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Subject: Twin Metals Minnesota Comments on Notice of Application for Withdrawal and Segregation of Federal Lands; Cook Lake, and Saint Louis Counties, Minnesota (Superior National Forest Withdrawal Application)

Twin Metals Minnesota (“Twin Metals” or “TMM”) submits these comments on the Department of Interior Bureau of Land Management’s Notice of Application for Withdrawal and Segregation of Federal Lands; Cook, Lake, and Saint Louis Counties, Minnesota, published in the Federal Register on October 21, 2021.¹ These comments are organized as follows:

I	Introduction.	2
II	The Withdrawal Is Contrary to the Administration’s Goals.	5
III	Withdrawal will cost American jobs and cause economic hardship.	11
IV	The Federal Government Has Been An Essential Driver of Mining in Northern Minnesota.....	13
V	The Agencies Must Adhere to the Legal Framework for the Proposed Withdrawal....	15
VI	The Proposed Withdrawal’s NEPA Review Must Recognize the Significant Benefits and Minimal Risks of Nonferrous Mining in the Rainy River Watershed.....	19
VII	The proposed withdrawal undermines the project-specific planning processes that the National and Minnesota Environmental Policy Acts mandate.....	34
VIII	Federal and State Laws Already Ensure Protection of Land, Air, Water, Species, and Historic Resources.	35
IX	Any Withdrawal Is Subject To Twin Metals’ Valid Existing Rights.....	44
X	The Proposed Withdrawal is Unlawful.....	46
XI	Conclusion	48

¹ 86 Fed. Reg. 68,299 (Oct. 21, 2021).



I. Introduction.

A. Introduction to Twin Metals.

Twin Metals is a Minnesota company founded in 2010 focused on the development, construction, operation, and eventual closure of a modern underground copper, nickel, cobalt, and platinum group metals mining project in northeast Minnesota near Ely and Babbitt (the “Project”). To date, Twin Metals has invested over \$530 million in exploration, drilling, environmental studies, and engineering to deliver a mine plan that reflects our commitment to be a model for future mining in the region. In 2021, the Project was ranked as a top 10 global copper project and a top 10 global nickel project. The Project ranks on these lists because of its potential to meet the needs of the future and its value compared to other mines in development around the world.

The Twin Metals Project brings the promise of a significant number of long-term jobs as well as environmentally responsible economic development in the region. In 2019, Twin Metals executed a Project Labor Agreement with the Iron Range Building and Construction Trades Council, committing to union labor for the construction of the Project. Once operational, the mine will provide long-term job opportunities supported by wages that sustain families.

Twin Metals is a subsidiary of Antofagasta plc, a global leader in sustainable mining and one of the world’s top ten copper producers. Antofagasta’s purpose-driven mission is to develop mining for a better future in an innovative, sustainable, and inclusive manner. Antofagasta is recognized as a global leader in sustainable mining. Antofagasta’s four mining operations in Chile will achieve 100% renewable energy usage this year, and the company has a goal to achieve carbon neutrality by 2050. Additionally, Antofagasta adheres to the International Council on Mining & Metals’ Water Stewardship Framework, which ensures the organization’s efficient use of water resources. Antofagasta also recently began the process of certifying its copper production from several of its operations with the Copper Mark standard, which is an internationally validated assurance framework demonstrating that copper production is obtained through processes that meet high standards of sustainability.

B. Overview of the Project.

The Project targets minerals within the Maturi Deposit, part of the Duluth Complex geologic formation in northeast Minnesota. The Duluth Complex is the largest undeveloped copper-nickel deposit in the world.

The responsible development of the Duluth Complex is critical in advancing several of our nation’s most pressing public policy issues, such as tackling the climate crisis—green energy relies enormously on these minerals—bolstering national security, shoring up domestic supply chains and creating American jobs. The Duluth Complex contains approximately 95% of U.S. nickel resources, 88% of its cobalt, 75% of its platinum group metals and about a third of its copper.

Northeast Minnesota is poised to become a global leader in the sustainable extraction of these raw materials that are fundamental elements of the technologies and infrastructure needed to address our nation’s priorities, under the highest environmental standards. The Project is designed with a host of built-in, proven environmental protection measures. Twin Metals will use dry stack tailings management, considered the best available tailings technology in the industry, which means there is no need for a tailings basin or any related dams, and therefore, **no potential for a dam failure**. Mining underground at



depths between 400 and 4,500 feet and use of dry stack tailings management allows the Project to minimize the surface footprint, sized at 1/10th of a traditional open pit mine with similar production capacity and conventional tailings. Ore crushing will occur underground, and the mining operation will process 20,000 tons of ore per day, with a mine life of 25 years.

Due to the unique geology, the mining and processing methods Twin Metals will use, and the storage of waste rock underground, **there will be no potential for acid rock drainage.** The mine will not discharge process water and is designed to not require discharge of contact water. Water used in the mineral concentration process will be reused.

Twin Metals is continuously investigating new opportunities to reduce or avoid greenhouse gas emissions. The Project is on track to become a carbon neutral operation through its incorporation of an electric mining fleet, use of renewable energy, and heat recovery efforts. The company is also working with partners in industry and academia to advance research and testing work to implement a carbon dioxide sequestration program through its olivine-rich tailings.

During the decade of work before Twin Metals submitted its mine plan of operations in late 2019, the company made significant changes to the Project. The proposed project got smaller, moving to 20,000 tons per day production. We transitioned from conventional tailings utilizing a slurry pipeline to dry stack tailings located next to the Project. Our overall surface impact was reduced from over 2,000 acres down to approximately 650 acres. Most recently, we have committed to fully electrifying our mining fleet, and are working toward a carbon neutral project. A detailed description of our Project is provided in Attachment 3.2.

The submission of Twin Metals' mine plan to state and federal regulators in late 2019 marked the culmination of a decade of engineering, environmental study, and community engagement work. This includes the largest hydrogeological study in the history of the region, with the testing of 74 boreholes and the installation of 105 monitor wells. More than 2 million feet of core has been drilled, providing Twin Metals with a deep understanding of the deposit and its geochemistry.

C. Summary of reasons why the withdrawal application should be canceled.

The withdrawal proposal requested by the United States Forest Service ("USFS") should be canceled. It contravenes law and long-standing policy and is not supported by science. It also completely contradicts several of the Biden Administration's chief priorities, such as bolstering long-term national and economic security through a resilient supply chain, addressing the climate crisis, and creating American jobs.

Indeed, the withdrawal proposal, if granted, would impede the country's ability to achieve the administration's highest priority goals—putting the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050—and strengthening American supply chains to promote economic

security, national security and good-paying, union jobs here at home.² Rather than wasting public time and dollars analyzing an ill-conceived withdrawal, the federal government should focus its resources on gaining the knowledge needed to ensure that critical minerals can be obtained from the Duluth Complex through modern mining techniques in a manner protective of the Boundary Waters Canoe Area Wilderness (“BWCAW”). The opportunity for the federal government to do that is available today, through a thorough environmental review of the Twin Metals Project.

The withdrawal proposal does not take into consideration currently available science and decades of environmental review, agency decision making and past practice. The withdrawal proposal also ignores the USFS’s own statements regarding how best to understand potential impacts of projects. In 2005, addressing the National Forest Management Act (“NFMA”), the USFS stated: “Over the course of implementing NFMA during the past 25 years, the agency has learned that environmental effects of projects and activities cannot be meaningfully evaluated without knowledge of the specific timing and location of the projects and activities.”³ Rather, the Forest Service “can most efficiently and appropriately evaluate and analyze the environmental consequences of an array of potential projects and activities when those matters reach the status of a proposal.”⁴

Unlike in 2017, when the USFS last attempted a mineral withdrawal in the area, the Bureau of Land Management (“BLM”) and USFS have a specific proposal from Twin Metals to analyze, which according to the USFS, is the most effective and appropriate way to determine potential project impacts.

A project-specific review would better serve the public interest than an environmental analysis of speculative and hypothetical circumstances. The most powerful and accurate review will be produced by review of the Twin Metals Project, which is already in the scoping process at the state and federal level.

Twin Metals does not assert that all potential mining projects in the region should be approved. Each proposal should undergo the rigorous and well-established regulatory review process to assess its potential impacts and to determine whether it can meet all regulatory standards. That is the only way to both meet our future domestic mineral needs and protect the environment.

The withdrawal proposal is also an attempted runaround of decades of carefully considered Congressional policies for the Superior National Forest (“SNF” or the “Forest”). Establishment of the BWCAW arose out of a long federal process that accounted for both environmental protection objectives and economic development opportunities in the region. In addition, to ensure that mineral development would not harm the BWCAW, Congress established a 220,000-acre buffer area bordering the wilderness, the “Mining Protection Area” or “MPA.” Similarly, Minnesota added its own layer of mining protection

² See Fact Sheet, The White House, President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies (Apr. 22, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/> (hereinafter “April 22, 2021 White House Fact Sheet”) (Attachment 5.1); Fact Sheet, The White House, Biden-Harris Administration Announces Supply Chain Disruptions Task Force to Address Short-Term Supply Chain Discontinuities (June 8, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/08/fact-sheet-biden-harris-administration-announces-supply-chain-disruptions-task-force-to-address-short-term-supply-chain-discontinuities/> (Attachment 5.2).

³ See 70 Fed. Reg. 1023, 1031 (Jan. 5, 2005).

⁴ *Id.* at 1041–42.

areas surrounding the BWCAW and state and federal buffer zones, mining has been promoted as a desired condition outside of the BWCAW and state and federal buffer zones.

Congress's creation of the MPA reflects its intent to preserve the potential for mineral development outside that area. USFS now proposes to take an action that Congress intentionally did not do and has not done since – i.e., to expand the MPA throughout the SNF. USFS is not only violating Congressional action, but its own guidance. USFS's Wilderness Management Manual states: "Do not maintain buffer strips of undeveloped wildland to provide an informal extension of wilderness."⁵ This attempt to administratively expand the wilderness area will have long-term detrimental impacts on the communities in the region, as well as the country as a whole.

Finally, the withdrawal proposal is contrary to law. Withdrawals submitted under the Federal Land Policy and Management Act ("FLPMA") are inapplicable to mineral leasing in the SNF. FLPMA only authorizes the withdrawal of locatable minerals subject to the General Mining Law of 1872, not leasable minerals. Because all of the minerals located within the proposed area of withdrawal within the SNF are leasable minerals, the USFS and BLM do not have the legal authority to withdraw the subject federal minerals under the statutory provisions outlined in the withdrawal proposal.

The withdrawal proposal should be canceled so that proposed projects within the relevant area can be fairly evaluated based on the regulatory system in place and site-specific criteria.

II. The Withdrawal Is Contrary to the Administration's Goals.

A. Twin Metals is capable of producing large amounts of copper, nickel, and cobalt—critical elements that are needed to meet the nation's climate goals.

President Biden has set a target of reducing greenhouse gas pollution 50-52% from 2005 levels by 2030, with an additional goal of reaching net-zero emissions economy-wide by 2050.⁶ To meet these goals with a commitment to American labor and environmental standards, permitting new responsible mining projects must be a domestic priority.

Mining metals like copper, nickel, cobalt, and platinum group metals is critical to our transformation to a clean-energy economy and global carbon reductions.⁷ To point to a few examples, solar and wind power technologies depend heavily on metals. A single wind turbine can contain 4.7 tons of copper,⁸ and hybrid cars require nearly twice as much copper as a standard vehicle. Nickel is fundamental in the production of batteries for energy storage and for electric vehicles ("EVs"). Cobalt is a key element in rechargeable

⁵ U.S. Forest Serv., Forest Serv. Manual 2300 – Recreation, Wilderness, and Related Resource Management, Ch. 2320 at 9 (Amend. No. 2300-2021-2; eff. Sept. 13, 2021), https://www.fs.fed.us/cgi-bin/Directives/get_dirs/fsm?2300.

⁶ April 22, 2021 White House Fact Sheet (Attachment 5.1).

⁷ See *The Raw-Materials Challenge: How the Metals and Mining Sector Will be at the Core of Enabling the Energy Transition*, MCKINSEY & CO. (Jan. 10, 2022), <https://www.mckinsey.com/industries/metals-and-mining/our-insights/the-raw-materials-challenge-how-the-metals-and-mining-sector-will-be-at-the-core-of-enabling-the-energy-transition?cid=other-emi-alt-mip-mck&hdpid=d1d9d3ec-f753-4eaf-b020-1b2640973372&hctky=1788612&hlkid=1bc2c7b118d24de78c903469e7d41688> (Attachment 5.3).

⁸ Renewables, COPPER DEVELOPMENT ASSOCIATION, INC. copper.org/environment/sustainable-energy/renewables/#:~:text=A%20three-megawatt%20wind%20turbine.of%20copper%20per%20MW. (last visited Jan. 13, 2022) (Attachment 5.4).

batteries, and the leading domestic use for platinum group metals is for catalytic converters that decrease harmful emissions from automobiles.

The World Bank's 2020 assessment of critical minerals essential to clean-energy, low-carbon technologies, *Minerals for Climate Action*, predicts we will need to increase cobalt production by 450% by 2050 to meet demands (as a percentage of 2018 production levels) and to increase nickel production by 100% to meet current climate targets established under the Paris Agreement.⁹ While recycling will play a critical role in the overall solution, the Nickel Institute notes that "around 68% of all nickel available from consumer products is recycled and begins a new life cycle; another 15% enters the carbon steel loop."¹⁰ Approximately 17% of nickel ends up in landfills.¹¹ Even recovering and recycling that final 17% will not provide nearly enough nickel to meet expected demand.

According to another study published in the journal *Global Environmental Change*, the global need for copper could increase by an estimated 350% by 2050, with current reserves depleting sometime between 2035 and 2045, as wind and solar energy demands generate an increasing percentage of electricity and more people switch to electric vehicles.¹²

The Twin Metals Project alone would provide enough nickel to build 280,000 electric vehicles annually and enough copper annually to support the development of 10,000 megawatts of solar or 13,000 megawatts of wind. The Project has the potential for its nickel/cobalt concentrate to go directly to a battery manufacturing facility, which could provide additional jobs and domestic manufacturing in the region while keeping the full supply chain local.

The Duluth Complex, much of which is within the area of the proposed withdrawal, contains approximately 95% of U.S. nickel resources, 88% of its cobalt, 75% of its platinum group metals and about a third of its copper. The proposed withdrawal would reduce critical investment in the region and limit the ability of the United States to meet its own supply chain needs.

The Duluth Complex geological formation in its entirety holds enough copper, nickel, and cobalt to help manufacture hundreds of millions EV's. It is the largest undeveloped copper-nickel deposit in the world. According to reporting in the *Mesabi Tribune*:

Using the contents of a Tesla 3 EV as an example, there's enough copper in the Duluth Complex to manufacture 310 million EV's according to MiningMinnesota, a Duluth-headquartered base and precious metals industry group. There's enough nickel in the

⁹ See Kirsten Hund et al., *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition*, WORLD BANK GROUP (2020) (Attachment 5.5).

¹⁰ *Nickel Recycling*, NICKEL INSTITUTE, <https://nickelinstitute.org/policy/nickel-life-cycle-management/nickel-recycling/> (last visited Jan. 13, 2022) (Attachment 5.6).

¹¹ *Id.*

¹² Ayman Elshkaki et al., *Copper Demand, Supply, and Associated Energy Use to 2050*, 39 *GLOBAL ENV'T CHANGE* 305 (Jul. 2016) (manuscript version available at: <http://manuscript.elsevier.com/S0959378016300802/pdf/S0959378016300802.pdf>).

complex to manufacture over 200 million EV's. And there's enough cobalt in the complex to manufacture more than 42 million EV's.¹³

The U.S. Geological Survey's draft 2021 Critical Minerals list includes both cobalt and nickel.¹⁴ The United States currently imports 47% of its nickel, and the only domestic nickel operation, Lundin's Eagle Mine in Michigan, will be coming offline in a matter of three years. Additionally, the United States was 76% import reliant for our cobalt consumption in 2020,¹⁵ with much of the supply coming from the Democratic Republic of the Congo, where environmental and labor standards are virtually nonexistent.¹⁶

If we are to reach the Biden Administration's aggressive goal of 50% vehicle electrification by 2030 and production of almost half of our nation's electricity from solar power by 2050, it is imperative that our country advance domestic mining projects in order to produce the raw materials needed for EV production and clean energy technologies. Any curtailment of mining in an area of the country that contains vast quantities of these raw materials is counterproductive to ensuring we meet these goals.

B. The withdrawal will require that more critical minerals be sourced from overseas.

1. The United States' reliance on foreign minerals is problematic for national security.

Northern Minnesota has the minerals to fuel the green economy and protect our national interests, as well as the means to safely mine those minerals. And while this region is blessed with a rich mineral endowment, our nation's reliance on foreign minerals has increased at an alarming rate since the 1990s. The U.S. is 100% reliant on foreign countries, including Russia and China, for 18 strategic minerals, and we import at least 50% of 30 other minerals from foreign countries.¹⁷

Curbing domestic mining will increase our already excessive reliance on mineral imports and eliminate jobs. Even worse, reducing domestic mineral production would enhance China's and Russia's leverage as producers of many essential minerals used throughout our economy in infrastructure, technology, manufacturing, conventional and renewable energy, and national defense.

If mining is curtailed domestically, the United States will continue to rely on sourcing these metals from overseas locations that do not guarantee environmental and humanitarian standards will be met. These locations also often rely on dangerous labor conditions and use child labor. Finally, reliance on metals sourced from overseas locations only increases greenhouse gas pollution due to these limited environmental standards and increased transportation costs. Sourcing and processing materials locally allows the supply chain to remain within domestic control and utilized by domestic producers.

¹³ Lee Bloomquist, *Minnesota Has the Metals for EV, Green Energy Economy*, MESABI TRIBUNE (Feb. 23, 2021), https://www.mesabitribune.com/mine/minnesota-has-the-metals-for-ev-green-energy-economy/article_810ada2c-7646-11eb-bb2c-bb7589cbe044.html (Attachment 5.7).

¹⁴ 2021 Draft List of Critical Minerals, 86 Fed. Reg. 62199 (Nov. 9, 2021).

¹⁵ U.S. GEO. SURV., MINERAL COMMODITY SUMMARIES, COBALT (Jan. 2021).

¹⁶ See *UNEP Study Confirms DR Congo's Potential as Environmental Powerhouse but Warns of Critical Threats*, U.N. ENVIRONMENT PROGRAMME, <https://www.unep.org/news-and-stories/story/unep-study-confirms-dr-congos-potential-environmental-powerhouse-warns> (last visited Jan. 13, 2022) (Attachment 5.8).

¹⁷ U.S. GEOLOGICAL SOC'Y, MINERAL COMMODITY SUMMARIES 2021, at 7 (Fig. 2 – 2020 U.S. Net Import Reliance), <https://pubs.usgs.gov/periodicals/mcs2021/mcs2021.pdf>.

Strategic minerals are a key part of the supply chains for many sectors—military, technology, healthcare, energy, infrastructure—that can significantly impact U.S. economic and national security. The global COVID-19 pandemic should serve as a lesson for the United States in the dangers of overreliance on foreign sources, particularly China, for control of crucial supply chains.

2. A withdrawal will eliminate opportunities for domestic investment and high-paying American jobs.

Mining is an important contributor to the U.S. economy. While the U.S. has been increasingly reliant on foreign countries for mineral resources in the past several decades, mining supports over 1.5 million U.S. jobs and contributes to economic activity in every state.¹⁸ These jobs are high-paying jobs that are often also union jobs, providing the raw materials that are the backbone of our infrastructure and jobs that support our standard of living.

As domestic and international demand for these minerals increases, and as our economy seeks to transform to meet the future, domestic mining has a significant role to play in the health of our families, our communities, and the economy. With modern mining techniques alongside modern regulatory mechanisms that ensure environmental protection, new mining opportunities can provide regional and national economic and political stability.

In an article acknowledging the confounding guidance that the federal government has provided the mining industry, James Calaway, executive chairman of lithium-boron supplier Loneer Ltd. stated, “If we don’t start getting some mining projects under construction this coming year, then we will not have the raw materials domestically to support EV manufacturing.”¹⁹

Ford Motor Co. president and CEO Jim Farley also announced support for domestic mining and processing of the critical minerals needed for electric vehicle production. “We have to bring battery production here, but the supply chain has to go all the way to the mines.”²⁰ He further stated, “So are we going to import lithium and pull cobalt from nation-states that have child labor and all sorts of corruption or are we going to get serious about mining? . . . We have to solve these things and we don’t have much time.”²¹

While the Biden Administration has signaled a desire to rely on foreign sources for these new metals, this limits both the potential for domestic, high-paying jobs, and offsets environmental gains from the EV market. Currently, forty percent of shipping emissions worldwide come from transporting fossil fuels.²² Raw materials being shipped from overseas will continue to boost greenhouse gas emissions, and foreign

¹⁸ NAT’L MINING ASS’N, THE ECONOMIC CONTRIBUTIONS OF U.S. MINING (2017 Update), at E-1 (Sept. 2018), https://nma.org/wp-content/uploads/2016/09/Economic_Contributions_of_Mining_2017_Update.pdf.

¹⁹ Ernest Scheyder, *U.S. Faces Tough Choices in 2022 on Mines for Electric-Vehicle Metals*, REUTERS (Dec. 22, 2021), <https://www.reuters.com/markets/commodities/us-faces-tough-choices-2022-mines-electric-vehicle-metals-2021-12-22/> (Attachment 5.9).

²⁰ Oralandar Brand-Williams, *Ford CEO Farley Calls for Making EVs More Affordable, Bringing Mining Back to US*, THE DETROIT NEWS (Sept. 25, 2021), <https://www.detroitnews.com/story/business/autos/ford/2021/09/25/ford-ceo-urges-making-evs-more-affordable-bringing-mining-back-us/5852516001/> (Attachment 5.10).

²¹ *Id.*

²² Samantha Subramanian, *Forty Percent of all Shipping Cargo Consists of Fossil Fuels*, QUARTZ (Jan. 14, 2022), <https://qz.com/2113243/forty-percent-of-all-shipping-cargo-consists-of-fossil-fuels/> (Attachment 5.11).

countries often do not have in place the robust environmental regulations to ensure that mining is done responsibly and safely—for workers or the environment.

This reliance on foreign countries not only leaves mining jobs behind, but also leaves behind all of the ancillary jobs that are created by the industry and removes that potential investment from the economy. Because it is an export business, mining brings money in from outside the region that then gets spent in the community. The money that comes from outside the area to the region gets circulated many different times in many different ways, primarily through the payroll of mining operations. Workers then spend that money at retail stores and on accommodations and food services, at car dealerships and schools.

Mining safely and responsibly in northeastern Minnesota is an important part of our domestic investment and our future economic security.

3. Foreign reliance on critical minerals exacerbates environmental justice issues and human rights violations.

When mining projects are delayed or prevented in the United States where we have strict environmental laws, regulations, safety features, and access to the most current technologies, it leads to the extraction of critical minerals abroad and exacerbates our continued dependence on foreign sources for these materials. Without strict environmental regulations and safety practices, the production of minerals in other countries is often subject to different standards for protection of the environment and human rights. Without strong environmental and labor standards, there is great risk of pollution and human rights injustices, which often have a disproportionate effect on already disadvantaged communities.

With demand for minerals projected to grow exponentially in the coming years, particularly because of the need for increased minerals in producing green energy technologies, we must consider the human rights and environmental justice costs of continuing to rely on foreign sources for minerals rather than developing the resources we have in the United States, especially those in northeast Minnesota.

Many regions of the world on which the United States is dependent for its minerals are also home to widespread human and environmental injustice. For example, the Philippines, Indonesia, and New Caledonia produce 42.9% of the world's nickel, and in these countries, it is common for local communities to face challenges due to limited regulations. Poorly regulated mines frequently pollute surrounding bodies of water, impacting drinking water and employment opportunities for fishing communities.

In terms of labor rights, it is well documented that several of the world's top copper, nickel and cobalt producing countries have higher rates of fatal and non-fatal occupational injuries in comparison to the United States, and working poverty rates are also cited as being very high in these countries. Some stark examples of these injustices: In the Democratic Republic of the Congo, which is the world's number one cobalt producer, 85% of the population is ranked as either extremely poor, moderately poor or near poor, meaning they earn between less than \$1.90 per day and \$5.50 per day.²³ Several major news outlets have recently reported on the Congo's widespread use of child labor for the extraction of cobalt. In the Philippines, according to interviews conducted by Amnesty International in 2021, one in five Filipino

²³ *Statistics on the Working Poor*, INTERNATIONAL LABOUR ORGANIZATION, (2019) <https://ilostat.ilo.org/topics/working-poor/> (Attachment 5.12).

mining workers allege that their employers did not properly pay them or they were not paid at all.²⁴ Human Rights Watch has found that Zambians working in the country's Chinese-run copper mines suffer from abusive employment conditions that fail to meet domestic and international standards, such as poor ventilation, lack of protective equipment and threat of being fired should workers refuse to work in unsafe places.²⁵ The Xinjiang province of China—where significant manufacturing of polysilicon and solar panels occurs—has long been associated with alleged human rights abuses.²⁶ Indeed, the United States and many other international democracies believe that China is forcing the mostly Muslim Uyghur population into labor camps in the province.

As the American public and investors become more aware of the costs of our consumption, the demand for ethical standards and environmental practices for materials sourcing will continue to increase. We need to prioritize domestic mining in order to meet these supply chain demands.

4. A withdrawal is worse for the environment as alternative sources of nickel have higher emissions for processing and transportation.

Additional sources of nickel are going to be required as the green economy advances technology to reduce carbon emissions. The Duluth Complex and other nickel sulfide deposits, represent a low emission source of nickel.

Nickel deposits are broadly split into two types: sulfide deposits and laterite deposits.²⁷ Sulfide deposits represent the lowest carbon emission path to source an intermediate nickel product that could feed into battery manufacturing. From published data, the average carbon intensity to first saleable product from a sulfide deposit through flotation processing is 7 tons of carbon dioxide per 1 ton of nickel produced compared to an average of 34 ton of carbon dioxide per 1 ton of nickel produced from laterite through high pressure acid leaching²⁸. Nickel laterite processing requires processing the whole ore by a process called high pressure acid leaching without a pre-concentration and leads to higher energy use and resulting in higher carbon emissions. Nickel sulfide deposits can use flotation as a process to concentrate nickel reducing the mass by approximately 90% prior to additional processing that may be more energy intensive.

Twin Metals is poised to become a leader in low carbon emission extraction of the nickel sulfide deposits. Twin Metals has designed the Project to utilize battery electric vehicles, use renewable energy and is investigating an opportunity to eliminate the use of propane to heat the mine. This would lead to

²⁴ AMNESTY INT'L, PHILIPPINES: UNDERMINING WORKERS' RIGHTS: LABOUR RIGHTS ABUSES IN NICKEL SUPPLY CHAINS (2021) (Attachment 5.13).

²⁵ *Zambia: Workers Detail Abuse in Chinese-Owned Mines*, HUMAN RIGHTS WATCH (Nov. 3, 2011) <https://www.hrw.org/news/2011/11/03/zambia-workers-detail-abuse-chinese-owned-mines> (Attachment 5.14).

²⁶ *China: UN Must Act on Xinjiang Atrocities After Petition Shows Mass Global Outrage*, AMNESTY INT'L (Oct. 11, 2021), <https://www.amnesty.org/en/latest/news/2021/10/china-un-must-act-on-xinjiang-atrocities-after-petition-shows-mass-global-outrage> (Attachment 5.15).

²⁷ National Minerals Information Center, *Nickel Statistics and Information*, U.S. GEO. SURV. <https://www.usgs.gov/centers/national-minerals-information-center/nickel-statistics-and-information> (last visited Jan. 15, 2022) (Attachment 5.16).

²⁸ Canada Nickel Company, *Introduction to Canada Nickel Company – Delivering the Next Generation of Nickel* (Jan. 2022). <https://canadanickel.com/wp-content/uploads/2022/01/Canada-Nickel-Investor-Presentation-FINAL-Jan-6-2021.pdf> (Attachment 5.17)

emissions of less than 0.2 tons of carbon dioxide per ton of nickel in concentrate, significantly less than the industry average of 28 tons of carbon dioxide per ton of nickel.²⁹

III. Withdrawal will cost American jobs and cause economic hardship.

A. Mining is good for the local economy, bringing with it high paying, union jobs.

Historic mine closures have caused a significant decrease in the populations of and economic opportunities available to northwestern Minnesota communities. The Twin Metals Project will revitalize two of these communities: Ely and Babbitt.

The population of Ely, Minnesota has declined by more than 30% since the last of eleven mines in the area (the Pioneer Mine) closed in 1967.³⁰ The population has decreased by about half since the taconite mines closed.³¹ Enrollment in the local schools has followed the same trajectory.³² And the economy of the region reflects the need for additional economic opportunity. Tourism alone is not going to sustain Ely or the surrounding communities. In 2020, by which time the economic effects of the mine closings had unquestionably materialized, there were 3,268 people residing in 1,616 households in the city.³³ Between 2000 and 2020, the population declined more than 12%.³⁴ The median income for a household in the city was \$40,946, far less than the median Minnesota household income of \$74,593.³⁵ The employment rate was 63.4% and only one-third of the population has a bachelor's degree (or higher).³⁶ Nearly 12% of people in Ely are below the poverty line (including 19.6% of people age 65 or older), greater than the state average of 9%.³⁷

The city of Babbitt, Minnesota, has a similar history. With a 2020 population estimate of 1,397, the city has seen a 16% decline in population since 2000³⁸ and a 46% decline since the 1960s.³⁹

The Twin Metals Project offers an extraordinary opportunity for long-term, environmentally sound economic growth and job creation in northeastern Minnesota. The jobs, revenue and taxes generated by mining these resources have the potential to support the communities of Minnesota for years to come. While tourism jobs bring a crucial part of our culture to life in northern Minnesota, our diverse economy is supported by high paying mining jobs, which bring families into restaurants, consumers into shops and students into local schools. Additionally, mining and tourism are not mutually exclusive. Previous mining projects in Minnesota, Michigan, and throughout Canada have not only coexisted with tourism activities, but have also supported additional growth of tourism within their communities.⁴⁰

²⁹ *Id.*

³⁰ *Population of Ely, MN*, <https://population.us/mn/ely/> (last visited Jan. 15, 2022) (Attachment 5.18).

³¹ U.S. Census Bureau, Ely, Minnesota (2020), <https://data.census.gov/cedsci/profile?q=1600000US2719142> (Attachment 5.19).

³² *Editorial: Alarming enrollment drop at Ely schools*, THE ELY ECHO (Oc. 15, 2021), <https://www.elyecho.com/articles/2021/10/15/editorial-alarming-enrollment-drop-ely-schools> (Attachment 5.20).

³³ U.S. Census Bureau, Ely, Minnesota (2020), <https://data.census.gov/cedsci/profile?q=1600000US2719142> (Attachment 5.19).

³⁴ *Id.* (3,724 people lived in Ely in 2000).

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ U.S. Census Bureau, Babbitt, Minnesota (2020), <https://data.census.gov/cedsci/table?q=babbitt,%20minnesota&q=1600000US2719142&y=2000> (Attachment 5.21).

³⁹ *Population of Babbitt, MN*, <https://population.us/mn/babbitt/> (last visited Jan. 15, 2022) (Attachment 5.22).

⁴⁰ See Attachment 4.1.



The Project will bring 750 direct full-time jobs and 1,500 spinoff jobs to residents of Ely, Babbitt, and the greater northeast Minnesota community – a tremendous economic impact. To date, Twin Metals has invested more than \$530 million, with an expected \$1.7 billion through Project construction.

These are much-needed family-sustaining jobs, particularly because northeast Minnesota has been on an economic decline for several decades. According to Minnesota Department of Employment and Economic Development 2019 figures, the average mining wage in northeast Minnesota was more than \$97,000 per year, with all other industries averaging \$43,000 per year. In comparison, the average tourism job pays approximately \$21,000 per year. The region's mining jobs have delivered for communities in Minnesota for over 140 years, and Twin Metals will continue that long tradition.

Twin Metals is committed to building its mine with the skilled union workers of northeast Minnesota. The construction phase of the Project will require several million hours of labor under a project labor agreement already in place with the Iron Range Building and Construction Trades Council. Building the Twin Metals Project is comparable to building a professional sports stadium but funded by private investment without any request for state or federal subsidies.

Twin Metals contributes to Minnesota's economy and the broader region today. Twin Metals' over \$530 million in investment to date has brought union workers to Ely to build our office and core storage facility. We have 22 full time employees and hundreds of consultants in the region that have helped us to develop a model for future mine development in the region. In addition, Twin Metals is a strong supporter of local communities. Since 2010, Twin Metals has contributed more than \$550,000 in financial support to a variety of community organizations, including the United Way of Northeast Minnesota, the Ely Area Food Shelf, and the local school district.

B. The proposed withdrawal could devastate Minnesota's statewide School Trust Fund.

A mineral withdrawal could preclude important potential economic benefits to Minnesota, including having a devastating impact by prohibiting mining of substantial School Trust Fund and University Trust lands. This withdrawal also has the potential to affect the long-term negotiations with Minnesota to address the impacts that the establishment of the BWCAW had on Minnesota's school trust lands.

The nonferrous mining industry is critical in supporting students and the educational system statewide through revenues from mining. Under Minnesota's constitution and statutes, the Minnesota Department of Natural Resources ("DNR") is responsible for managing approximately 2.5 million acres of school and university trust lands and an additional 1 million acres of mineral rights. The agency is charged with administering school trust lands "in a manner that reflects the undivided loyalty to the beneficiaries consistent with the commissioner's fiduciary duties."

In 2017, Dr. Bill Brice (a former director of the MDNR's Lands and Minerals Division) executed an affidavit submitted as a comment on the proposed withdrawal of federal mineral minerals in the Rainy River Watershed.⁴¹ Below are several of his conclusions:

⁴¹ See Attachment 2.2 at 18–20.

- In 2011, DNR projected potential total royalty income from copper-nickel development on school trust lands in Minnesota at about \$2.4 billion.
- The state's mineral interests include extensive holdings located within the Superior National Forest in general and the Rainy River Watershed in particular, much of which is trust minerals. There are approximately 399,500 acres of school trust minerals located inside of the Superior National Forest and outside of the BWCAW.
- There are currently 13,321 acres of trust minerals lying within the Superior National Forest and within the Rainy River Watershed that are subject to state mineral leases granted to private operators. There are also approximately 6,712 acres of tax-forfeited minerals that are currently under state mineral lease in the Superior National Forest.
- The state has about 147,600 acres of mineral ownership within the Superior National Forest and the Rainy River Watershed.⁴² All of it has mineral potential for exploration and discovery of valuable minerals. 20,033 of the acres described above are currently under lease. There is at least a similar amount of private mineral rights within the Superior National Forest and the Rainy River Watershed. Some of the private lands are also leased. This private land also has significant mineral potential.

Minnesota's education system benefits immensely from mineral development on state leased land, and the proposed withdrawal would result in a devastating loss of those benefits.

C. Withdrawal and associated regulatory uncertainty disincentivizes investment in the area.

The proposed withdrawal reduces the chance of businesses investing in communities and workers in northeast Minnesota. Every perceived regulatory instability can reduce new investment and undermine policy goals.

The negative impacts of this chilling effect on future investments in Minnesota must be evaluated by USFS and BLM. School enrollment and the overall economic well-being of northeast Minnesota have declined for decades due to the lack of mining projects moving forward. The proposed mineral withdrawal would mean further declines in enrollment and continued disinvestment in essential services such as healthcare.

The jobs and ancillary benefits from the Twin Metals Project alone present an opportunity to revitalize an entire region of our state. Shutting the door on this opportunity must be evaluated with great concern by USFS and BLM.

IV. The Federal Government Has Been An Essential Driver of Mining in Northern Minnesota.

Mining is an essential part of life and the economy in Northern Minnesota—and has been since the first iron ore was shipped from Minnesota's Iron Range in 1884—in part due to the federal government's role in promoting domestic mining. In 1872, Congress enacted the General Mining Law, which provides the

⁴² See Attachment 4.3 for a map presenting MN School Trust Land Affected by Withdrawal.

foundation for the private acquisition of hardrock minerals on public-domain lands.⁴³ The law's purposes included encouraging development of U.S. resources and facilitating the transfer of public minerals to private parties.⁴⁴ Hence, by declaring that "all valuable mineral deposits in lands belonging to the United States . . . [are] free and open to exploration and purchase,"⁴⁵ the General Mining Law encourages citizens to "enter and explore the public domain, and search for minerals."⁴⁶

One year after enacting the General Mining Law, Congress excepted from it all mineral lands in Minnesota (and Michigan and Wisconsin).⁴⁷ In 1950, however, Congress authorized hardrock mineral exploration and development on public-domain land in the SNF. Specifically, in a law known as the Act of 1950, Congress authorized the Secretary of the Interior, with the consent of the Secretary of Agriculture, to "permit the prospecting for and the development and utilization of . . . mineral resources" in the SNF, to the extent not already statutorily authorized.⁴⁸

According to the Senate report accompanying the Act of 1950, the law was intended not just to "permit" mining in the SNF but to encourage it as a "highly desirable" activity.⁴⁹ Notably, Congress enacted the law against the backdrop of the executive branch's failure to honor and protect mining companies' legitimate reliance interests, resulting in severe economic consequences for those companies.⁵⁰ Indeed, according to the Senate report, it was Congress's dissatisfaction with "investment losses resulting from cancellation of mining permits in the Minnesota forests" that spurred the law's passage.⁵¹ In particular, the accompanying House report stated, companies that "have made investments for the mining and removal of mineral substances from the described lands should be given the privilege of renewing or retaining their permits or leases."⁵²

This view reflects a long-standing and fundamental principle of mineral law and policy: secure mineral tenure, i.e., that those who invest time and money to prospect for minerals on federal land will have secure rights to minerals they find, and thus will not have those minerals arbitrarily taken away by the government. This principle is necessary to encourage the mineral exploration that is critical to the nation's economy, national security, and clean-energy future. Prospecting for hardrock minerals is a difficult, expensive, and time-consuming processes, as is developing such minerals once discovered. Both steps involve special challenges and present a high risk of failure. Federal law has therefore given developers an incentive to take on the risk and expense to explore for minerals on public lands. That incentive is secure mineral tenure. Without that security, no rational prospector would undertake the risk and investment of time and money needed for exploration and development of hardrock minerals. Put simply, secure mineral tenure is what allows the nation to enjoy the enormous benefits that flow from such development.

⁴³ 17 Stat. 91 (May 10, 1872) (codified at 30 U.S.C. Title 30).

⁴⁴ See 30 U.S.C. §§ 21a, 22.

⁴⁵ *Id.* § 22.

⁴⁶ *Andrus v. Shell Oil Co.*, 446 U.S. 657, 658 (1980).

⁴⁷ See 17 Stat. 465 (Feb. 18, 1873) (codified at 30 U.S.C. § 48); S. Rep. No. 81-1778, at 1 (1950).

⁴⁸ 64 Stat. 311 (30, 1950) (codified at 16 U.S.C. § 508b).

⁴⁹ S. Rep. No. 81-1778 at 2.

⁵⁰ See *id.*; H.R. Rep. No. 81-795, at 2 (1949).

⁵¹ S. Rep. No. 81-1778, at 2.

⁵² H.R. Rep. No. 81-795, at 2.

V. The Agencies Must Adhere to the Legal Framework for the Proposed Withdrawal

BLM and USFS must comply with the National Environmental Policy Act (“NEPA”), the Administrative Procedure Act and the Council on Environmental Quality’s regulations for implementing NEPA when assessing the proposed withdrawal. Otherwise, the resulting decision will be set aside as “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law[.]”⁵³ To ensure compliance, the agencies must complete a thorough scoping process for an environmental impact statement that includes the benefits and necessity of modern mining within the SNF. Once the environmental impact statement (“EIS”) for the proposed withdrawal is scoped and the agencies publish a notice of intent, they must complete a comprehensive and detailed review of the proposed withdrawal, its consequences, and alternatives. This review must include consideration of the federal and state laws and regulations that are already in place to protect the SNF and the BWCWA (detailed in Section VIII, below) and the actions that mining projects, like Twin Metals’ Project, have undertaken to eliminate and minimize risks to air, water, species, and other resources.

A. Scoping must consider the impacts of the proposed withdrawal for mining critical minerals in the United States.

BLM and USFS must follow NEPA’s statutory and regulatory requirements to ensure that scoping of the EIS for the proposed withdrawal is thorough and complete. NEPA requires federal agencies to use “an early and open process” to determine the appropriate scope of the environmental analysis.⁵⁴ Agencies must consider (1) what action is proposed and whether that action is connected or triggers other actions; (2) the alternatives to the proposed action including the “no action” alternative; and (3) the potential impacts of the proposed action.⁵⁵ To determine the appropriate scope, the lead agency invites likely affected federal, state, tribal, and local agencies and governments, as well as potentially affected or interested persons and organizations to provide input.⁵⁶ Scoping may involve public meetings, publishing information and communicating in other ways with potentially affected agencies, governments and individuals.⁵⁷ Once the lead agency determines that the proposal to be assessed is sufficiently developed for meaningful public comment, the lead agency must publish a notice of intent to prepare an EIS in the Federal Register.⁵⁸

Here, USFS has not published notice of intent to prepare an EIS in the Federal Register. Because the 2020 changes to the NEPA regulations provide that scoping may occur before the notice of intent is published,⁵⁹ Twin Metals is providing feedback on the appropriate scope of the EIS now. First, USFS must consider the impact of the proposed withdrawal on mining projects. USFS requested that the

⁵³ 5 U.S.C. § 706(2)(A).

⁵⁴ 40 C.F.R. § 1501.9(a) (all references to the Code of Federal Regulations in this comment letter are to the January 12, 2022 edition).

⁵⁵ *Id.* § 1501.9(e).

⁵⁶ *Id.* § 1501.9(b).

⁵⁷ *Id.* § 1501.9(c).

⁵⁸ *Id.* § 1501.9(d). The NEPA regulations require agencies to publish a notice of intent to prepare an environmental impact statement, *id.* §§ 1501.9(d), 1507.3(f)(3), but do not require agencies to publish a notice of intent to prepare an environmental assessment.

⁵⁹ Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304, 43,326 (July 16, 2020) (codified at 40 C.F.R. § 1501.9).



Secretary of the Interior withdraw approximately 225,378 acres from disposition under federal mineral and geothermal leasing laws for twenty years.⁶⁰ While “disposition” is not defined, presumably it encompasses both leasing and pre-leasing activities. For leasable minerals, the proposed withdrawal may bar agency approval of prospecting permits and exploration licenses, as well as preference right and competitive leases.⁶¹ To determine the impact of the proposed withdrawal on mining projects, the agencies must thoroughly consider the type, number, location, and operational performance of projects that are reasonably foreseeable⁶² within the proposed withdrawal area during the withdrawal’s twenty-year timeframe. Only once the agencies determine the range of projects impacted by the proposal can they assess the cumulative economic impact the withdrawal will have on those projects, the surrounding community, and to the nation’s ability to address the climate crisis and create American jobs.

While the agencies must consider the impacts of the proposed withdrawal on reasonably foreseeable projects, they must be realistic about the number of new exploration or mining projects that could be proposed in the next two decades and what impact, if any, the proposed withdrawal may have on those projects. Permitting a new mining project is a time-intensive and expensive process due to the extensive federal and state regulatory regimes that ensure the environment and surrounding communities are protected (see Section VIII). As a result, only a handful of companies have the resources to pursue mining projects on federal lands in Minnesota. The PolyMet Project is the only mine that has been fully permitted in Minnesota in the past two decades and the federal and state environmental review for that project took sixteen years. As such, it is unrealistic, and wholly unsupported by recent history, to assume that there would be more than a few new mining projects permitted in the SNF in the next two decades if the proposed withdrawal is not completed.⁶³

As explained in Sections II and III above, proceeding with the proposed withdrawal will hinder the country’s ability to meet the administration’s clean energy goals and strengthen domestic supply chains, due in part to the proposed withdrawal’s unintended impact on mining-related research, exploration, and development activities. For example, the SNF contains large deposits of olivine, a mineral that absorbs carbon dioxide. The University of Minnesota Duluth’s Natural Resources Research Institute has applied for a grant from the Department of Energy, with technical support from the University of British Columbia and Twin Metals, to conduct advanced research use of olivine to sequester carbon dioxide. Olivine is uneconomical to mine alone but its benefits could be realized as an additional benefit of Twin Metals’ Project. The proposed withdrawal would have the effect of stalling U.S. research and development in this and other critical areas.

Second, the agencies must consider alternatives to the proposed withdrawal,⁶⁴ including the “no action” alternative, i.e., continuing to allow disposition of the land under mineral and geothermal leasing laws. To

⁶⁰ Notice of Application for Withdrawal and Segregation of Federal Lands; Cook, Lake, and Saint Louis Counties, Minnesota, 86 Fed. Reg. 58,299 (Oct. 21, 2021) (hereinafter “Notice of Application for Withdrawal”).

⁶¹ See 43 C.F.R. § 3501.10.

⁶² “Reasonably foreseeable means sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision.” 40 C.F.R. § 1508.1(aa).

⁶³ The agencies must acknowledge that each of the limited number of mining projects reasonably foreseeable within the next twenty years in the Maturi Deposit also hold valid existing rights or state rights and will proceed through the established state and federal environmental review and permitting processes in some form with or without the proposed withdrawal.

⁶⁴ For example, alternatives could include withdrawing less acreage than originally proposed, changing the duration of the withdrawal, or withdrawing only lands with low mineral potential.

arrive at a reliable assessment of the “no action” alternative, not only must the USFS identify reasonably foreseeable projects, it also must determine their performance. However, the agencies lack a single modern operating mining project sited in the Rainy River watershed that could act as a benchmark for mines in this context. What the agencies can do, however, is point to the existing framework of state and federal regulations that ensure that mining projects are not permitted that would impact the BWCAW and the information gathering that will occur through the federal and state environmental review processes that have already begun for the Twin Metals Project.

Finally, to establish the scope of impacts to be considered as part of the EIS, the agencies should look to the resource categories evaluated in the October 2011 final EIS (“FEIS”) assessing a proposed withdrawal of federal lands from new mining claims in Northern Arizona.⁶⁵ The resource categories reviewed as part of the Northern Arizona FEIS represent a level of evaluation consistent with NEPA regulations and include categories such as: air quality and climate, geology and mineral resources, water resources, soil resources, vegetation resources, fish and wildlife, special status species, visual resources, soundscapes, cultural resources, American Indian resources, wilderness, recreation resources, social conditions and economic conditions.⁶⁶ As part of the scoping process, the agencies must also consider measures to mitigate impacts of mining within the SNF.⁶⁷ As discussed in Section VI.C, the potential impacts of responsible mining projects in the SNF to resources such as water, air and climate referenced in the USFS application, are either nonexistent or minor due to use of best available technology and industry-leading operational practices.⁶⁸

B. BLM and USFS must complete a detailed Environmental Impact Statement that thoroughly evaluates reasonably foreseeable projects that could be developed within the proposed withdrawal area.

Once the proposed withdrawal is scoped and the agencies have published the notice of intent to prepare an EIS, the agencies must complete a NEPA analysis.⁶⁹ That analysis must include a “purpose and need” statement, which “should consider the needs and goals of the parties involved in the application or permit as well as the public interest.”⁷⁰ Importantly, it is the “purpose and need for action that will determine the range of alternatives and provide a basis for the selection of an alternative in a decision.”⁷¹ Here, the

⁶⁵ BLM, Northern Arizona Proposed Withdrawal, Final Environmental Impact Statement, DOI-BLM-AZ-A000-2011-0001-EIS (Oct. 2011), <https://eplanning.blm.gov/eplanning-ui/project/103221/510> (“Northern Arizona FEIS”). The Department of the Interior published a record of decision approving the withdrawal on January 9, 2012.

⁶⁶ See Northern Arizona FEIS at Ch. 4.

⁶⁷ NEPA’s implementing regulations require an assessment of the “means to mitigate adverse impacts” in the environmental impact statement. See 40 C.F.R. § 1502.16(a)(9). “Mitigation” means “measures that avoid, minimize, or compensate for effects caused by a proposed action or alternatives as described in an environmental document or record of decision and that have a nexus to those effects.” 40 C.F.R. § 1508.1(s). Several federal court cases have determined that an EIS is inadequate because it did not contain an adequate discussion of mitigation measures or omitted mitigation measures that should have been discussed. See NEPA Law and Litig. § 10:60 - Adequacy of discussion at n.8 (2021).

⁶⁸ The USFS presents information in Section 7 of the withdrawal application about potential adverse mining impacts (water quality related impacts, climate change, and health risks), citing several scientific studies as evidence that mining in the Rainy River watershed would lead to irreversible degradation of the wilderness ecosystem in the BWCAW and surrounding Superior National Forest. Environmental impacts from mining can only be accurately estimated by considering: regional climate, hydrology, and hydrogeology, as these are key to predicting environmental performance; site specific geology, as it is a requirement for accurate water quality predictions; and project-specific engineering, technology, and design, which are necessary to understand how the environment would be protected, and to estimate potential environmental impacts. See Attachment 4.2 for further information.

⁶⁹ See 40 C.F.R. § 1501.3. Because the proposed withdrawal is likely to have significant effects, the agencies will need to prepare an environmental impact statement. See 40 C.F.R. § 1501.3(a)(3).

⁷⁰ 43 C.F.R. § 46.420(a)(2).

⁷¹ *Id.*

agencies will need to objectively evaluate whether proposed withdrawal will accomplish the agencies' purpose and need.

The EIS must then provide a detailed evaluation of the proposed action and assess the following:⁷²

- The proposed action's short- and long-term environmental impacts, the significance of those impacts, and means to mitigate those impacts;
- The reasonable alternatives to the proposed action;
- Any adverse environmental effects that cannot be avoided;
- Any irreversible or irretrievable commitments of resources;
- Opportunities to conserve energy, natural, or depletable resources;
- Any conflicts between the proposed action and federal, regional, state, tribal, and local land use plans or policies;
- Potential impacts to historic and cultural resources; and
- Economic and technical considerations, including the economic benefits of the proposed action.

The agencies must apply NEPA early in the process to ensure that the potential environmental impacts of the proposed action are adequately considered.⁷³ An essential component of this analysis are the commitments that companies like Twin Metals have already made to avoid adverse impacts of mining in the SNF. As detailed in subsequent sections, the agencies must consider the conflicts between the proposed withdrawal and the Superior National Forest Land and Resource Management Plan (hereinafter "SNF Plan"),⁷⁴ which designates mining as a "desired condition" for the Forest.⁷⁵ Additionally, the agencies must consider the conflicts between the proposed withdrawal and national climate goals that require critical minerals, like those located within the SNF, to produce batteries and wind turbines. NEPA further requires the agencies to consider economic impacts. As detailed in Section III, the agencies must consider the loss of jobs and a significant source of revenue to Northern Minnesota if the proposed withdrawal is approved. Lastly, the agencies must consider the need for the proposed withdrawal in the context of federal and state laws currently in place to protect the air, water, species, and cultural and historic resources. The required analysis of a "no action alternative" will show the sufficiency of federal

⁷² 40 C.F.R. § 1502.16; *see also* 42 U.S.C. § 4332(C).

⁷³ 40 C.F.R. § 1501.2(a).

⁷⁴ Land and Resource Management Plan, Superior National Forest, U.S. Department of Agriculture, Forest Service – Eastern Region (rev. July 2004), https://www.fs.usda.gov/detail/superior/landmanagement/planning/?cid=fsm91_049716.

⁷⁵ *Id.* at 2-9 (Desired Condition D-MN-1: "Exploration and development of mineral and mineral material resources is allowed on National Forest System land, except for federally owned minerals in designated wilderness (BWCAW) and the Mining Protection Area (MPA).") Desired Condition D-MN-2: "Ensure that exploring, developing, and producing mineral resources are conducted in an environmentally sound manner so that they may contribute to economic growth and national defense.").

and state environmental review and regulatory programs to thoroughly review projects and only allow them to proceed if they can meet strict environmental protection requirements.

NEPA also requires federal agencies to solicit input and consult with other state, tribal, and local governments, as well as interested individuals and organizations.⁷⁶ Given the significance of the proposed withdrawal for Minnesota's communities and economy, for mining project proponents like Twin Metals, and for the United States' economy and climate, the agencies must solicit significant input from local, regional, state, and federal stakeholders.

VI. The Proposed Withdrawal's NEPA Review Must Recognize the Significant Benefits and Minimal Risks of Nonferrous Mining in the Rainy River Watershed.

Mining has operated in and around the SNF and the Rainy River Watershed for decades. The presence in this area of valuable hardrock minerals (copper, nickel, platinum, cobalt, palladium, and other precious metals) has long been recognized, and exploration has occurred since before 1950 without any harm to the surrounding environment.

Particularly relevant to the Duluth Complex is the 1964 Wilderness Act, which "established a National Wilderness Preservation System . . . composed of federally owned areas designated . . . as 'wilderness areas.'"⁷⁷ The Wilderness Act provides that "wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."⁷⁸ The law, however, does not prohibit the development of existing minerals in the Rainy River Watershed, leading to an extensive public debate regarding whether mineral development should occur in that area.⁷⁹

Congress sought to resolve the debate in 1978 by enacting the Boundary Waters Canoe Area Wilderness Act (the "BWCAW Act").⁸⁰ This law embodied a national compromise: it barred mineral development within the approximately 1.1-million acre wilderness, but it permitted mining in the remaining 2.4 million acres of the Superior National Forest.⁸¹ The statute also, as noted earlier, established a unique protection for the wilderness: the MPA, a 220,000-acre buffer zone of forest lands bordering the wilderness.⁸² The lands subject to the proposed withdrawal are outside both the wilderness and the MPA, lying instead in a part of the SNF where mining has been deemed a "highly desirable" activity.⁸³ The current SNF Plan also designates "[e]xploration and development of mineral and mineral material resources" in the lands at issue as a "Desired Condition."⁸⁴

⁷⁶ 40 C.F.R. § 1501.9(b).

⁷⁷ Pub. L. No. 88-577 § 2(a) (1964), 78 Stat. 890, 890.

⁷⁸ 16 U.S.C. § 1133(b).

⁷⁹ See, e.g., 124 Cong. Rec. S9642 (daily ed. June 23, 1978); 124 Cong. Rec. H13443 (daily ed. Oct. 14, 1978).

⁸⁰ Pub. L. No. 95-495 (1978), 92 Stat. 1649.

⁸¹ See *id.* § 11(b)(1).

⁸² See *id.* §§ 9-10.

⁸³ S. Rep. No. 81-1778, at 2 (1950).

⁸⁴ SNF Plan at 2-9.

A. Mining is already banned in the BWCAW and mineral buffer zones.

The BWCAW is one of the original wilderness areas designated under the Wilderness Act⁸⁵ and enjoys the statute’s full range of protections. In 1978, Congress expanded the BWCAW and designated an MPA around the BWCAW.⁸⁶ The BWCAW Act specifically states that exploration and mining of federal minerals is prohibited within the BWCAW and the MPA.⁸⁷ Together, designation of the BWCAW and MPA withdrew approximately 1,075,500 acres from mining.⁸⁸

In addition to the federal protections, Minnesota adopted Minnesota Statutes Section 84.523 in 1976. This statute stated that no “exploration or mining of minerals, and no state permits, licenses or leases shall be issued to use any other state natural resources for any mineral exploration or mining operations” on state-owned or administered lands within the BWCAW.⁸⁹ Together, the federal and state protections currently in place have been incredibly successful: “Over 100 years of past historical mining activities in the Rainy River Watershed in rock formations containing sulfide minerals, including sixteen commercial mines and two commercial quarries, ten test pits, two test mining shafts, thousands of drill sites, and millions of tons of sulfide-containing mineral stockpiled for decades, all within the Rainy River Watershed, have not resulted in adverse water quality impacts on the BWCAW.”⁹⁰ For additional examples of permitted mines operating without significant environmental impacts, see Attachment 2.2, the Affidavit of Dr. William C. Brice (Dec. 8, 2021).

B. The proposed withdrawal contradicts the Superior National Forest Land and Resource Management Plan.

The proposed withdrawal is contrary to the SNF Plan, which designates mining as a “desired condition” for the Forest.⁹¹ The SNF Plan is the overarching management framework for the Forest. The NFMA “requires National Forest System land [to] be managed for a variety of uses on a sustained basis to ensure in perpetuity a continued supply of goods and services to the American people.”⁹² To achieve these goals, the same law requires that the USFS develop, revise, and amend forest plans.

Chapter 2 of the SNF Plan specifically designates exploration and development of mineral resources as a “desired condition” for the SNF.⁹³ Of course, the SNF Plan does not permit mining of federal minerals in the BWCAW or the adjacent MPA.⁹⁴ But outside of the BWCAW and the MPA, the SNF Plan allows exploration and mining for non-federal minerals, while maintaining appropriate protections to minimize and mitigate any adverse environmental impacts.⁹⁵

⁸⁵ *Id.* § 1132(a)(1).

⁸⁶ Pub. L. No. 95–495.

⁸⁷ *Id.* § 11.

⁸⁸ *Id.*

⁸⁹ Minn. Stat. Ann. § 84.523, subd. 3.

⁹⁰ Attachment 2.2 at 3.

⁹¹ SNF Plan at 2-9.

⁹² *Id.* at 1-5.

⁹³ *Id.* at 2-9.

⁹⁴ *Id.* at 2-9 – 2-10; 3-61.

⁹⁵ *Id.* at 2-10.

Prohibiting mining in the SNF would therefore directly contradict the management framework of the SNF Plan.

C. Twin Metals' Project will responsibly mine the critical minerals the United States needs for its clean energy transition.

This section describes many of the Twin Metals Project's benefits that the agencies should consider as they conduct the EIS on the proposed withdrawal. The Project is thoughtfully sited and will use industry best practices to minimize impacts to the environment. Twin Metals' actions to reduce impacts to the environment are an integral component of the "full and fair discussion" of impacts that NEPA requires every EIS to contain.⁹⁶

The Maturi Deposit has inherent geologic attributes that support environmentally protective mining when paired with responsible engineering/project design decisions. These attributes allowed Twin Metals to design a targeted mining method that drastically reduces the amount of waste rock generated (waste rock is generally one of the areas of greatest concern when considering acid rock drainage). The minor amount of waste rock that will be mined during operations will be kept underground.

The geology surrounding the Maturi Deposit allows for a mine that will not have subsidence, thus enabling backfilling of tailings underground, no permanent waste rock stockpiles on the surface, and disposal of 40% of tailings underground – drastically reducing the surface footprint. In fact, the proposed Project's surface footprint is limited to the mine portals and ventilation raises, which total approximately 20 acres. The underground mine also allows Twin Metals to use conveyors for transporting ore underground and allows for fugitive dust to settle out before it is exhausted from the mine, reducing the fugitive dust emitted compared to an open pit mine.

Hydro drilling and testing at the proposed mine site have shown that Maturi Deposit rock has very low hydraulic conductivity. Preliminary modeling has shown that Twin Metals will have significantly less water entering the underground workings than a comparable open pit mine of its size and is considered to be a "dry mine." The low hydraulic conductivity of the rock also helps to protect water (wetlands and/or small streams) above the mine.

The Maturi Deposit has a low relative abundance of iron sulfides compared to the copper and nickel sulfides. The Twin Metals Project design is based on a flotation flowsheet targeted to recover all types of sulfides (copper, nickel, and iron sulfides) to the two flotation concentrate products which will create low-sulfur tailings. In fact, Twin Metals will ensure that the final flotation cells in the nickel roughing circuit act as sulfur scavengers to recover any remaining sulfide minerals that are not recovered to that point in the flowsheet. Creating a low-sulfur tailings through flotation is key to effectively eliminating acid rock drainage for the tailings. Geochemical testwork has shown that our tailings will not generate acid rock drainage due to the low sulfur content (<0.2%), which is below the threshold identified for acid generation.

In addition to processing considerations, Twin Metals designed its Project to include many built-in, proven environmental protection measures. Twin Metals will crush ore underground and due to the unique

⁹⁶ See 40 C.F.R. § 1502.1.

geology, the mining, processing, and tailings disposal methods Twin Metals will use, and the storage of waste rock underground, there will be no potential for acid rock drainage. The mine will not discharge process water and is designed to not require discharge of contact water. Water used in the mineral concentration process will be reused onsite. Twin Metals will use dry stack tailings management, considered the best available tailings technology in the industry, meaning there is no need for a tailings basin or any related dams, and therefore, no potential for a tailings dam failure. Mining underground at depths between 400 and 4,500 feet, backfilling waste rock and over 40% of the tailings, and using dry stack tailings management allows Twin Metals to minimize the Project's surface footprint to 1/10th of a traditional open pit mine with similar production capacity and conventional tailings.

1. The Project is designed to remove the potential for acid rock drainage.

The Golder Acid Rock Drainage White Paper (Attachment 1.C.1) presents an overview of potential geochemical environmental issues associated with the Twin Metals Project ("ARD White Paper"). The environmental issue of most concern for nonferrous mining is the generation of acid rock drainage ("ARD") and associated metal leaching ("ML"), commonly combined using the acronym ARD/ML. The process of ARD generation is very well understood, as are the engineering options available to prevent, minimize, and mitigate ARD formation. Based on all geochemical information generated to date, the long-term potential for ARD generation for the Twin Metals Project is non-existent.

Twin Metals' strategy for mine material management focuses first on elimination of ARD/ML risk, with engineering controls as a secondary or complementary action. Unlike many other types of ore deposits, the sulfide minerals in the Maturi deposit and other Duluth Complex deposits are directly associated with and generally restricted to the ore, thereby limiting the potential for waste materials that could generate acid. Put simply, Twin Metals' mine design has eliminated what are most often the cause of long-term ARD/ML:

- **No Open Pit:** The environmental benefits of underground mining, as compared to an open pit, include reduced land disturbance and waste generation and the avoidance of a pit lake or other large surface feature at closure. Less land disturbance results in less waste generation and less sulfide mineral exposure, which are common sources of ARD for other mining projects.
- **No Waste Rock Stockpiles:** During operations of the Project, all waste rock will remain underground as backfill thus eliminating a common source of ARD.
- **No High-Sulfur Tailings:** The Project is designed to create low-sulfur tailings through flotation, key to largely eliminating ARD generation. Because virtually all the sulfide minerals are removed in the concentration process, the sulfur content of the tailings would be low ($\leq 0.2\%$) based on geochemical test work.

The ARD potential of mine materials is determined by the balance between the acid generation potential (AP) of a material (i.e., sulfide concentration) and the neutralization potential (NP). The sources of AP and NP in Duluth Complex rock are well understood.

Geochemical characterization of Duluth Complex rocks indicates that total sulfur content and sulfide mineralogy are the controlling factors in the rate and severity of ARD generation before mining and

processing methods are taken into account. Sulfide mineralization within the Maturi Deposit comprises copper, nickel, and iron sulfides. Iron sulfides (e.g., pyrite and pyrrhotite) typically are the most common source of ARD due to their high reactivity, but their abundance in the Maturi Deposit is lower than the copper and nickel sulfides. The copper sulfide chalcopyrite, the most abundant sulfide mineral in the Maturi Deposit, oxidizes at a slower rate than the iron sulfides and may not generate acid upon oxidation. As such, the potential for ARD generation of the Maturi Deposit due to sulfide oxidation is much lower than many other types of deposits containing sulfide minerals.

Silicate minerals are the primary source of NP in Duluth Complex rocks. Silicate mineral NP is sufficient to maintain circum-neutral pH conditions for extended periods for rock with a low total sulfur content. For material with higher total sulfur contents, silicate NP is responsible for a delay in the development of acidic conditions, thereby allowing time for implementation of appropriate engineering controls. The lag time to ARD is also related to sulfur content (i.e., lag time decreases as sulfur content increases).

Twin Metals' characterization program includes both short-term and long-term testing (i.e., static and kinetic tests, respectively). In addition to the evaluation of ARD potential, the testing program provides information to evaluate sulfate and metal leaching from mine materials. These data support the development of mine water quality estimates, a multi-disciplinary effort which includes consideration of many other factors (e.g., water balance, physical characteristics of potential source materials, baseline water quality, geochemical conditions in the receiving environment, etc.).

A comprehensive understanding of the geochemical behavior of mine materials is a fundamental starting point for the prediction and prevention of possible impacts to the receiving environment. The extensive geochemical dataset and deep understanding of the behavior of Duluth Complex rocks result in confidence in the prediction of potential environmental impacts and selection of effective engineering controls.

The ARD White Paper includes a description of the current state of ARD research into the process of ARD formation and methods to minimize its impacts.⁹⁷ It also includes a description of the considerable information available regarding the environmental behavior of the Duluth Complex, which provides a fundamental understanding of the expected environmental behavior of the materials originating from the Twin Metals Project.

Considerable information is available regarding the environmental behavior of the Duluth Complex. Studies of the ARD potential of Duluth Complex rocks have been conducted at the laboratory and field scale by government agencies and research organizations and private industry. The information available from these studies provides a fundamental understanding of the expected environmental behavior of the materials originating from the Twin Metals Project. To add to this understanding, the ARD White Paper describes the comprehensive Mine Material Characterization Program ("MMCP") Twin Metals has implemented, aimed at determining the geochemical behavior of project-specific mine materials including waste rock, ore, and tailings. This program has been developed in cooperation with the Minnesota Department of Natural Resources. Twin Metals' commitment to comprehensive characterization of the

⁹⁷ Attachment 1.C.1 (ARD White Paper).

geochemical behavior of the Maturi Deposit began during exploration drilling and continues today, for a total duration of almost one decade.

2. The Project will manage tailings through dry stacking, eliminating the need for tailings dams and the risk of dam failure.

Based on expert reports and recommendations, the mining industry is moving away from traditional tailings towards the use of dry stack technologies. Benefits of dry stack tailings management include:

- Tailings holding less water (referred to as “filtered tailings,” “paste tailings,” or “dry stack tailings” depending on how much water is removed). Tailings are also more stable and produce much less polluted drainage.⁹⁸
- “Reducing the water content in tailings increases their safety because as water content decreases, so do the probability and consequences of tailings failures. While paste or thickened tailings are safer than conventional slurry, filtered tailings—meaning tailings for which sufficient water has been removed so that the tailings behave like moist soil—have the lowest water content. Filtered tailings reduce the probability and consequence of failure.”⁹⁹
- Paste tailings placed on a liner and covered could have a profound, minimizing effect on pollution.¹⁰⁰
- Paste tailings reduce the project footprint and use less water thus decreasing risk of water pollution.¹⁰¹
- The use of filtered tailings achieves all the benefits of dewatering at closure, but maintains those benefits over the entire life of mine operations. The risk of water seepage and physical instability in conventional tailings facilities (e.g., slurry impoundments) can be reduced by good drainage and maintaining little, if any, ponded water. Hence, effective management of water in and around tailings impoundments is an important responsibility of a mine operator. These problems can be virtually eliminated by using paste and dry stack facilities, since these contain little or no water.¹⁰²
- Not only do filtered tailings facilities eliminate the risk of dam collapse (since no dam is needed), but they also allow the tailings to be compacted to limit infiltration of oxygen and water, thereby

⁹⁸ “PolyMet Mine: The Threat of Tailings Dam Failure, WATER LEGACY <https://waterlegacy.org/tailings-dam-failure/> (last visited Dec. 4, 2021) (Attachment 5.23).

⁹⁹ EARTHWORKS, SAFETY FIRST – GUIDELINES FOR RESPONSIBLE MINE TAILINGS MANAGEMENT, at 14 (June 29, 2020), <https://41p14t2a856b1qs8ii2wy4k4-wpengine.netdna-ssl.com/assets/uploads/2020/06/REPORT-Safety-First-Requirements-for-Safe-Tailings-Management-FINAL.pdf>.

¹⁰⁰ Comment on the PolyMet DEIS. *All SDEIS Public Comments and Corresponding Theme Assignments*, Minnesota DNR (Nov. 2015) at 530. The commentator added: “Paste tailings use less water, require less land, do not require engineered containment dams, generate less acid and contaminants, reduce long-term costs and allow for early reclamation.” *Id.*

¹⁰¹ *Id.* at 526.

¹⁰² *Joint Petition for a Contested Case Hearing Regarding Poly Met Mining, Inc.’s Permit to Mine Application For the NorthMet Project* submitted to DNR by the Minnesota Center for Environmental Advocacy, the Center for Biological Diversity, and the Friends of the Boundary Waters Wilderness (Feb. 28, 2018) at 46–47.

eliminating the risk of acid development and seepage. Because the tailings have already been dewatered, there is no need for water treatment at closure.¹⁰³

- The benefits of filtered tailings are not aspirational; they are readily achievable, as filtered tailings are a well-established technology and “there are no overriding technical impediments to more widespread adoption of filtered tailings technology.”¹⁰⁴

The following characteristics of Dry Stack Facilities reduce the risk of geotechnical failure:

- Elimination of pond on tailings facility: In the event of a failure of a pond on the tailings facility, the water contained in the pond mobilizes and suspends tailings and greatly increases the runout distance. Elimination of a pond can reduce both the probability of failure (as it eliminates certain failure modes) and also the consequence of failure (as the runout distance will be greatly reduced).
- Desaturation and compaction of tailings: Removal of water through filtering, allows tailings to be placed and compacted at, or close to, the optimum moisture content. This allows the mechanical compaction applied to the tailings to achieve greater density, and thus the tailings have increased shear strength and resistance to liquefaction. These dense tailings are less likely to liquefy during failure and thus, if a failure does occur, it is more likely to be a smaller scale slumping failure. Therefore, this is expected to reduce the consequences of failure.

The increased density of placed tailings results in a smaller volume and an increased strength of the tailings. There is also additional flexibility in the shape and height of a dry stack facility. This combines to result in a smaller footprint for tailings disposal. For the Twin Metals Project, a dry stack facility is approximately 1/3 of the footprint of a conventional slurry tailings facility.

There are a number of ways that filtering and dry stacking tailings can have a positive impact on the water management of a mine site, as compared to conventional tailings storage. These include:

- Reduced volume in the process water circuit: The elimination of the tailings settling pond and recovery of water from the filter plant, results in a significantly reduced volume of water in the cycle. This water would typically be drawn from freshwater sources.
- Reduced infiltration and seepage in the tailings: The elimination of the tailings settling pond and the ability to limit exposed tailings through concurrent reclamation and construction staging in most cases would result in less seepage through the tailings and a shorter period of active seepage management following construction of the tailings facility. This means the site can be reclaimed faster for closure.

When choosing the tailings management methods, the primary objective was to select method(s) that are easiest to reclaim with the best long-term closure performance. A secondary objective was to minimize

¹⁰³ *Id.* at 48.

¹⁰⁴ *Id.* at 49.

the footprint. Selecting backfilling for the Twin Metals Project reduces the surface footprint by approximately 40%, is required for long-term geotechnical stability as it provides confinement to the surrounding rock and provides further geochemical stabilization to the tailings by adding cement. Twin Metals considered multiple methods for storing the 60% of tailings that remain on surface and ultimately determined dry stacking was the best method. The benefits of dry stacking for the Twin Metals Project include:

- 1) Best environmental performance for long-term closure.
- 2) Smallest footprint – approximately 1/3 the footprint of a conventional tailing storage facility.
- 3) Highest water recovery – tailings filters recover the water and recycle it to the beginning of processing, reducing the makeup water requirements.
- 4) Allows for concurrent reclamation.
- 5) There is no dam and therefore no risk of a tailings dam failure.

3. The Project is designed to reduce the generation of greenhouse gases and can be a low emission supplier of nickel for the battery market.

Twin Metals expects to lead the industry on reducing greenhouse gas intensity (kilograms of carbon dioxide emitted per kilogram of copper or nickel produced) through electrification and sourcing renewable energy. Twin Metals anticipates the Project's greenhouse gas intensity will be 90% lower than the global average for copper, and >99% lower than the global average for nickel. Twin Metals anticipates being a leader within mines producing nickel concentrates by having a greenhouse gas intensity 97.5% lower than the average for nickel concentrates.

Twin Metals has already committed to using battery electric vehicles, which eliminates greenhouse gas emissions from diesel combustion and minimizes off-site greenhouse gas emissions from power generation. In addition, Twin Metals is evaluating an electric heating system and heat recovery options for the underground mine to replace the proposed propane-fired system, which would eliminate greenhouse gas emissions from propane combustion.

Twin Metals will also continue investigating new opportunities to reduce or avoid greenhouse gas emissions. Twin Metals is currently working with partners in industry and academia to develop methods for permanent carbon dioxide sequestration in its olivine-rich tailings. These efforts could lead to a net zero carbon or even carbon negative Project. An example of this work is a recent Department of Energy grant request by University of Minnesota Duluth's Natural Resources Research Institute in partnership with University of British Columbia and Twin Metals titled "Carbon Mineralization and Critical Metal Extraction using a Minnesota Source of Olivine: Development of a Process that Addresses Climate Change, Produces Domestic Critical Metals, and Decreases the Environmental Impact of Tailings." The proposed research and development study identifies olivine minerals, that would exist in Duluth Complex tailings, that may be treated using carbon dioxide mineralization to sequester carbon dioxide. This is an

example of innovative research that would be impacted by withdrawing minerals for exploration and development.

4. Additional engineering designs and mitigations for the Project ensure water resources are protected and reduce potential visual and noise impacts.

The dry stack facility will be built with multiple layers of environmental control measures, that in many cases are redundant, to ensure the facility is protective of water resources. The entire footprint of the dry stack facility where tailings are placed is lined with a linear low density polyethylene liner or equivalent, which will intercept any draindown or seepage. In addition, there are two types of drains that provide a route to drain from the stack any water that maybe intercepted by the liner. This allows for management of the draindown and prevents building a significant hydraulic head on the liner. Due to the design of the liner and overliner drains, the hydraulic head on the liner is minimized and seepage through the liner is a minimal concern but the design includes an underliner drain that reports to the same location as the overliner drain.

Both the overliner drains and the underliner drains report to the dry stack facility perimeter ditch, which is contained within the groundwater cutoff wall. Seepage not collected by either type of drain would be intercepted by the groundwater cutoff wall and not leave the tailings management site.

The groundwater cutoff wall is made up of low hydraulic conductivity compacted material that includes a grout curtain where bedrock conditions require. Additionally, the ditch is designed to have an inward gradient, meaning water outside the footprint would have a gradient entering the ditch as another mechanism for any seepage not to flow through the groundwater cutoff wall.

Concurrent reclamation plays an important role in the water management and dust management strategies. Keeping the area of exposed tailings low reduces potential water and dust impacts. The maximum area of tailings exposed at one time is expected to be up to 150 acres. Additionally, by conducting concurrent reclamation of the tailings facility it provides opportunities to test different covers and reclamation types at a commercial scale.

The process water pond design exceeds regulatory standards. It will be double lined with a leak detection and collection system in between the two liners. Part of the pond walls will be below grade, constructed into bedrock reducing the consequence if there was a failure in a pond wall. The process water pond's catchment area is the footprint of the pond and therefore has been designed to handle the 72-hour probable maximum precipitation which is approximately equivalent to the total annual precipitation in Northeastern Minnesota falling in a 3-day period.

The Twin Metals Project's lighting plan has been designed in accordance with International Dark Sky Association guidelines. Project features will minimize the heights of various facilities and initial assessments show it would not be visible from the BWCAW. The Project will also minimize noise in the immediate vicinity, which further protects the BWCAW. Initial noise modeling has shown there would be no noise impacts to the BWCAW from the Project. Some of the measures that will minimize noise include placing mining equipment—such as the crushers and exhaust ventilation fans—underground, and surrounding the process equipment with buildings.

5. The Project will conduct concurrent reclamation and is developed and designed in a manner to promote closure.

The purpose of this section is to describe how reclamation would occur and therefore protect the environmental long-term including downstream waterbodies. Reclamation is the process of restoring properties mined or modified to support mining, to a natural condition or economically usable purpose, including controlling and protecting against potential adverse environmental effects and planning for and facilitating future orderly development or other post-closure land uses of the properties. Reclamation includes the measures undertaken to bring about the necessary reconditioning or restoration of lands or water affected by exploration, mining, on-site processing operations or waste disposal in a manner which, among other things, would prevent or control on- or off-site damage to the environment.

Reclamation of the Project consistent with state and federal regulations is economically and technically feasible. The Project is designed so that Twin Metals can complete all required reclamation and be released from the DNR's Permit-to-Mine. Reclamation will occur during all phases of the Project including construction, operations, closure, and post-closure. When reclamation occurs during the construction or operations phase it is referred to as concurrent reclamation.

Closure is the process of terminating and completing final steps in reclaiming any specific portion of a mining operation. For the Project, closure is defined as the 3-year phase after operations cease. During closure, infrastructure would be removed, flooding of the underground workings would begin, and disturbed surfaces would be regraded and revegetated. After the 3-year closure phase, a post-closure phase of maintenance and monitoring would confirm that reclamation has been sustained and post-closure performance criteria have been achieved.

Reclamation and closure planning begins with project design and engineering and continues through the process of restoring properties mined or modified to support mining, to a natural condition or economically usable purpose. This includes planning for controlling and protecting against potentially adverse environmental effects and planning for and facilitating future orderly development of the properties. Reclamation is not just a company decision; input for post-closure land use will be required from the agencies and the community and aligned to match goals set for the area and community moving forward.

The underground mine undergoes its own form of concurrent reclamation through the operations phase. Throughout the mining process, after a void is created by mining a stope, the trough of the stope is barricaded and backfill in both the form of waste rock and cemented tailings backfill occurs. This effectively closes each stope on a stope-by-stope basis. Backfilling the stope with waste rock and engineered tailings backfill makes the stope geotechnically stable to prevent subsidence. The cemented tailings backfill cements any waste rock in place managing the concern of ARD by inhibiting oxygen to the surface of the waste rock effectively stopping the oxidation reaction and preventing ARD.

When mining ceases at the site, the remaining stopes are individually backfilled and closed to increase confidence in the geotechnically stable of the mine by providing confinement to the pillars resulting in no subsidence long-term; while much of the underground mine would be backfilled through the course of mining, portions of the underground mine would remain unfilled, and this is taken into account in the geotechnical stability analysis. The next step in closing the underground mine is removing equipment and any infrastructure that may affect long-term water quality from the underground mine. After removal of

equipment and infrastructure from the underground workings, the mine would be allowed to fill with groundwater as groundwater levels progressively rise to pre-Project conditions after mine dewatering ceases. Flooding the mine stops the oxidation reaction and has been shown to be an effective method of controlling ARD. Mine flooding could be accelerated by pumping water underground or additional backfilling of underground drifts with cemented tailings backfill.

Access to the underground workings would be closed off to the public throughout closure. Once closure activities in the underground workings have been completed and approved pursuant to federal and state regulations, fill would be placed within the upper segment of the declines and at the portal as a barrier to block mine re-entry. The ventilation raises are cemented closed at the upper portion and further capped on surface so there is no risk to the public. The barrier would be covered with a granular cover layer, above which rooting soil would be placed to support revegetation of the portal area.

Post-closure maintenance would consist of vegetation monitoring and monitoring the portal, ventilation raise sites, and first 2,000 feet of mine decline to confirm closure integrity and lack of subsidence. All buildings associated with the Project would be demolished unless a post-mining onsite use is identified and approved by the appropriate regulatory and land management agencies that would benefit from the infrastructure. Reclamation of structures and supporting infrastructure would generally include salvage (when practicable / feasible), demolition and disposal. It is anticipated the majority of the demolition waste (not salvageable, saleable, recyclable or reusable) from removal of structures would be acceptable for disposal in a new (location to be determined) or existing demolition debris landfill.

The post-closure surface of the plant site would be graded to drain toward adjacent wetland complexes and would generally re-establish pre-Project flow directions and discharge locations. Reclamation design would aim to create conditions where runoff rates and volumes estimated for stormwater reaching downstream surface water receptors are similar to pre-mining site conditions.

Plant communities selected for revegetation would be confirmed based on reference site and revegetation plot findings. Until then, plant communities have been selected considering climate change and the anticipated evolution of plant communities in the project region. The target plant community at the plant site would include a range of mixed hardwood pine forest to jack pine barrens.

Post-closure maintenance would consist of vegetation monitoring and monitoring to confirm performance of stormwater and erosion control.

Reclamation design would aim to create conditions where runoff rates and volumes estimated for runoff reaching downstream surface water receptors are similar to pre-mining site conditions. Post-closure grading plans and drainage features would be designed to minimize concentrated flow and limit flow velocities such that, together with the vegetated cover, the resulting tailings management site would be stabilized with erosion potential generally similar to pre-mining site conditions. The slope of the dry stack facility was selected based on Twin Metals' tailings an additional factor of safety to ensure long-term stability of the tailings and the dry stack facility.

The tailings are placed in a manner that keeps long-term closure in mind, meaning that it is likely that when placing the dry stack facility cover, relatively little grading would be required to establish a finished

slope towards the perimeter of the lined dry stack facility as this grading would occur as part of routine dry stack facility operations.

The long-term cover is selected to accomplish the following objectives:

- 1) Meet reclamation and closure regulatory requirements
- 2) Control fugitive dust emissions
- 3) Provide a suitable growth media for revegetation
- 4) Manage infiltration of precipitation
- 5) Continue surface water management activities to shed stormwater off the DSF

The currently proposed plant communities for the dry stack facility are diverse grasslands with pollinator species. These grasslands would establish an erosion resistant growth environment and then natural succession vegetation would be encouraged with the long-term objective of establishing a vegetated cover consistent with the surrounding environment.

A significant amount of water is removed from the tailings via thickening and filtering prior to the placement of tailings during operations. When placing the tailings at a low percent moisture, this allows a greater mechanical compaction of the tailings that aids in promoting runoff and reducing infiltration and seepage through the stack. The removal of water from the tailings prior to placement as well as the additional compaction that occurs when tailings are placed aids in long-term seepage management. During placement the dry stack is expected to have draindown (seepage through the tailings) but is expected to curb once placement of tailings ends and final reclamation cover installed. The dry stack liner system includes over and under liner drains that are designed to capture the draindown and seepage that may occur. In the early years of closure, any draindown or seepage that may occur can be captured and managed by pumping the water underground to flood the mine or treating and discharging through a water treatment plant (if required). Further into closure, the seepage is expected to reduce to an amount that is insignificant.

Industry best practice for mine closure aims to transition to a post-mining land use responsive to community engagement. "Community engagement" includes local municipal, county, and tribal government input, as well as local stakeholder groups such as recreation, education, and other public interest groups. A mine closure process may aim to identify and implement land uses that sustain and achieve economic, social, tribal, cultural and/or environmental benefits well beyond the life of the mine. Underground mines in particular can offer creative reuse and multi-use opportunities. Closure planning is not only about the mine site itself, but also about its workforce. Mining companies can help to retrain and re-trench its workforce in new careers to ensure individuals and their families are economically supported once the mine ceases to operate. Closure planning also extends to local communities to help them accommodate economic growth and transitions associated with mines, but also to recognize there will be a different life for the site after the mine. Mine closure, if done properly, is about new beginnings desired by communities. As a steward of the land and a member of the community, Twin Metals looks

forward to playing a leadership role planning for closure of Twin Metals' Project and relying on both globally recognized best practices and our neighboring community engagement input.

6. Significant research and information has been developed that will inform the EIS process.

The original Mine Plan of Operations ("MPO") was provided to the BLM on December 18, 2019, and is included as Attachment 3.3. Twin Metals responded to BLM comments on the original MPO and produced the MPO Addendum (Attachment 3.4) to address remaining questions on the Project proposal prior to the issuance of the Notice of Intent.

In parallel with state and federal EIS processes that were progressing concurrently, Twin Metals continued to refine the Project to reduce potential environmental impact and address state and federal agency questions. For the federal EIS, this culminated in developing a Project Description (Attachment 3.2) in October 2021 that includes following:

- Project Reclamation Plan (Attachment 3.2.1);
- Interim Management Plan (Attachment 3.2.2);
- Spill Contingency Plan (Attachment 3.2.3); and
- Transportation Plan (Attachment 3.2.4).

The October 2021 Project Description (Attachment 3.2) and its appendices (Attachments 3.2.1 through 3.2.4) provide the most comprehensive representation of the technical details and configuration of the Project and reflect Twin Metals' valid and existing mineral rights.

In November 2021, Twin Metals developed an updated MPO (Attachment 3.1) to describe mining a different combination of minerals based on recent actions the BLM took against Twin Metals regarding Twin Metals' two preference right lease applications ("PRLAs") covering public-domain lands adjacent to the land covered by its two federal leases. The alternative mine plan replaced PRLA ore tons with additional tons from Twin Metals' 1352 federal preference right lease, state leases, and private mineral leases. All minerals rights across various owners are adjacent to each other, therefore the macro location of underground mining did not change. The Project configuration on surface to support the alternative mining plan does not differ from the surface features described in the October 2021 Project Description. Overall, this led to minimal project changes between the October 2021 Project Description and the November 2021 MPO. As a part of the November 2021 MPO, Twin Metals provided the following additional documents:

- Mineral and Surface Ownership Information (Attachment 3.1.1);
- Project Reclamation Plan (Attachment 3.1.2);
- Transportation Plan (Attachment 3.1.3);
- Spill Contingency Plan (Attachment 3.1.4);

- Environmental Quality Assurance Plan (Attachment 3.1.5); and
- Interim Management Plan (Attachment 3.1.6).

During the scoping processes for the federal and state EISs, Twin Metals continued to analyze potential impacts on a resource-by-resource basis. Twin Metals prepared resource reports and volumes that document baseline conditions, resource evaluation methodology, and results of potential impacts. Twin Metals provided the following resource reports or volumes to BLM prior to November 2021:

- Appendix D.2 Water Resource Volume 1 Baseline Conditions (Attachment 1.D.2)
 - Appendix D.2.1 Water Resources Volume 1 Appendix A Surface Water Hydrology and Water Quality Baseline (Attachment 1.D.2.1)
 - Appendix D.2.2 Water Resources Volume 1 Appendix B Hydrogeology and Groundwater Quality Baseline Data (Attachment 1.D.2.2)
 - Appendix D.2.3 Water Resources Volume 1 Appendix C Public Surface Water and Groundwater Information (Attachment 1.D.2.3)
 - Appendix D.2.4 Water Resources Volume 1 Appendix D Climate Baseline Data (Attachment 1.D.2.4)
 - Appendix D.2.5 Water Resources Volume 1 Appendix E Base Flow Separation and Low Flow Analyses of the Project Creeks (Attachment 1.D.2.5)
 - Appendix D.2.6 Water Resources Volume 1 Appendix F Surface Water Quality Graphical Representations and Trend Analyses (Attachment 1.D.2.6)
 - Appendix D.2.7 Water Resources Volume 1 Appendix G Proposed Class 3 and 4 Water Quality Standards as Evaluation Criteria (Attachment 1.D.2.7)
 - Appendix D.2.8 Water Resources Volume 1 Appendix H Hydraulic Gradient Assessment (Attachment 1.D.2.8)
 - Appendix D.2.9 Water Resources Volume 1 Appendix I Large Tables (Attachment 1.D.2.9)
 - Appendix D.2.10 Water Resources Volume 1 Appendix J Groundwater Baseline Data Evaluation (Attachment 1.D.2.10)
- Appendix D.3 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation (Attachment 1.D.3)
 - Appendix D.3.1 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix A Waste Rock and Ore Static Testing Results (Attachment 1.D.3.1)

- Appendix D.3.2 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix B Tailings and Cemented Tailings Static Testing Results (Attachment 1.D.3.2)
- Appendix D.3.3 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix C Ore Humidity Cell Testing Results Group HCT C-1 (Weeks 0 to 78) (Attachment 1.D.3.3)
- Appendix D.3.4 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix D Waste Rock Humidity Cell Testing Results Group HCT C-1 (Weeks 0 to 52) (Attachment 1.D.3.4)
- Appendix D.3.5 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix E Tailings Humidity Cell Testing Results (Weeks 0 to 52) (Attachment 1.D.3.5)
- Appendix D.3.6 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix F Cemented Tailings Monolith Diffusion Testing Results (Attachment 1.D.3.6)
- Appendix D.4 Socioeconomics and Environmental Justice Volume 1 (Attachment 1.D.4)
- Appendix D.5 Socioeconomics and Environmental Justice Volume 2 (Attachment 1.D.5)
- Appendix D.6 Socioeconomics and Environmental Justice Volume 3 (Attachment 1.D.6)
- Appendix D.7 Geology, Soils, Minerals Resource Report (Attachment 1.D.7)
 - Appendix D.7.1 Geology, Soils, Minerals Resource Report Appendix A USFS ELT Soils Information (Attachment 1.D.7.1)
 - Appendix D.7.2 Geology, Soils, Minerals Resource Report Appendix B Surficial Geology Intersected By Project (Attachment 1.D.7.2)
 - Appendix D.7.3 Geology, Soils, Minerals Resource Report Appendix C NRCS Soils Information (Attachment 1.D.7.3)
 - Appendix D.7.4 Geology, Soils, Minerals Resource Report Appendix D Surface Mineral Ownership (Attachment 1.D.7.4)
- Transportation Resource Report (Attachment 3.6)
 - Appendix A Transportation Level of Service Analysis (Attachment 3.6.1)
- Land Use Resource Report (Attachment 3.7)

During the state EIS scoping process, Twin Metals submitted five different iterations of the scoping environmental assessment worksheet (“SEAW”) data submittal to the Minnesota Department of Natural Resources, from December 12, 2019, to November 11, 2021. The November 2021 SEAW Data Submittal (Attachment 3.5) describes the same project as the October 2021 Project Description (Attachment 3.2), but includes additional detail regarding Twin Metals’ initial assessment of relevant resources that was completed as part of the original December 2019 SEAW submittal.

VII. The proposed withdrawal undermines the project-specific planning processes that the National and Minnesota Environmental Policy Acts mandate.

The proposed withdrawal undermines NEPA’s and the Minnesota Environmental Policy Act’s (“MEPA”) project-specific planning processes by proposing a ban on mining in the SNF without thoroughly assessing the merits of proposed projects. As described in Section V, NEPA requires that federal agencies complete a comprehensive review of the impacts of each proposed major federal action.¹⁰⁵ MEPA requires a similarly robust assessment of a project’s environmental impacts by requiring each state department and agency to “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”¹⁰⁶ Under MEPA, state agencies must prepare an environmental impact statement when “there is . . . potential for significant environmental effects resulting from any major governmental action.”¹⁰⁷ The MEPA EIS must analyze the environmental impacts, alternatives and mitigation opportunities for the proposed action, as well as the economic, employment and sociological effects.¹⁰⁸ Like NEPA, MEPA provides opportunities for public input throughout the process.¹⁰⁹

The proposed withdrawal seeks to undermine and short-circuit the NEPA and MEPA processes by banning mining for twenty years, thereby denying mining project proponents an opportunity to undergo the federal and state review processes to determine the impacts of their individual proposed projects. This is short-sighted. Modern mining projects like the Twin Metals Project are designed to minimize impacts to the environment by mining beneath the surface, processing tailings to remove sulfide minerals to avoid acid rock drainage, and storing tailings either underground as backfill or in surface dry stacks. NEPA and MEPA also provide decisionmakers, other federal and state agencies, local governments, tribes, and the public with an opportunity to evaluate the benefits of these projects. And, as detailed in Section II, mining critical minerals in the United States is essential to building a clean-energy economy, meeting the United States’ ambitious climate goals, and providing a source of well-paying local jobs. Because NEPA and MEPA require decisionmakers to assess the potential impacts, both positive and negative, of each proposed Minnesota mining project, the extreme remedy of withdrawal is unnecessary. Instead, the agencies should allow the federal and state environmental review processes to assess

¹⁰⁵ 42 U.S.C. § 4332(C); 40 C.F.R. § 1502.16.

¹⁰⁶ Minn. Stat. Ann. § 116D.03, subd. 2.

¹⁰⁷ *Id.* § 116D.04, subd. 2a.

¹⁰⁸ *Id.*

¹⁰⁹ Minn. R. 4410.2100, 4410.2600, 4410.2700.

proposed projects and determine the fate of those proposed projects based on the project-specific alternatives and potential impacts.

VIII. Federal and State Laws Already Ensure Protection of Land, Air, Water, Species, and Historic Resources.

Currently, the SNF's resources and values are adequately protected by numerous federal and state laws. Some of these laws ensure that mining is generally conducted responsibly and in an environmentally safe manner. Others focus on protections for specific resources. The proposed withdrawal is unjustified because these laws collectively provide comprehensive protection for the Superior National Forest that would apply to any mining activity within the proposed withdrawal area. In addition to the many federal and state laws summarized below, mining projects are subject to regional and local regulations, rules, and siting processes.

Given the extensive protections federal and state laws already provide to the Forest, proceeding with the proposed withdrawal would be contrary to the intent of the Secretary of the Interior's withdrawal authority. FLPMA provides the authority to the Secretary of the Interior to withdraw land for certain purposes.¹¹⁰ Specifically, federal land can be withdrawn from "settlement, sale, location, or entry, under some or all of the general land laws, for the purpose of limiting activities under those laws in order to maintain other public values in the area or reserving the area for a particular public purpose or program"¹¹¹ The agencies have not provided evidence that withdrawing the SNF from disposition under the mineral and geothermal leasing law is necessary to maintain public values or preserve the area for a certain purpose. Conversely, the SNF Plan designates "[e]xploration and development of mineral and mineral material resources" in the lands at issue as a "Desired Condition."¹¹² And, USFS guidance states that withdrawal is not the preferred mechanism for maintaining other public values or reserving areas for a particular purpose or program in areas open to mineral leasing.¹¹³ Therefore, to the extent the agencies provide evidence that protections are needed to maintain other public values in the SNF (and so far, the agencies have not), withdrawal is not the appropriate tool to use to maintain those values.

As described in detail below, every mining project is subject to extensive regulation to ensure protection of the SNF's values. The agencies have not identified a purpose or need for the proposed withdrawal beyond what the status quo protections provide, and therefore the proposed withdrawal is unwarranted.

A. Land and siting protections.

Several federal and state laws govern the siting, construction, operation, and reclamation of mining projects and ensure protection of the environment every step of the way.

¹¹⁰ 43 U.S.C. § 1714(a); see related regulations at 43 C.F.R. Parts 2300 and 2310.

¹¹¹ 43 U.S.C. § 1702(j); 43 C.F.R. § 2300.0-5(h).

¹¹² SNF Plan at 2-9.

¹¹³ See U.S. Forest Serv., Forest Serv. Manual 2700 – Special Uses Management, Ch. 2760 (Withdrawals) at 3 (eff. June 1, 1990), https://www.fs.fed.us/cgi-bin/Directives/get_dirs/fsm?2700. ("Requests for withdrawal from mineral leasing should be made rarely (see FSM 2761.04). Existing public laws, Federal regulations, and leasing stipulations provide substantial opportunities (FSM 2822.2) to accommodate both surface resources and the recovery of leasable minerals.")

Responsible development on federal lands begins with the leasing process. Prior to any prospecting or exploration of lands to determine whether a valuable deposit exists, an individual or entity must obtain a prospecting permit.¹¹⁴ If a permittee discovers a valuable deposit of a leasable mineral during the prospecting permit term, the permittee may apply for a preference right lease.¹¹⁵ BLM will not issue a prospecting permit or a lease unless doing so: “conforms with the decisions, terms and conditions of an applicable comprehensive land use plan.”¹¹⁶ BLM must also “comply with any applicable environmental requirements before issuing [] a permit or lease” and may impose conditions in the permit or lease to comply with environmental requirements.¹¹⁷ BLM will not issue a permit or lease for an area deemed unsuitable in the resource management planning process.¹¹⁸

Prior to conducting any operations under a permit, license or lease, every mining operator must submit an exploration or mining operations plan to BLM.¹¹⁹ The plan must include information regarding: the geologic conditions and mineral resources, maps, descriptions of the operating methods, descriptions of the structures and facilities to be built, estimates of the quantity and quality of mineral resources and a comprehensive reclamation schedule.¹²⁰ It also must include an explanation of the environmental aspects associated with the proposed mining operations, including: an estimate of the quantity of water to be used and any potential pollutants, a design for control of runoff and drainage to prevent pollution to receiving waters and a “description of measures to be taken to prevent or control fire, soil erosion, subsidence, pollution of surface and ground water, pollution of air, damage to fish or wildlife or other natural resources and hazards to public health and safety.”¹²¹

Approval of an operations plan is a “major federal action” and requires a NEPA review.¹²² When assessing the potentially affected environment, BLM must consider “the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act.”¹²³ BLM also must consider a range of effects, including: short and long term effects, beneficial and adverse effects, public health and safety effects, and any effects that “would violate Federal, State, Tribal, or local law protecting the environment.”¹²⁴

In addition to the permits and leases required to mine on federal lands, project proponents often must obtain special use permits for other uses of National Forest System Lands.¹²⁵ To obtain a special use permit, an individual or entity must file a proposal with the relevant District Ranger or Forest

¹¹⁴ 30 U.S.C. § 192c; 43 C.F.R. § 3501.10(a). Note that the General Mining Act of 1872 does not apply to federal lands in Minnesota. 30 U.S.C. § 48. Instead, Congress authorized the Secretary of the Interior to “permit the prospecting for and the development and utilization of such mineral resources” in a special, Minnesota-specific statute: 16 U.S.C. § 508b. While the permission to prospect for and lease minerals is based in a state-specific statute, the Secretary of the Interior manages these processes under its general Part 3500 Regulations - Leasing of Solid Minerals other than Coal and Oil Shale. 43 C.F.R. §§ 3501.1(b)(3), 3503.13(c).

¹¹⁵ 43 C.F.R. § 3501.10(c).

¹¹⁶ *Id.* § 3501.17(a).

¹¹⁷ *Id.* § 3501.17(b).

¹¹⁸ *Id.* §§ 3501.17(c), 1610.7-1.

¹¹⁹ *Id.* § 3592.1(a).

¹²⁰ *Id.* § 3592.1(c).

¹²¹ *Id.* § 3592.1(c)(8).

¹²² *See* 40 C.F.R. § 1501.1.

¹²³ *Id.* § 1501.3(b)(1).

¹²⁴ *Id.* § 1501.3(b)(2).

¹²⁵ 36 C.F.R. § 251.50(a). Special use permits are not used for sharing roads, grazing and livestock, sale and disposal of timber and special forest products, and minerals because these activities are governed by special regulations and permitting regimes.

Supervisor.¹²⁶ The USFS assesses the potential impacts of the proposed special use and ensures that the proposed special use is consistent with the applicable forest land and resource management plan.¹²⁷ The USFS must comply with NEPA when assessing a proposed special use.¹²⁸ At minimum, NEPA compliance requires the USFS to complete an environmental analysis for the proposed special use and a “no action” alternative.¹²⁹ The USFS may request that the applicant provide information to evaluate the effects of the proposed special use, such as “cultural resource surveys and biological surveys and biological surveys of threatened, endangered, or sensitive plant and animal species and their habitats....”¹³⁰ Every special use authorization must include terms and conditions that ensure compliance with applicable statutes and regulations; “[m]inimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment;” require compliance with federal and state water quality standards; and require compliance with state standards for “public health and safety, environmental protection, and siting, construction, operation and maintenance if those standards are more stringent than applicable Federal standards.”¹³¹

In addition to the federal leasing, siting, operations and reclamation regulations, mining projects must comply with all applicable state statutes and regulations. Chapter 93 of the Minnesota Statutes requires reclamation of mined lands “to control possible adverse environmental effects of mining, to preserve the natural resources, and to encourage the planning of future land utilization, while at the same time promoting the orderly development of mining, the encouragement of good mining practices, and the recognition and identification of the beneficial aspects of mining.”¹³² The statute requires every metallic mineral mining operation to obtain a permit from the Minnesota Commissioner of Natural Resources.¹³³ To obtain a permit, the operation must have an approved reclamation plan, adequate insurance coverage and a posted bond or other financial assurance, which is reviewed annually for adequacy.¹³⁴ The statute also requires all mining permit holders to pay an annual permit fee.¹³⁵

Chapter 6132 of the Minnesota Regulations implements Chapter 93 of the Minnesota Statutes for all nonferrous mineral mining projects. Chapter 6132 details the requirements to obtain and modify a permit, as well as the procedures for suspension, revocation and cancellation of a permit to mine due to noncompliance.¹³⁶ It also dictates the standards for reclamation,¹³⁷ which begins with responsible siting and facility design and ends with appropriate closure and post-closure maintenance to ensure the site is stable, hazard-free, and minimizes impacts to the environment, including water resources.¹³⁸ The regulations require applicants to choose a site that minimizes impacts to the environment and the public and to “incorporate setbacks or separations that are needed to comply with air, water, and noise pollution

¹²⁶ *Id.* § 251.54.

¹²⁷ *Id.* § 251.54(e).

¹²⁸ *Id.* § 251.54(e)(6), (g)(2)(ii). The Forest Service’s NEPA regulations are located at 36 C.F.R. part 220.

¹²⁹ U.S. Forest Serv., Forest Serv. Handbook 2709 – Special Uses Handbook, Ch. 10 (Application and Authorization Processes) at 21 (eff. June 23, 2020), https://www.fs.fed.us/cgi-bin/Directives/get_dirs/fsh?2709.11.

¹³⁰ *Id.*

¹³¹ 36 C.F.R. § 251.56(a).

¹³² Minn. Stat. Ann. § 93.44.

¹³³ *Id.* § 93.481.

¹³⁴ *Id.*; *Id.* § 93.49.

¹³⁵ *Id.* § 93.481.

¹³⁶ Minn. R. 6132.1000–1400, 6132.4200–4600.

¹³⁷ *Id.* at 6132.2000–3200.

¹³⁸ *Id.* at 6132.3200.

standards; local land use regulations; and requirements of other appropriate authorities.”¹³⁹ Minnesota’s regulations confirm that mining and surface disturbance are prohibited in the BWCAW as well as state wilderness areas, state scientific and natural areas and other sensitive areas.¹⁴⁰ The siting requirements require applicants to minimize “major modifications of watersheds, including diversions of surface water and alterations of groundwater levels,” and “potential damage to property and natural resources due to floods, caving, or slope failure,” among other factors, when siting operations, storage piles, tailing basins and other facilities.¹⁴¹ Minnesota also has special requirements for managing and storing reactive mine waste,¹⁴² storage pile design,¹⁴³ tailings basins¹⁴⁴ and heap and dump leaching facilities.¹⁴⁵

Minnesota’s rules for siting nonferrous mine projects are being administratively reviewed to determine whether DNR’s siting rules are adequate to protect the BWCAW. Comments submitted by Twin Metals and MiningMinnesota and others in that administrative review should be considered as part of this proceeding and are submitted as attachments to this comment letter.¹⁴⁶ Twin Metal’s comments to DNR explain that existing federal and state laws and regulations ensure adequate protection of the BWCAW and no federal mineral withdrawal, mining ban in Minnesota or other revision to state or federal law or rule is needed. DNR already defeated a court challenge to its siting rules by taking the firm and well-reasoned position that its rules are adequate to protect the environment.¹⁴⁷ In that case, the Minnesota Court of Appeals concluded that DNR’s existing rules provide sufficient protection of the BWCAW and other resources.¹⁴⁸

At the time of that court decision, DNR expressed continued confidence in its siting rules for nonferrous mining projects: “We continue to believe that the current nonferrous rules fundamentally provide an effective framework for implementing our regulatory responsibilities and ensuring protection for public health and the environment,” DNR Deputy Commissioner Barb Naramore said.¹⁴⁹ The existence of those rules alone foreclose the need for a federal mineral withdrawal.

B. Surface water protections.

The Clean Water Act (“CWA”) governs the quality of surface waters in the United States by regulating discharges of pollutants into surface waters.¹⁵⁰ It is illegal to discharge pollution from a point source into a navigable water without a National Pollution Discharge Elimination System (“NPDES”) permit.¹⁵¹ The U.S. Environmental Protection Agency (“EPA”) delegated the authority to implement the CWA in Minnesota to

¹³⁹ *Id.* at 6132.2000.

¹⁴⁰ *Id.* at subps. 3 (mining excluded within the BWCAW) and 4 (surface disturbance prohibited in the BWCAW).

¹⁴¹ *Id.* at subp. 5.

¹⁴² *Id.* at 6132.0100, subp. 28 (“reactive mine waste” is “waste that is shown through characterization studies to release substances that adversely impact natural resources”), 6132.2200.

¹⁴³ *Id.* at 6132.2400.

¹⁴⁴ *Id.* at 6132.2500.

¹⁴⁵ *Id.* at 6132.2600.

¹⁴⁶ See Attachments 1 and 2.

¹⁴⁷ The DNR described the robustness of its rules and its experience: “Over 25 years ago, after extensive study and collaboration with stakeholders, including representatives from the environmental community, the Department of Natural Resources (“DNR”) adopted Chapter 6132 (Nonferrous Metallic Mineral Mining Rules) to regulate nonferrous mining operations.” Brief for Respondent Minnesota Dep’t of Nat. Res. at 1, *Minnesota Ctr. for Env’t Advoc.*, 2019 WL 3545839.

¹⁴⁸ *Id.* at n.1.

¹⁴⁹ Jennifer Bjorhus, *In Win for PolyMet, Court Upholds Minnesota’s Nonferrous Mining Rules*, STAR TRIBUNE, (Aug. 5, 2019), <https://www.startribune.com/in-win-for-polymer-court-upholds-minnesota-s-nonferrous-mining-rules/521284131/> (Attachment 5.24).

¹⁵⁰ 33 U.S.C. §§ 1251–1388.

¹⁵¹ 33 U.S.C. § 1311(a).

the Minnesota Pollution Control Agency (“MPCA”).¹⁵² Pursuant to this authority, MPCA may issue NPDES permits with oversight from EPA. However, MPCA’s authority to issue an NPDES permit for a facility passes back to EPA if the state fails to revise any permit to meet EPA’s objections.¹⁵³ That oversight ensures that MPCA properly applies the CWA’s requirements to protect all waters within Minnesota.

The CWA requires that MPCA designate beneficial uses for all waters within the state and develop water quality standards to protect each use. For each covered body of water, MPCA identifies how people, aquatic communities and wildlife use state waters and establishes standards for the conditions of those waters to protect for those uses. MPCA also adds “antidegradation” protections that provide extra protection for high-quality or unique waters and existing uses, like the uses of waters in the BWCAW.¹⁵⁴ The antidegradation standards and requirements in Minnesota’s Rules apply to new or expanded discharges of any pollutant to surface waters. MPCA assigned the highest level of protection afforded under state and federal law to the BWCAW, designating its waters as Prohibited Outstanding Resource Value Waters (“PORVW”).¹⁵⁵ With that designation, MPCA must “prohibit a proposed activity that results in a net increase in loading or other causes of degradation”¹⁵⁶ to those waters ensuring protection of the BWCAW.

A project proponent must submit to MPCA the necessary information to satisfy antidegradation standards in Minnesota Rules part 7050.0265.¹⁵⁷ MPCA then determines whether the submission demonstrates that existing uses and the level of water quality necessary to protect such uses will be maintained and protected; that beneficial uses will be protected and the project will not permanently preclude attainment of water quality standards. For waters other than the BWCAW and similarly designated waters, MPCA must determine that degradation of high water quality in the area is unavoidable, will be prudently and feasibly minimized, and is necessary to accommodate important economic or social changes in the geographic area of the project.

¹⁵² Minn. Stat. Ann. § 115.03, subd 5. MPCA grants authorization to activities that impact water quality through the issuance of control documents including Clean Water Act section 402 permits (i.e., NPDES permits) and Clean Water Act section 401 certifications of federal licenses and permits.

¹⁵³ “If the EPA Region objects to a permit, within 90 days of receiving the permit it must transmit to the state a statement of the reasons for the objection and the actions that the state must take to eliminate the objection [§ 123.44(a)-(b)]. Specific causes for objection are outlined in the regulations at § 123.44(c). Any interested party can request a public hearing on an objection by the EPA Region. After such a hearing, the Region can affirm the objection, modify the terms of the objection, or withdraw the objection and notify the state of that decision. If the EPA Region does not withdraw the objection, the state then has 30 days to resubmit a permit revised to meet the objection. If the state does not do so, exclusive authority to issue the permit passes to the EPA Region. If no public hearing on the objection is held, the time frame for the state to resubmit a revised permit is 90 days from receipt of the objection.” U.S. ENVIRONMENTAL PROTECTION AGENCY, NPDES PERMIT WRITERS’ MANUAL (Sept. 2010) at 11–14 to 11-15, https://www.epa.gov/sites/default/files/2015-09/documents/pwm_2010.pdf.

¹⁵⁴ See Minn. R. 7050.0250–0335 for Minnesota’s antidegradation rules. This statement from EPA guidance articulates the applicability of antidegradation:

It is the position of EPA that, at a minimum, States and authorized Tribes must apply antidegradation requirements to activities that are “regulated” under State, Tribal, or federal law (i.e., any activity that requires a permit or a water quality certification pursuant to State, Tribal or federal law, such as CWA § 402 NPDES permits or CWA § 404 dredge and fill permits, any activity requiring a CWA § 401 certification, any activity subject to State or Tribal nonpoint source control requirements or regulations, and any activity which is otherwise subject to State or Tribal regulations that specify that water quality standards are applicable).

Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36,742, 36,780 (July 7, 1998).

¹⁵⁵ Minn. R. 7050.0335, subp. 3.A.

¹⁵⁶ *Id.* at 7050.0265 subp. 7, 7050.0270 subp. 6.

¹⁵⁷ The antidegradation procedures applicable to individual 401 Certifications (Minn. R. 7050.0285) require applicants to submit the same information required for individual NPDES permits (Minn. R. 7050.0280, subp. 2) plus additional information addressing compensatory mitigation for physical alteration of surface waters.

Every applicant for a federal permit or other authorization for a nonferrous mining project in Minnesota must obtain a certification from MPCA that the project will not violate state water quality standards. All conditions included in the MPCA certification then become conditions of the federal permit and no federal permit may be issued if the state certification is denied.

C. Groundwater protections.

MPCA addresses the potential effects of projects on groundwater quality. MPCA carefully reviews project information to determine whether a project satisfies the requirements in Minnesota Rules Chapter 7060 for protection of groundwater resources and whether the proposed groundwater monitoring included in the NPDES/State Disposal System (“SDS”)¹⁵⁸ permit will verify the protection of those resources. MPCA will evaluate potential impacts of a mining project in conjunction with its groundwater protection policy:

It 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. The ready availability nearly statewide of underground water constitutes a natural resource of immeasurable value which must be protected as nearly as possible in its natural condition. For the conservation of underground water supplies for present and future generations and 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.

MPCA’s review of a mining project includes analysis of the proposal’s potential to impact groundwater, proposed engineering controls to minimize waste materials and wastewaters and related monitoring plans and requirements. Information for the review will include studies produced during the MEPA process, encompassing both information on current conditions and groundwater modeling of potential impacts, both during operations and after closure.

EPA also has direct permitting authority over certain types of underground mine backfill operations in Minnesota under the Safe Drinking Water Act’s Underground Injection Control (“UIC”) program. Specifically, the UIC permitting regulations that apply to “Class V” wells address potential impacts to underground sources of drinking water presented by mine backfill operations that entail placement of mixtures of water and tails that qualify as “fluids” under the UIC program.¹⁵⁹ The UIC program therefore presents yet another level of federal protection from any pollution, impairment, or destruction of water resources on or near the mine site. In fact, EPA could require mining project applicants to apply for an individual UIC permit if it determined that the operation qualified for regulation under the UIC program and that it presented a unique risk to an underground source of drinking water.¹⁶⁰ The individual permit process includes an opportunity for public comment and, potentially, an administrative contested case. EPA will, therefore, carefully review each mining project to determine whether the UIC program applies and exercise its permitting authority as appropriate.

¹⁵⁸ MPCA combines the issuance of an NPDES permit with issuance of a State Disposal System (“SDS”) permit.

¹⁵⁹ See 40 C.F.R. § 146.5(e)(8).

¹⁶⁰ See *id.* § 144.31.

D. Air protections.

To ensure that air quality is protected, every nonferrous mining project proposal is subject to federal and state air quality regulations. Those regulations are designed to protect the general climate and air quality within the Rainy River Watershed. Three air programs ensure protection for the Rainy River Headwaters Watershed: Prevention of Significant Deterioration; Air Quality Related Values; and New Source Performance Standards.

1. Prevention of Significant Deterioration.

Under the Clean Air Act, the Prevention of Significant Deterioration (“PSD”) requirements provide for a pre-construction review and permit process for the construction and operation of a new or modified major stationary source in attainment areas. The review includes:

- a Best Available Control Technology demonstration;
- ambient air quality analysis to assess potential project effects with National Ambient Air Quality Standards (“NAAQS”) and PSD increments;
- an assessment of Air Quality Related Value (“AQRV”) of the direct and indirect effects of a project on general growth, soil, vegetation, and visibility for Class I regions (defined below) within 300 km;
- an ambient monitoring program if no representative data are available; and
- public comments.¹⁶¹

EPA’s PSD program imposes various levels of air quality protection and growth on all attainment areas depending upon each area’s designated class. Class I areas are special areas of natural wonder and scenic beauty—national parks, national monuments, and wilderness areas—and receive the highest level of protection.¹⁶² Some increase in pollution is allowed in Class II areas and an even larger increase is allowed in Class III areas.¹⁶³ The BWCAW is a Class I area,¹⁶⁴ and the Rainy River Watershed is within a Class II attainment area. For attainment areas, EPA has promulgated PSD increments for four pollutants (nitrogen dioxide, sulfur dioxide, particulate matter with inhalable particles of 10 micrometers (PM₁₀), and particulate matter with inhalable particles of 2.5 micrometers and smaller (PM_{2.5})) for both Class I and Class II regions. Class I PSD increments are designed to keep pristine areas clean and have more restrictive allowable increment thresholds.

Even if a project proposes to limit its actual emissions below “major source” thresholds for the federal PSD program, other agencies can request that the project effects be compared to the PSD Class I and

¹⁶¹ See 42 U.S.C. § 7475.

¹⁶² See *id.* § 7472(a).

¹⁶³ See 40 C.F.R. § 51.166.

¹⁶⁴ *Id.* § 81.415.

Class II increments to ensure that the proposed project will not contribute to any significant air quality effects.

2. Air Quality Related Values.

Federal Land Managers responsible for protecting the BWCAW and the SNF closely review any mining project to assess the effects on the BWCAW.¹⁶⁵ Those projects may be required by the Federal Land Managers to evaluate effects on AQRVs,¹⁶⁶ which may include visibility, flora, fauna, odor, water, soils, geologic features, and cultural resources in the BWCAW. Much of the proposed withdrawal area is within 186 miles (300 km) of four Class I areas: the BWCAW and Rainbow Lakes Wilderness (each administered by the USFS) and Voyageurs National Park and Isle Royale National Park (each under the administration of the National Park Service). For example, Twin Metals' Project will be evaluated against the AQRVs because it is within 50 km of a Class I area.

3. New Source Performance Standards.

The federal New Source Performance Standards are technology-based standards applicable to new or modified stationary sources of regulated emissions. The New Source Performance Standards program has defined emission limitations for approximately 70 source categories that are designated by size, as well as type of process. A comprehensive list of the applicable regulations for a nonferrous mining facility would be included as part of the MPCA air quality permit. In addition to the above federal requirements, MPCA has promulgated rules concerning the control and permitting of all sources (not just for mining operations) throughout Minnesota. A comprehensive list of Minnesota Standards of Performance would be identified in the air quality permit.

E. Sensitive species protections.

The Endangered Species Act ("ESA") provides comprehensive protection for species identified as in danger of extinction and species at risk of becoming endangered.¹⁶⁷ Enacted in 1973, the ESA established the policy that "all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of [the ESA]."¹⁶⁸ The ESA conserves endangered and threatened species using a four-prong approach.

First, the ESA requires the Secretaries of the Interior and Commerce to create a list of species of wildlife, fish, and plants that are threatened or endangered and subject species to the ESA's protections.¹⁶⁹ Second, the Secretaries must develop and implement recovery plans for listed threatened and

¹⁶⁵ "The term 'Federal Land Manager' means, with respect to any lands in the United States, the Secretary of the department with authority over such lands." See 42 U.S.C. § 7602(i). "The Federal Land Manager and the Federal Official charged with direct responsibility for management of such lands shall have an affirmative responsibility to protect the air quality related values (including visibility) of any such lands within a Class I area and to consider, in consultation with the Administrator, whether a proposed major emitting facility will have an adverse impact on such values." *Id.* § 7475(d)(2)(B).

¹⁶⁶ The Federal Land Managers have agreed on this definition of an Air Quality Related Value:

A resource, as identified by the FLM for one or more Federal areas that may be adversely affected by a change in air quality. The resource may include visibility or a specific scenic, cultural, physical, biological, ecological, or recreational resource identified by the FLM for a particular area.

Nat'l Park Serv., Federal Land Managers' Air Quality Related Values Work Group (FLAG), Phase I Report—Revised (2010) at 4 (Oct. 2010), <https://www.fws.gov/guidance/sites/default/files/documents/FLAG%20Air%20Quality%20Phase%201%20report.pdf>.

¹⁶⁷ 16 U.S.C. §§ 1531, 1532.

¹⁶⁸ *Id.* § 1531(c)(1).

¹⁶⁹ *Id.* § 1533. The Secretary of Agriculture is responsible for identifying and listing imperiled plants as endangered and threatened.

endangered species.¹⁷⁰ Third, the Secretaries must designate “critical habitat” for each listed species.¹⁷¹ And fourth, the ESA prohibits any person from a “take” of an endangered species without a permit;¹⁷² “take” is broadly defined to include any action to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”¹⁷³ U.S. Fish and Wildlife Service regulations extend the take prohibition to threatened species.¹⁷⁴ Violators of the take prohibition are subject to civil and criminal penalties.¹⁷⁵

While the Departments of the Interior and Commerce are responsible for implementing the ESA, the statute directs federal agencies to “cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species.” This cooperation includes entering into management and other agreements with states to protect endangered and threatened species.¹⁷⁶ However, any state law or regulation that conflicts with the ESA or its implementing regulations is void.¹⁷⁷ Because the ESA applies to all lands, it ensures that threatened and endangered species and their habitats receive appropriate protection regardless of location.

Two federal laws provide additional protections for bird species. The Bald and Golden Eagle Protection Act (“BGEPA”) prohibits any person from taking, possessing, selling, purchasing, transporting, or importing or exporting any bald or golden eagle or any part, or any nest or any egg of a bald or golden eagle without a permit.¹⁷⁸ Violators are subject to criminal and civil penalties.¹⁷⁹ The Migratory Bird Treaty Act prohibits any person from pursuing, hunting, taking, capturing or killing or attempting to capture or kill, possessing, selling, transporting, or importing or exporting any migratory bird or any part, or any nest or egg of a migratory bird without authorization from the Secretary of the Interior.¹⁸⁰ This Act, like the BGEPA, provides that criminal and civil penalties may be imposed on violators.¹⁸¹

F. Historic resources protections.

Section 106 of the National Historic Preservation Act requires federal agencies to assess the impacts of federal agency activities, funding, and permitting and licensing decisions (i.e., “undertakings”) on historic properties.¹⁸² Prior to any undertaking, a federal agency must “identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.”¹⁸³ The consultation process involves the federal agency, the state historic preservation officer (“SHPO”), the tribal historic preservation officer (“THPO”), tribes, local government representatives, and, if relevant, the applicant for federal assistance, permits, licenses or other

¹⁷⁰ *Id.* § 1533(f).

¹⁷¹ *Id.* § 1533(3).

¹⁷² *Id.* § 1538.

¹⁷³ *Id.* § 1532(19).

¹⁷⁴ 50 C.F.R. § 17.31(a).

¹⁷⁵ 16 U.S.C. § 1540.

¹⁷⁶ *Id.* § 1535(b), (c).

¹⁷⁷ 16 U.S.C. § 1535(f).

¹⁷⁸ *Id.* §§ 668, 668(a).

¹⁷⁹ *Id.* §§ 668, 668b.

¹⁸⁰ *Id.* §§ 703, 704.

¹⁸¹ *Id.* § 707.

¹⁸² 54 U.S.C. § 306108.

¹⁸³ 36 C.F.R. § 800.1(a).

approvals.¹⁸⁴ Additionally, the federal agency must seek and consider input from members of the public.¹⁸⁵

To begin the consultation process, the federal agency must first determine whether the proposed federal action is an undertaking “that has the potential to cause effects on historic properties.”¹⁸⁶ The Section 106 regulations define an “undertaking” as “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.”¹⁸⁷

If the federal agency determines that the undertaking has the potential to cause effects on historic properties, it must consult with other parties¹⁸⁸ and, in consultation with the SHPO/THPO, document the area of potential impacts, identify the historic properties potentially affected¹⁸⁹ and assess whether any adverse effects (such as destruction or damage to the property) may result from the undertaking.¹⁹⁰ If potential adverse effects are identified, the federal agency and consulting parties “develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties.”¹⁹¹ Once the federal agency and SHPO/THPO agree on how to resolve the adverse effects, they execute a memorandum of agreement and submit the memorandum of agreement to the Advisory Council on Historic Preservation before approving the undertaking.¹⁹²

Accordingly, through consultation with federal, state, tribal, and local stakeholders, the Section 106 process ensures that historic properties are identified, potential impacts are assessed, and appropriate mitigation is required to ensure protection.

IX. Any Withdrawal Is Subject To Twin Metals’ Valid Existing Rights.

A. FLPMA mandates that withdrawals are subject to valid existing rights.

BLM acknowledges that the proposed withdrawal is “subject to valid existing rights.”¹⁹³ Rightly so. Every withdrawal of federal lands under FLPMA **is subject to valid existing rights.**¹⁹⁴ In addition to property rights deriving from federal law, such as preference right leases or preference right lease applications, valid existing rights include rights arising under state law.¹⁹⁵

Twin Metals owns an extensive portfolio of federal preference right mineral leases and pending lease applications in the contemplated withdrawal area. In addition, Twin Metals holds various state and private

¹⁸⁴ *Id.* § 800.2(c).

¹⁸⁵ *Id.* § 800.2(d).

¹⁸⁶ *Id.* § 803.3(a).

¹⁸⁷ *Id.* § 800.16(y).

¹⁸⁸ *Id.* § 800.3.

¹⁸⁹ *Id.* § 800.4.

¹⁹⁰ *Id.* § 800.5.

¹⁹¹ *Id.* § 800.6.

¹⁹² *Id.*

¹⁹³ Notice of Application for Withdrawal at 58,299.

¹⁹⁴ 43 U.S.C. 1701 n.(h); *Nat’l Min. Ass’n v. Zinke*, 877 F.3d 845, 858 (9th Cir. 2017).

¹⁹⁵ See *Herr v. U.S. Forest Serv.*, 865 F.3d 351, 357 (6th Cir. 2017) (holding that in the context of the Michigan Wilderness Act, which also operated subject to valid existing rights, property owners held valid existing state law littoral and riparian rights permitting them to continue operating motorboats in a wilderness area).

property rights in the minerals and lands required for Twin Metals' proposed mine. Any withdrawal that prevents Twin Metals from utilizing or otherwise benefitting from these rights would be a taking and thus entitle Twin Metals to just compensation under the Fifth Amendment to the U.S. Constitution.¹⁹⁶

B. Twin Metals has valid existing rights in its preference right leases.

In the early 1950s, Twin Metals' predecessor-in-interest, the International Nickel Company ("INCO"), applied for and received permits to explore for hardrock minerals in the SNF. INCO's prospecting was successful; it discovered a valuable deposit of copper, nickel, and other strategic minerals. In 1956, INCO applied for a lease to extract those minerals. In 1966, the government issued INCO two leases for that extraction, leases that were renewed in 1989 and 2004.¹⁹⁷

Twin Metals applied for a third ten-year renewal in 2012.¹⁹⁸ Unlike with the two prior renewals, the BLM asked the Solicitor of the Interior whether it had discretion to deny the renewal application. The Solicitor concluded that BLM had the same discretion as with the initial issuance of leases,¹⁹⁹ leading BLM to ask USFS whether it would consent to the lease renewal (on the mistaken theory that USFS would have such consent authority with initial lease issuance). USFS withheld consent, so BLM declined to renew the leases.²⁰⁰

In 2017, Interior, after again reviewing both Twin Metals' leases and the statutory and regulatory framework, concluded that the leases granted Twin Metals the right to renew.²⁰¹ The leases were thus reinstated²⁰² and, after environmental review, renewed for a third time.²⁰³

In 2018, a group of plaintiffs filed three lawsuits, which were consolidated, challenging BLM's reinstatement of Twin Metals' leases. The district court rejected the claims, and plaintiffs appealed to the D.C. Circuit.²⁰⁴ Those appeals remain pending. In 2020, the same plaintiffs filed yet another lawsuit challenging the actual renewal of the leases.²⁰⁵ That case also remains pending and is currently stayed pending the government's review of the 2018 renewal decision.²⁰⁶

¹⁹⁶ See U.S. CONST. amend. V ("... nor shall private property be taken for public use, without just compensation"); *Armstrong v. U.S.*, 364 U.S. 40, 49 (1960) ("The Fifth Amendment's guarantee that private property shall not be taken for a public use without just compensation was designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole").

¹⁹⁷ See BLM Eastern States, Decision Record: Addition of Terms, Conditions, and Stipulations for Renewal of Hardrock Mineral Leases MNES 01352 and MNES 01353, at 1 (May 15, 2019), https://eplanning.blm.gov/public_projects/nepa/98730/172782/209927/DR-FONSI_LeaseRenewal_MNES01352-01353_signed.pdf.

¹⁹⁸ *Id.*

¹⁹⁹ See Solicitor's Opinion M-37036 (Mar. 8, 2016), <https://www.doi.gov/sites/doi.gov/files/uploads/m-37036.pdf>.

²⁰⁰ See BLM, Decision: Lease Renewal Application Rejected (Dec. 15, 2016), https://www.frl.mn.gov/pdf/archive/TMM_dec2016_leaserenewaldocs.pdf.

²⁰¹ See Solicitor's Opinion M-37049 (Dec. 22, 2017), <https://www.doi.gov/sites/doi.gov/files/uploads/m-37049.pdf>.

²⁰² See BLM, Decision: Rescission of December 15, 2016, Lease Renewal Application Rejection; Reinstatement of Mineral Leases MNES 01352 & MNES 01353 as Issued in 2004; Reinstatement of Twin Metals' 2012 Lease Renewal Application (May 2, 2018), <https://www.twin-metals.com/wp-content/uploads/2018/05/2018.05.02-Twin-Metals-Lease-Reinstatement-Decision-002.pdf>.

²⁰³ *Id.*

²⁰⁴ See *Voyageur Outward Bound School v. United States*, 444 F.Supp.3d 182, 187 (D.D.C. 2020), *appeals pending*, Nos. 20-5097, -5098, -5099 (D.C. Cir.).

²⁰⁵ *Wilderness Society v. Haaland*, No. 1:20-cv-01176 (D.D.C. filed May 6, 2020).

²⁰⁶ See Order on Motion to Stay, *Wilderness Society v. Haaland*, No. 1:20-cv-01176 (D.D.C. Dec. 21, 2021).



Because Twin Metals' leases reflect valid existing rights, the proposed withdrawal, even if granted, could not diminish Twin Metals' rights under those leases.²⁰⁷

C. Twin Metals has valid existing rights in its preference right lease applications.

Twin Metals has two PRLAs covering public-domain lands adjacent to the land covered by its two leases described in the prior subsection. Twin Metals was previously issued prospecting permits covering those lands, and it obtained Forest Service consent to conduct prospecting operations there. Twin Metals' predecessor submitted the first of the two PRLAs (MNES 50264) in December 2006, and Twin Metals submitted the second (MNES 57965) in March 2013. BLM has since confirmed Twin Metals' discovery of valuable deposits in the PRLA lands, issuing a "preliminary valuable deposit determination" as to PRLA MNES 57965 in October 2018, and as to PRLA MNES 50264 in June 2020.

Twin Metals' PRLAs are valid existing rights. The Mineral Leasing Act provides that if prospecting permittee demonstrates discovery of a valuable deposit, the permittee is entitled to a lease for the land covered by the prospecting permit.²⁰⁸ Similarly, the implementing regulations provide that in order "to obtain a preference right lease," the permittee need only "demonstrate that [they] have discovered a valuable deposit within the period covered by [their] prospecting permit."²⁰⁹ Twin Metals has satisfied the requirements for obtaining preference right leases. In October 2018, BLM determined that Twin Metals had discovered a valuable deposit on PRLA MNES 57965. In June 2020, BLM determined that Twin Metals had discovered a valuable deposit on PRLA MNES 50264.

A permittee's entitlement to a mineral lease is a legally protectable property right. As the D.C. Circuit has explained in the context of entitlement leasing under the Mineral Leasing Act, "not even the policies of NEPA, which are of the utmost importance to the survival of our environment, can . . . undermine the property rights of prospecting permittee lease applicants."²¹⁰ Because entitlement to a mineral lease is a property right that "cannot be diminished,"²¹¹ it plainly qualifies as a "valid existing right" for purposes of a mineral withdrawal or segregation of lands—either of which would diminish the entitlement. Accordingly, under a leasing program where discovery of a valuable deposit entitles prospectors to a lease, "an application for a preference right lease . . . give[s] the applicant a 'valid existing right' when the requisite discovery is shown."²¹² Twin Metals, therefore, has valid existing rights in PRLA MNES 57965 and PRLA MNES 50264 because BLM has confirmed that Twin Metals discovered valuable deposits within the scope of its permits.

X. The Proposed Withdrawal is Unlawful.

The Forest Service's proposed withdrawal is unlawful for several reasons.

²⁰⁷ See *Freese v. United States*, 639 F.2d 754, 757 (Ct. Cl. 1981) ("It is a matter beyond dispute that federal mining claims [under the General Mining Law] are 'private property' enjoying the protection of the fifth amendment.")

²⁰⁸ See 30 U.S.C. § 211(b); see also *id.* §§ 262, 272, 282.

²⁰⁹ 43 C.F.R. § 3507.11(a).

²¹⁰ *Natural Resources Defense Council, Inc. v. Berkland*, 609 F.2d 553, 559 (D.C. Cir. 1979).

²¹¹ *Id.*

²¹² *Peterson v. Department of Interior*, 510 F.Supp. 777, 779 (D. Utah 1981) (citing cases).

First, FLPMA does not authorize BLM to withdraw minerals in the SNF, because only minerals “locatable” under the General Mining Law of 1872 can be withdrawn under FLPMA. The minerals in the SNF, by contrast, are “leasable” minerals and thus not subject to FLPMA’s general withdrawal authority.

The unavailability of withdrawal in the context of leasable minerals stems from agencies’ ability to deny prospecting permit applications for those minerals. This enables agencies to preclude mineral development in particular areas of potential concern – authority lacking in the context of locatable minerals. As a result, the withdrawal authority was deemed necessary to give the government some ability to restrict development with respect to locatable minerals. But there is no similar justification for such authority over leasable minerals. That is especially true given that leasable minerals, by definition, are governed by a lease.²¹³ The terms and conditions of that lease provide the government with adequate opportunity to ensure that mineral development does not have any undue adverse impacts.

Second, the proposed withdrawal violates FLPMA’s provision that BLM “shall not . . . modify . . . any withdrawal created by Act of Congress”²¹⁴ The BWCAW and the MPA are unquestionably withdrawals created by Act of Congress.²¹⁵ And BLM is now attempting to modify that congressional withdrawal by adding another 234,328 acres – an expansion of nearly 20%. That effort to “expand the wilderness boundaries beyond the area established by Congress” violates FLPMA.²¹⁶

The BLM regulation purporting to construe “modify” in FLPMA as excluding “the addition of lands to an existing withdrawal,”²¹⁷ does not change that conclusion. Extending the boundaries of a withdrawal is unquestionably a “modification” within the plain meaning of the term. Indeed, the U.S. Supreme Court has recognized that “modify” can mean “enlarge” or “extend.”²¹⁸ Congress did not supply any different definition of “modify” in FLPMA, and BLM may not through regulation eliminate the statute’s express limitation of the agency’s withdrawal authority.²¹⁹

Third, Congress expressly and specifically authorized mineral development in the SNF.²²⁰ Because a specific statutory provision controls over a general one,²²¹ Section 508b’s specific authorization of mineral development in two national forests in Minnesota governs over FLPMA’s general withdrawal authority granted to federal agencies. Further supporting this argument is the fact that Section 508b itself was

²¹³ See Federal Land Withdrawals; Amendment to Withdrawal Procedures, 46 Fed. Reg. 5794, 5795 (Jan. 19, 1981).

²¹⁴ 43 U.S.C. § 1714(j); see also 43 C.F.R. § 2300.0-3(a)(1)(i) (“[FLPMA] provides that the Secretary of the Interior does not have authority to (i) make, modify, or revoke any withdrawal created by an Act of Congress.”) (emphasis added).

²¹⁵ Pub. L. No. 95-495 §§ 3, 9, 11.

²¹⁶ *Izaak Walton League of America, Inc. v. Kimbell*, 516 F.Supp.2d 982, 989 (D. Minn. 2007); see also *Sierra Club Northstar Chapter v. Kimbell*, No. 07-3160 ADM/RLE, 2008 WL 4287424, at *7 (D. Minn. Sept. 15, 2008) (“Because there is a tension between the need to preserve the wilderness of the Boundary Waters and the need to conduct timber harvesting activities to manage the Superior National Forest, the Wilderness Act does not impose a per se ban on all agency activity having an impact within the wilderness area.”).

²¹⁷ 43 C.F.R. § 2300.0-5(o).

²¹⁸ *MCI Telecommunications Corp. v. AT&T Co.*, 512 U.S. 218, 225 (1994) (quoting BLACK’S LAW DICTIONARY 1004 (6th ed. 1990)).

²¹⁹ See, e.g., *Comm’r of Internal Revenue v. Standard Life & Accident Insurance Co.*, 433 U.S. 148, 163 (1977) (rejecting regulations to the extent they were “inconsistent” with the governing statute).

²²⁰ See 16 U.S.C. § 508b.

²²¹ See *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 384 (1992) (it is a commonplace of statutory construction that the specific governs the general”).



enacted in response to a previous executive withdrawal. Section 508(b) must be interpreted to further rather than frustrate that statutory purpose.²²²

XI. Conclusion.

For the reasons set forth above, the proposed withdrawal is unnecessary, contrary to the Biden Administration's goals, contrary to public policy, injurious to job creation and the state's economy, redundant, contrary to Congressional action and otherwise unlawful. As such, the proposed withdrawal should be canceled.

Twin Metals appreciates the opportunity to present these comments and looks forward to working with the agencies on further environmental review of its proposed Project.

Sincerely,

A handwritten signature in blue ink, consisting of a large, stylized 'J' followed by a horizontal line extending to the right.

Julie Padilla

Chief Regulatory Officer
Twin Metals Minnesota LLC

²²² *The Emily & The Caroline*, 22 U.S. 381, 388 (1824) ("In construing a statute . . . we must look to the object in view, and never adopt an interpretation that will defeat its own purpose, if it will admit of any other reasonable construction.").



Attachments

Attachment 1 Index - TMM DNR Nonferrous Siting Rule Comment Letter and Appendices

Cited as	Title
Attachment 1	Twin Metals Minnesota - Comments on Minnesota Department of Natural Resources Nonferrous Siting Rule
Attachment 1.A	Appendix A - Nonferrous Mines Siting Rule Review - Technical Comments
Attachment 1.B	Appendix B - Nonferrous Mines Siting Rule Review - Technical Document Rebuttals
Attachment 1.C.1	Appendix C.1 ARD White Paper
Attachment 1.C.2	Appendix C.2 Mining and Tourism Analysis
Attachment 1.D.1	Appendix D.1 Project Reclamation Plan
Attachment 1.D.2	Appendix D.2 Water Resources Volume 1 Baseline Conditions
Attachment 1.D.2.1	Appendix D.2.1 Water Resources Volume 1 Appendix A Surface Water Hydrology and Water Quality Baseline
Attachment 1.D.2.2	Appendix D.2.2 Water Resources Volume 1 Appendix B Hydrogeology and Groundwater Quality Baseline Data
Attachment 1.D.2.3	Appendix D.2.3 Water Resources Volume 1 Appendix C Public Surface Water and Groundwater Info
Attachment 1.D.2.4	Appendix D.2.4 Water Resources Volume 1 Appendix D Climate Baseline Data
Attachment 1.D.2.5	Appendix D.2.5 Water Resources Volume 1 Appendix E Base Flow Separation and Low Flow Analyses of the Project Creeks
Attachment 1.D.2.6	Appendix D.2.6 Water Resources Volume 1 Appendix F Surface Water Quality Graphical Representations and Trend Analyses
Attachment 1.D.2.7	Appendix D.2.7 Water Resources Volume 1 Appendix G Proposed Class 3 and 4 Water Quality Standards as Evaluation Criteria
Attachment 1.D.2.8	Appendix D.2.8 Water Resources Volume 1 Appendix H Hydraulic Gradient Assessment
Attachment 1.D.2.9	Appendix D.2.9 Water Resources Volume 1 Appendix I Large Tables
Attachment 1.D.2.10	Appendix D.2.10 Water Resources Volume 1 Appendix J Groundwater Baseline Data Evaluation
Attachment 1.D.3	Appendix D.3 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation
Attachment 1.D.3.1	Appendix D.3.1 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix A Waste Rock and Ore Static Testing Results
Attachment 1.D.3.2	Appendix D.3.2 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix B Tailings and Cemented Tailings Static Testing Results
Attachment 1.D.3.3	Appendix D.3.3 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix C Ore Humidity Cell Testing Results Group HCT C-1 (Weeks 0 to 78)
Attachment 1.D.3.4	Appendix D.3.4 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix D Waste Rock Humidity Cell Testing Results Group HCT C-1 (Weeks 0 to 52)
Attachment 1.D.3.5	Appendix D.3.5 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix E Tailings Humidity Cell Testing Results (Weeks 0 to 52)



Cited as	Title
Attachment 1.D.3.6	Appendix D.3.6 Geochemistry Volume 1 Geochemical Characterization Approach, Results, and Interpretation Appendix F Cemented Tailings Monolith Diffusion Testing Results
Attachment 1.D.4	Appendix D.4 Socioeconomics and Environmental Justice Volume 1
Attachment 1.D.5	Appendix D.5 Socioeconomics and Environmental Justice Volume 2
Attachment 1.D.6	Appendix D.6 Socioeconomics and Environmental Justice Volume 3
Attachment 1.D.7	Appendix D.7 Geology, Soils, Minerals Resource Report
Attachment 1.D.7.1	Appendix D.7.1 Geology, Soils, Minerals Resource Report Appendix A USFS ELT Soils Info
Attachment 1.D.7.2	Appendix D.7.2 Geology, Soils, Minerals Resource Report Appendix B Surficial Geology Intersected by Project
Attachment 1.D.7.3	Appendix D.7.3 Geology, Soils, Minerals Resource Report Appendix C NRCS Soils Information
Attachment 1.D.7.4	Appendix D.7.4 Geology, Soils, Minerals Resource Report Appendix D Surface Mineral Ownership
Attachment 1.E.1	Appendix E.1 Kennecott Eagle Mine Opinion Affirming Grant of Part 31 Permit
Attachment 1.E.2	Appendix E.2 Kennecott Eagle Mine Order Affirming Grant of Part 632 permit
Attachment 1.E.3	Appendix E.3 Kennecott Eagle Mine PFD
Attachment 1.E.4	Appendix E.4 National Wildlife Federation v Department of Environmental Quality (No 1), 856 N.W.2d 252 (Mich. App. 2014)
Attachment 1.E.5	Appendix E.5 National Wildlife Federation v Department of Environmental Quality (No 2), 856 N.W.2d 394 (Mich. App. 2014)
Attachment 1.E.6	Appendix E.6 Wisconsin Resources Protection Council v Flambeau Min Co., 727 F.3d 700 (7th Cir. 2013)
Attachment 1.E.7	Appendix E.7 Wisconsin Resources Protection Council v Flambeau Mining Company, 2012 WL 12996106 (W.D. Wisc. July 24, 2012)
Attachment 1.E.8	Appendix E.8 Huron Mountain Club v US Army Corps of Engineers, 545 Fed. Appx. 390 (6th Cir. 2013)
Attachment 1.E.9	Appendix E.9 Huron Mountain Club v US Army Corps of Engineers, 2012 WL 306146 (W.D. Mich. July 25, 2012)
Attachment 1.E.10	Appendix E.10 Kennecott Eagle Mine FDO

Attachment 2 Index – Other DNR Nonferrous Siting Rule Comment Letters

Cited as	Title
Attachment 2.1	MiningMinnesota Comments on Minnesota Department of Natural Resources Request for Comment on the Nonferrous Siting Rule – Chapter 6132
Attachment 2.2	Affidavit of Dr. William (Bill) C. Brice in Support of Comments of Mining Minnesota on the Nonferrous Mine Siting Rule



Attachment 3 Index – Technical Reports

Cited as	Title
Attachment 3.1	Mine Plan of Operations Rev 1A
Attachment 3.1.1	Appendix A-Mineral and Surface Ownership Information
Attachment 3.1.2	Appendix B-Project Reclamation Plan
Attachment 3.1.3	Appendix C-Transportation Plan
Attachment 3.1.4	Appendix D-Spill Contingency Plan
Attachment 3.1.5	Appendix E-Environmental Quality Assurance Plan
Attachment 3.1.6	Appendix F-Interim Management Plan
Attachment 3.2	Project Description
Attachment 3.2.1	Appendix A-Project Reclamation Plan
Attachment 3.2.2	Appendix B-Interim Management Plan
Attachment 3.2.3	Appendix C-Spill Contingency Plan
Attachment 3.2.4	Appendix D-Transportation Plan
Attachment 3.3	Mine Plan of Operations Rev 0A
Attachment 3.4	MPO Addendum
Attachment 3.5	SEAW Data Submittal
Attachment 3.6	Transportation Resource Report
Attachment 3.6.1	Appendix A Transportation LOS Analysis
Attachment 3.7	Land Use Resource Report

Attachment 4 Index – TMM Response to Withdrawal Application

Cited as	Title
Attachment 4.1	Socioeconomics of Mining and Tourism
Attachment 4.2	TMM Response to Withdrawal Application
Attachment 4.3	MN School Trust Land Affected by Withdrawal

Attachment 5 Index – News Articles, Press Releases, and Reports

Cited as	Title
Attachment 5.1	April 22, 2021 White House Fact Sheet - 2030 Greenhouse Gas
Attachment 5.2	June 8, 2021 White House Fact Sheet - Supply Chain Disruptions
Attachment 5.3	The Raw-Materials Challenge: How the Metals and Mining Sector Will be at the Core of Enabling the Energy Transition
Attachment 5.4	Renewables
Attachment 5.5	Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition
Attachment 5.6	Nickel Recycling
Attachment 5.7	Minnesota Has the Metals for EV, Green Energy Economy
Attachment 5.8	UNEP Study Confirms DR Congo's Potential as Environmental Powerhouse but Warns of Critical Threats
Attachment 5.9	U.S. Faces Tough Choices in 2022 on Mines for Electric-Vehicle Metals
Attachment 5.10	Ford CEO Farley Calls for Making EVs More Affordable, Bringing Mining Back to US



Cited as	Title
Attachment 5.11	Forty Percent of all Shipping Cargo Consists of Fossil Fuels
Attachment 5.12	Statistics on the Working Poor
Attachment 5.13	Amnesty Int'l, Philippines: Undermining Workers' Rights: Labour Rights Abuses in Nickel Supply Chains
Attachment 5.14	Zambia: Workers Detail Abuse in Chinese-Owned Mines
Attachment 5.15	China: UN Must Act on Xinjiang Atrocities After Petition Shows Mass Global Outrage
Attachment 5.16	Nickel Statistics and Information
Attachment 5.17	Introduction to Canada Nickel Company – Delivering the Next Generation of Nickel
Attachment 5.18	Population of Ely, MN
Attachment 5.19	U.S. Census Bureau, Ely, Minnesota (2020)
Attachment 5.20	Editorial: Alarming enrollment drop at Ely schools
Attachment 5.21	U.S. Census Bureau, Babbitt, Minnesota (2020)
Attachment 5.22	Population of Babbitt, MN
Attachment 5.23	PolyMet Mine: The Threat of Tailings Dam Failure
Attachment 5.24	In Win for PolyMet, Court Upholds Minnesota's Nonferrous Mining Rules