To: Honorable Secretary of Agriculture Sonny Perdue Honorable Secretary of Interior David Bernhard

Cc: Undersecretary of Agriculture Jim Hubbard
Chief of Staff to the Undersecretary Chris Marklund
U.S.F.S Chief Vicki Christianson
U.S.F.S. Deputy Chief Chris French
U.S.D.O.I. Assistant Deputy Secretary James Cason
U.S.D.O.I. Assistant Secretary Joseph Balash
BLM Deputy Director Brian Steed
Gareth Rees

Secretaries Perdue and Bernhard:

We, the undersigned former U.S. Forest Service employees, write to express our grave concerns related to proposed sulfide-ore copper mining in the Rainy River Drainage Basin, which includes the watershed of the Boundary Waters Area Canoe Wilderness (BWCAW). Collectively we have nearly 1,000 years of experience in such fields as wildlife biology, hydrology, recreation, NEPA, wilderness management and natural resource management. In addition, each of us has knowledge and experience directly related to the management of the BWCAW and the vast array of social, cultural, ecological, and economic benefits it provides.

Acid Mine Drainage (AMD) from hardrock mines such as the one proposed by Twin Metals MN and Chilean conglomerate, Antofagasta, is a worldwide problem. AMD occurs as sulfide minerals in the ore bodies and rock over burden are exposed to air and water creating sulfuric acid which subsequently increases water pH and leaches harmful metals such as copper, zinc, lead, cadmium, iron and nickel. The highly complex and interconnected surface and subsurface waters of the Rainy River Watershed provide an immediate and irremediable transport mechanism for toxic material to move through the BWCAW, Voyageurs National Park, and Quetico Provincial Park.

The following actions are imperative:

- Recognition of U.S. Forest Service statutory and regulatory consent authority on all lease applications within the Superior National Forest.
 - O The Forest Service's consent to lease renewal and lease applications is mandated under 16 U.S.C. 508b, Section 402 of Reorganization Plan No. 3 of 1946, and 43 C.F.R. 3507.19(c) and cannot be diminished by the Dept. of Interior.
- Reinstatement and completion of the study of a proposed 20-year mineral withdrawal within the Rainy River Watershed.
 - O Until the question of whether mining is appropriate and feasible within this watershed is answered, all other actions are premature.
- Suspension of all authorizations related to new federal mining lease applications in the Rainy River Watershed pending completion of the reinstated mineral withdrawal study.

- O In the alternative, preparation of an Environmental Impact Statement by the Forest Service that considers the full suite of reasonably foreseeable significant impacts associated with copper mining in the watershed.
- Suspension of leases MNES-01352 and 01353 pending final adjudication of litigation regarding lease reinstatement. This includes withdrawal of the Environmental Assessment (EA) prepared by the Bureau of Land Management, Northeastern States District Office: "Addition of Terms and Conditions, for Renewal of Hardrock Leases, MNES 001352 and MNES 001353."
 - O Moving forward with renewal and development of the leases represents a significant waste of resources given the probability of success in litigation challenging lease reinstatement. Moreover, the lease renewal EA is wholly inadequate, does not provide a serious or factual examination of the effects of lease renewal and subsequent connected actions, and runs contrary to the robust, science-based 2016 decision by former Forest Service Chief Tom Tidwell to deny consent to renewal.

According to the Copper Development Association, Inc. (2019): "known world-wide copper resources are estimated at nearly 5.8 trillion pounds of which only about 0.7 trillion pounds (12%) have been mined throughout history.... And nearly all of that is still in circulation because copper's recycling rate is higher than that of any other engineering metal." The U.S. Geological Survey estimates the percentage of known copper mined throughout history at 25%. While our concerns are based on science and local expertise, simple common sense tells us that with upwards of 75% of all known copper deposits still available for development, there are surely more ecologically-suited places to meet the demand for copper than directly upstream from millions of acres of water-rich wilderness.

The history of copper mining clearly demonstrates that the vast majority of copper mines fail. They may fail catastrophically, or they may leak contaminants over time leading to inevitable environmental damage or collapse. But there is no denying that at some point in the construction, operation or the extremely long-term reclamation phase of these mines, there is a high probability of failure. It is indisputably a high-risk business and there is no mine plan or design feature that eliminates the risk.

The U.S. Forest Service has extensive experience with development of sulfide producing minerals on National Forest System lands. Even in the most arid environments, there are significant risks to this type of mining requiring continuous management and perpetual water treatment. Within the Rainy River Watershed there is simply no way to contain contamination without sacrificing the wilderness and the long-term ecologic and economic sustainability that it supports. Contrary to the opinion of industry spokesmen and politicians, including Secretary of Agriculture Sonny Perdue, who baselessly assert that we "can have it all"- irrefutable scientific studies and all of our experience tell us that in this extremely valuable, water rich, and highly interconnected place you simply cannot have both copper mining and healthy forests, water, and communities.

The collective 988 years of experience, expertise, and dedicated public service represented by the individuals below should not, simply cannot, be ignored. We encourage you to view us as a valuable resource that can be relied on to provide fair, accurate, and science-based information. We urge you to support the actions listed above as first steps toward supportable decision making related to proposed copper mining in the Rainy River Watershed.

Brenda Halter U.S. Forest Service – ret. 23 yrs. experience Hydrologist, Forest Supervisor Superior National Forest

Mary Shedd U.S. Forest Service - ret. 34 yrs. experience Wildlife Biologist, Natural Resource Manager U.S. Forest Service- ret. 16 yrs. experience Forester, Director of Planning and Information, Director of Natural Resources

Nancy Lizette Berlin U.S. Forest Service – ret. 30 yrs. experience Regional Deputy Director Renewable Resources

Bill Stocker U.S. Forest Service – 36 yrs. experience District Ranger, Professional Engineer

James A. Gallagher U.S. Forest Service – ret. 31 yrs. experience Wildlife Biologist, Land Management Planner

Nancy Salminen U. S. Forest Service – ret. 33 yrs. Experience Forest Hydrologist, Assistant Ranger

Melissa Grover U.S. Forest Service - ret. 18 yrs. experience Wildlife Biologist

Theresa Gallagher U.S. Forest Service – ret. 34 yrs. experience Soils, Fire Ecologist, District Ranger

Robin Vora U.S. Forest Service – ret. 39 yrs. experience Wildlife Biologist, Ecologist, Forester, Natural Resource Manager

Alan Williamson U.S. Forest Service – ret. 34 yrs. experience Wildlife Biologist, Forest Ecologist

Lynden Gerdes U.S. Forest Service, MNDNR – ret. 31 yrs. experience Botanist, BWCAW Ranger

Bruce Anderson U.S .Forest Service – ret. 34 yrs. experience Forest Monitoring Coordinator, Natural Resource Manager

Mark Hummel
U.S. Forest Service -ret. 30 yrs. experience
Planning, District Ranger, Deputy Forest Supervisor, Director of Public & Gov't Relations

John Wytanis U.S. Forest Service -ret. 30 yrs. experience District Ranger

Bonnie Ilhardt U.S. Forest Service -ret. 37 yrs. experience Regional Watershed Improvement/Riparian Program Manager

David Shadis

U.S. Forest Service – ret. 34 yrs. experience Forest Soil Scientist, Ecologist, Regional Soil Scientist

Kristin Horman U.S. Forest Service – 14 yrs. experience Wilderness Program Support Asst.

Lawson Gerdes U.S. Forest Service, MNDNR – ret. 30 yrs. experience Wildlife Biologist, Landscape Ecologist

Chel Anderson U.S. Forest Service – 12 yrs. experience Boundary Waters Wilderness Ranger

Jan Shultz U.S. Forest Service – ret. 28 yrs. experience Regional Botanist – Eastern Region

Dennis Fitzpatrick U.S. Forest Service – ret. 20 yrs. experience Biological Technician

Tom Kaffine
U.S. Forest Service – ret. 31 yrs. experience
Boundary Waters Wilderness Ranger/Recreation Technician

Ellen Hawkins U.S. Forest Service – ret. 30 yrs. experience Wilderness Specialist – BWCAW

Rick Brandenberg U.S. Forest Service – ret. 25 yrs. experience BWCAW – Wilderness Ranger

Becky Bartol U.S. Forest Service – ret. 37 yrs. experience National Environmental Policy Coordinator

Harvey Sobiak U.S. Forest Service – ret. 38 yrs. experience Engineering and Survey Technician

Christine Brunner U.S. Forest Service – ret. 30 yrs. experience National Environmental Policy Coordinator

Barbara Ann Belleman U.S. Forest Service/U.S. Fish and Wildlife Service – ret. 20 yrs. experience Wildlife Biologist

Yvonne Schmidt U.S. Forest Service – ret. 35 yrs. experience Forestry Technician/Information Assistant

Mark Toot U.S. Forest Service – ret. 39 yrs. experience

Forestry Technician

Wayne Russ U.S. Forest Service – ret. 35 yrs. experience Wildlife Ecologist

Tom McCann
U.S. Forest Service – ret. 40 yrs. experience
Forestry Technician/Resource Information Mgmnt.