

Linda Jackson, Payette Forest Supervisor

USFS, Payette National Forest

500 North Mission Street

McCall Idaho 83638

RE: Comment Letter on the Stibnite Gold Project Modified Mine Plan with Burntlog Route

Dear Ms. Jackson:

I, Robert Crump fully supports the USFS approving the Modified Mine Plan (MMP) for the Stibnite Gold Project and allowing the project to move forward based upon my judgement that there is minimal environmental impact and that legacy tailings will be reprocessed to remove antimony, arsenic and natural occurring mercury which are currently contaminating Meadow Creek. I feel that I am qualified to make this informed opinion based upon ten years experience as an engineering specialist performing probabilistic risk assessment (PRA) of nuclear power plants using tools such as fault tree analysis (FTA), accident sequence analysis (ASA) and failure mode and effects analysis (FMEA) while working at the National Engineering Laboratory in Idaho Falls and Gulf General Atomics in San Diego.

The proposed Tailing Storage Facility (TSF) in the MMP has been designed such that there is minimal probability of leakage of impounded contents to groundwater due to the two liners (each designed to have a half-life of 450 years), a leakage collection system between the liners and an underlying bentonite clay barrier that will be laid down first. Even though the consequences of breaching of the TSF would be identified as a catastrophic event, based upon the factors of safety reported for the design and construction of the TSF and the associated development of the rock storage buttress, the probability of a breach during operational and reclamation (post operation) is extremely low thus there are no risks associated with the TSF.

The slurry solution containing cyanide will be neutralized before being pumped from processing plant to the TSF. Idaho Department of Water Quality allows 50 ppm (safe level for wildlife) of cyanide but Perpetua will be treating the slurry such that the cyanide concentration of the pumped solution will be 10 ppm or less. So for the slurry solution (cyanide concentration only 10 ppm) to seep into ground water, both liners would have to fail, the leakage collection system between the liners would have to fail and then the impervious clay liner would also have to break down. The probability of these three barriers failing is so low that one can clearly state that there is very low probability of seepage and the consequence of a cyanide concentration of 10 ppm harming the environment is non-existent thus "Zero Risk". At the end of the project, TSF will be de-watered, the tailings will settle and consolidate and Meadow Creek will be routed over the decommissioned TSF. The tailings once consolidated will create another nearly impervious layer thus vertical flow of water through the tailings will be minimal thus a non-event sequence.

Another source of cyanide contamination would be the failure of a vessel or piping in equipment rooms but again, Perpetua has designed equipment building capacity to provide a secondary containment that has a volume of 110% of slurry solution available after a piping/tank failure are an industry standard in gold mine processing plants using NaCN. Again the probability of vessel or piping failure releasing

solution into the environment would be considered as a non-event sequence thus extremely low probability.

An accident sequence that could be considered as having greater environmental risk and impact is the accidental spillage of NaCN briquettes from trailer and diesel from tractor into an area stream between the ore processing facility and Cascade. Thus, agree with the USFS that Perpetua proposal to reopen Burntlog Route would be the best alternative and route all tractor trailer rigs away from area streams as much as possible. An additional benefit of the Burntlog Route is that in the event of future avalanches along Stibnite Road, the only road available between Yellow Pine and the processing plant, operational supplies and employees will still be able to arrive in a timely manner.

During the last comment period in 2020 on the Stibnite Gold Project, I suggested that an independent third party risk assessment be performed for the failure events of TSF leakage and breaching. Perpetua apparently also believed that a risk assessment by a third party was warranted thus funded a study which showed that even though the consequences were high, the TSF was design such that leakage and breaching are extremely low probability events thus again no risks associated with the TSF.

Finally, one of the world's largest deposits of antimony lie within the footprint of the Stibnite Gold Project and this mineral is required in many technologies, energy and defense applications. Thus the very best reason for the USFS to immediately approve the Stibnite Gold Project is that it would be the only antimony mine in the United States and help end our dependence upon other countries (namely China and Russia) to supply US needs for this critical rare earth mineral.

Again, in my opinion and based on my professional experience, Perpetua Resources has designed this project in such a way that USFS should issue all necessary permits so that it is allowed to go forward. Thanks for allowing me the opportunity to write a comment letter in support of the Stibnite Gold Project.

Robert Crump

Former Riggins Mayor and Councilor

Robert Crump