources that may include degradation of class 2 beneficial uses and may require mitigation. MPCA precedent justifies denial of Section 401 certification until such time as the NPDES/SDS process is complete. In 2011, the MPCA was asked to certify under Section 401 an Aitkin AgriPeat operation that would have opened several hundred acres of wetlands for harvesting. Public comments on the draft permit raised questions about the adequacy of its limits on mercury effluent, and the MPCA determined that certification was premature until the permitting concerns had been resolved: At this time, the MPCA is unable to provide the requested Section 401 Water Quality Certification, which would indicate that the proposed project can reasonably be anticipated to comply with the applicable state water quality standards ... The process for issuing the required MPCA NPDES/SDS permit for this project, which would regulate the project's proposed wastewater discharges to ensure compliance with the applicable water quality standards, has not yet concluded (due, in part, to substantive comments received on the draft permit placed on public notice.450 The MPCA also found that Section 401 certification was premature due to the ongoing process not yet completed to address compensatory wetland mitigation with the U.S. Army Corps of Engineers ("Army Corps"). Certification was denied without prejudice. The MPCA did not make a final determination on the project's ability to comply with water quality standards, and allowed the applicant to reapply for certification after "the required wastewater permitting process is concluded" and "after a final proposed compensatory mitigation plan is furnished."451 In the Poly Met Project case, the MPCA has only recently placed the Draft NPDES/SDS Permit on public notice. As reflected in the preceding pages of substantive comments and our request for a contested case hearing, the NPDES/SDS process for the Poly Met Project is far from concluding. The discharges proposed in the current Draft Permit would not comply with Minnesota or federal law, and it remains to be seen whether the Draft Permit can be modified so that the Poly Met Project could be certified under Section 401. The time is not ripe for Section 401 certification. The MPCA noted in its 401 Certification Fact Sheet that FolyMet has arranged for and secured regulatory approvals for the purchase of 1282 wetland mitigation credits from the Superior Mitigation Bank, and has secured the option to purchase up to 1,800 wetland credits , hich the MPCA perceived were suffi ient to address wetland mitigation requirements.452 However the MPCA did not suggest that the additional purchase option had obtained regulatory approval.	The statute does not require the completion of an NPDES permit, and in many cases a 401 certification is issued in the absence of an NPDES permit. In addition, The comment does not identify a legal basis requiring a draft 404 permit to be available at the time of 401 certification.	This does not raise an issue of fact. This raises a legal question regarding the ability to certify a proposed project under 33 U.S.C. § 1341. Because there is no issue of fact, and no specific new facts were presented, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* .
543-EU	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	The MPCA is undoubtedly aware that there is no current Section 404 application for the PolyMet Project, and that the last Revised Wetland Permit Application for the PolyMet NorthMet Project was submitted on August 19, 2013. The August 19, 2013 Application, for which a second public notice was issued in November 2015, contained a description of mitigation requirements and a proposal for wetland mitigation that are substantially different from PolyMet's current proposal,453 summarized in the MPCA's 401 Certification Fact Sheet. No current Section 404 permit application has been submitted by PolyMet and no public notice has been provided for the new assessments of wetlands mitigation requirements and the new compensatory mitigation plan. The Army Corps is continuing to work on a compensatory mitigation plan for wetlands that will be directly or indirectly impacted by the Poly Met mine project.	The MPCA evaluates the application materials submitted to draft a 401 certification. Any discrepancies between the proposals to the USACE and MPCA must be resolved before 404 permit issuance. If USACE found that the MPCA's 401 Certification required mitigation differing from that required by USACE, the final 404 permit (which incorporates the 401 Certification conditions) would either require both the 404 mitigation and the 401 mitigation; would be adjusted to be consistent with the 401 Certification; or would not be issued if such issues could not be resolved. The 401 Certification need not wait for USACE updates, and indeed, must precede issuance of a 404 permit.	This does not raise an issue of fact. This raises a legal question regarding the ability to certify a proposed project under 33 U.S.C. § 1341. Because there is no issue of fact, and no specific new facts were presented, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A); *see Red Wing; Amendment No. 4* .
543-EV	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	However, after environmental review was completed, Poly Met submitted requests for water appropriations permits reflecting uses of water from the Partridge River watershed an order of magnitude greater than the appropriation that had been described in the final environmental impact statement for the Poly Met Project. In the FEIS, the highest aggregated estimate of appropriations from the mine site Partridge River headwaters watershed was 2,845 gallons per minute (gpm).454 The total of all draft Poly Met Water Appropriations Permits from the Partridge River headwaters watershed for the mine site is now 28,820 gpm.455	MPCA assessed existing uses in the Partridge River (AUID 04010201-552) in 2011. The appropriations permit requires listing the maximum possible water usage, which is not equal to the actual anticipated usage necessary for the project. In addition, condition 4(b) of the 401 certification requires evaluation of existing and beneficial uses if hydrology changes by 20 percent, and mitigation if there is any loss.	This raises an issue of fact, but it does not create a reasonable basis for dispute and a contested case hearing would not aid the commissioner. Because there is no reasonable basis underlying the claimed dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
543-EW	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Our comments on the Draft PolyMet Water Appropriations Permits requested an evaluation of whether the proposed mine site appropriations would assure an adequate supply of water in the Partridge River headwaters, would preserve groundwater use for future generations, and would not harm ecosystems under applicable State law in Chapter 103G. We also requested, under applicable law, that the Minnesota Department of Natural Resources (DNR) set a protective elevation for th Upper Partridge River and define periods of low flows when during which appropriations that remove at r from the head aters watershed must be disallowed.456	This is beyond the scope of the 401 certification. The conditions of the appropriations permit are under the jurisdiction of the DNR. In addition, the comment does not have a reasonable basis because it misconstrues the appropriations permit application. The appropriations permit requires identification of the maximum possible water usage, which is not equal to the actual usage. Simultaneous maximum use from each of the many appropriation sources is unlikely.	This may raise a factual issue, but the commissioner does not have jurisdiction to determine adequacy of conditions in the appropriations permit. The MPCA commissioner cannot grant a hearing on the water appropriation permit contents. Minn. R. 7000.1900, subp. 1(B). Because there is not a reasonable basis underlying the claimed dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).

543-EX	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In addition to the requirements pertinent to DNR water appropriations permits, Minnesota water quality standards set a narrative standard for all class 2 waters that includes degradation resulting from "material alteration" of the physical qualities of a water body "to the extent that attainable or previously existing beneficial uses are actually or potentially lost. "457 We know of no analysis done since Poly Met applications for water appropriation permits were filed to determine whether the proposed appropriation would result in a material alteration of the Partridge River headwaters so that attainable or previously existing beneficial uses are actually or potentially lost.	The conditions of the appropriations permit are under the jurisdiction of the DNR. In addition, the 401 certification requires assessment of effects on uses for any hydrology change of greater than 20 percent, so there is not a reasonable basis to conclude that the appropriation can remove all flow from the river.	This may raise a factual issue, but the commissioner does not have jurisdiction to determine adequacy of conditions in the appropriations permit. The MPCA commissioner cannot grant a hearing on the water appropriation permit contents. Minn. R. 7000.1900, subp. 1(B). Because there is not a reasonable basis underlying the claimed dispute, a contested case hearing would not aid the commissioner. Minn. R. 7000.1900, subp. 1(C).
543-EY	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	Until this analysis is done, the MPCA has no assurance that PolyMet's proposed water appropriations from the Partridge River headwaters will comply with either water appropriations statutes or water quality standards. It is possible that degradation of the beneficial use of the Upper Partridge River for aquatic life will preclude permitting or Section 401 certification. It is possible that changes will need to be made in the Poly Met Project plan in order to comply with Minnesota law. At the least, it is possible that the Project will require a plan for stream mitigation to replace functions lost or impaired due to consumption of water resources in the Partridge River headwaters. Hydrologic information provided in an appendix to the Cross-Media Analysis done for Poly Met to support Section 401 certification suggests there are some discrepancies in assessment of hydrology and water consumption in the Partridge River headwaters where the mine site is proposed. The Hydrology Summary confirms, "Water that will be captured in the mine water system will be removed from the Partridge River watershed, resulting in a reduction in runoff and baseflow to the Partridge River during operations. '458 The Hydrology Summary states that average annual flow under existing conditions at SW004 in the Upper Partridge River south of the proposed mine site is 13.97 cubic feet per second (cfs), which will be reduced to 13.37 cfs during the time of maximum mine site impacts.459 However, as noted above, PolyMet's applications for water appropriations permits and the draft permits prepared in response to these applications would authorize 28,820 gallons per minute in appropriations from the mine site, equivalent to 64.21 cfs. Although it is anticipated that Poly Met, on average, would consume less water than allowed under the these permits, in their most recent drafts PolyMet's water appropriations permits would allow the Company to consume more than four-and-a-halftimes the average annual flow of water in the Partridge River at the mine site. The MPCA has already recognized that, under existing conditions, the Partridge River headwaters have a 7Q 10 flow (lowest 7-day average that occurs once every 10 years) of zero, so effluent limits cannot be protective if they allow any dilution of discharged pollutants. 460 In its detailed comments during environmental review, the EPA explained that "projected increased contaminant concentrations above baseline or 'no action' levels" and "the concomitant effect of projected lower stream flows" should be considered together to determine whether the Poly Met project would degrade water quality.461	See response to Comment 543-EX.	See response to Comment 543-EX.
543-EZ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	In a prior case involving headwaters stream impacts resulting from the expansion of U.S. Steel's Minntac mine, the MPCA denied Section 401 certification without prejudice until it could be determined whether stream impacts complied with state water quality law. The MPCA emphasized that tream mitigation for the project was required and that stream mitigation issues must be resolved before a 401 certification could be granted.462 WaterLegacy has provided the MPCA with compelling substantive grounds to deny issuance of the Poly Met Draft NPDES/SDS Permit and to deny Section 401 certification for the Poly Met copper-nickel mine project. In addition, based on the current state of the record, we believe that issuance of Section 401 certification is premature. Substantive issues pertaining to the NPDES/SDS permit are highly contested, the Section 404 application has not been made current, and new issues raised by PolyMet's applications for water appropriations permits have yet to be analyzed to determine whether appropriations from Partridge River headwaters would comply with either DNR permitting law or Minnesota narrative water quality standards.	This comment does not raise a factual issue, it merely opines a legal perspective on the relationship between the 401 certification process and NPDES permitting requirements. The comment does not cite a legal basis for delaying the certification or permit. The comment does not explain why the project-specific letter cited must apply to every instance.	Because there is no factual issue in dispute, a contested case hearing is not appropriate. Minn. R. 7000.1900, subp. 1(A). Also see response to Comment 543-ET.
543-FA	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As detailed in Section 2 of the preceding comments, Petitioner disputes whether the Draft NPDES/SDS Permit violates the Clean Water Act and its implementing regulations by failing to perform reasonable potential analysis or establish permit conditions to prevent discharge to surface water through hydrologically connected groundwater from causing or contributing to an exceedance of Minnesota water quality standards. In addition to questions of federal and state law under the jurisdiction of the commissioner, material facts defined more thoroughly in the comment text are disputed, including but not limited to the following: A) whether Poly Met Project mine site and plant site discharge to surface water through hydrologically connected groundwater has the reasonable potential to cause or contribute to an exceedance of Minnesota water quality standards, particularly although not exclusively as a result of uncontained tailing seepage and Category 1 waste rock stockpile seepage;	See Response to Comments 543-AB through 543-AY, particularly 543-AB through 543-AI.	See Response to Comments 543-AB through 543-AY, particularly 543-AB through 543-AI.
543-FB	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	B) whether the Draft NPDES/SDS Permit contains specific and enforceable conditions and limits to prevent Poly Met Project discharge from causing or contributing to exceedance of Minnesota water quality standards as a result of discharge to surface water through hydrologically connected groundwater.	See Response to Comments 543-AB through 543-AY, particularly 543-AB through 543-AI.	See Response to Comments 543-AB through 543-AY, particularly 543-AB through 543-AI.

543-FC	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As detailed in Section 3 of the preceding comments, Petitioner disputes whether the monitoring proposed in the Draft NPDES/SDS violates the Clean Water Act and · Minnesota law due to its insufficiency to detect if and when Poly Met Project discharge through groundwater causes or contributes to violations of Minnesota water quality standards or results in unpermitted discharge. In addition to questions of federal and state law under the jurisdiction of the commissioner, material facts defined more thoroughly in the comment text are disputed, including but not limited to the following: A) whether monitoring locations are insufficient to detect where and when Poly Met contaminants discharged through groundwater seepage daylight to surface waters of the United States;	See Response to Comments 543-AZ through 543-BH.	See Response to Comments 543-AZ through 543-BH.
543-FD	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	B) whether monitoring locations are insufficient to detect whether PolyMet direct discharge to surface waters causes or contributes to exceedance of water quality standards or violations ofNPDES/SDS permit conditions;	See Response to Comments 543-AZ through 543-BH, particularly 543-BB through 543-BH.	See Response to Comments 543-AZ through 543-BH, particularly 543-BB through 543-BH.
543-FE	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	C) whether monitoring locations are insufficient to detect leakage from lined sources of contamination and propagation of Poly Met Project contaminants through the surficial aquifer; and	See Response to Comments 543-AZ through 543-BH, particularly 543-BB through 543-BH.	See Response to Comments 543-AZ through 543-BH, particularly 543-BB through 543-BH.
543-FF	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	D) whether monitoring parameters are insufficient or inappropriate to detect failure of seepage containment systems at the tailings waste facility and Category 1 waste rock stockpile and to detect northward flow of PolyMet pollutants.	See Response to Comments 543-AZ through 543-BH, particularly 543-BG.	See Response to Comments 543-AZ through 543-BH, particularly 543-BG.
543-FG	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As detailed in Section 4 of the preceding comments, Petitioner disputes whether the Draft NPDES/SDS permit for the Poly Met Project violates the Clean Water Act and Minnesota law by failing to set limits for direct discharge to surface water with the reasonable potential to cause or contribute to violation of Minnesota water quality standards. In addition to questions of federal and state law under the jurisdiction of the commissioner, material facts defined more thoroughly in the comment text are disputed, including but not limited to the following: A) whether PolyMet has demonstrated the efficacy of the proposed water quality treatment at the large scale needed and for the influent resulting from its coppernickel mining Project;	See Response to Comments 543-BO through 543-CJ, particularly 543-BQ through 543-BV.	See Response to Comments 543-BO through 543-CJ, particularly 543-BQ through 543-BV.
543-FH	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	B) whether there is a reasonable potential that mercury in PolyMet Project direct discharge to surface water will exceed the Lake Superior Basin water quality standard and contribute to mercury impairment in receiving waters due to faulty influent assumptions and the lack of mercury removal technology in the proposed wastewater treatment system;	See Response to Comments 543-BO through 543-CJ, particularly 543-BX through 543-CB.	See Response to Comments 543-BO through 543-CJ, particularly 543-BX through 543-CB.
543-FI	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	C) whether there is a reasonable potential that specific conductivity in Poly Met Project direct discharge to surface water will exceed Minnesota narrative water quality criteria precluding toxicity and will contribute to fishes impairment in receiving waters; and	See Response to Comments 543-BO through 543-CJ, particularly 543-CC through 543-CH.	See Response to Comments 543-BO through 543-CJ, particularly 543-CC through 543-CH.
543-FJ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	D) whether the Draft NPDES/SDS would allow direct discharge to surface waters from existing L TVSMC tailings that have the reasonable potential to cause or contribute to exceedance of Minnesota water quality standards.	See Response to Comments 543-BO through 543-CJ, particularly 543-CI through 543-CJ.	See Response to Comments 543-BO through 543-CJ, particularly 543-CI through 543-CJ.
543-FK	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As detailed in Section 5 of the preceding comments, Petitioner disputes whether the Poly Met Project is likely to cause or contribute to violations of Minnesota water quality standards for mercury, increase mercury impairments, and degrade water quality by increasing mercury levels, thus precluding NPDES permit issuance or assurances needed for 401certification under federal and state law. In addition to questions of federal and state law under the jurisdiction of the commissioner, material facts defined more thoroughly in the comment text are disputed. Each of the disputed material facts A) through G) described below would demonstrate that the Poly Met cross-media analysis on which the MPCA relies for its Draft 401 certification is unsound, so that the MPCA has no reasonable assurance that the Poly Met Project would not result in violations of water quality standards, and endanger the environment and human health: A) whether the exclusion of impacts of sulfate and mercury seepage from groundwater renders the cross-media analysis of mercury unsound;	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-FL	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	B) whether the failure to evaluate the impacts of sulfate and mercury in surface water discharged or released to wetlands renders the cross-media analysis of mercury unsound;	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

543-FM	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	C) whether the failure to analyze the effects of changes in wetland and stream hydrology on mercury release, methylation and transport renders the cross-media analysis of mercury unsound;	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-FN	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	D) whether the exclusion of impacts on mercury methylation from multiple sources of sulfur and sulfide deposition at both the mine site and the plant site renders the crossmedia mercury analysis unsound;	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-FO	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	E) whether exclusion of mine site mercury deposition, water bodies closest to mercury sources, and mercury deposition to wetlands in analyzing mercury and methylmercury increases renders the cross-media analysis of mercury unsound;	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-FP	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	F) whether the misleading analysis of mercury methylation in a single "wetland of interest, both because of distorting exclusions and because of its singularity, renders the cross-media analysis of mercury unsound;	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-FQ	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	G) whether modeling and analysis that systematically minimize the cumulative potential for mercury and methylmercury impacts renders the cross-media analysis of mercury unsound; and	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-FR	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	H) whether as a result of the above there is a reasonable potential that Poly Met Project effects on sulfate and mercury in groundwater seepage, sulfate and mercury in surface water discharged or released to wetlands, hydrological impacts including the drying and wetting of high methylating wetlands, and air deposition of both mercury and various forms of sulfur particulates and gases will have a cumulative effect to increase mercury in the water column and methylmercury in fish tissue in receiving waters, including Great Lakes Basin waters that are already impaired due to excessive levels of this bioaccumulative substance of immediate concern.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
543-FS	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	As detailed in Section 6 of the preceding comments, Petitioner disputes whether the antidegradation analysis performed for the PolyMet Project with respect to pollutants other than mercury and methylmercury is inadequate for NPDES/SDS permitting or for Section 401 certification. In addition to questions of federal and state law under the jurisdiction of the commissioner, material facts defined more thoroughly in the comment text are disputed, including but not limited to the following: (A)whether the failure to analyze impacts from release of pollutants to groundwater and surficial aquifers renders the antidegradation analysis inadequate to determine whether the Poly Met Project would degrade surface water and/or groundwater; and	See Response to Comments 543-EH through 543-ES, particularly 543-EH through 543-EM.	See Response to Comments 543-EH through 543-ES, particularly 543-EH through 543-EM.
543-FT	Paula Goodman Maccabe	Just Change Law Offices/Water Legacy	(B) whether the failure to consider best practices to prevent and minimize degradation, including dry stack tailings, liners and relocation of a concentrated waste facility from an unstable foundation, renders the antidegradation analysis inadequate for NPDES/SDS permitting or to support Section 401 certification.	See Response to Comments 543-EH through 543-ES, particularly 543-EN through 543-ES.	See Response to Comments 543-EH through 543-ES, particularly 543-EN through 543-ES.
544	BLANK	Citizen	Sulfide Mining is: A Type of mining that pollutes local waters with acid-mine drainage	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
545	BLANK	Citizen	Relies on outdated technology and a flawed tailings basin	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

546	BLANK	Citizen	Long-term risks to health and safety outweigh short-term benefits	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
547	BLANK	Citizen	Operational for 20 years BUT will need active water-treatment plants for 100's of years beyond!	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
548	Kevin Malmquist	Citizen	I attempted to submit my comments on the MPCA permits for the Polymet project at 6: 15pm CDT on Friday 3/16/18 and was informed the comment period had ended. This was noted as the final day comments would be accepted. It seems odd in the digital age to end the online day prematurely when comments can be accepted automatically throughout the evening unattended. In the hopes that my comment can still be viewed and/or put into the public record, I'm mailing it directly to you. If you need any more information to make it count, please don't hesitate to call me.	The public notice for the draft permit clearly states on page 1 that the public comment period ends at 4:30 p.m. on March 16, 2018.
549	Kevin Malmquist	Citizen	My comment is as follows: Many of my friends and family didn't make it to the public hearings and will likely not be commenting here. This is not because they are okay with the PolyMet mining project, but because they broadly assume that the MPCA exists to be good stewards and protectors of MN. I would have stood for myself, them, and the other 74% of MN that oppose this project at the hearing in Duluth, but was not given a chance. Too many others were bussed in from the Range and flooded the commenting opportunities. So, I would like to state my opposition to all MPCA permits and certifications for the PolyMet project here.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
550	Kevin Malmquist	Citizen	It seems to me beyond foolhardy to give the green light to PolyMet. I've heard a lot about "risk" and whether or not it is worth the risk. When the EPA concludes that the pollution control systems failure rate for sulfide mines is 93% during operation and 100% after the mine closes, how is that "risk"? That is CERTAINTY! I've also heard a lot of talk about "technologies" and "innovation", but the wet tailings dam waste storage method is a 1950s era "technology" that has had decades to show that it will fail, time and time again. Is this really innovation good enough for Minnesota?	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
551	Kevin Malmquist	Citizen	There's a reason we aren't being given adequate financial assurance ... it's because this dam WILL FAIL and this project will pollute our land and water long into a future we cannot comprehend. MN will end up footing the bill and the monetary and public health cost will be far more than the value of anything mined. It would probably be cheaper for MN to give a living wage for a couple decades to the 300 or so families on the Range that the mine would employ. There is no risk here, and what is certain is pollution in perpetuity. Is this the legacy you want to leave from your time in public service?! Is this what you want to let happen through YOUR DECISIONS?	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
552	Kevin Malmquist	Citizen	I think it might be easier for me to take this position having grown up next to a Superfund site in the Gary/Morgan Park area of Duluth. We were raised with warnings not to swim in the St. Louis River or eat the fish. But of course, we did. We also occasionally played in the sludge piles US Steel abandoned and left behind broken fences and signs to not trespass. Now here we are finally trying to do right, cleaning up that mess and others in the St. Louis River Estuary ... large sums of money and effort spanning dozens of organizations and untold hours of person-power and you are setting us up for the next disaster before we are even finished. Please, reject this and all permits and certifications for the PolyMet Project and do the right thing for MN and for our children and grandchildren.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
553	Libby Bent, Deanna Erickson, JT Haines, Bridget Holcomb	Duluth for Clean Water	Please find enclosed an urgent new report detailing how the PolyMet Inc. NorthMet permit application did not adequately consider increasing precipitation resulting from climate change or the impact of snow melt in their tailings basin and dam design. The members of Duluth for Clean Water call for the PolyMet permit to mine to be denied. We are sharing the findings of this report in the hopes that you will join us.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.

554	Libby Bent, Deanna Erickson, JT Haines, Bridget Holcomb	Duluth for Clean Water	Climate change has already resulted in marked decreases in extreme cold and increasing rain in every month of the year in Northern Minnesota. Duluth for Clean Water sought to understand how the PolyMet proposal accounts for anticipated climate change impacts in the future. With indefinite water treatment planned at the copper/nickel mine tailings basin, due diligence requires consideration of the impacts of long-range climate trends on the tailings basin and dam. This is absolutely essential to protect downstream and nearby communities. Through a grant from the Indigenous Environmental Network, we engaged respected hydrologist and engineer, Tom Myers, Ph.D1 , to analyze the underlying assumptions on precipitation events as they relate to the PolyMet permit applications.	The MPCA did not attempt to quantify the specific effects that climate change may have on wastewater flows at the project. However, the MPCA did consider storm event precipitation in its review of the permit application, particularly as it relates to the potential for sump and pond overflows to result in an unauthorized discharge. For example, the review indicated that mine water sumps and ponds typically have normal operating capacity for the 100-year, 24 hour precipitation event (approximately 5.2 inches), and have additional capacity within the freeboard as a safety factor. In the case of a larger 500-year or 1000-year storm event, water can be transferred to the Equalization Basins if needed, where sufficient freeboard capacity is available to contain the aggregate volume of a 1000-year storm event (estimated at 7.0 inches of precipitation in 24 hours) without an overflow. Overflows resulting from large storm events at other mine site features would flow to the mine pits where it would be removed for treatment as mine pit dewatering. For areas where an overflow could result in an unauthorized discharge, such as at the FTB seepage containment system and the mine site equalization basins, the permit requires that redundant pumping capacity be available.
555	Libby Bent, Deanna Erickson, JT Haines, Bridget Holcomb	Duluth for Clean Water	The resulting report shows that PolyMet did not plan for climate change impacts in its tailings basin design. The report (enclosed) compares the probable maximum precipitation (PMP) predicted in the proposed PolyMet tailings basin alongside local climate change models for Biwabik, MN. Not only did PolyMet fail to account for increasing precipitation resulting from climate change, the applicant failed to consider the impacts of melting snowpack at all. The PMP reflected in PolyMet's proposed tailings basin design is only 55°/o of the PMP when both snowpack and increasing heavy rainfall are considered (38 inches versus 68 inches in 72 hours). Such a discrepancy would significantly increase the chance of dam failure, either by overtopping, piping, or foundation failure.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.
556	Libby Bent, Deanna Erickson, JT Haines, Bridget Holcomb	Duluth for Clean Water	This is unacceptable and dangerous to Minnesota, especially downstream communities. The agencies charged with protecting Minnesotans and our portion of the Lake Superior watershed have a duty to act. By not accounting for accurate precipitation events and by disregarding snowpack, the NorthMet permit as drafted is inadequate. Please join Duluth for Clean Water in speaking publicly about these concerns and request the permit be denied. Demand action from both the permitting agencies and our local, state and federal elected officials. The safety of our communities and the long-term future of Lake Superior lies in our hands today.	See response to comment 554.
557	Libby Bent, Deanna Erickson, JT Haines, Bridget Holcomb	Duluth for Clean Water	The attached report to this comment, "Risk Analysis of Probable Maximum Flood and Climate Change at the PolyMet Flotation Tailings Basin", details possible risks at the tailing basins as a result of climate change.	Comment noted.
558	197 Signatures	Citizen	Dear Commissioner Landwehr, Commissioner Stine, and Governor Dayton, These comments are submitted on behalf of the persons signing below. We also seek to remind you of the many comments from medical and health professionals that have been disregarded during the past four years in regards to PolyMet's EIS. During the past four years, medical associations representing over 30,000 physicians and health professional have tried repeatedly to have our voices heard regarding the need for an independent and transparent analysis of health risks, including a Health Impact Assessment (HIA), prior to the consideration of permits for the PolyMet project. These appeals for objective and open consideration of health impacts of the PolyMet mine project have been made by the following: Minnesota Medical Association (see attached letter) MAFP Minnesota Academy of Family Practice (see attached letters) Minnesota Nurses Association (see attached letter) Minnesota Public Health Association (see attached letters) Minnesota Department of Health (see attached letter).	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment. The issue related to a health study was addressed as part of the EIS process.
559	197 Signatures	Citizen	The final environmental impact statement (FEIS) for the PolyMet project was deemed "adequate" by the Minnesota Department of Natural Resources (DNR) even though no HIA was completed and minimal information was provided regarding the effects on human health from the impacts of first copper-nickel sulfide mine project ever permitted in Minnesota.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

560	197 Signatures	Citizen	Since the FEIS was completed, there has been no independent or transparent process to evaluate health impacts from air emissions and seepage of pollution from the PolyMet project, which are likely to disproportionately impact tribal and low-income communities, fetuses, infants and children. The Minnesota Pollution Control Agency (MPCA) has allowed PolyMet to propose its own studies without involving the medical community or the community of patients we serve.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
561	197 Signatures	Citizen	On many of the issues we raised as concerns during environmental review, the PolyMet project has not improved. In fact, it seems that the agencies have allowed PolyMet to take several steps backward. Although the DNR emphasized when deeming the FEIS adequate that PolyMet had promised to capture more than 99% of its polluted seepage from the tailings basin and more than 95% of its polluted seepage from the permanent waste rock pile at the mine, its draft permits place no limits on polluted seepage and require no enforceable standards for performance for any seepage capture.	See response to Comment Water-342.
562	197 Signatures	Citizen	The MPCA draft water pollution permit provides no control over contaminated wastewater that is collected in the tailings basin or waste rock pile, then seeps from groundwater into wetlands and streams. The MPCA, whether in its draft permit or its draft certification, seems to ignore one of the biggest threats posed by copper-nickel mining: the seepage of sulfates and toxic metals into both groundwater and connected surface water. MPCA doesn't even propose to monitor the nearest surface water where seepage is likely to cause violations of water quality standards.	See response to Comment Water-510.
563	197 Signatures	Citizen	The DNR has not required a modern dry stack tailings disposal method to reduce the risk of dam failure, failure which would cause downstream contamination with lead, arsenic and manganese as well as sulfates that increase mercury methylation. The DNR also hasn't required any study of the effects on downstream water quality, drinking water, mercury methylation and bioaccumulation resulting from potential dam failure at the PolyMet wet slurry tailings basin. This type of information is critical to assessment of health risks as well as downstream ecological and financial risks.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. This comment also poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
564	197 Signatures	Citizen	We know that contamination of our water supply with sulfates and heavy metals (see attached letter from Dr. Saracino) would have the potential to cause permanent damage to the brains and nervous system of our unborn children, infants and children.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
565	197 Signatures	Citizen	Changes allowed by the DNR since the PolyMet FEIS, such as eliminating the wastewater treatment facility at the mine site, seem to make the project more, not less, of a risk to water quality and human health. Neither DNR nor MPCA has required PolyMet to disclose just how contaminated each potential source of pollution at the mine site and tailings site will be.	See response to Comment Water-511. The GoldSim modeling conducted as part of the EIS specifically considered the flow rates and chemistry from the various project sources. The results of this modeling then informed the design of the different components of the WWTS; these were described in the WWTS Design and Operation Report that was submitted as part of the NPDES permit application.
566	197 Signatures	Citizen	Rather than being reassuring, the DNR and MPCA draft permits and certification of the PolyMet mine increase our concern that human health will be harmed in our communities which are downstream from the proposed PolyMet project. These permits set no enforceable standards to control polluted seepage and fail to require modern technology to reduce the risk of tailings pollution and dam failure.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
567	197 Signatures	Citizen	The scale and permanence of threats from PolyMet copper-nickel mining in the headwaters of the St. Louis River, America's largest tributary to Lake Superior, require a different approach. Minnesota's government agencies must not allow such a risky endeavor based on poor quality information and unprotective conditions. The weak draft permits proposed by the DNR and MPCA would protect PolyMet, not human health. They would be an egregious betrayal of the trust the people of Minnesota have placed in the very agencies that are meant to protect us. We oppose the draft permits and certifications currently proposed by the Minnesota Department of Natural Resources and Minnesota Pollution Control Agency for the PolyMet copper-nickel mine project.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
568	Minnesota Nurses Association	Minnesota Nurses Association	This attachment to Multiple-181 is a letter which was submitted on March 10, 2014 concerning the SDEIS.	Comment/submittal noted.
569	Donald M. Jacobs	Minnesota Medical Association	This attachment to Multiple-181 is a letter which was submitted on September 25, 2014 requesting a health risk assessment to be conducted.	Comment/submittal noted.

570	M. Tariq Fareed	Minnesota Academy of Family Physicians	This attachment to Multiple-181 is a letter which was submitted on July 22, 2015 requesting a health risk assessment to be conducted.	Comment/submittal noted.
571	M. Tariz Fareed	Minnesota Academy of Family Physicians	This attachment to Multiple-181 is a letter which was submitted on July 1, 2015 requesting a health risk assessment to be conducted.	Comment/submittal noted.
572	Dania Kamp	Minnesota Academy of Family Physicians	This attachment to Multiple-181 is a letter which was submitted on May 25, 2016 as a petition for rulemaking.	Comment/submittal noted.
573	Kristen Godfrey Walters	Minnesota Public Health Association	This attachment to Multiple-181 is a letter which was submitted requesting a health risk assessment to be conducted.	Comment/submittal noted.
574	Lindsey E.A. Fabian	Minnesota Public Health Association	This attachment to Multiple-181 is a letter which was submitted on June 17, 2016 as a petition for rulemaking.	Comment/submittal noted.
575	Edward P. Ehlinger	Minnesota Department of Health	This attachment to Multiple-181 is a letter which was submitted on March 13, 2014 concerning the SDEIS.	Comment/submittal noted.
576	Marlyn Swanson	Citizen	If it is so important to gain copper & other minerals her I ask are our electronics recycled in USA or China? If this is such a "good deal" for jobs here, why is a foreign country getting the profit?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
577	Marlyn Swanson	Citizen	Has anyone looked at previous work sites to see resulting pollution? Will this be worth destroying our beautiful waters, forests, & critters?	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
578	Kathleen Anumn	Citizen	Sulfide Mining is: A Type of mining that pollutes local waters with acid-mine drainage	Comment noted. General comments related to water quality and flow were considered during the environmental review process. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
579	Kathleen Anumn	Citizen	Relies on outdated technology and a flawed tailings basin	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
580	Kathleen Anumn	Citizen	Long-term risks to health and safety outweigh short-term benefits	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
581	Kathleen Anumn	Citizen	Operational for 20 years BUT will need active water-treatment plants for 100's of years beyond!	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
582	Jane L. Soukup	Citizen	We respectfully request that you deny the NorthMet Mining Project Water Quality Permit for the following reasons: •As stated by the Environmental Protection Agency, sulfide mining is the most toxic industry and creates a much greater risk than iron ore mining. •It is a well-documented fact that sulfide mining has never been done without a breach. Never. •This draft permit proposes the same wet slurry storage method that caused a catastrophic collapse in the Mount Polley mine project in British Columbia, Canada in 2014 and the Samarco project in Brazil.	Alternatives for tailings disposal were addressed during the EIS process. Dam safety issues are addressed in the DNR's dam safety permit

583	Jane L. Soukup	Citizen	•This draft permit would allow PolyMet to use billions of gallons of water per year that would drain into the headwaters of the Lake Superior Water Basin without adequate protection.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
584	Jane L. Soukup	Citizen	•The Environmental Impact Statement provided by PolyMet concedes that water treatment from this mining proposal would be required for 200 years and the overall site for 500 years. Are we, as constituents of the MN DNR and homeowners near this proposed mine, to believe that PolyMet will continue to pay for this for the entire 500 years???? We think not!	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
585	Jane L. Soukup	Citizen	•According to the Minnesota Voter's Environmental Priorities Survey in February 2017, 74% of those polled oppose sulfide mining and nearly half are very concerned about rollbacks in environmental laws.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
586	Jane L. Soukup	Citizen	•In his State of the State address on February 21, 2018, proposed $477 million in clean water initiatives, which includes $214 million for the Clean Water Fund and supports efforts to protect sensitive groundwater and drinking resources. Please protect our water first... before it is put at risk! Protecting clean water should be our first and foremost objective.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
587	Jane L. Soukup	Citizen	•In the March-April, 2018 issue of the Minnesota Conservation Volunteer magazine, a magazine published by MN DNR, the article "The Long Reach of Legacy" made the following statement regarding the November, 2008 Clean Water, Land and Legacy Amendment: "More than $2.2 billion has been allocated as a result of the amendment, which increased the state sales tax from 6.5 percent to 6.875 percent in July 1, 2009 ". It goes on to list the projects that this money has been allocated to, such as "reduce harmful drainage into waters" and "monitoring aquifers to ensure the quality of drinking water". As taxpayers in the State of Minnesota, we vehemently oppose any approval of this or any sulfide mining project that will potentially require our tax dollars to clean up their mess! DENY THE NORTHMET MINING PROJECT WATER QUALITY PERMIT, AND PROTECT THE CLEAN WATER AND LAND THAT WE HAVE FOUGHT FOR SINCE NOVEMBER OF 2008!	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
588	Enrique Gentzsch	Citizen	Dear Governor Dayton, Congratulations, Governor Dayton, on your conversion to openly support the nightmare PolyMet Mining project for Da Range of Minnesota. The promise of "JOBS, JOBS, JOBS" is just too much of a carrot to resist, even for a Democratic Party Governor like you, Sir. This is very disappointing since it shows that you have given up advancing the claim of your political party's name, the party "OF, BY and FOR the PEOPLE", or democracy.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
589	Enrique Gentzsch	Citizen	Protecting the Waters is really the highest order of obligation in any system of government, as just one name will confirm it: Flint, MI. The government of the State of Michigan totally failed its people, and for what goal? It definitely was not democracy!	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
590	Enrique Gentzsch	Citizen	You have revealed your hand for the copper-nickel mining in northeast Minnesota. You have also made a judgement against the protection of our national Waters, by the release of the sulfides from such mining. The impact will be inevitable, Governor Dayton, as you approve such economic recklessness. It is regrettable that you moved so seamlessly into the corporate-dominated political domain, and away from the PEOPLE!	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
591	Enrique Gentzsch	Citizen	But then, your DNR Commissioner, Tom Landwehr, does not grasp the concept of the "Defense of the Land", even though that is what his name means in German, which includes "our Waters". As an active MPCA employee in Water Quality on a fish kill case, I met with DNR staff who accused me of leniency for the perps, even though the end result yielded more benefits to the State Waters. Where are these DNR employees now, when the threat from this mining to the Waters of Minnesota, and the nation, are irreversible?	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
592	Enrique Gentzsch	Citizen	It appears that our corporate-dominated politics is now willing to gamble to write the epitaph for human existence on this planet. You, Governor Dayton, took the lead role in that playbook, with full-throated support from your DNR Commissioner, against the People! Will this be how you will be remembered by Minnesotans? "Governor Dayton, helped turn Minnesota [i.e., Land of the sky-blue Waters] into the "Land of beer-colored Acid Waters". That, Governor, is a truly unenviable remembrance for any caring human being.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.

593	Katie Krikorian	Citizen	It makes no sense to me that the Pollution control agency can give permission for copper-nickel-sulfide mining based only on the "beliefs" that It can and will be done safely and in a manner that won't pollute the air, land, and water around it. Scientifically, there is no reason to believe this. All the science points to guaranteed pollution, the question is only for how long and will there be enough money and effort to minimize what is sure to happen. Regardless, it will definitely destroy the life that currently lives in those forests and wetlands. The minute amount of metals per waste rock could be mined out of recycled technology, providing jobs and protecting our natural environment.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
594	Carla A. Arneson	Citizen	The One Hundred Mile Swamp was cut off before it crossed the Laurentian Divide on 10 Environmental Impact Statement (EIS) maps; these maps could have been corrected before the Final EIS was released to the public, but they were not. Minnesota's agencies have already allowed removal of bedrock pillars by taconite mining at the Peter Mitchell mine, essentially removing the Laurentian Divide. If permitted, PolyMet's toxic sulfide mining pollution could flow north, not only through the Peter Mitchell pit to Birch Lake, but also by way of the One Hundred Mile Swamp, following the directional flow of groundwater determined by geologic rock types and their associated structures beneath the Laurentian Divide. The contaminant migration pathways have had little to no scrutiny in PolyMet's EIS, and cannot be known with any certainty without detailed onsite hydro-geologic investigations.	The potential for a north flow path in the groundwater from the mine site was evaluated in the EIS. The EIS stated that such flow was not likely but could not be conclusively ruled out and recommended that the issue of north flow be further addressed during permitting. The NPDES/SDS permit requires the monitoring of water levels from 11 bedrock wells and 8 surficial aquifer wells. These water level data, plus information collected during installation of the monitoring wells, will be used to assess for the future potential of north flow. It should be noted that north flow, were it to occur, would not take place until many years after mine closure when NorthMet mine pits refill with water, so sufficient time is available to assess the potential and implement mitigation, if needed, to prevent the north flow from occurring .	
595	Carla A. Arneson	Citizen	2."The BWCAW and Voyageurs National Park are located in different watersheds than the NorthMet Project area. Surface water flow and surficial groundwater flow from the NorthMet Project Proposed Action would not directly, indirectly, or cumulatively affect the water in these areas. Potential bedrock groundwater flow from the Mine Site north to the Northshore Mine, if determined possible through monitoring, would be prevented." (PolyMet) Prevented how? "Adaptive management strategy" is meaningless, unscientific, and makes all risk assessments invalid. All contamination management issues must have scientifically proven plans in place before permitting, not after.	Potential mitigation measures to prevent north flow through the bedrock aquifer are discussed on pages 58-59 of the DNR's Record of Decision on the EIS.	
596	Carla A. Arneson	Citizen	A mythical water mound will not stop contamination from seeping into the Peter Mitchell Pit to be released into Birch Lake-into the Kawishiwi River watershed-flowing to the Boundary Waters Canoe Area Wilderness. The entire PolyMet permit has been based on PolyMet not polluting two watersheds. Only polluting waters of the St. Louis River watershed, as if that was acceptable. Absolutely not the Kawishiwi River/Rainy River watershed! The people of Minnesota are being deceived with an unproven, improbable scenario and with altered maps of a significant wetland area at the NorthMet mining site.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
597	Carla A. Arneson	Citizen	3.PolyMet testwork showed that LTVSMC tailings leached arsenic; indicating the basin should not be disturbed, nor the tailings used for covers and dams, due to the high potential for toxic releases of arsenic to groundwater-releases above water quality standards. Documented elevated arsenic risks-discussed within the agencies at the beginning of the permitting process- were tied to the No Action Alternative. Yet the agencies went ahead with a plan to deliberately disturb the basin and use the tailings for other purposes. Was the public ever informed in the EIS of this serious arsenic issue? The No Action Alternative was the only valid choice from the beginning; it is still the only valid choice. (Or building a new tailings basin.) It is not scientifically valid to reuse the LTVSMC tailings basin for copper -nickel sulfide mining. Apparently, since the LTVSMC tailings basin is already leaking, the agency solution is to risk releasing high levels of arsenic-then add massive amounts of toxic sulfide mining waste to the already leaking basin-and then capture the basin's legacy pollution, including arsenic, at the same time that PolyMet collects and treats the entire overwhelming mess. Whenever that may be. It is delusional.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment. The permit includes an Operating Limit for arsenic, set at the water quality standard, for the discharge from the WWTS. (The WWTS treats the seepage captured by the FTB seepage containment system.)	

598	Carla A. Arneson	Citizen	4.Adding massive amounts of toxic sulfide mining pollution to an already leaking, polluted basin while risking the release of arsenic-then collecting everything-is scientifically impossible on such a scale. Where is the scientific proof, where has it been done on such a scale in a like environment? To experiment with Minnesota's waters is not in the best interest of the people of Minnesota. Requiring Cliffs Erie to put in a collection system and to clean up the mess it assumed responsibility for would have been the best choice for Minnesota. It is fiscally irresponsible for the state of Minnesota to permit sulfide mining. The monetary losses would far outweigh the gains. Our waters are Minnesota's most valuable resource, environmentally, economically, and strategically.	The effectiveness of the FTB seepage containment system was evaluated in the EIS. The permit has been revised to include the barrier design specifications (i.e., thickness, permeability) that were evaluated in the EIS and that it be constructed and operated so as to maintain an inward hydraulic gradient across the barrier. The containment systems function on the principle of maintaining an inward hydraulic gradient across the barrier wall that is part of the system design. If the hydraulic gradient is inward, hydraulic head is greater outside the basin and water cannot escape -- instead, water will tend to flow into the capture system. The Modflow modeling conducted for the EIS indicated that the capture efficiency for both systems would be in excess of 90% and the subsequent GoldSim modeling indicated that degree of capture would be sufficient to protect downgradient surface and ground water quality. See FEIS at 5-7. The MPCA has revised the language of the permit to state that if an inward gradient is not reestablished within 14 days of detection of an outward gradient, it is a violation of the permit. The permit also requires that the effectiveness of the seepage capture system be evaluated on an on-going basis.	
599	Carla A. Arneson	Citizen	5.It is false that virtually all of the pollution can be collected. And if by some miracle that could occur, it would only weaken a tailings basin that is designed to leak for stability. Once tailings are deposited in the LTVSMC basin there are two choices, let the basin leak or return all polluted waters to a basin that would then only become increasingly unstable, leaving Minnesota with an ever greater risk of catastrophic failure.	See response to Comment Multiple 750. Dam safety issues are addressed in the DNR's Dam Safety permit.	
600	Carla A. Arneson	Citizen	6.NorthMet would become a toxic pit; there is no feasible way to keep the exposed Virginia Formation from turning pit waters into a death trap for wildlife, particularly waterfowl. 7.The Duluth Complex is a sole-source aquifer. Exploration drilling has turned the area into a contamination network for proposed sulfide mining pollution. Destroying a region's water supply is criminal.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
601	Carla A. Arneson	Citizen	8.No cost/benefit analysis has been done for PolyMet.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
602	Carla A. Arneson	Citizen	9.The number of projected mining jobs would be highly questionable; the amount of mining waste generated annually by PolyMet's proposed NorthMet Project fluctuates significantly over the proposed 20 years of operations, which translates to fluctuating mining layoffs with significantly unstable economic benefits. This fact was not made clear in PolyMet's Environmental Impact Statement.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
603	Carla A. Arneson	Citizen	10.No adequate risk assessment (including for human health) has been done for PolyMet. PolyMet has not done a risk assessment, they have many disparate reports, and none are cumulatively put together as a human health or environmental risk assessment. A complete Human Health and Ecological Risk Assessment needs to be done to assess cumulative impacts to the human environment, as required under NEPA The Air Emissions Risk Assessment (AERA) in the FEIS cannot be reviewed for accuracy or completeness by anyone because the full report has not been provided anywhere. The AERA does not qualify as a human health risk assessment such as the USEPA uses (USE PA Risk Assessment Guidance for Superfund, EPA/S40/R95/132PB96-963203), and the LTVSMC plant site is a superfund site. The MPCA AERA process is not written in Rule but is an agency administrative policy. The AERA lacks outside scientific peer review by such agencies as USEPA. Thus the use of the AREA resulted in an inadequate human health evaluation for the air in PolyMet's Final EIS.	The issue of a human health risk assessment (or Health Impact Assessment) was addressed as part of the EIS process and the EIS was deemed adequate. AERA issues were addressed as part of the Air Quality permitting process.	

604	Carla A. Arneson	Citizen	No other risk assessments have been performed for soils, sediments, surface or groundwater, even though impacts are documented currently in the FEIS references in both the surface and groundwater from the existing LTVSMC plant site. These impacts must be added to PolyMet's proposed use of tons of additional chemicals including the surfeit of waste minerals and elements that have been identified within in the rock from numerous reports from such sources as DNR minerals and the NRRI. These wastes will require perpetual treatment as stated in the FEIS. NEPA requires EIS's to protect the human environment (NEPA sec. 2). This requirement has not been met, and is a major omission invalidating PolyMet's FEIS. Since there was not a standard human health risk assessment performed on the air, soils, sediments, surface or groundwater, the DNR cannot certify that human health will be protected. The lack of protection of human health in air, soils, sediments and water means the DNR cannot issue PolyMet water appropriation permits under MN. Statute 103G.297 Subd. 3 (2) & (3). Nor can the MPCA issue an air quality permit, a water quality permit, or a 401 Water Quality Certification for PolyMet.	The issue of a human health risk assessment (or Health Impact Assessment) was addressed as part of the EIS process and the EIS was deemed adequate. The permit complies with Clean Water Act requirements identified by EPA, including permit coverage for all pollutant discharges expected from the facility. The permit contains limits consistent with 40 CFR part 440.
605	Carla A. Arneson	Citizen	11.No comprehensive, independent Health Impact Assessment has been done for the PolyMet Project, despite repeated requests from Minnesota's health professionals; all requests were denied, denying the utmost protection to the public, particularly to Minnesota's children.	The issue of a human health risk assessment (or Health Impact Assessment) was addressed as part of the EIS process and the EIS was deemed adequate.
606	Carla A. Arneson	Citizen	12.The addition of toxic sulfide mining waste-including dozens of chemicals that were unidentified in the EIS-to a basin already contaminated with high levels of arsenic, is putting the children of Minnesota at extreme risk for physical and neurological impairment. Also, chemicals associated with the PolyMet Project-identified and unidentified in the EIS-have not been studied synergistically. Total toxicity has been vastly under reported.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
607	Carla A. Arneson	Citizen	13.No cost/benefit analysis has been done for a sulfide mining industrial complex.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
608	Carla A. Arneson	Citizen	14.No cumulative impact/risk assessment, inclusive of human health, has been done for a sulfide mining industrial complex. The public needs to know what the probable impact of a sulfide mining industrial complex would be, before we begin to permit such a complex with PolyMet. A cumulative risk assessment-including for health- is critical for a massive sulfide mining industrial complex in such a rare water-rich environment as northeastern Minnesota. It is false to claim each mine is permitted on its own merits when the agencies are well aware that once the standards are set for PolyMet they are set for all sulfide mining companies seeking permits in Minnesota.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
609	Carla A. Arneson	Citizen	15.Minnesotans have not been given an accurate way to gauge the true cost of what the public is risking. The only acceptable financial assurance under such unknown risk -for a high-risk industry in a high-risk location-is total projected costs in cash- including reclamation costs-upfront. Or no permit. Must also include insurance for catastrophic failures or natural disasters, which it is highly doubtful PolyMet could obtain. Minnesota must not take on the industry's risk. All cash up front or no permit. The proposed financial assurance is far too low, and payment comes far too late in the mining process.	Comment noted. Comments related to this theme generally pertain to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to these comments.
610	Carla A. Arneson	Citizen	16.Who is lying? The taconite industry that says it cannot use reverse osmosis. Or PolyMet that claims it could use reverse osmosis for sulfide mining, but then uses taconite tailings leachate-contaminated water for its "Successful Water Treatment Plant." PolyMet cannot be permitted when its 'successful' use of reverse osmosis is suspect and unverifiable. And the concentrated contaminants that would remain after reverse osmosis have unknown levels of toxicity, and therefore unknown disposability. There are no other examples of sulfide mines of this scale in a comparable water-intensive environment and climate that have not polluted surrounding waters. The entire EIS is based on PolyMet's ability to use reverse osmosis successfully. No proof. No permit.	See response to Comment Multiple-488. The concentrate from membrane treatment portions of the WWTS will be routed to the chemical precipitation portion of the WWTS for metals removal. The waste sludges from this process will be disposed of in a permitted offsite landfill or in the HRF once it is built.

611	Carla A. Arneson	Citizen	17.When I asked for an explanation as to why information from Barr Engineering contradicted the DNR classification for a 100-year event, the DNR refused to answer. I was questioning the assertion in the Duluth News Tribune that PolyMet was now designing its tailings dam to withstand a 1,000-year event, and asking how that determination had been made. Initially the DNR sent me a portion of an email from Barr, "the proposer," to explain why a Duluth News Tribune article suddenly referenced a PMP. Part of that email stated the following: "The Flotation Tailings Basin has been designed to hold the 72-hour Probable Maximum Precipitation (PMP) event, which is approximately 38 inches, without overtopping. The PMP does not have an assigned return period. 10 year - about 4" in 72 hours, 100 year - about 6" in 72 hours, 1000 year - about 9" in 72 hours, PMP - 38" in 72 hours." I then questioned the fact that the PolyMet EIS consistently referred to a 100-year event as being in 24 hours. As did the DNR website, "A 24-hour duration 100-year storm for most Minnesota communities is roughly six to seven inches." It was when I asked the following questions that the DNR became less than forthcoming. I asked, "Why then has Barr or proposer decided to state that a 100-year event is about 6 inches in 72 hours, rather than 6 inches in 24 hours?" I added, "I am also wondering how it is possible to upgrade PolyMet's tailings basin to a so-called PMP, without also upgrading the entire interconnected EIS, which was based on a 100-year event?" The DNR response was as follows. "Thanks for your interest and questions. We will be addressing all comments during the permitting process." (I was responding to an email I received from the DNR, not a draft permit application.) So, why has Barr/proposer decided to state that a 100-year event is about 6 inches in 72 hours, rather than in 24 hours? It appears such a change would skew the results of a PMP. Spreading six inches over 72 hours, instead of six inches of rainfall in 24 hours, certainly makes a difference in flooding potential. Again, I am wondering how it is possible to upgrade PolyMet's tailings basin to a so-called PMP, without also upgrading the entire interconnected EIS, which was based on a 100-year event not a 1000-year event?" I am also aware that a 100-year event or a 1000-year event can occur at any time, it is a matter of percentages. 500-year events are no longer rare, yet PolyMet's EIS is still based on a 100-year event.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment. Permit review did consider extreme storm events for sizing of mine site pumps and ponds. Mine water sumps and ponds typically have normal operating capacity for the 100-year, 24 hour precipitation event (approximately 5.2 inches), and have additional capacity within the freeboard as a safety factor. In the case of a larger 500-year or 1000-year storm event, water can be transferred to the Equalization Basins if needed, where sufficient freeboard capacity is available to contain the aggregate volume of a 1000-year storm event (estimated at 7.0 inches of precipitation in 24 hours) without an overflow.	
612	Carla A. Arneson	Citizen	18.Which raises the point that an EIS largely based on a 100-year event is wholly inadequate in a time of great climate change, when 500-year events are becoming more and more frequent, and 1000-year events are occurring as well.	See response to comment Multiple 612	
613	Cecilia Wicklund	Citizen	I request that permits for PolyMet Mining be denied. This project is dangerous to the health of the Environment. Hazards abound to humans, wildlife, clean water and animals. I request that permits for PolyMet Mining be denied. This project is dangerous to the health of the Environment. Hazards abound to humans, wildlife, clean water and animals.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
614	Cecilia Wicklund	Citizen	There are no reasons that this project would be of any benefit to northern Minnesota. The very few jobs that may be available to residents cannot outweigh the dangers that loss of tourism dollars would occur without clean environment, continuation of good fishing, pristine waters and clean air.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
615	Cecilia Wicklund	Citizen	I respectively ask that permits for PolyMet are denied and the precious northern Minnesota ecosystems be protected. Thank you very much.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
616	Fran Kascielak	Citizen	Polymet can not prove that there is not a significant risk of disastrous damage to the pristine environment that now exists in Minnesota. Clean water cannot be sacrificed. So much is at stake and so many people's welfare is threatened if Polymet mines. This is a nightmare! The leaching of heavy metals into the environment poses hazards to humans such as brain development to infants and children.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	
617	Fran Kascielak	Citizen	Toxic air emissions will cause health problems, death to plants and animals. Our valuable clean water will be permanently contaminated and aquatic life destroyed. Please do not let this happen to our area and earth. Protect the valuable place we call home.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

618	Brian White	Citizen	I'm writing to oppose granting of environmental permits for the proposed PolyMet mine in Northeast Minnesota. It is apparent that this project is not worth the serious and potentially devastating environmental risk it could cause to the local area's environment and natural resources (and economy). Breached toxic sulfide residue dams can cause permanent environmental damage. One breached mining residue dam in British Columbia ruined the ecology of a stream that fed into a tributary of the province's Fraser River. From what I've read, PolyMet cannot ensure that such a devastating occurrence would not occur in its proposed Minnesota mine project. I am currently an Oregon resident, but I grew up in northern Minnesota and will be moving back to the area in retirement. I care deeply about the environment of the state and trust that your agency, through its sound examination of scientific information on the risks of this project, will decide to deny permits associated with this project.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
619	Joy Turman	Citizen	Please protect our water our beautiful natural resources for our children and grandchildren, from the toxic sulfide mines in the Northeast Minnesota. Please say No!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
620	Signature illegible	Citizen	Please do not approve the permit for the Polymet project in N. Minn. The risk to our water & our childrens children's water is too great. There is no guarantee this company will be around in the future to deal with problems if they even could clean it up.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
621	144 Signatures	Friends of the Boundary Waters	Also continuing for a thousand years or more are the dangers presented by the tailings basin dam. Because safer alternatives for dealing with mine waste exist, permitting a new mine to store toxic waste in liquid form behind a dam of this type is particularly unconscionable. I object to the State of Minnesota sanctioning this threat to future generations living downstream. Please protect the future of the people, wildlife and waters of northeastern Minnesota by saying "no" to this mine plan.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
622	Joy Davis	Friends of the Boundary Waters	Commenter added... "Don't let them destroy the Boundary Waters!!	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
623	Kristen Bon-Zorb	Friends of the Boundary Waters	This is completely stupid- who is getting "paid-off"? Why do we want this, why does DNR want this? Why does Governor Dayton want this? Why not do dry stacking?	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment. Alternatives were addressed as part of the EIS process.
624	Pat Tammen	Friends of the Boundary Waters	Please stop Polymet- we need to keep our water clean and save our wetlands- no mining in Superior National Forest- that forest belongs to all of us- no mining should be allowed. Thanks - Pat Tammen	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
625	Linda Kriel	Citizen	The proposed NPDES/SDS permit is weak and fails to control the biggest threat from sulfide mining – the seepage of contaminated Dear Commissioner Stine, I strongly urge the MPCA to deny water pollution (NPDES/SDS) permit and deny the Section 401 certification for the PolyMet copper-nickel wastes to groundwater and then to drinking water and surface water from mine pits, waste rock stockpiles, tailings basins and other sulfide mine waste storage facilities.	See response to Comment Water-510.
626	Linda Kriel	Citizen	The Section 401 certification relies on PolyMet's assumptions, exclusions and misleading information to claim that the PolyMet sulfide mine would not violate water quality standards, degrade water quality, and endanger the environment and human health.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
627	Linda Kriel	Citizen	The PolyMet draft NPDES/SDs permit and draft 401 certification would conflict with federal and state laws and would jeopardize Minnesota water quality, natural resources, health and finances.	The draft permits were developed according to current state and federal law.
628	Linda Kriel	Citizen	*The MPCA draft water pollution permit for the PolyMet sulfide mine wouldn't set limits on polluted seepage through groundwater to drinking water or surface water.	See response to Comment Water-510.
629	Linda Kriel	Citizen	*The MPCA draft water pollution permit for the PolyMet wouldn't even provide appropriate monitoring; PolyMet's pollution seeping from groundwater and welling up in wetlands and streams in violation of the Clean Water Act could go completely undetected	See response to Comments Water-510 and Water-711-A.

630	Linda Kriel	Citizen	*The MPCA draft section 401certification would ignore the deficiencies in the water pollution permit and erroneously claims that the PolyMet sulfide mine project would not violate water quality standards or degrade Minnesota water quality.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
631	Linda Kriel	Citizen	*The MPCA, along with other State agencies refused to evaluate impacts on human health from the PolyMet mine project through an open and public health impact assessment (HIA) process, even though groups representing 30,000 Minnesota medical and health professionals asked for an HIA to assess threats including brain damage to fetuses, infants and children from mercury contamination of fish.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
632	Linda Kriel	Citizen	*Now, the MPCA draft section 401certification would accept PolyMet's exclusions, assumptions and junk science to erroneously claim that the PolyMet sulfide mine project would not endanger the environment and human health.	This comment addresses the 401 certification. No changes were made to the draft NPDES permit in response to this comment.
633	Linda Kriel	Citizen	Please accept your Agency's mission as a protector of Minnesota waters, fish, wild rice, wildlife, wetlands and human health not the protector of foreign mining companies seeking profit at our expense. I ask you to reject and deny the draft water pollution (NPDES/SDS) permit and the draft 401 certification for the PolyMet copper-nickel sulfide mine project. Sincerely,	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
634	JT Haines	Duluth for Clean Water	Dear Commissioner Stine, Duluth for Clean Water objects to the draft water quality permit, draft air quality permit, and draft Clean Water Act Section 401 certification (wetlands) related to the PolyMet Mining Co. NorthMet proposal. Our objections center on two fundamental problems with the permits as drafted: 1) long-term health impacts of the proposal on the residents of downstream communities are unknown, and 2) long-term water treatment of the proposal is undefined and unreliable.Duluth for Clean Water is a Minnesota nonprofit based in Duluth, with volunteers and members around the Duluth area. Our mission is to promote a safe and healthy future for the St. Louis River Watershed, Lake Superior, and the communities who reside thereon. We have participated in the administrative processes concerning the NorthMet Mine proposal by submitting comments, retaining expert consulting services, and attending and speaking at public hearings. Our members live downstream from the proposed PolyMet operation. We drink water from, eat fish from, and rely fully upon the St. Louis River and Lake Superior for our future. Our position is that the NorthMet draft permits are insufficient to protect Minnesota, especially downstream communities, and should be denied.	Background statement for comments to follow. See comment responses below.
635	JT Haines	Duluth for Clean Water	1. Cumulative human health impacts have not been assessed. PCA's mission to "protect and improve the environment and enhance human health" based on the core value that "decisions and policies are supported by data and analysis" is instructive and should guide this decision. Heavy metals are neurotoxins that affect brain development. Pregnant and nursing mothers, infants, and young children would be most impacted by exposure to these metals. Mine waste, especially from nonferrous hardrock mining, poses a significant human health threat downstream. Given these realities, we are extremely concerned that PCA and other state agencies have so far declined to evaluate impacts to human health from the proposed NorthMet project through an independent Health Impact Assessment. We are grateful that PCA promotes a "health in all policies" approach, and we are grateful for the work of the Minnesota Academy of Family Physicians (and other medical professionals) who requested that a "comprehensive, independently produced HIA be completed for the PolyMet NorthMet Project out of a concern for the health of Minnesotans." It is effectively impossible for us to respond fully to this new-to-Minnesota proposal for impacts to air and water quality, when the cumulative impacts to human health have not been analyzed and presented . There is ample reason to conclude -- based on the history of this type of mining as the nation's most toxic industry -- that an HIA is a necessity for a data-driven analysis of these 1 draft permits. The lack of an HIA for this dangerous proposal is a clear failure in the process. Our position is that it would be an unconscionable failure to issue permits for this proposal to bring this toxic and unfamiliar industry to Minnesota when long term health impacts have not been studied or communicated. We object.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. The issue of a human health risk assessment (or Health Impact Assessment) was addressed as part of the EIS process and the EIS was deemed adequate.

636	JT Haines	Duluth for Clean Water	2. Water Quality Permit would not protect downstream communities. It appears that the draft water quality permit would not set limits on polluted seepage through groundwater to drinking water or surface water, and would not provide necessary monitoring, meaning that pollution seeping from groundwater and upwelling in wetlands and streams in violation of the Clean Water Act could go undetected. We object to the draft water quality permit on this basis.	The MPCA assessed the location of each individual well as dictated by the purpose of each well and how each well fit into the overall monitoring well network. This approach was coupled with the incorporation of existing monitoring wells (with a record of baseline water quality) and practical considerations such as access and potential disturbance to wetlands. The monitoring well network in the permit was developed to meet multiple goals, which includes monitoring the performance of engineering infrastructure; serving as indicators for the early detection of potential project impacts; and determining compliance at downgradient locations closer to the property boundary. In addition, the draft permit requires an annual assessment of the suitability of the monitoring network, and requires the proposal of additional/alternative monitoring locations in the event the original network is not sufficient, based on the ongoing collection of data (including flow direction and groundwater quality). If the MPCA determines in the future that the monitoring well network is insufficient, the agency has authority under Minnesota Rule part 7001.0170 to modify the permit, and authority under part 7001.0150 to require sufficient monitoring to determine compliance.	
637	JT Haines	Duluth for Clean Water	3. The draft water quality permit violates Minnesota law requiring maintenance free closure. Minnesota Administrative Rule 6132.3200 requires that a mining area "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." Closure is defined as "the process of terminating and completing final steps in reclaiming any specific portion of a mining operation. Closure begins when, as prescribed in the permit to mine, there will be no renewed use or activity by the permittee." The NorthMet proposal currently anticipates cessation of activity at year 30, meaning "closure" would theoretically be at that date. The DNR's permit to mine, meanwhile, has no set term, effectively meaning that there is no closure defined at all . Here is a scenario that concerns us, and one which we would request that you consider: Let's imagine that an applicant has an extensive system of water controls that they plan to use, and, if everything goes perfectly, things would be mostly fine for a while. The question, especially for downstream communities, is, what do those controls look like in twenty years? Problems with non-performing mines develop over decades, and applicant companies have a history of abandoning controls as soon as they are legally, or just financially, able. Claims about the future study of "passive controls," and an incredibly extensive system of liners, trenches, pumps, caps, and pipelines -- all of which would require perpetual maintenance to work -- do not reassure us. 2 The permits as drafted anticipate water treatment for centuries or longer, maintaining hydrologic impacts, release of substances, and continuing to pose potential hazards beyond any (undefined) "closure" date. This is a clear violation of Minnesota law, including with regard to the draft water quality permit. It appears, then, that under this permit regime as drafted, PCA's enforcement of any water quality permit it may issue would be difficult if not facially impossible We are, quite simply, not protected by these draft permits over the longer term. That's not only a legal problem under Minnesota's closure requirements, it is clearly an ethical problem as well. We object. 3	See response to Comment Water-510. The NPDES/SDS permit requires the submittal ofan Annual Comprehensive Performance Evaluation Report which specifically requires the annual assessment of the perfiormance of individual engineering controls and the implementation of adaptive management, mitigation or corrective actions before potential impacts actually occur. This annual assessment is required each of the five years of this permit issuance and some updated adaptation of this is likely in future reissuances of the permit. (These future reissuances of the permit will be subject to public review and comment prior to reissuance.) The DNR administers Minnesota Rule 6132 and their Permit to Mine for the facility includes financial assurance conditions that, in part, address the long-term maintenance of necessary controls.	
638	JT Haines	Duluth for Clean Water	4. Downstream communities have not provided consent. Duluth, Carlton, Cloquet, and the many other communities downstream of the NorthMet proposal have not been directly consulted on the PolyMet proposal, and some have vocally objected. Simply put, these communities have not consented. This includes the sovereign Fond du Lac Band of Lake Superior Chippewa, whose concerns have not been fully integrated into permits or the NorthMet project design. Copper sulfide mining would be new to Minnesota, and the legal and regulatory regime is untested and dated. Downstream consultation and consent should be required for a proposal as dangerous as this. We view the lack of downstream consent, including the absence of downstream consent with regard to the so-far-undetermined cumulative health impacts, as a fundamental failure in this process to date, and we request that PCA recognizes this failure in its evaluation of the proposal. We object to the draft NorthMet permits on the basis of the lack of consent of downstream communities and urge that they be denied.	Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.	

639	JT Haines	Duluth for Clean Water	Conclusion. The future health and prosperity of northeastern Minnesota depends on protecting our rare freshwater complex. We appreciate PCA's caution that groundwater levels have declined, and that "the prognosis turns downright grim" when the growing problem of groundwater contamination is factored in. "The bottom line on groundwater? We can run out of it." 4 If permitted, the NorthMet project would put us at substantial, and insufficiently accounted for, risk. Minnesotans should anticipate, based on the significant history of promises and non-performance by applicants for similar permits around the US, violations, exceedances, and regular permit revision applications at best, and at worst, outright failures to control pollution at unimaginable cost to our communities. The citizens of Duluth and other downstream communities are relying on the Minnesota Pollution Control Agency to fulfill its vision that "clean water, air, and land support healthy communities and ecosystems, and a strong economy in Minnesota." We urge that you deny the draft water quality permit, draft air quality permit, and draft Clean Water Act Section 401 certification (wetlands) for the proposed Northmet project. We would appreciate an opportunity to discuss our concerns with you in person as well and can be reached at the below contact information for scheduling. We have included a poem about our watershed from one of our members below.	Comment noted. This comment poses questions or contains statements about issues previously considered during the environmental review process and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). The draft permits were developed according to current state and federal law. No changes were made to the draft permit in response to this comment.
640	David Showalter	Citizen	I strongly urge the MPCA to deny water pollution (NPDES/SDS) permit and deny the Section 401 certification for the PolyMet copper-nickel mine project.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
641	David Showalter	Citizen	The proposed NPDES/SDS permit is weak and fails to control the biggest threat from sulfide mining – the seepage of contaminated wastes to groundwater and then to drinking water and surface water from mine pits, waste rock stockpiles, tailings basins and other sulfide mine waste storage facilities.	See response to Comment Water-510.
642	David Showalter	Citizen	Minnesota needs strong protections against sulfide mining pollution. The MPCA is the State's only way to provide for our my children and grandchildren. Please prove you are on the right side of this serious debate.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
643	Karen Graham	Citizen	Dear Minnesota Pollution Control Agency Commissioner, I ask you to light the "torch for nature" spreading the light of so many notable heroes before you, in particular President Theodore Roosevelt! Please deny the Permit to Mine for the proposed PolyMet sulfide mine.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.
644	Karen Graham	Citizen	This mine is projected to offer jobs for 20 years of operation. In exchange for a few years, you will usher in many hundred years of sulfuric acidic runoff, 500 years of toxic pollution by PolyMet's own calculation.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
645	Karen Graham	Citizen	The estimates for requiring the holding and treating of water outflow from this mine is almost twice the years the USA has existed. What building? What structure? What company? What of our creation has lasted as long in this our country? We are not the ancient Romans.	Comment noted. This comment pertains to issues considered in the development of the DNR Permit to Mine. No changes were made to the draft permit in response to this comment.
646	Karen Graham	Citizen	We, you, the Minnesota Department of Natural Resources is considering to offer the generations to come just such an inheritance! The partner of this dismal adventure, Polymet Mining has not run any project much less mining! In point of fact, it is a company established to protect a larger corporation from liability damage. The company offers 3 years as defined by the permit to protect from environment harm and bankruptcies. They also offer 1950's style of liners to collect contaminated water and osmotic filtration system.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments. Comment noted. The draft permits were developed according to current state and federal law. Comments related to this theme generally do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.
647	Karen Graham	Citizen	The risk to Minnesota's communities is simply too great – this type of mining has a 100% track record of pollution, and a tailings dam breech could be catastrophic for downstream communities. The mine's toxic wastewater would have to be treated for 500 years, 25 lifetimes. This is an unacceptable legacy to leave for current and future generations of Minnesotans.	Comment noted. Comments related to this theme generally pose questions or contain statements about issues previously considered during the environmental review process and do not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to these comments.

648	Karen Graham	Citizen	The PolyMet mine would set a dangerous precedent for Northeast Minnesota, opening the door to an industrial acid mining corridor that threatens the Arrowhead region and Boundary Waters Wilderness, the crown jewel of our state. Minnesota's legacy hangs in the balance. In the public's interest, I urge you to deny the Permit to Mine for PolyMet.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
649	Lori Andresen	Save Our Sky Blue Waters	Friends of the Boundary Waters Wilderness and the Center for Biological Diversity (hereinafter, "Organizations") submit this Petition for a Contested Case Hearing on the Minnesota Pollution Control Agency (MPCA)'s proposed Clean Water Act Section 401 Water Quality Certification for the Section 404 (Wetlands) Permit for PolyMet Mining, Inc.'s proposed NorthMet Project. The Organizations believe that the NorthMet Project may result in water quality standard violations on several bases. Some of these are covered by the Petition for Contested Case Hearing on the NPDES/SDS Permit that will be submitted by Minnesota Center for Environmental Advocacy, to which the Organizations are signatories, and will not be repeated here.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
650	Lori Andresen	Save Our Sky Blue Waters	This petition addresses potential water quality standard violations due to: 1.Air deposition of metals and sulfur; and 2.Spillage of ore from rail cars along the haul route between the mine and the processing plant.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
651	Lori Andresen	Save Our Sky Blue Waters	Attached to the petition and incorporated herein is a report by geochemist Dr. Ann Maest addressing the issues we raise in regards to air deposition.1 This report is based on Dr. Maest's review of PolyMet Mining Co.'s Cross-Media Report.2 The Organizations appreciate the fact that MPCA has required an extensive analysis of the potential for water quality standard violations due to the deposition of metals and sulfur from fugitive dust and other mining-related emissions. However, we disagree with many assumptions that were used, both in the modeling and in reaching conclusions based on the modeling. These assumptions are addressed briefly in this petition and in the Maest Report; we believe that a contested case hearing is necessary to determine whether faulty assumptions have resulted in an analysis that does not accurately reflect the potential for water quality standard violations.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
652	Lori Andresen	Save Our Sky Blue Waters	The Draft Certification does not address rail spillage, and other than the monitoring included in the draft NPDES/SDS permit, it is unclear what attention MPCA has given this issue. Because the materials for the various permits and permit applications are so voluminous and many reports are hidden in appendices to other reports, we use the Final Environmental Impact Statement materials to address this issue.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
653	Lori Andresen	Save Our Sky Blue Waters	We ask that MPCA hold a consolidated hearing on the water discharge and air emissions permits and the 401 Certification. We also ask that MPCA and MDNR consolidate all of the permits and issues into one hearing. There is a great deal of overlap between the permits, including the 401 Certification. An example is whether it is realistic to believe that PolyMet will achieve 90% reduction in fugitive dust, which is a matter that is covered by the air permit but has implications for the air deposition analysis. Another example is the issue of railcar spillage, which overlaps with the permit to mine. A third is the cumulative effect of groundwater affected by leachate from mine features, which should have been addressed in the NPDES/SDS permit, combined with air deposition. Consolidating all permits and issues into one hearing is necessary to avoid conflicting decisions, and would conserve resources for all parties.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
654	Lori Andresen	Save Our Sky Blue Waters	I.Statement of interest The mission of the Friends of the Boundary Waters Wilderness is "to protect, preserve and restore the wilderness character of the Boundary Waters Canoe Area Wilderness and the Quetico-Superior ecosystem." As the PolyMet mine site is within the Superior ecosystem, its protection falls squarely within our mission and within the interests of our 3,000-plus members and supporters. Our members recreate not only within the Boundary Waters Canoe Area Wilderness, but also in other parts of Minnesota's Arrowhead region, on federal, state, and county land. They paddle, fish, swim, and rice on the St. Louis River downstream from the proposed mine. Impacts on water quality from the mine could affect these activities. Many of our members hunt in the area, and many more enjoy seeing and being in the presence of wildlife in its natural habitat. The strictest water quality standards that apply to the mine site protect wildlife - both aquatic wildlife, and terrestrial and avian wildlife that ingest aquatic species. For example, the 1.3 ng/L mercury standard was intended to protect wildlife like otters, fishers, and loons from impacts from eating fish with high mercury levels. If the proposed mine results in exceedances of water quality standards in the Partridge River watershed, it will impact wildlife that is important to our members.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

655	Lori Andresen	Save Our Sky Blue Waters	Most Friends members are also Minnesota taxpayers. They are Minnesota residents who hope their grandchildren and great-great-grandchildren will live in Minnesota and enjoy the Superior National Forest and surrounding lands and waters as they do. The mining project as proposed presents risks to future generations that will include the descendants of Friends members. Those risks are both to natural resources, most especially clean water, and to financial well-being, which could be impacted if the mine results in a large contaminated area that eventually must be remediated.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
656	Lori Andresen	Save Our Sky Blue Waters	The Center for Biological Diversity is a nonprofit conservation organization headquartered in Tucson, Arizona, with offices in a number of states, including an office in Duluth, Minnesota. The Center is a leading organization fighting on behalf of wildlife and wild places, including threatened and endangered species such as the Canada lynx and gray wolf that would be adversely affected by the NorthMet Mine Project. The Center believes that the welfare of human beings is deeply linked to nature -the existence in our world of a vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, the Center works to secure a future for all species, great and small, hovering on the brink of extinction. The Center has over 63,000 members, including members who own land and recreate in northeastern Minnesota, including downstream from the proposed NorthMet Mine Project. These members' interests include fishing, canoeing, wild-rice gathering, camping, hiking, and seeking quiet remote places to recreate within the Superior National Forest. These interests would be negatively and potentially permanently impacted if the NorthMet Mine Project is permitted and allowed to proceed. The Center and some of its members have been actively engaged in the NorthMet Mine Project for many years, including submitting detailed comments to state and federal agencies and attending public hearings.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
657	Lori Andresen	Save Our Sky Blue Waters	The Center for Biological Diversity is a nonprofit conservation organization headquartered in Tucson, Arizona, with offices in a number of states, including an office in Duluth, Minnesota. The Center is a leading organization fighting on behalf of wildlife and wild places, including threatened and endangered species such as the Canada lynx and gray wolf that would be adversely affected by the NorthMet Mine Project. The Center believes that the welfare of human beings is deeply linked to nature -the existence in our world of a vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, the Center works to secure a future for all species, great and small, hovering on the brink of extinction. The Center has over 63,000 members, including members who own land and recreate in northeastern Minnesota, including downstream from the proposed NorthMet Mine Project. These members' interests include fishing, canoeing, wild-rice gathering, camping, hiking, and seeking quiet remote places to recreate within the Superior National Forest. These interests would be negatively and potentially permanently impacted if the NorthMet Mine Project is permitted and allowed to proceed. The Center and some of its members have been actively engaged in the NorthMet Mine Project for many years, including submitting detailed comments to state and federal agencies and attending public hearings. Similarly, no assessment is made of increased mercury levels in wetlands based on the 1.3 ng/L standard. Mercury levels are considered in downstream lakes and in a very truncated way in the Partridge and Embarrass Rivers, and increased sulfate levels are considered in wetlands, but increased mercury levels in wetlands are simply ignored, even though they would contribute to higher methylmercury levels, which is the point of the sulfate exercise. Failure to consider water quality standard violations in wetlands is even more pronounced in the rail spillage analysis. The poor quality of the analysis is addressed below, but for the sake of argument here, the projected area of copper water quality violations ranges between 16 and 542 acres. MPCA's certification that water quality standards will not be violated completely ignores this analysis. Material issue of fact Ia: Do the modeling exercises show exceedances of water quality standards in wetlands that are ignored by MPCA's proposed certification? Material issue of fact Ib: Do the modeling exercises cover all potential violations of water quality standards, including in wetlands? Relief requested: Deny certification if analysis predicts water quality standard violations in wetlands.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

658	Lori Andresen	Save Our Sky Blue Waters	Issue 2: The evaluation points are not the points most likely to be impacted. In assessing the potential for water quality standard violations, MPCA should identify the wetlands and/or sections of streams where impacts could occur based on all or any combination of contributing factors - background concentration, concentration and load levels from all PolyMet sources, flow, water chemistry, etc. Only after conducting the analysis for all such points can MPCA certify that water quality standards will not be violated. For the air deposition analysis, an evaluation point should be located on Second Creek below SD026 but within the upstream reach where deposition from the Plant is likely to be highest. An evaluation point should also be located at SW003 on the Partridge River, which is the point where mine features are closest to the river. Concentrations of mercury, methylmercury, and other metals (copper, cobalt, nickel, and arsenic) should all be evaluated at those locations. The analysis should also not have been limited to one "Wetland of Interest." A number of factors will contribute to the concentrations of metals in wetlands; limiting the analysis to the wetland that will receive the highest deposition is an over-simplification that may result in a failure to recognize other areas where problems are likely to occur. While the Wetland of Interest may be the wetland that is most likely to be impacted, that does not mean that no other wetland will experience exceedances of water quality standards if the Wetland of Interest does not. For many of the same reasons that monitoring is needed in wetlands other than the Wetland of Interest (an issue that is discussed below), modeling should include additional wetland evaluation points. Material issue of fact 2: Do the evaluation points used for modeling miss stream and wetland locations that may have the highest impacts? Relief requested: Redo model including additional evaluation points as determined in contested case hearing.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
659	Lori Andresen	Save Our Sky Blue Waters	Issue 3: On-site baseline monitoring in wetlands is necessary to a valid analysis. Baseline water quality monitoring has not been done in wetlands at either the mine site or along the railroad tracks. Baseline monitoring is absolutely critical to the modeling effort at both locations; without knowing what the baseline water quality is, MPCA has no idea how much additional load can be accommodated before water quality standards are exceeded. Given the length of time that this project has been undergoing review and the knowledge on the part of everyone involved that significant water quality issues are presented by this mining proposal, there simply is no excuse for this lack of data. In regard to the air deposition analysis, please refer to the discussion in the Maest Report, pp. 4-5. In addition to Dr. Maest's points, we note that no baseline water quality data is provided for any wetlands with the exception of limited specific conductance field measurements for four wetlands. When other missing and biased elements are corrected, it is possible that a lower hardness values and therefore lower metal water quality standards would apply in other wetlands as compared to the Wetland of Interest. Material issue of fact 3a: Is the estimated hardness of 60 ug/L for mine site wetlands supported by sufficient evidence? Material issue of fact 3b: Is an accurate prediction of water quality standard exceedances possible without site-specific baseline data? Relief requested: Require baseline monitoring as determined in contested case hearing; redo model using site-specific data.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

660	Lori Andresen	Save Our Sky Blue Waters	Issue 4: The proposed monitoring prior to and during operations is insufficient to ensure that water quality exceedances will be discovered. In addition to the lack of baseline monitoring, the proposed monitoring prior to start-up and during operations is completely insufficient. Please refer to the Maest Report, pp. 14-15. Regarding air deposition, the proposed monitoring is inadequate for all constituents: mercury, sulfate, methylmercury, and other metals. In regard to mercury, sulfate, and methylmercury, the proposal is to require monitoring for the two years prior to mining, but no monitoring is proposed during actual operations. We believe that this must be an oversight, and we ask that it be corrected. In regard to metals other than mercury, nickel should be added to the list of constituents for monitoring. Two years of initial monitoring should be done prior to start-up, similar to what is proposed for mercury and sulfate. Baseline monitoring should cover a representative number of wetlands that includes all wetland types and wetlands with varying hydrology. Baseline monitoring should be used to determine what wetlands might be most likely to experience water quality exceedances for each of the indicator metals (including nickel), taking account of all contributing factors (e.g., pH, organic carbon, proximity to fugitive dust sources, background concentrations of metals). Along the railroad track, monitoring is proposed only for the streams, on the upstream and downstream side of the tracks. Upstream locations immediately adjacent to the tracks should not be used as "background" against which downstream concentrations are measures, as upstream locations could also be affected by spillage. Baseline monitoring in both the stream locations and in wetlands prior to start of the project is critical to identifying impacts. The planned monitoring will not identify impacts on wetlands. Contaminants in streams are much more likely to be flushed downstream relatively quickly. PH levels will not reflect those found in bog wetlands, and other parameters may vary as well. Baseline monitoring and operational monitoring along the railroad tracks must include all wetlands that may experience water quality standard violation due to rail haulage and/or other factors. Material issue of fact 4: Is there potential for water quality standard exceedances that the proposed monitoring plans would not detect? Relief requested: Expand monitoring plan according to above recommendations, as further defined in contested case hearing.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
661	Lori Andresen	Save Our Sky Blue Waters	Issue 5: Predictions of water quality impacts should be based on a weight-of-the-evidence standard1 rather than limited by an arbitrary measure of significance. The Organizations strongly object to the use of "measurability" as a synonym for significance, and also to the manner in which MPCA has used this equation to allow impacts that are in fact significant. Although they come at it from different angles, and have different outcomes as to the level of measurability, both the Cross-Media Report and MPCA take the position that if an increase in a particular pollutant is within the margin of error at a lab that does water quality testing (or as set by the United States Environmental Protection Agency for a particular testing method), it is ipso facto not significant. Neither the Cross-Media Report nor MPCA provide a rationale for this position, which is tantamount to taking the position that if we can't see it, it doesn't exist. To begin with, it is unclear why MPCA is using a concept of significance to allow increases in pollution that the weight-of-evidence indicates will result in water quality standard exceedances. Throughout the Cross-Media Report and in MPCA's review, the study is repeatedly touted as "conservative," e.g., over-predicting impacts to ensure that resources are protected. While we disagree that the study is conservative for reasons outlined below, we agree that the study should be conservative and that the study (and thus decisions based on the study) should err on the side of protection. MPCA's decision to allow increases in pollutants if the predicted increase is within a particular lab's margin of error is contrary to MPCA's stance of protectiveness.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

662	Lori Andresen	Save Our Sky Blue Waters	In regard to mercury in the water column and methylmercury levels in fish tissue, any increase simply should not be countenanced. This is the reasoning behind the flat-out prohibition on any new or increased point source discharges of mercury within the Lake Superior basin, the zero- mercury emission goal of the Lake Superior Binational Program, and the decision by stakeholders in the Statewide Mercury TMDL process that any facility emitting three pounds of mercury (and in many cases, less) has to contribute to reductions. It does not really matter whether the amount of an increase could be accurately measured in the field; we already know that any increase is too large. In the PolyMet case, whatever the uncertainty as to the amount of the increase, there is no question that there will be an increase. And in the Lake Superior basin, any increase is a violation of water quality standards. If some level of significance is used to allow very small increases of pollutants, that level should be something that is truly de minimus. Lab margins of error simply bear no relationship to the meaning of the word "significant." If we go that route, larger and larger increases become "insignificant" as the levels in the environment go up, taking us in exactly the wrong direction. Using the Cross-Media Report value for total mercury,3 any amount that was within 23% of background would not be a significant increase. Thus if a stream had a background mercury level of 1 ng/L, an addition of only 0.23 ng/L would be considered significant. But if a stream had a background level of 12 ng/L, almost 3 ng/L of additional mercury would be considered insignificant. Similarly, in an example used in the Cross-Media Report, if fish tissue had a concentration of 0.535 mg/kg, the addition of 0.107 mg/kg, which is more than half of the 0.2 mg/kg standard, would be considered insignificant. Significance based on a percentage of background is simply not rational, and should not be used. At the NorthMet Project, predicted changes in fish tissue mercury in lakes downstream from the plant are as high as 0.026 mg/kg. This is thirteen percent of the standard of 0.2 mg/kg. Table 5-5 of the Cross-Media Report shows a potential increased mercury concentration in Second Creek of 0.3 ng/L, almost one-quarter of the standard. In light of all of the work that MPCA has done on mercury over the last twenty years, we find it astonishing that MPCA finds these to be insignificant increases. Furthermore, it is simply not the case that we can't know that mercury levels will increase if they can't be measured. There is no relationship between these two processes. The ability to measure an increase at some point in the future is irrelevant to the exercise of predicting increases now. In any event, we cannot know ahead of time what the actual increase will be regardless of the ability of a lab to measure the increase once the plant is operational. Minnesota environmental law incorporates the concept of cumulative impacts: the resulting significant impact of contributions from many sources, any one of which may seem insignificant on its own. Most of the critical environmental issues of our time are issues of cumulative impacts, including climate change and mercury contamination of fish. The seriousness of these problems does not allow us the luxury of waiting until we advance our technology to the point where we can physically measure seemingly insignificant individual sources (as opposed to predicting them based on inputs and processes) before we address them. If the weight of the evidence indicates that pollutants will be released to the environment in amounts that could either increase the concentration at identified endpoints (if standards are already exceeded) or cause standard exceedances (if they are not), the activity should not be permitted. Material issue of fact 5: Are the increases in mercury, sulfate, methylmercury, and/or other metals shown in the Cross-Media Report significant? Relief requested: Adopt a weight-of-evidence standard to determine whether water quality standards will be violated. Deny the 401 Certification due to predicted increases in mercury in fish tissue.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
663	Lori Andresen	Save Our Sky Blue Waters	Issue 6: Nickel should be included as a modeled and monitored constituent. Please refer to the Maest Report, pp. 11-14. Material issue of fact 6: Is there potential for violation of the nickel water quality standard even if the copper and cobalt standards are not violated, in the WOI or some other location? Relief requested: Redo the modeling and analysis, adding nickel.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
664	Lori Andresen	Save Our Sky Blue Waters	Issue 7: Minerals with significant metals content appear to have been left out of the analysis. Please refer to the Maest Report, pp. 12-14. The Cross-Media Report and its appendices do not provide a clear explanation of the minerals that were included in the emissions and deposition analyses, or how they were included. We assume that all of the minerals listed in Table 2-2 of Appendix B were included in a manner that reflects the actual mean metals concentration for each category of rock. The report indicates that simplifying assumptions were made to treat other sulfide minerals as chalcopyrite and pyrrhotite. It is unclear whether this refers only to the dissolution rate, or whether it also relates to the concentration of copper, arsenic, and cobalt in the rock. If the latter, we would like to present another challenge to the analysis on this basis, but cannot articulate it until we receive a clear explanation of the inputs to the model. Regardless of the manner in which the sulfide minerals were treated, we object to the exclusion of metals from silicate minerals from the analysis. Material issue of fact 7: Were metals levels in emissions underestimated because non-sulfide minerals containing cobalt and nickel were omitted from the exercise? Relief requested: Redo the modeling and analysis including all minerals that contain any level of the target metals.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

665	Lori Andresen	Save Our Sky Blue Waters	Issue 8: Poor hydrological data and the use of average concentrations masks the potential for seasonal water quality standard exceedances. Please refer to the Maest Report, pp. 5-9. Dr. Maest concludes, The model was used to estimate outflow from the WOI that were used to estimate the potential for flushing metals and sulfur from the wetland to downgradient areas. Given the relatively poor calibration during high and low wetland water levels, a high degree of uncertainty exists in those estimates. This is especially important because the majority of particulates and metal are exported from wetlands during period of high flow following snow melt, as discussed in the following section. Material issue of fact Ba: Does the lack of adequate hydrological data result in a potential underestimate of export of constituents to downstream waters? Material issue of fact Bb: Does the use of averaging and mean values in the context of constituent concentrations and/or hydrological conditions mask seasonal water quality standard violations? Relief requested: Require robust baseline water quality and hydrological monitoring for a suite of wetlands representing all that may be affected by air deposition. Redo the model using appropriate hydrological data (including minimum and maximum conditions) and maximum concentration data.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
666	Lori Andresen	Save Our Sky Blue Waters	Issue 9: The Cross-Media Report ignores large fluctuations in water levels that would result in significant mobilization of metals. Please refer to the Maest Report, pp. 6-9. In addition to drought cycles, the operation of the mine will itself lower the water table in an undetermined number and acreage of wetlands. These wetlands will presumably resaturate after pit dewatering ends and during periods of high rainfall and snowmetl, resulting in the export of significant amounts of metals that the Cross- Media Report assumes will remain sequestered in the wetlands. Material issue of fact 9: Did the failure to consider mobilization of metals (including mercury) due to fluctuating water levels and snowmelt effects result in an under-prediction of the potential for water quality exceedances? Relief requested: Redo model to take account of fluctuating water levels and snowmelt effects.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
667	Lori Andresen	Save Our Sky Blue Waters	Issue 10: The Cross-Media Report ignores the role of organic carbon in mobilizing metals from wetlands. Please refer to the Maest Report, pp. 9-10. Material issue of fact 10: Did the failure to consider the role of organic carbon in metals (including mercury) sequestration result in under-prediction of water quality exceedances? Relief requested: Redo model, incorporating appropriate factors to reflect the role of organic carbon in the release of metals.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

668	Lori Andresen	Save Our Sky Blue Waters	Issue 11: Mercury increases to the Partridge and Embarrass Rivers will not be limited to what falls on open water. In the mercury analyses done for the Environmental Impact Statement, mercury loads from air deposition were calculated for in-stream lakes, but not for the Embarrass and Partridge Rivers - despite the fact that for the most part, mercury that entered the lakes had to enter the rivers first. Furthermore, the analysis ignored mercury emissions at the mine site altogether, from both fugitive dust and mobile sources. In this iteration, fugitive dust is considered, but an assumption is made that only mercury that falls directly onto open water ends up in surface water. The attached report from Dr. Ann Maest includes a preliminary rebuttal of this assumption in relation to snowmelt. In addition, this assumption is in direct opposition to the Statewide Mercury TMDL, which applies a runoff coefficient to mercury deposited on land to calculate a total load from deposition: Atmospheric loading is the product of area and air deposition; total area can be split into water area and land area to distinguish direct atmospheric loading from indirect watershed loading. To account for mercury that is buried in the soil or volatilized to the atmosphere, the watershed loading can be discounted by a runoff coefficient, which remains constant for a given region as long as there are no significant changes in land cover/use. This was tested by comparing land cover changes between 1982 and 1997 (http://www.mn.nrcs.usda.gov/technical/nri/tables/lcu_change.htm), applying standard runoff coefficients to each of the general land cover types. Although there were obvious increases in urban land use, the effect of the change was not significant to the composite runoff coefficient for the state: composite runoff coefficients were 0.289 for 1982 and 0.287 for 1997.4 If only mercury falling on open water ends up in the water, the mercury TMDL has completely miscalculated both the amount of mercury load to waters of the state and the relative contributions from point and nonpoint sources. Material issue of fact 11: Is the assumption that zero mercury that falls on upland or wetland areas (versus open water) enters surface streams valid? Relief requested: Redo the model including a factor for mercury falling on upland and wetland areas.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
669	Lori Andresen	Save Our Sky Blue Waters	Issue 12: Cumulative impacts from air deposition and leachate from mine features into wetlands will violate water quality standards. The issue of leachate from mine features is addressed in comments on the NPDES/SDS permit. To our knowledge, no cumulative impact assessment has been done to predict the combined effects of that leachate with air deposition in wetlands across the site, despite acknowledgment in the Environmental Impact Statement that water quality impacts on wetlands from both sources are likely. Our position on this issue was submitted to the U.S. Army Corps of Engineers in comments on the Section 404 permit in 2014.5 Those comments are attached and incorporated into this petition. Material Issue of Fact 12: Will the combination of leachate from mine features and air deposition result in violations of water quality standards in wetlands at the mine site? Relief requested: Denial of the 401 Certification unless and until measures are added that will prevent violations.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
670	Lori Andresen	Save Our Sky Blue Waters	Issue 13: Multiple metals toxicity is not evaluated. Please refer to the Maest Report, p. 2. Material Issue of Fact 13: Will the additive effects of multiple metals impact fish toxicity? Relief requested: In remodeling and analysis, include quantitative analysis of multiple metals and qualitative analysis of toxicity.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
671	Lori Andresen	Save Our Sky Blue Waters	The amount of wetland acreage that will be affected by ore spillage has not been accurately determined. The first PolyMet analysis indicated that 542.7 acres could be affected by copper in the spilled material to the point of exceeding water quality standards.6 Smaller acreages of exceedances were predicted for cobalt and nickel. PolyMet subsequently agreed to refurbish the cars, and claims that spillage will be reduced by 97 percent, resulting in an estimated 16 acres of water quality exceedances for copper, a claim that the FEIS adopts.7 The document referenced in the FEIS does not explain how the 97 percent reduction figure was arrived at, and includes no author or date. A footnote refers to a consultant, but no consultant is named. The document refers to a PolyMet visit to another site using recently refurbished cars, but the site is not named. In short, the estimate of the reduction in spillage that will be achieved by refurbishing the cars cannot be accepted without more support. Material issue of fact 14: Is the analysis that claims a 97 percent reduction in ore spillage adequately supported? Relief requested: Redo the analysis in a transparent, verifiable manner.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

672	Lori Andresen	Save Our Sky Blue Waters	Issue 15: Modeling inputs resulted in underestimated impacts The original modeling that produced the 542 acre estimate also likely significantly underestimated the level of impact. First, the modeling used the "concentration caps" used for modeling leachate from waste rock piles.8 This is a complete misuse of data. The 2015 Waste Rock Characterization Data Package states, The maximum concentrations of dissolved metals observed under field conditions result from multiple competing geochemical processes such as mineral precipitation and dissolution, sorption, desorption, and solubility of secondary minerals. The concentration cap, therefore, is primarily an empirical method for modeling the combined effect of these complex processes in field-scale waste rock stockpiles.9 In addition, the modeling assumed a hardness of 100, an assumption that is almost certainly wrong for wetlands.10 The listed model input parameters do not reveal the range in pH; low pH in bogs could also result in higher metal mobilization. Due to these factors (and others that may become apparent on closer examination of the model), the impacts are likely to be underestimated. Material issue of fact 15: Did model inputs result in underestimation of the number of wetland acres that will be affected by ore spillage from railcars? Relief requested: Require baseline monitoring to support modeling. Redo model using appropriate data and assumptions (or range of assumptions).	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
673	Lori Andresen	Save Our Sky Blue Waters	Issue 16: MPCA's 401 Certification must address aluminum. Aluminum has a high potential for exceedances of water quality standards along the haulage track. However, the analysis omitted aluminum because background surface runoff already has a 20 percent likelihood of exceeding the water quality standard. Modeling showed contact water leaving the spillage strip as containing aluminum at 80 times the water quality standard at the P50 level, and 360 times the water quality standard at the P90 level. Even if spillage is reduced by 97 percent, water leaving the spillage strip could contain aluminum at more than 10 times the water quality standard. This aluminum would be added to background levels that are already often near the standard. Aluminum therefore must be considered in regard to this issue despite the lack of quantification of impacts. Material issue of fact 16: Is the spillage likely to result in additional violations of the aluminum water quality standard and/or larger margins above the standard? Relief requested: After remodeling, include an analysis that identifies the increased likelihood of exceedances of the aluminum water quality standard.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
674	Lori Andresen	Save Our Sky Blue Waters	Issue 17: The measures designed to reduce spillage are not enforceable. The 97 percent reduction figure discussed above was arrived at by assuming that the gaps on refurbished rail cars will measure 0.25" for the hinge gap and 0" for the door gap. But these parameters are not included in the permit to mine application, required in the permit to mine Draft Special Conditions, or included in any other permit. Even if the proposed monitoring were adequate (which it is not), it is not sufficient to promise to address water quality problems after they develop. The record more than indicates that there will be water quality standard exceedances, and the permit must require measures to ensure that they do not occur. Material issue of fact 17: Are enforceable requirements needed to ensure the conditions on which the rail spillage analysis was based? Relief requested: Add enforceable provisions to the Certification (or to one of the permits) that requires PolyMet to maintain rail cars with a gap of 0.25" or less for the hinge gap and 0" for the door gap.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.

675	Lori Andresen	Save Our Sky Blue Waters	Issue 18: Additional requirements should be adopted to eliminate water quality standard exceedances. PolyMet continues with its plan to use refurbished side-dump rail cars for hauling ore despite modeling indicating that exceedances of water quality standards are likely to occur in a significant acreage of wetlands due to spillage along the haul route. The Great Lakes Indian Fish and Wildlife Commission, a cooperating agency in the development of the EIS, has suggested using new cars with sealed compartments to address this problem.11 PolyMet also has reviewed several options in its Rail Car Modifications Evaluation.12 An enforceable condition should be added to the 401 Certification and/or the Permit to Mine that requires measures that would eliminate this source of water quality impacts. Material issue of fact 18: Are options available that would eliminate spillage for railcars, and thus eliminate the potential for water quality standard violations? Relief requested: Require that PolyMet use sealed cars or adopt other measures that would result in no water quality standard violations along the rail track; in the alternative, deny the certification.	This comment addresses the 401 certification. See the 401 response to comment document. No changes were made to the draft 401 certification in response to this comment.	This comment addresses the 401 certification. See the 401 response to comment document.
676	Lori Andresen	Save Our Sky Blue Waters	III. Proposed Finding Supporting an MPCA Decision to Hold a Contested Case Hearing The Organizations propose the following finding: MPCA finds that Friends of the Boundary Waters Wilderness and Center for Biological Diversity have raised disputed material issues of fact for which there is a reasonable basis such that the holding of a contested case hearing would allow the introduction of information that would aid the commissioner in resolving the disputed facts in making a final decision on the matter. The issues of fact include: 1a. Do the modeling exercises show exceedances of water quality standards in wetlands that are ignored by MPCA's proposed certification? 1b. Do the modeling exercises cover all potential violations of water quality standards, including in wetlands? 2. Do the evaluation points used for modeling miss stream and wetland locations that may have the highest impacts? 3a. Is the estimated hardness of 60 ug/L for mine site wetlands supported by sufficient evidence? 3b. Is an accurate prediction of water quality standard exceedances possible without site- specific baseline data? 4. Is there potential for water quality standard exceedances the proposed monitoring plans would not detect? 5. Are the increases in mercury, sulfate, methylmercury, and/or other metals shown in the Cross-Media Report significant? 6. Is there potential for violation of the nickel water quality standard even if the copper and cobalt standards are not violated, in the WOI or some other location? 7. Were metals levels in emissions underestimated because non-sulfide minerals that contain cobalt and nickel were omitted from the exercise? 8a. Does the lack of adequate hydrological data result in a potential underestimate of export of constituents to downstream waters? 8b. Does the use of averaging and mean values in the context of constituent concentrations and/or hydrological conditions mask seasonal water quality standard violations? 9. Did the failure to consider mobilization of metals (including mercury) due to fluctuating water levels and snowmelt effects result in an under-prediction of the potential for water quality exceedances? 10. Did the failure to consider the role of organic carbon in metals (including mercury) sequestration rates result in a potential under-prediction of water quality exceedances? 11. Is the assumption that zero mercury that falls on upland or wetland areas (versus open water) enters surface streams valid? 12. Will the combination of leachate from mine features and air deposition result in violations of water quality standards in wetlands at the mine site?	This comment offers desired language for potential findings that would support a presumed, but speculative, MPCA decision on the request for a contested case hearing. See above for detailed responses to issues raised. Comment noted.	Comment noted. Requests for a contested case hearing were evaluated according to current state law.
			13. Will the additive effects of multiple metals impact fish toxicity? 14. Is the analysis that claims a 97 percent reduction in ore spillage adequately supported? 15. Did model inputs result in underestimation of the number of wetland acres that will be affected by ore spillage from railcars? 16. Is the spillage likely to result in additional violations of the aluminum water quality standard? 17. Are enforceable requirements needed to ensure the conditions on which the rail spillage analysis was based? 18. Are options available that would eliminate spillage for railcars, and thus eliminate the potential for water quality standard violations?		

677	Lori Andresen	Save Our Sky Blue Waters	IV.Requested Relief The Organizations would request the following relief in the contested case hearing, as explained above. MPCA should: 1.Deny 401 certification if the analysis predicts water quality standard violations in wetlands, streams, or fish tissue due in whole or in part to air deposition or railroad spillage, based on a weight-of-the-evidence standard. That is, if the weight of the evidence indicates that water standards will be exceeded, the certification should be denied. 2.Require a new modeling effort and analyses that incorporate: additional evaluation points; site-specific baseline water quality and hydrological monitoring data; nickel as a modeled constituent; additional minerals in ore and waste rock that contain the modeled constituents; a range (including maximum) values for baseline water quality and modeled parameters, to capture episodic or seasonal exceedances; the impacts of fluctuating water levels and snowmelt; the role of organic carbon in mobilizing metals; mercury inputs from watershed runoff and snowmelt; multiple-metal toxicity; railcar spillage predictions based on measured and verifiable parameters; appropriate, defensible inputs to the railcar spillage model; potential for exceedances of the aluminum standard; 3.If the certification is granted, require additional monitoring as described above. 4.Require that PolyMet use sealed railcars or adopt other measures that would eliminate the potential for water quality standards along the rail track.	This comment offers desired language for potential findings that would support a presumed, but speculative, MPCA decision on the request for a contested case hearing. See above for detailed responses to issues raised. Comment noted.	Comment noted. Requests for a contested case hearing were evaluated according to current state law.
678	Lori Andresen	Save Our Sky Blue Waters	V.Proposed witnesses and exhibits, and time required We propose to have Dr. Ann Maest appear as our primary witness. Dr. Maest's report on PolyMet's Cross-Media Report is attached and would be introduced at the hearing. The publications and references cited in Dr. Maest's report would be introduced along with additional material not yet identified. Dr. Maest may present testimony and exhibits on additional subjects covered by this petition. Additional witnesses and exhibits have not yet been determined. We expect the presentation of this matter to require one to two days. Thank you for this opportunity to review the proposed 401 Certification. The Organizations believe that a contested case hearing is necessary to correct errors in the air deposition and railcar spillage modeling exercises that could result in unpredicted or undiscovered water quality standard violations. Respectfully submitted, Jane Reyer Advocacy Director Friends of the Boundary Waters Wilderness 401 N. Third St., Suite 290 Minneapolis, MN 55401-1475 jane@friends-bwca.org Marc Fink Senior Attorney Center for Biological Diversity 209 East 7th St Duluth, MN 55805 mfink@biologicaldiversity.org	This comment offers logistical details that are based on a presumed, but speculative, MPCA decision on the request for a contested case hearing. Comment noted.	Comment noted. Requests for a contested case hearing were evaluated according to current state law.
679	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	Dear Commissioners Landwehr and Stine, February 2018 I am writing to urge the Minnesota Department of Natural Resources and Minnesota Pollution Control Agency not to issue a permit to mine or wastewater discharge permit to PolyMet Mining Co. The proposed permits cannot and do not protect future generations from the long-term impacts of sulfide mining. Furthermore, they do not live up to the representations made in the Environmental Impact Statement.	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	
680	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	In Minnesota, groundwater belongs to the public even when it is located within private property, just as surface water does. However, the PolyMet permits are written to allow contamination up to the site's boundary line, which encompasses many square miles. Aside from having no justification in Minnesota law, this is extremely poor public policy that has not been vetted through the regulatory process.	The permit includes provisions intended to prevent the groundwater from being polluted. See response to Comment Water-510. The permit ensures that groundwater outside the seepage capture system will not become polluted.	

681	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	The permits renege on the Environmental Impact Statement promise that an underground wall built to contain and collect groundwater in the most polluted areas will be at least 90 percent effective. The permits would deem the system acceptable if it works under "average annual conditions," effectively disregarding the potential for snowmelt and heavy rainfall to flush pollution through cracks in the wall. The permits provide no standards and no fines if the system fails -even if surface streams become polluted as a result.	See response to Comment Multiple 503. The MPCA has removed the "temporary conditions" language and has revised the language of the permit in light of the comment to state that if an inward gradient is not reestablished within 14 days of detection, it is a violation of the permit. The permit also requires monitoring of the Category 1 stockpile paired wells/piezometers weekly following a 100-year storm event to ensure that monitoring and any necessary preventative maintenance occur promptly. In the event of noncompliance with the permit, the assessment of penalties is determined through the MPCA's enforcement process. As with any NPDES/SDS permit in Minnesota, penalties are not "pre-established" as a term of the permit. MPCA enforcement actions include corrective actions to be taken by the regulated party.	
682	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	The most disturbing aspect of this plan is that no one knows how long it will need to continue. Modeling suggests that the underground barriers will need to stay intact -- along with a continuously operating pump-and-treat system -- for centuries.	See response to Comment Multiple 504.	
683	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	Also continuing for a thousand years or more are the dangers presented by the tailings basin dam. Because safer alternatives for dealing with mine waste exist, permitting a new mine to store toxic waste in liquid form behind a dam of this type is particularly unconscionable. I object to the State of Minnesota sanctioning this threat to future generations living downstream.	Comment noted. This comment pertains to issues considered in the development of the DNR Dam Safety permit. No changes were made to the draft permit in response to this comment.	
684	Chris Knopf	Executive Director, Friends of the Boundary Waters Wilderness	Please protect the future of the people, wildlife and waters of northeastern Minnesota by saying "no" to this mine plan	Comment noted. This comment generally states an opinion and does not reference specific sections of the draft permit (Minn. R. 7001.0110, subp. 2). No changes were made to the draft permit in response to this comment.	