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I am writing to comment on the proposed Stibnite Gold Project SDEIS. For the past 30 years I have lived, worked, and now enjoy retirement in McCall. Having spent my career as a fisheries biologist for the State of Idaho I am very familiar with the site of the proposed project and the aquatic resources therein. For 20+ years I directed a regional program to monitor distribution and status of all stream dwelling salmonid fishes throughout the South Fork Salmon River basin. My crews monitored fish populations and their habitat annually throughout the Stibnite mine area as well as upstream and downstream from the site. I have witnessed past mining and restoration activities in the mine area starting with mid-1990s efforts to build a channel around the Bradley tailing ponds, precariously perched on the northeast slope of Meadow Creek. I monitored the results of attempts to isolate Bradley tailings by filling the meadow with new mountains of SODA; and watched as lower Meadow Creek was reconstructed to bypass hotspots of toxic waste and add back some of the sinuosity that a high elevation meadow stream should have. I was responsible for the initial reintroduction of adult Chinook Salmon upstream of the Yellow Pine Pit in 2000. Over several years of subsequent adult chinook out-planting I monitored successful spawning and rearing in that reconstructed Meadow Creek.

The South Fork Salmon River drainage was, and continues to be, a stronghold for migratory fish and wildlife. Its strength is due to the variety of aspects, elevations, and habitats that are spread across its four major tributaries; I refer to upper South Fork, Secesh River, Johnson Creek, and East Fork South Fork Salmon River (EFSFSR). The resiliency of this watershed's ability to support keystone species of Pacific Salmon, and bull trout depends on maintaining the diversity of the habitats throughout it. The EFSFSR is unique in South Fork watershed because of its high elevation, spring fed, east/west aspect. The EFSFSR is critical for persistence of bull trout with that species' need for cold summer and fall waters. The cold water and high elevation of EFSFSR also provides for more protracted spawning, rearing, and smoltification for Chinook Salmon and Steelhead trout, maintaining diversity within those species; diversity necessary for the population as a whole to survive short-term local habitat catastrophes, like the extensive mass wasting of the 1964-65 floods. Localized

natural stochastic geomorphologic events continuously occur, affecting riverine habitat and in-stream connectivity, impacting migratory and resident fish populations. Climate change will likely make such events larger and more frequent in the future.

A proposal for purposeful long-term (100+ years) mass wasting, pollution generating catastrophe throughout a significant area of the South Fork Salmon River watershed is unconscionable. I urge the Forest Service to choose the No Action alternative for Perpetua's proposed mining operation. The Forest Service should not assume that Perpetua has any foregone "right" to mine on public lands. Mining law does not supersede Federal Environmental laws.

In the limited time I have had to review this SDEIS I was able to address just a few topics. My specific comments and questions are organized by general topic, below.

Purpose and Need

The SDEIS provides only one alternative for mining, a full scale open pit style that would double the area of land disturbance at the site, from 1,593 to 3,265 acres, including the excavation of three open pits, and generate an estimated 400 million tons of additional mine waste that will remain on the landscape in perpetuity - creating a permanent source of potential pollution within the watershed. Such a proposal cannot be considered a "restoration project." The alternate action alternatives differ only in access routes to the mine site. The action alternative for mining states that the project will *minimize adverse environmental impacts where feasible*, relying on mitigation and reclamation efforts to offset environmental impacts. Such efforts are vaguely explained. Perpetua must provide much more detail and realistic projected outcomes for proposed mitigation and reclamation.

The proposal relies heavily on significant long-term amendments to the BNF and PNF forest plans to allow Perpetua to significantly negatively impact the natural environment for decades to come. The current forest plans incurred extensive vetting by the public, including government agencies, tribes and NGOs. The intent of the amendment process is to allow temporary degradation to achieve longterm benefit. Perpetua's proposal states intent to try to achieve some mitigation and reclamation of the Stibnite area following mining, but provides no assurances; and the incredibly long timeframe is certain to result in local extinctions of many species. Amendments described in Appendix A must simply not be allowed.

Questions: Why are no action alternatives presented that would reduce environmental impacts of the project by scaling down mining, including

mining method alternatives to open pits; and limit amendments to forest plans? Why is there not an action alternative offered that relies only on using the existing disturbed site, then reclaiming that site after completion of mining? Why is there no “restoration-only” alternative presented?

Climate Change and Greenhouse Gas Emissions

The SDEIS fails to adequately incorporate Climate Change projections in environmental impact analyses.

The SDEIS must submit an accurate and comprehensive greenhouse gas emissions analysis for the proposed Lifetime of Mine and subsequent Water Treatment timeline, including requirements for mitigation of the GHG emissions added to the current levels.

4.8 Surface and Groundwater Quantity; 4.9 Surface and Groundwater Quality;
4.12 Fish Resources

Much attention is given in the SDEIS the proposed highly engineered “fish tunnel” to be constructed around Yellow Pine Pit. This is new technology as used for fish passage and untested in North America. It has been used in Europe with limited documented success. The primary purpose of the tunnel is to dewater Yellow Pine Pit for open pit mining. The DEIS claims this tunnel will be highly engineered to accommodate fish emigration and immigration to establish connectivity that currently does not exist. However, significant water quality (i.e., temperature), water quantity, and other in-stream habitat parameters will be significantly impaired upstream from the tunnel. Barriers to fish movement come in many forms, including physical (lack of stream depth, lack of hiding cover), and thermal.

Question: What will be the quality and quantity of habitat that will be available to fish upstream of this tunnel?

Perpetua needs to document anticipated barriers to fish movement throughout the project area, both spatially and temporally, and for all life stages of the four salmonid species of concern, by providing specific locations and degradations to fish habitat.

The SDEIS discusses how hyporheic conditions can protect salmonid fish eggs and alevins by moderating stream temperatures that would otherwise harm these vulnerable life stages during and after mining. Groundwater recharge is also discussed as a positive influence on in-stream habitat. However, all streams throughout the mined area will be lined as part of “reclamation” to isolate toxic metals from surface waters. Hyporheic zones are critical to stream ecosystem

health. Liners will prevent nutrients and oxygen exchange and other processes upon which aquatic life depends.

The SDEIS admits to having inadequate amounts and quality of soil, or “growth media” to reclaim riparian zones. Perpetua will supposedly figure this out in the future. This is completely unacceptable, as a healthy riparian area is critical for stream ecosystem function.

Perpetua needs to be honest about and thoroughly examine the ultimate and artificial conditions they propose to call “reclamation” of surface waters and adjacent lands. I pose that there is very low potential of lined waterways to ever recover to functioning ecosystems one could call a “stream;” a stream that can support healthy communities of aquatic life.

4.16 Access and Transportation

The SDEIS presents no analysis of the impacts of mine-related transportation on state and federal roads outside of the immediate project area; roads that will be used to transport mine-related supplies, including hazardous materials from hundreds of miles away. Many of the highways used for transport are adjacent to important and protected waterways and communities. Are rail lines also to be used? If so, relevant analyses are needed.

Perpetua must analyze impacts to entire anticipated routes of mine related transport. This analysis should include potential risks associated with transporting materials through municipalities along those routes, assess vulnerabilities with each route, and develop mitigation measures and/or design features that would reduce or eliminate potential impacts from those risks or vulnerabilities.

Maintenance of the Burnt Log Road, especially through winter, will be incredibly difficult. Perpetua needs to be realistic with the Forest Service and the public that it will be impossible for Burnt Log route to be the sole access to the mine. It is inevitable events such as avalanche, wildfire, washouts, etc. will occur over the life of SGP and Johnson Creek Road will get used by mine traffic. Use of Johnson Creek Road will further disrupt public use. There may be times when both of these routes are unavailable. Under no circumstances should mine traffic be allowed to use the South Fork Salmon River Road, as it is not built for large heavy vehicles, and the consequences of a hazardous spill into the river are absolutely unacceptable.

Perpetua must evaluate contingencies for natural or other localized disasters that cause closure to the main road route to Stibnite. All impacts for using alternate routes must be evaluated.

Summary

There was inadequate time to review this lengthy and complicated SDEIS, with a very limited comment period provided to the public, and encompassing the fall and winter holiday season. A full 120 days should have been granted.

This SDEIS did delve further into analyzing environmental consequences that SGP would cause, but falls far short in providing plans for how the project will mitigate impacts during operation and reclaim the site following the end of mining. Another complete EIS is warranted if the Forest Service is even remotely considering approval of the action alternative.

I do wish to thank the staff of the Forest Service, who must respond to the many comments submitted regarding this proposed project, for their hard work with this important and difficult task.

Respectfully,
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