

June 24, 2011

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Attn: **Federal Hardrock Minerals Prospecting Permits Project – DEIS Comments**

Dear Mr. Sanders:

The following comments regarding the Federal Hardrock Minerals Prospecting Permits Project draft environmental impact statement (“Prospecting DEIS”) are submitted on behalf of WaterLegacy, a Minnesota non-profit organization dedicated to protecting Minnesota’s water resources and the communities that depend on them. We appreciate the extension of time previously granted for comments in this matter. WaterLegacy’s main concerns are summarized below, and then a further discussion with references to the DEIS text is provided.

Reject DEIS and Prospecting Due to Cumulative Mining Impacts

First, WaterLegacy would suggest that the lack of an appropriate cumulative impacts analysis requires rejection of both the Prospecting DEIS and the Project. Neither current nor proposed prospecting and mining activities impacting natural resources in and near the Superior National Forest were considered in the DEIS. Prospecting is done in order to mine. Failure to consider existing and future harms of mining makes the DEIS environmental analysis meaningless. If the full impacts of opening the additional forest areas to a broad mining district were assessed, only the No Action Alternative would be acceptable.

There are also multiple deficiencies in the Prospecting DEIS that should result in its rejection, a requirement for supplementation, development of additional alternatives and stipulations and a limitation of its scope. A more rigorous analysis of environmental harms may also lead to the conclusion that the No Action Alternative is required to protect natural resources.

Summary of Deficiencies

- The Prospecting DEIS fails to provide basic site-specific environmental analysis of resources that could be impacted by drilling and road building activities;
- The Prospecting DEIS provides inadequate analysis and mitigation of long-term temporal impacts and concentrated density impacts on natural resources;
- The Prospecting DEIS contains inadequate analysis and mitigation of water quality impacts, including impacts of brines and toxic metals on non-degradation requirements and impacts on wild rice;
- The Prospecting DEIS fails to appropriately consider alternatives to mitigate harms from prospecting activities;
- The Prospecting DEIS provides inadequate and unenforceable stipulations that will not ensure compliance with the few conditions it proposes;
- The Prospecting DEIS fails to analyze cumulative impacts due to prospecting, mining and road-building activities on other lands in the region.

Additional Analysis Needed in a Supplemental DEIS

- A Supplemental DEIS should identify all known and likely mining and prospecting activities in or near the Superior National Forest, including impacts on private lands and State leases and should describe in detail existing and future cumulative impacts of mining, along with timber harvesting, on wilderness, solitude, road building, ecological landscapes, forest resources, water and air quality, habitats, threatened and endangered species and other resources;
- A Supplemental DEIS should provide mapping and site-specific analysis for all of the impacts on resources proposed in current permit applications and operating plans. In particular, the SDEIS should provide a detailed analysis of all potential impacts to Birch Lake with specific limits on activities and other mitigation measures;
- A Supplemental DEIS should analyze impacts of drilling and roads based on the full permitted time of use, recognizing that changes in habitat or opening up of areas to ATV use for decades is effectively a permanent, not a “temporary” impact;
- A Supplemental DEIS should analyze impacts of drilling and roads based on mapping of historical and current operation plans and assumptions that reflect the likely density of future prospecting where minerals are anticipated to be located;
- A Supplemental DEIS should provide detailed evaluation of the potential for degradation of water quality as a result of prospecting. This assessment should include water quality sampling and analysis of historical bulk sample sites for arsenic, copper, nickel, lead and sulfates;
- A Supplemental DEIS should provide a thorough analysis of the potential of contamination with brackish waters and brines, requiring disclosure from mining companies of salt indicators and mitigation measures recognizing that intrusions are not limited to three miles from Lake Superior;
- A Supplemental DEIS should provide a thorough analysis of potential impacts on natural wild rice, including river stands, and a Traditional Cultural Properties analysis;
- A Supplemental DEIS should analyze an alternative that provides density per acre limits on drilling, construction of roads and drill pads and use of landings and should provide stipulations that would effectively enforce that limit;
- A Supplemental DEIS should analyze an alternative limiting cumulative withdrawal of water from any resource and should provide clear stipulations to effectively enforce that limit whether or not multiple companies and permits draw from the same resource;
- A Supplemental DEIS should recommend limitation of prospecting activities to winter to reduce impacts on a range of natural resources and on recreation;
- A Supplemental DEIS should analyze an alternative limiting prospecting activities to winter in addition to a low enough decibel limit near the Boundary Waters Canoe Area Wilderness (“BWCAW”) so that no noise is perceived in the wilderness.
- A Supplemental DEIS should set limits on prospecting and road-building activities so that cumulative impacts do not impair natural resources or conflict with the Forest Plan.
- A Supplemental DEIS should stipulate monitoring for water quality that places responsibility for sampling and reporting on prospectors.
- A Supplemental DEIS should recommend limiting prospecting activities to winter so that protection of wetlands and other sensitive Ecological Land Types is enforceable.

Limiting the Scope of the DEIS

The U.S. Forest Service has provided some limitations on the scope of the Prospecting DEIS in its text. The Prospecting DEIS states that any mining leases would require additional environmental review (Prospecting DEIS, p. 2). The DEIS also states that it would not apply to

prospecting activities in the Boundary Waters Canoe Area Wilderness, Mining Protection Areas, Research Natural Areas, Unique Biological Areas or wild or recreational areas of Wild and Scenic Rivers (Prospecting DEIS, p. 49).

However, while the Prospecting DEIS states that none of the permit applications analyzed involve incursions into roadless areas, it does not specifically exclude application of the DEIS to those areas (Prospecting DEIS, p. 170). The Prospecting DEIS implies extension to additional prospecting permits and the potential for adoption or “tiering” to other activities (Prospecting DEIS, p. iv, 8).

We strongly recommend that the Supplemental DEIS ensure that additional actions that would harm the environment not be “piggy-backed” onto the meager analysis performed in the Prospecting DEIS:

- The Prospecting DEIS should not apply to any additional permits and operation plans not specifically identified in the site-specific analysis contained in the Supplemental DEIS;
- Any additional permits and operations plans proposed in the Superior National Forest should require additional analysis of cumulative likely adverse impacts based on the nature and location of operation plans, with public notice, scoping, an opportunity for public comment and analysis of actual impacts of prospecting to date;
- The Prospecting DEIS should include a clear statement that future decisions regarding prospecting activities in the Superior National Forest may not may not adopt the Prospecting DEIS and may not tier to or supplement the Prospecting EIS without public notice, scoping, an opportunity for public comment and an assessment of the actual impacts of prospecting to date;
- The Prospecting DEIS should not apply to roadless areas;
- The Prospecting DEIS should identify other areas where mining would be particularly destructive, such as any aquatic resources of national importance or areas impacting Traditional Cultural Properties and state that the Prospecting DEIS does not apply to allow minerals exploration in those areas.

DISCUSSION

The Prospecting DEIS fails to analyze cumulative impacts due to prospecting, mining and road-building activities on other lands in the region.

The Prospecting DEIS explicitly states that it has not considered the cumulative impacts of Superior National Forest prospecting and private prospecting on adjacent lands, even to the extent that the SNF has received notification of such activities. (Prospecting DEIS, p. 34). The DEIS acknowledges, “Drilling will continue on state county and private lands,” and implies that cumulative impacts need not be considered since drilling on adjacent non-federal lands will “continue to be regulated by existing state regulation on drilling activity.” (Prospecting DEIS, p. 134). This omission of cumulative prospecting impacts is significant, since federal ownership in the project area is 42.1 percent, with state, county, timber industry and other private ownership making up the balance. (Prospecting DEIS, p. 147).

Next, although the Prospecting DEIS states that additional “temporary” road mileage under the current applications alone would range from 58 to 80 percent of Forest Plan FEIS mileage over the life of the project (Prospecting DEIS, p. 153), the DEIS fails to place this analysis in context of cumulative impacts. No analysis is provided of the road mileage impacts of all

potential project activities, including future as well as current mileage applications and no analysis is provided of cumulative road mileage impacts of other prospecting, mining and timber industry activities. Thus, at the most basic level, it is not possible to determine if the cumulative impact of proposed Superior National Forest prospecting could exceed the Forest Plan mileage.

NEPA does not permit a responsible governmental unit to exclude consideration of cumulative impacts of related activities on the ground that they will be regulated or permitted by other jurisdictions. Cumulative impacts analysis should consider activities of different types that would impact natural resources and should consider impacts across jurisdictions that might be mitigated by government partnerships to set limits and protect resources (See e.g. *U.S. EPA Consideration Of Cumulative Impacts In EPA Review of NEPA Documents* May 1999, <http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>). The Prospecting DEIS fails on both accounts.

Most important, the purpose of the Prospecting DEIS is not merely to allow holes to be drilled, but to open up a broad swath of the Superior National Forest to mining. The Prospecting DEIS fails to analyze cumulative impacts of mining as well as prospecting on the Superior National Forest and other natural resources. There is no discussion of how existing mines, tailings basins, processing facilities and roads create significant cumulative adverse impacts and there is no discussion of the cumulative environmental harm that is certain to result if the prospecting plans find valuable minerals. This omission, along with the general lack of site-specific analysis in the Prospecting DEIS, requires rejection of the DEIS as inadequate. Further, WaterLegacy believes that, if a cumulative impacts analysis were done, the data would support the No Action Alternative to avoid environmental degradation.

- *A Supplemental DEIS should identify all known and likely mining and prospecting activities in or near the Superior National Forest, including impacts on private lands and State leases and should describe in detail existing and future cumulative impacts of mining, along with timber harvesting, on wilderness, solitude, road building, ecological landscapes, forest resources, water and air quality, habitats, threatened and endangered species and other resources;*
- *The most likely outcome of a rigorous cumulative impacts analysis will be to require selection of the No Action Alternative.*

The Prospecting DEIS fails to provide basic site-specific environmental analysis on resources that could be impacted by drilling and road building activities.

The essence of an environmental impact statement is to provide site-specific analysis of the effects of a proposed action on natural resources. Failure to conduct a site-specific analysis may result in a determination that an EIS is incomplete and the finding of harmlessness unsustainable. For example, in the recent case of *United States v. Coalition*, 2011 U.S. App. LEXIS 9927 (May 11, 2011) the First Circuit Court of Appeals held that the lack of “site-specific appraisal” of oil spill impacts to Buzzards Bay was the “sockdolager” resulting in a determination that the Coast Guard had failed to take a “hard look” at environmental impacts.

The Prospecting DEIS identifies specific permit applications and operating plans proposed to be issued to DMC, Twin Metals, Lehmann Exploration, Encampment and Prime Meridian under the proposed action. (Prospecting DEIS, p. iii) and acknowledges that the locations for

drilling access roads have been identified in the operating plans.” (Prospecting DEIS, p. 6-7). However, the Prospecting DEIS provides no specific information on the location of the drill sites, roads, landings or other impacts of the proposed operations and no site-specific appraisal of the specific natural resources impacted, the proximity to residents and recreation uses and the density and intensity of impacts in any particular locale.

The need for a more site-specific environmental impacts analysis is particularly evident in the case of Birch Lake, a fishing lake in close proximity to the BWCAW, referenced sporadically throughout the Prospecting DEIS. Historically, there has been only one landing on Birch Lake (Prospecting DEIS, p. 138). The Lehmann Exploration prospecting permit application includes 8 landings, and the DEIS suggests that it would be reasonable to assume an additional 20 open water landings and an additional 20 winter landings over the ice for a total of 40. (Prospecting DEIS, pp. 138, 184).

The DEIS recognizes that landings can effect water resources by introducing sediment into a lake, modifying riparian vegetation and shoreline, introducing invasive species and modifying the littoral area. (Prospecting DEIS, pp. 138-139). The DEIS states that three to six trips per day during daylight hours may occur during drilling operations, impacting residents and users of the lake: “Sound from watercraft engines would affect users of the lake and recreational residences on the lakeshore. Sound would travel further across the lake than in the forest since vegetation would not provide a barrier.” (Prospecting DEIS, p. 78).

The DEIS also discusses the potential for drilling on Birch Lake without assessing specific operation plans or quantifying impacts. The DEIS does note that “there is a research natural area and a unique biological area” impacted by operating plans for Birch Lake. (Prospecting DEIS, p. 74). The DEIS notes that the single drilling site from a barge on Birch Lake over the past several years “has impacted the recreation experience of recreation users.” (Prospecting DEIS, p. 76).

Despite the potential for a range of adverse impacts, the DEIS proposes a 4000 percent increase in the number of landings on Birch Lake, without placing any limits on the density, seasonality or duration over time of these impacts. The DEIS provides no unified and coherent analysis of potential impacts on Birch Lake, including the riparian and littoral area, the nature of the water body (mineralized, non-mineralized, depth, aquatic systems, vegetation), the nature of the landings and prospecting activities proposed, the location of the landings and drilling activities proposed, or a map of proposed locations as compared to ecologically sensitive areas. There is no rigorous and coherent analysis of the number of motorized vehicles, drilling sites and equipment that would impact the lake or the potential noise and other impacts on residents and recreational users. Neither the density nor impact over time of proposed activities are analyzed in terms of impacts on natural resources, recreation or property values.

Without such detailed site-specific analysis, the assertions in the DEIS that the impacts on Birch Lake scenery, noise would be “minimal” or “similar” to effects of other activities or that sites could be “moved to the left or right shoreline” to minimize resource impacts (*see, e.g.* Prospecting DEIS, pp. 65, 78, 139) fails to demonstrate the “hard look” required under the National Environmental Policy Act and applicable case law.

- *A Supplemental DEIS should provide mapping and site-specific analysis for all of the impacts on resources proposed in current permit applications and operating plans. In*

particular, the SDEIS should provide a detailed analysis of all potential impacts to Birch Lake with specific limits on activities and other mitigation measures.

The Prospecting DEIS provides inadequate analysis of long-term temporal impacts and concentrated density impacts on natural resources.

Temporal Duration

The Prospecting DEIS acknowledges that drilling, road construction and usage and other prospecting activities could last 25 years, since a typical permit would be active for 15 years and a 4-year permit extension could add another 10 years to the duration of impacts. (Prospecting DEIS, p. 35). The DEIS also notes that permittees have 10 years before they must permanently abandon drill holes and that final reclamation of the roads and drill pads in a permit area would not be completed until the drill holes are permanently abandoned. (Prospecting DEIS, p. 38).

Despite the potential that prospecting impacts on noise, scenery, habitats, species and water resources could last for more than three decades, the Prospecting DEIS includes both explicit assumptions that minimize potential impacts and a generic assessment that various impacts are not significant due to the “temporary” nature of prospecting disruptions. For example, the DEIS assumes a sharp drop-off in road usage after the first few months of the first year without providing any basis for this impact-minimizing assumption. (Prospecting DEIS, pp. 37, 148-149). Even as it lays out a possible duration of 45 years from permit issuance to reclamation, the DEIS states, “it is assumed that final prospecting permit reclamation, including the last permanent drill hole abandonment would take place no later than 15 years from the prospecting permit issuance date.” (Prospecting DEIS, p. 38) Again, no basis is provided for this impact-minimizing assumption.

From the perspective of natural resources, such as introduction of invasive species, off-road vehicle access and abuse in wilderness areas, impacts of roads and stream crossings from sediment and stream flow manipulation and impacts of human disturbance on endangered species like the lynx and the wolf, a period of several decades is more than long enough to create a significant, if not permanent adverse impact. Yet, the Prospecting DEIS dismisses the impacts of roads on invasive species as “temporary” (Prospecting DEIS, p. 164); the impacts to both local and downstream reaches from sediment and stream flow manipulation as “short-term” (Prospecting DEIS, p. 141); the incursion of illegal ATV use to the BWCAW as “unlikely” since the roads that would provide illegal access are “temporary” roads (Prospecting DEIS, p. 113) and the human disturbance likely to lead to increased mortality of lynx and wolf “discountable or insignificant” since the roads used would be “temporary.” (Prospecting DEIS, p. 202).

A more reasonable approach to the environmental impacts of the prospecting activities proposed for the Superior National Forest would be to identify for each type of impact the likely duration and its impact on the specific natural resources. For example, if drilling in a particular area became intermittent after several years, but roads near the BWCAW were not reclaimed for decades, the adverse impact of noise might diminish without diminishing impacts on illegal ATV uses or sediment in streams.

Density of Impact

In addition to minimizing the impacts of prospecting by referring to long-term activities as “temporary,” the Prospecting DEIS explicitly states and implicitly suggests that impacts

would be dispersed, so that the impact of 3,725 acres of disruption of forest resources (*see, e.g.,* Prospecting DEIS pp. 16, 116) may be deemed insignificant, as compared to the overall size of the Superior National Forest “project area.” (Prospecting DEIS, p. 3). For example, the Prospecting DEIS explicitly suggests that erosion and runoff from construction of landings, roads and drilling sites would have a minimal impact on water quality since drill sites would be “disbursed,” meaning “dispersed.” (Prospecting DEIS, p. 137).

The DEIS assumption that impacts will not be concentrated minimizes the impacts of disruption. The DEIS explains that road surface approximately 10-12 feet in width is needed to transport the drill rig, fuel, equipment, water, and personnel to the site with a total disturbed width, including tree clearing and temporary storage of vegetation, of 20 feet on the average. The DEIS also notes that developing a “temporary” road could include installing culverts, drivable dips and water crossings; clearing vegetation; cutting/removing trees and brush; using gravel; using geosynthetics; and installing drainage dips and water diversion structures. (Prospecting DEIS, p. 21)

The DEIS also describes vehicle use, clearing and disruption for prospecting, including overland use of snowmobiles and ATVs, multiple helicopter trips and ongoing use of barges and motorized watercraft. (Prospecting DEIS, p. 21). Sites for helicopter operations would average 50 by 25 feet and drill pad sites up to a maximum of 100 feet by 100 feet would be required. The drill pad area would be cleared of all vegetation that would obstruct setting up the drill rig or interfere with drilling operations; the ground may also be bladed level with a dozer. In addition to drill pad sites, disturbance at landing sites 25 feet wide by 50 feet deep, perpendicular to the shoreline, could include clearing and grubbing. (Prospecting DEIS, pp. 21-23).

Road building, drilling, motorized vehicle use, development of drill pads, helicopter pads and landings would all be more likely to impair water quality, introduce invasive species, foster illegal ATV use, impact scenery, habitats and endangered species and impact solitude and recreation if they were densely concentrated in a resource area, rather than dispersed. A Supplemental DEIS should analyze the impacts of each of these prospecting activities based on actual operation plans and the likelihood that activities will be concentrated and should evaluate impacts on resources and recreation resulting from limiting the number of activities or their density per acre. The need to consider concentrated impacts and density limits is underscored since the level of prospecting proposed to take place in the Superior National Forest over the next 20 years (1,920 boring holes) is greater than that experienced on all State, Federal, County and private lands in the five decades from 1948 to 2002 (1,700 boring holes). (Prospecting DEIS, pp. 123, 136).

Aggregate Water Resource Impacts

The potential impacts of densely concentrated impacts on water quantity should be specifically analyzed. The Prospecting DEIS acknowledges in response to WaterLegacy’s scoping comments that withdrawal of water for use in drilling can adversely impact aquatic ecosystems:

The withdrawal of water to use in the drilling process could have an effect on the surface water resources. Surface water removal can affect aquatic biota by simple desiccation, or cause stress and mortality to fish and other aquatic organisms by changes in the thermal and chemical properties of water. Excess rate of water removal can affect the stream biota. (Prospecting DEIS, p. 229)

The Prospecting DEIS explains that approximately 1000 to 2000 gallons of water are used per day for each drill hole depending on subsurface conditions and that permits for water use are only required for water use equal or greater to 10,000 gallons per day. (Prospecting DEIS, p. 24). If there are multiple drill holes resulting from various permits and operations plans, it is highly likely that water usage won't trigger any permit requirement.

The DEIS analysis and proposed mitigation of water resource impacts are inadequate. The DEIS provides no site-specific assessment of the water quality and quantity impacts of actual permits and operation plans included in the project based on the flowage of the impacted bodies of water, the number of borings proposed or the aggregate gallons proposed to be withdrawn. The Prospecting DEIS concludes that a single stipulation (discussed on pages 9-10 of these comments) addresses all water quantity concerns raised, but does not discuss how either the WAT-6 stipulation or any other measures, would actually minimize or mitigate aggregate impacts of prospecting activities on water resources.

- *A Supplemental DEIS should analyze impacts of drilling and roads based on the full permitted time of use, recognizing that changes in habitat or opening up of areas to ATV use for decades is effectively a permanent, not a “temporary” impact;*
- *A Supplemental DEIS should analyze impacts of drilling and roads based on mapping of historical and current operation plans and assumptions that reflect the likely density of future prospecting where minerals are anticipated to be located.*

The Prospecting DEIS contains inadequate analysis and mitigation of water quality impacts, including impacts of brines and toxic metals on non-degradation requirements and impacts on wild rice.

Non-Degradation

The Prospecting DEIS analysis of water quality impacts is limited to potential violation of water quality standards. (Prospecting DEIS, p.131). The DEIS does not discuss anti-degradation requirements under Federal law that “in-stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected,” 40 C.F.R. §131.12, or Minnesota statutes and rules providing that “groundwater be maintained in its natural condition, free from any degradation caused by human activities, Minn. Stat. 103H.001, and that “beneficial uses and the water quality necessary to protect the existing uses must be maintained and protected from point and nonpoint sources of pollution.” Minn. R. 7050.0185, Subp. 1. Restricting water quality analysis to violation of standards without discussing anti-degradation requirements is overly limiting and fails to analyze what is required to adequately protect water resources.

Bulk Sampling

The Prospecting DEIS assumes that bulk sampling sites, such as the Spruce Road Site closed in 1975-1976, are not considered a source of pollutants and degradation of water resources. (Prospecting DEIS, p. 143) However, the DEIS fails to discuss recent concerns about impairment of receiving waters or actual sampling and analysis by various sources. Since the DEIS apparently relies on the history of bulk sampling to conclude that drilling impacts on water quality are likely to be minimal, a thorough analysis of all data pertaining to bulk sampling impacts is needed.

Brackish Water Intrusions

The Prospecting DEIS recognizes that drilling activities may contaminate surface or groundwater if brines or brackish water intrusions are encountered. (Prospecting DEIS, pp. 131-132). However, the sole mitigation of this impact provided in the DEIS requirement of a Brackish Water Management Plan in order to drill within three miles of the Lake Superior shoreline (see Prospecting DEIS, WAT-12, pp. 59, 63). This measure is inadequate and creates a false sense of security regarding the potential locations of brackish water intrusions throughout the project area.

Although the Prospecting DEIS suggests that mitigation of impacts of brackish water intrusions can be accomplished by requiring a management plan for drilling within three miles of Lake Superior, experience with brackish intrusions at other mines and scientific investigation of brackish water intrusions within the Duluth Complex does not support the assumption that brackish water would only be of concern within three miles of Lake Superior.

Intrusions of brackish waters or brines may be found anywhere within the Duluth Complex. The Minnamax project drilling in the Duluth Complex in the late 1970's encountered saline water, with chlorides up to 11,000 mg/L in a drill hole (far above the water quality standard of 230 mg/L). Later, when constructing their test mine, Minnamax encountered highly saline mine dewatering wastewater. The Minnamax site is more than three miles from Lake Superior.

Research published in 1991 pertaining to the Minnamax site identified drill cores from the Duluth Complex containing high chloride (up to 3200 ppm) and fluoride (up to 760 ppm) concentrations. The report noted that these levels came from drill holes located in troctolitic rocks in various areas, including the Maturi, Minnamax, Water Hen, Dunka Road, and Dunka Pit formations of copper-nickel sulfide occurrences. (Eduard H. Dahlberg & Bernhardt Saini-Eidukat, *A Chlorine-bearing Phase in Drill Core of Serpentinized Troctolitic Rocks of the Duluth Complex, Minnesota*, Canadian Mineralogist Vol. 29, 1991, pp. 239-244, Attachment A)

Geological research suggests that troctolitic rock formations in which high chloride levels can be found may be prevalent throughout Minnesota's Duluth Complex and may, in fact, coincide with higher levels of concentrations of various metals where prospecting activities are most likely to take place. (Mark Severson & Randal Barnes, *Geology, Mineralization, and Geostatics of the Minnamax/Babbitt Cu-Ni Deposit (Local Boy Area), Minnesota Part II: Mineralization and Geostatics*, Natural Resources Research Institute, Technical Report TR-90-13b (1991) see e.g. pp. 24, 56, 59, 62, Attachment B).

Minnesota's Copper-Nickel Study recognized that "Highly saline water has been encountered in some bedrock areas in the Study Area (AMAX Drill Hole 303). The source and spatial distribution of this water in the Study Area is unknown." Occurrence of brackish waters or brines in significant quantities could present significant water quality problems at any location where they were encountered. (Daryl e Thingvold, Nancy Sather, Peter Ashbrook, *Water Quality Characterization of the Copper Nickel Water Quality Research Area*, Minnesota Regional Copper-Nickel Study, MEQB (Dec. 1979).

A Supplemental DEIS must recognize the risk that brackish water intrusions pose to surface and ground water throughout the project area, a risk that may remain significant, even if project-wide stipulations are required.

Natural Stands of Wild Rice

The Prospecting DEIS recognizes that drill pad construction would adversely impact natural stands of wild rice, and proposes a 50-foot setback from wild rice lakes. (Prospecting DEIS, p. 16). However the DEIS neither discusses or limits the impacts of landings on wild rice; the DEIS also fails to propose any setbacks for drill pad construction adjacent to streams or rivers containing stands of natural wild rice. A Supplemental DEIS should analyze the degree to which proposed permits and operation plans impact stands of wild rice and should include stipulations to protect wild rice in lakes, streams and rivers from landings as well as drill pad construction.

The Prospecting DEIS begins to review the significance of wild rice stands as Traditional Cultural Properties, suggesting that a wild rice stand that has been annually harvested historically by a distinct living community for the past 100 years should be considered a Traditional Cultural Property heritage resource and that there are 34 known heritage resources within permit application boundaries. (Prospecting DEIS, pp. 178, 179). However, the DEIS criteria by which a wild rice stand would be deemed a Traditional Cultural Property are overly narrow. Cycles in productivity of natural wild rice might preclude an “annual” harvest and, in general, a resource develops cultural significance after 50, not 100 years. (See e.g. National Register Bulletin, *How to Apply the National Register Criteria for Evaluation*, p. 41, <http://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf>)

In addition the DEIS does not specify whether any of the known heritage resources in the permit area are natural wild rice stands and does not identify any wild rice stands that would meet the criteria of a Traditional Cultural Property and require avoidance measures. (see Prospecting DEIS, p. 181). These gaps in analysis undermine the potential to minimize adverse impacts on stands of natural wild rice.

- *A Supplemental DEIS should provide detailed evaluation of the potential for degradation of water quality as a result of prospecting. This assessment should include water quality sampling and analysis of historical bulk sample sites for arsenic, copper, nickel, lead and sulfates;*
- *A Supplemental DEIS should provide a thorough analysis of the potential of contamination with brackish waters and brines, requiring disclosure and mitigation from mining companies of salt indicators and recognizing that intrusions are not limited to three miles from Lake Superior;*
- *A Supplemental DEIS should provide a thorough analysis of the potential of impacts on natural wild rice, including stands in rivers and streams and Traditional Cultural Properties analysis.*

The Prospecting DEIS fails to appropriately consider alternatives to mitigate harms from prospecting activities.

Density of Prospecting Activities

In addition to evaluating the impacts of concentrated prospecting activities on natural resources, as discussed above on pages 5-6 of these comments, a Supplemental DEIS should consider alternatives to limit the density of impacts of drilling, landings, road building, and other prospecting activities.

Alternatives might also be defined in terms of the impacts on specific resources. For example,

the Prospecting DEIS suggests that an appropriate “indicator” for impacts along rivers and lakes might be the percentage of disturbed riparian or near shore littoral area. (Prospecting DEIS, p. 134). Rather than merely providing an indicator, a Supplemental DEIS should evaluate alternatives that limit the percentage of disturbed riparian or littoral area that could be permitted as a result of drilling pads, landings or other prospecting activities.

Limits on Water Quantity Withdrawal

While the Prospecting DEIS acknowledges the potential for multiple withdrawals of water impacting water resources and avoiding permit limitations, the solution provided in the DEIS is inadequate to protect water resources. The single stipulation provided in the Prospecting DEIS, WAT-6 on page 59 of the Prospecting DEIS, states that water cannot be withdrawn from streams with less than 1 cubic feet per second flow rate and that cumulative withdrawal rates shall be no more than 10 percent of the flow or 1 percent of the estimated volume of the basin. However, no monitoring or control strategies are provided.

No mechanism is provided to enforce this stipulation, since there is no requirement that actual water use specific to flow level or water basin volume be either monitored or reported by prospecting companies. There is no stipulation limiting the number of permits or operating plans that may be granted for a single water body and no provisions requiring even the modest check and balance of a permit if multiple drill holes in the aggregate will use 10,000 gallons of water per day. (See Prospecting DEIS, p. 58-59 and Appendix E, pp. 266-267). To protect water resources and ecosystems, a Supplemental DEIS should provide alternatives and stipulations limiting the number of permits and boring holes, requiring companies to monitor and report water withdrawals and defining withdrawals that use an aggregate volume of 10,000 gallons of water as subject to permitting requirements.

Limit Prospecting Activities to Winter

The assertion in the Prospecting DEIS that noise is the *only* issue that serves as a driver for alternatives (Prospecting DEIS, p. 17-18) is inconsistent with the data discussed in the DEIS and distorts the potential of seasonal limitation to reduce a number of resource impacts, including but not limited to noise. WaterLegacy does not challenge the conclusion in the DEIS that noise from drilling, vehicle and equipment is an appropriate driver for alternatives:

The drill rig would normally operate 24 hours a day in two 12 hour shifts. . . Multiple drill rigs may be operating at the same time but at different sites. Support equipment may include all terrain vehicles, snowmobiles, a skid-mounted rod dray, a D-4 or larger dozer, an excavator, a high lift and two or three axle trucks for transporting water, pipe, fuel, other equipment, and drill core. Four wheel drive pickups, sport utility vehicles (SUVs), all terrain vehicles, and snowmobiles are used to transport personnel, equipment, supplies, drill core boxes; and to service drill rigs. . . Noise abatement such as enclosing the drill rig with panels and directing the noise upwards may be required.” (Prospecting DEIS, p. 24)

However, the recommendation of Alternative 4, which avoids the limitation of prospecting activities to winter provided in Alternative 5, is inconsistent with the DEIS itself. Not only would Alternative 5 have the lowest impact on the opportunity for solitude (Prospecting DEIS, p. vi), but impacts on other natural resources would be minimized or mitigated if prospecting activities were restricted to winter months, as follows:

- Alternative 5 would result in fewer impacts to recreation because there would be no drilling during the summer season, when most recreation use occurs. (Prospecting DEIS, p. 115)

- Alternative 5 would result in lower potential for impacts to the soil resource. During a majority of that time frame, soils would likely be frozen, reducing potential compaction, rutting and displacement. (Prospecting DEIS, p. 129)
- Alternative 5 would reduce the impact of crossing and construction on wetlands. (Prospecting DEIS, p. 141)
- Alternative 5 would reduce impacts on ground and surface water quality and reduce the impact of roads on sediment in surface waters. (Prospecting DEIS, p. 142).
- Alternative 5 would avoid summertime access using barges. (Prospecting DEIS, p. 155)
- Alternative 5 could result in a decrease in the competitive advantage of Canada lynx due to snow compaction, but would be beneficial to lynx and other wildlife species by reducing disturbance during breeding seasons. (Prospecting DEIS, p. 155)
- Alternative 5 would pose a lower risk of non-native invasive plant spread than under Alternatives 2, 3, or 4. (Prospecting DEIS, pp. 164, 166-167)

Based on the information contained in the Prospecting DEIS, if the No Action Alternative is not selected, the U.S. Forest Service should recommend that prospecting be limited to winter months in addition to other mitigation measures.

Noise Attenuation to Protect Wilderness

Although Alternative 5 would avoid impacts to many wilderness users by limiting the drilling season, the Prospecting DEIS also suggests that measures be taken to minimize perceptible noise in the BWCAW. Alternative 4 would limit sound reaching the wilderness to 30 dBA, but would not prevent audible noise. (Prospecting DEIS, p. 114). A Supplemental DEIS should analyze an alternative that would ensure that there is no perceptible noise in the wilderness as well as a general limitation on activities to winter and should specify the limits on number and location of equipment and the specific sound control technologies for drilling equipment and vehicles that would be needed to provide this mitigation.

The current Prospecting DEIS seems to assume that the only choice is either seasonal limitation or noise control technology to protect solitude in the wilderness. A Supplemental DEIS should analyze an alternative combining these mitigation measures. Second, the current DEIS lacks any effective mechanism to ensure that proposed noise limits would be followed. Rather than reporting monitoring results at the end of the year (Prospecting DEIS, p. 266, Appendix E), effective noise mitigation would require specifying and demonstrating the efficacy of noise control technology and decibel limit attainment prior to drilling and other prospecting activity and would set distance limits from wilderness areas to ensure that solitude is not impaired.

- *A Supplemental DEIS should analyze an alternative that provides density per acre limits on drilling, construction of roads and drill pads and use of landings and should provide stipulations that would effectively enforce that limit;*
- *A Supplemental DEIS should analyze an alternative limiting cumulative withdrawal of water from any resource and should provide clear stipulations to effectively enforce that limit whether or not multiple companies and permits draw from the same resource;*
- *A Supplemental DEIS should recommend limitation of prospecting activities to winter to reduce impacts on a range of natural resources and on recreation;*
- *A Supplemental DEIS should analyze an alternative effectively preventing perceptible noise in the wilderness as well as limiting prospecting activities to winter.*

The Prospecting DEIS provides inadequate and unenforceable stipulations that will not ensure compliance with the few conditions it proposes.

Ecological Land Types

WaterLegacy recognizes the concern about Ecological Land Types (“ELTs”) reflected in current stipulations in the Prospecting DEIS that restrict prospecting activities in some ELTs to frozen soil or dry periods. (Prospecting DEIS, pp. 125-126). A similar level of concern is reflected in the Prospecting DEIS suggestion that use of certain ELTs for temporary roads and skid trails will generally be permitted in frozen conditions. (Prospecting DEIS, p. 56). Given the restrictions on various Ecological Land Types, the DEIS suggests that, if its restrictions were followed, a total of about 60 percent of the prospecting operations in the proposed project would take place during the winter. (Prospecting DEIS, p. 150).

However, unlike an overall restriction of prospecting activities to winter, as suggested by Alternative 5, a restriction of activities based on mapping and supervising the conduct of activities in various ELTs would be difficult to enforce. Without investigation of multiple and specific sites, it would not be possible to determine whether restrictions were being followed. Given limits on resources and personnel to enforce diverse restrictions specific to ELT type, limiting activities to winter months is likely to be more enforceable as well as more protective of natural resources. Prospectors could be required to document the dates and weather conditions on which they begin and cease yearly operations, and any resident, hunter or recreational visitor as well as field staff could identify and report off-season prospecting.

Water Quality

The only monitoring for water quality impacts required in the Prospecting DEIS is “Visual evidence of correct sump operation and effectiveness, and potential rutting or erosion from temporary road construction and use.” U.S. Forest Service personnel would take photos of these facilities during their field visits. (Prospecting DEIS, pp. 266-167). This “monitoring” is both inadequate and places the burden of evaluation on field staff.

At a very minimum, if any action alternative is selected after supplemental analysis, any permits must require mining companies to monitor potential ground water impacts, report contacts with brackish water as well as any spills with the potential to degrade groundwater. Prospectors should be required to report the volume of water withdrawn from any water resource in total daily gallons as well as compared to flow or basin volume and to monitor impacts on surface water from sediment as well as drilling activities. Prospectors should be required to provide photographic documentation of roads, sumps and mitigation measures with time and date stamps. All reports and photographs should be submitted electronically on a prescribed schedule along with affidavits of their authenticity and representative nature. In general, in order to effectively protect natural resources, the primary burden of monitoring compliance should be placed on prospectors, with field visits as a quality check, rather than the primary means of data collection.

Bond

Finally, although WaterLegacy appreciates that the Prospecting DEIS considers some level of bonding to ensure surface and sub-surface reclamation (Prospecting DEIS, p. 44), the bond level of \$1,000 is far too modest. Such an amount would be inadequate to address routine reclamation, let alone spills or contamination.

- *A Supplemental DEIS should recommend limiting prospecting activities to winter so that protection of wetlands and other sensitive Ecological Land Types is enforceable;*
- *A Supplemental DEIS should stipulate monitoring for water quality that places responsibility for sampling and reporting on prospectors;*
- *A Supplemental DEIS should require a bond sufficient to remediate ground or surface water contamination or spills.*

The Prospecting DEIS fails to appropriately limit the scope of future resources degradation.

Preclude Application to Additional Permits and Operation Plans

The application of the Prospecting DEIS to future potential permits and operation plans is indefinite and fails to provide assurance that a hard look and public participation will be provided for environmental review of future permits.

The DEIS explains that the Eastern States-Milwaukee Field Office-Bureau of Land Management (BLM) has received 46 federal hardrock mineral prospecting permit applications for the Superior National Forest. Of the 33 complete applications, 21 also have operating plan proposals, but 13 are incomplete and lack exploration plans. (Prospecting DEIS, pp. 2, 6). Conducting an appropriate site-specific analysis of even these 46 permit applications would pose problems, given this lack of information about proposed operations.

The Prospecting DEIS, however, could allow more than double the amount of prospecting activity for which permits have been received, without requiring additional environmental review. The DEIS suggests that there may be 96 permits approved within the 20 year scenario timeframe, resulting in 192 operating plans. (Prospecting DEIS, pp. 34-35).

Although the DEIS does not totally preapprove such future prospecting permits, it bootstraps their approval without providing any information or analysis regarding their location, timing or the resources they might impact. The DEIS states that decisions on future prospecting permit applications, operating plans and special use permits associated with operating plans “would adopt, tier to or supplement this EIS” and that “NEPA compliance may be completed with a Categorical Exclusion.” (Prospecting DEIS, pp. iv, 8).

These indefinite uses for the Prospecting DEIS are likely to foreclose public notice and comment, a review of the actual impacts of prospecting allowed under the current Prospecting DEIS, a site-specific hard look at proposals for future exploration and a rigorous determination of limits and stipulations needed to minimize and mitigate environmental harm. Protection of the Superior National Forest requires clarification in this Prospecting DEIS that it will not apply to additional permits and operations plans not identified in its site-specific analysis, that environmental review of any additional permits or operations must require analysis of actual and cumulative prospecting activities, and that environmental review of future prospecting may not “adopt” this EIS, and may only tier to or supplement this EIA after a full analysis and after public notice, scoping and comments.

Exclude Roadless Areas

While no mineral exploration within a Forest Plan inventoried roadless area has been proposed in the current permit applications and operating plans (PDEIS, p. 171) it is quite possible that future explorations in the DEIS 20-year exploration scenario could be proposed within inventoried roadless areas in the Superior National Forest. (Prospecting DEIS, p. 170).

Of the 28 Forest Plan inventoried roadless areas, half have lands with federally-owned mineral rights outside of the Mining Protection Area (“MPA”) that could be impacted by prospecting – a total of 17,146.94 acres. (Prospecting DEIS, p. 173-174). Of the 13 areas designated under the Roadless Area Conservation Rule, 8 (more than 60 percent) have lands with federally owned mineral rights outside of the MPA – a total of 30,502.54 acres. (Prospecting DEIS, pp. 174-175).

Since the Record of Decision for the Forest Plan was signed in July 2004, any proposed site-specific project within a Forest Plan inventoried roadless area requires an environmental analysis that considers effects of the project proposal on the roadless characteristics in the area. This Prospecting DEIS has the potential to undermine resource protection and review envisioned by the Forest Plan. The DEIS should clearly state that it does not apply to roadless areas, so a separate EIS will be required, consistent with the 2004 Forest Plan, if future prospecting were proposed in roadless areas.

Protect Sensitive Areas

Although the Prospecting DEIS excludes various areas from its application, including BWCAW and MPA areas, research natural areas, unique biological areas and wild areas of Wild & Scenic Rivers, and places some restrictions on prospecting near scenic or recreational areas, the DEIS does not discuss other sensitive areas within the Superior National Forest, such as potential aquatic resources of national importance. (Prospecting DEIS, p. 49). Further, in discussing limits to protect heritage resources (Prospecting DEIS, p. 50), the DEIS does not explicitly state that areas where Traditional Cultural Properties are located, including natural stands of wild rice harvested for more than 50 years by Ojibwe/Chippewa tribes, shall be avoided, if known, and surveyed and protected in consultation with Tribal Historic Preservation Officers. This important clarification must be made.

- *The Prospecting DEIS should not apply to additional permits and operation plans not specifically identified in the site-specific analysis contained in the Supplemental DEIS;*
- *Any additional permits and operations plans proposed in the Superior National Forest should require additional analysis of cumulative likely adverse impacts based on the nature and location of operation plans, with public notice, scoping, an opportunity for public comment and analysis of actual impacts of prospecting to date;*
- *The Prospecting DEIS should include a clear statement that future decisions regarding prospecting activities in the Superior National Forest may not adopt, tier to or supplement the Prospecting EIS without public notice, scoping, an opportunity for public comment and an assessment of the actual impacts of prospecting to date;*
- *The Prospecting DEIS should not apply to roadless areas;*
- *The Prospecting DEIS should identify other areas where mining would be particularly destructive, such as any aquatic resources of national importance or areas impacting Traditional Cultural Properties and state that the Prospecting DEIS does not apply to allow minerals exploration in those areas.*

WaterLegacy believes that the cumulative analysis in the Prospecting DEIS is wholly inadequate and that a rigorous cumulative impacts assessment would require selection of the No Action Alternative.

There are other critical deficiencies in the Prospecting DEIS, which neither provides a site-specific hard look at resource impacts nor regulates overall impacts to the Forest by density

and timing, as might be required in a generic EIS. WaterLegacy believes that a more thorough analysis of potential impacts of prospecting alone is likely to support a No Action Alternative and is certain to require consideration of additional alternatives, limits and stipulations to protect the Superior National Forest, nearby wilderness, ground and surface water quality, wetlands and riparian areas, heritage resources, habitats, threatened and endangered species and other natural resources.

We appreciate your consideration of our comments and request that a Supplemental draft environmental impact statement provide the additional cumulative, site specific and resource specific analysis proposed in the above summary and discussion.

Please feel free to contact me at 651-646-8890 or at pmaccabee@justchangelaw.com if you have any questions with respect to our comments.

Respectfully submitted,

A handwritten signature in blue ink that reads "Paula J. Maccabee". The signature is written in a cursive style with a large initial "P".

Paula Goodman Maccabee
Counsel for WaterLegacy

cc: Kenneth Westlake, NEPA Compliance, U.S. EPA (westlake.kenneth@epa.gov)