


VIA USPS CERTIFED MAIL AND ELECTRONIC SUBMISSION

October 18, 2024

Objection Reviewing Officer
Stibnite Gold Project
USFS Intermountain Regional Office, Room 4403
324 25th Street
Ogden, UT 84401.

Electronic Submittal to: www.fs.usda.gov/project/payette/?project=50516

RE: Objection to the Stibnite Gold Project Final Environmental Impact Statement ("Final EIS" or "FEIS") and Draft Record of Decision ("Draft ROD" or "DROD")

To the Responsible Official, Matthew Davis, Forest Supervisor Payette National Forest:

Pursuant to 36 C.F.R. Part 218, Lead Objector Save the South Fork Salmon along with Co-Objectors Idaho Conservation League, Earthworks, Idaho Rivers United, Center for Biological Diversity, and Winter Wildlands Alliance (collectively, "Objectors"), file this Objection to the FEIS and Draft ROD for the Stibnite Gold Project ("Mine" or "Project") issued by Payette National Forest Supervisor Mathew Davis on September 6, 2024. *See* https://www.fs.usda.gov/project/?project=50516.

A legally compliant FEIS is required for the Forest Service to approve the Project, proposed by Perpetua Resources ("Perpetua"). Because the DROD is based on the FEIS, these Objections show that both the DROD and FEIS fail to comply with, and misinterpret and misapply, numerous

federal laws, including the National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq*. ("NEPA"); Forest Service Organic Administration Act of 1897, 16 U.S.C. §§ 475, 478, 551 ("Organic Act"); Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701 et seq. ("FLPMA"); Clean Water Act, 33 U.S.C. §§ 1251 et seq. ("CWA"); the 1872 Mining Law, 30 U.S.C. §§ 21 et seq.; National Forest Management Act, 16 U.S.C. §§ 1600-1614 ("NFMA"); the Clean Air Act, 42 U.S.C. §§ 7401 et seq. ("CAA"); Endangered Species Act, 16 U.S.C. §§ 1531 et seq. ("ESA"); the Administrative Procedure Act, 5 U.S.C. §§ 551 et seq. ("APA"); Treaties with Native American Tribes; and the implementing regulations, Executive Orders, and policies of these laws and treaties.

The remedy for these violations is for the Forest Service to withdraw the FEIS and DROD and not issue any decision or take any action based on the inadequate FEIS. This includes the proposed approval of the Project, as well as any and all Special Use Permits, Road Use Permits, Rights-of-Way, and other authorizations proposed to be issued by the Forest Service to Perpetua or its related companies.

The Forest Service must not take any action until a revised FEIS and revised DROD demonstrates full compliance with each and every law, regulation, policy, Treaty, and requirement noted herein. The Regional Forester must withdraw the FEIS and DROD with instructions to the Payette National Forest to correct all errors noted herein before the Agency can consider approving or taking any actions.

Objectors filed comments on the Draft SEIS on January 9 and 10, 2023 ("January 2023 Comments"), and previously commented on the 2020 DEIS as well, and have fully participated in the Forest Service's ("USFS") review of the Project. Pursuant to 36 C.F.R. § 218.8, Objectors state that the following content of this Objection demonstrates the connections between the January 2023 Comments for all issues raised herein, unless the issue or statement in the FEIS or DROD arose or was made after the opportunity for comment on the Draft SEIS closed, as detailed herein. The Reviewing Officer is directed in particular to the January 2023 Comments and FEIS Appendix B for reference to previous comments.[1] As detailed below, the FEIS and DROD inadequately and erroneously respond to the previous comments, in violation of the federal laws and requirements noted herein.

Pursuant to the Administrative Procedure Act, 5 U.S.C. §§ 553-706, and USFS requirements, the Regional Forester's Office must provide a detailed response to each of the issues/objections raised in this Objection.

All the previous comments submitted by the Objectors, including all exhibits and attachments submitted to the Forest Service by the Objectors in January 2023, and earlier, are hereby incorporated into this Objection and into the administrative record and hereby submitted to the Reviewing Officer for its review and consideration.

Interests and Description of Objectors

Lead Objector, Save the South Fork Salmon, is a Valley County, Idaho, community-based non-profit organization dedicated to protecting the South Fork of the Salmon River watershed, its outstanding and remarkable natural values, and the economies that depend on those values. Members and supporters of SSFS live, work, recreate, congregate, and thrive within and around the South Fork of the Salmon River watershed, including within the communities most immediately impacted by the proposed Stibnite Gold Project.

Idaho Conservation League is an Idaho non-profit organization dedicated to preserving Idaho's clean water, wilderness, and quality of life through citizen action, public education, and advocacy. Idaho Rivers United is an Idaho non-profit organization whose mission is to protect and restore the ecological integrity of Idaho's rivers and ensure their legacy remains for generations to come. Earthworks is a national non-profit organization dedicated to protecting communities and the environment against the adverse effects of hard rock mining, while seeking sustainable solutions. Winter Wildlands Alliance (WWA) is a national non-profit working to inspire and empower people to protect America's wild snowscapes. Center for Biological Diversity is a non-profit environmental organization dedicated to the preservation, protection, and restoration of biodiversity, native species, and ecosystems including those within the Northern Rockies.

Members of the Objector organizations utilize the South Fork Salmon River watershed and surrounding area, including the East Fork of the South Fork Salmon River where the Project is proposed to be located, for recreational activities including camping, road-biking, wildlife observation, scenery appreciation, birding, hunting and fishing, botanizing, whitewater kayaking, rock climbing, backcountry skiing, hiking, firewood cutting, berry and mushroom picking, mountain biking, and accessing wilderness as well as their private land holdings—to name just a few.

Members of the Objector organizations seek to protect the wildlife and natural resources of the region (and the site itself) and support restoration efforts in the South Fork Salmon River watershed so that it will continue to provide habitat for Endangered Species Act-listed Chinook salmon and steelhead, and to facilitate bull trout recovery efforts. We do this under the belief that these fish species, as an integral part of the watershed ecosystem, are what make the South Fork Salmon such an amazing place in central Idaho. These fish are the essence of what makes Idaho, Idaho. They are more valuable than gold.

The South Fork Salmon is a major tributary to the second longest free-flowing river in the lower 48 states, the Wild and Scenic Main Salmon River. Most of the South Fork Salmon and many sections of its tributaries have been deemed eligible and suitable under the Wild and Scenic Rivers Act by the U.S. Forest Service. The watershed continues to boast critically important spawning habitat for migratory anadromous fish. Recognizing this importance, federal agencies, tribes, and other organizations have made significant efforts to improve the ecological health of

the watershed. The South Fork Salmon watershed is indeed a cornerstone in ongoing efforts to restore threatened Chinook salmon and steelhead to Idaho. Objectors, therefore, submit the following objections to the FEIS and DROD for the proposed Stibnite Gold Project in furtherance of their missions as well as the interests and rights of their members.

Sincerely,

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Project Summary

The proposed Project, as described in the FEIS and the Selected Alternative in the DROD, is a massive cyanide leach gold mining operation proposed on federal public lands and patented lands at the headwaters of the South Fork Salmon River watershed - an area that has already been impaired by past mining activities. The proposed mine would double the area of land disturbance from 1,593 to 3,266 acres, require excavating three open pits, generate an estimated 400 million tons of additional mine waste that will remain on the landscape in perpetuity, and create a permanent source of pollution within the watershed.

Indeed, "[t]he Selected Alternative includes a total of approximately 3,266 acres of new and re-disturbance of surface resources through the creation or expansion of three open-pits, an ore processing area, a tailings storage facility and buttress, an access roads, a transmission line, dewatering and industrial water supply wells, a worker housing facility, a road maintenance facility, an underground exploration decline, and other ancillary facilities." DROD at 4.

The Stibnite Gold Project has generated significant opposition in Valley County and throughout Idaho because of its proposed location directly on top of the headwaters of a major tributary to the South Fork Salmon River–the East Fork South Fork Salmon River–and the unavoidable environmental, social, and economic risks it poses to the ecosystem and local communities.

Detailed Objections

The following detailed Objections are based on the Objectors' previous comments, which were not adequately addressed or remedied by the FEIS and DROD and explain the legal and factual errors that warrant the withdrawal of the FEIS and DROD. These issues were either raised by the Objectors' previous comments (some, but not all of which are identified in Appendix B) or arose after the close of the public comment period for the Draft SEIS, which concluded in early January 2023.

I. THE FEIS AND DROD ARE BASED ON THE WRONG REGULATORY STRUCTURE

The Forest Service is under the mistaken belief that its review and approval of all of Perpetua's proposed uses of federal land are authorized by the 1872 Mining Law and governed solely by the agency's hardrock mining regulations at 36 C.F.R. Part 228 Subpart A. For instance, the FEIS states: "The 36 CFR 228A rules recognize that the U.S. mining laws confer a statutory right to enter NFS lands." FEIS at B-34 (responding to the Nez Perce Tribe). Likewise, the DROD asserts: "The statutory right to search for, develop, and extract mineral deposits on federal lands open to mineral entry was established by the General Mining Law of 1872, as amended. These rights include the right to locate a mining claim and the right to reasonable access to the claim for further exploration, development, mining, or necessary ancillary activities. The Selected

Alternative allows Perpetua to exercise its rights under the mining laws in a manner consistent with the requirements governing surface use and occupancy of NFS lands in connection with mining operations consistent with 36 CFR 228A." DROD at 41; *see also, e.g.,* FEIS at B 1-15, 32-34.

Moreover, the FEIS erroneously states that the existing Forest Plan must be amended to accommodate the Mine, based on Perpetua's presumed "rights" under the 1872 Mining Law. This is because there are unpatented mining or millsite claims on the lands to be covered by the Project's facilities. According to the Forest Service, its authority is limited by the Perpetua's purported and asserted "rights" under the 1872 Mining Law. Objectors, as well as the Nez Perce Tribe in its comments to the agency as shown in Appendix B, detailed why this legal and factual position was wrong. *Id*.

The fact that Perpetua submitted a proposed mining plan covering its mining and millsite claims does not mean that all, or any, aspects of the Project on federal land are regulated only under Part 228, that approving the plan is the Forest Service's only real choice, that the Forest Plan must be amended, or that the federal government's treaty obligations can be disregarded and violated. Indeed, because the record lacks the requisite evidence that the company has statutory rights under federal mining laws, including the 1872 Mining Law, to the lands that remain in federal ownership, the Forest Service's review and regulation of the Project is not under Part 228, but rather the agency's special use and multiple use authorities (36 C.F.R. Parts 251 & 261), as well as right-of-ways (ROW) under FLPMA and full compliance with the provisions of the Idaho Roadless Rule (36 C.F.R. Part 294 Subpart C).

The Forest Service's overly restricted interpretation of its authority was squarely and recently rejected by the Ninth Circuit U.S. Court of Appeals, which has jurisdiction over Idaho. *Center for Biological Diversity v. U.S. FWS*, 33 F.4th 1202 (9th Cir. 2022) ("*Rosemont*"). There, the court affirmed the district court decision that vacated and remanded the Forest Service's approval of a large copper mine (the Rosemont Mine) due to the agency's erroneous interpretation and application of the 1872 Mining Law, federal public land law, and NEPA.

Simply put, the court rejected the same federal government position taken here by the Forest Service in the DROD and FEIS – that mining claimants are entitled to use and occupy mining or millsite claims absent any evidence that the claims are valid under the 1872 Mining Law, and that the Part 228A regulations are the only proper regulatory vehicle for operations proposed on such lands/claims. The court ruled that the government's statutory interpretation was contrary to the plain language and controlling case law under the Mining Law, Organic Act, NEPA, Surface Resources Act of 1955 (30 U.S.C. Section 612), and other laws. The *Rosemont* decision rejected the government's position that it has no authority to apply its broader public land

regulations to mining operations proposed on lands that fail to meet the Mining Law's statutory prerequisites for rights against the United States.

Here, the agency's review of the Stibnite Gold Project is based on the same erroneous legal view that the *entire* project is authorized by the 1872 Mining Law and can only be regulated by the Part 228 Subpart A regulations, simply because it involves uses of federal land *related* to mining. Although it is difficult to ascertain the exact number and nature of Perpetua's alleged mining and millsite claims from the FEIS, the Forest Service believes it is 1) precluded from choosing or fully reviewing the No-Action Alternative, as well as being significantly restricted in its review authority over the Project, 2) compelled to revise the Forest Plan, 3) violate Treaty rights, and 4) ignore or misapply the Idaho Roadless Rule, among other self-imposed limitations based on an erroneous view of the law as noted herein.

In response, the agency admits that it did not inquire into whether all, or any, of the Perpetua mining and millsite claims are valid and thus restricted its authority (although Treaty rights are superior to even valid claims). FEIS at B1-B15, B32-B34. The agency relies on the fact that because, arguably, the mining/millsite claims are up-to-date and their fees have been paid, etc., this means that all of the claims are valid and have statutory rights under the Mining Law. The FEIS points to a 2021 company Feasibility Study, *see id. at* B-1, as proof that Perpetua has the statutory rights on its mining and millsite claims that are the basis for USFS decision-making and review.

But these facts and documents do not show that the claims are valid and thus have established statutory rights under the 1872 Mining Law. The Ninth Circuit in *Rosemont* held that unless sufficient evidence exists in the agency record that the claims proposed for use and occupancy met the requirements of the Mining Law and were therefore valid—that is, each mining claim must contain the requisite "discovery of valuable minerals," and each millsite claim must meet the strict requirements of Section 42 of the Mining Law, including the requirement that the lands are nonmineral and do not exceed the allowable number of valid millsites, which are limited to a strict 5 acres of millsites (the maximum size for each millsite claim) for each full size mining claim (20 acres)–-the Mining Law does not govern the agency's review of the proposed use/occupancy of those lands. Simply put, unless each claim is shown to be valid and meets all factual and legal requirements, the Forest Service cannot simply assume rights under the Mining Law that limit its full and broad authority to protect public land and resources.

In *Rosemont*, the Ninth Circuit also held that the agency's failure to inquire into whether the claims covering the ancillary uses (such as waste dump and tailings) were valid under the Mining Law was essentially the same as assuming the claimant had a right to use and occupy these lands – and that such an assumption illegally created statutory rights where none exist. Similarly, in the FEIS and DROD, the USFS either assumed that Perpetua's claims on that land

were valid or (what amounted to the same error in *Rosemont*) did not inquire into the validity of the claims. The USFS thus erroneously concluded that Perpetua's permanent or long-term occupation and use of the claims was permitted under the Mining Law.

At *Rosemont*, the issue was the validity of the mining claims. At Stibnite, while the company recently refiled millsite claims on much of the project's lands, the requirement is the same – the agency cannot assume that the company has rights to use/occupy these lands without verifying that each claim meets the validity requirements in the Mining Law (whether for mining or millsite claims). As noted herein and in previous comments (*e.g.*, Objectors' January 2023 Comments, at pp. 9-24), the agency's failure to inquire as to whether the claims are valid, and adjust the government's authority accordingly based on that analysis, fundamentally flaws the entire DROD, FEIS, and agency review.

Moreover, under the Part 251 regulations, the Forest Service could limit the mine to any of the options/alternatives noted by the Objectors in their comments, if it found the proposed Project ran afoul of the public interest. The Forest Service failed to take the requisite hard look at these alternatives by informing the public that the agency supposedly could not truly consider any alternative that rejected Perpetua's plan. A "thorough discussion of the significant aspects of the probable environmental consequences" must include an accurate analysis of the regulatory framework in which the Forest Service analyzes those consequences. *See California v. Block*, 690 F.2d 753, 761 (9th Cir. 1982). No amount of alternatives or depth of discussion could "foster[] informed decision-making and informed public participation" when the Forest Service bases its choice of alternatives on an erroneous view of the law. *See Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 868 (9th Cir. 2004).

Relatedly, the USFS did not prepare the required new Surface Use Determination (SUD), which is necessary to assess whether Perpetua Resources even has the right to use and occupy unpatented mining and millsite claims associated with the Project. As Objectors noted, significant changes have occurred regarding the Project and mining/millsite claims since then. FEIS at B-6 to B-8. The agency's inadequate response largely repeated its erroneous view that it does not have to inquire into, let alone substantiate, claim validity and the on-the-ground facts for the mining and millsite claims. *Id.*

In sum, the Forest Service must verify the validity of each unpatented mining and millsite claim within the operations boundary as well as along the proposed Burntlog Route where operations are proposed to occur — whether or not the proposed operations' use and occupancy of those claims is temporary or permanent. See, *e.g.*, January 2023 Comments, at 24.

II. APPROVAL OF THE BURNTLOG ROUTE VIOLATES THE IDAHO ROADLESS RULE AND OTHER REQUIREMENTS

Perpetua has located unpatented mining claims along portions of the Burntlog Route between Trapper Creek and the larger claim block comprising the SGP project area. *See* Midas Gold PRO, Appendix C-4 (2016). With respect to these claims, if they will be used or occupied, whether temporarily or permanently, for activities reasonably incident to mining, they must be valid. As noted herein, absent evidence supporting validity, their use and occupancy may not be permitted solely under 36 C.F.R. Part 228A. Yet the agency continued to erroneously believe that under the definition of "operations" at 228.3(a), roads and other off-site activities/facilities are solely regulated under Part 228. As the *Rosemont* decision held, though, that is legally wrong, as activities/facilities are only considered "authorized by the mining laws" when they are conducted on lands that contain confirmed valid rights – which the agency has admittedly failed to ascertain here.

The Objectors' January 2023 Comments detailed the various legal and factual problems with the agency's review and approval of the Burntlog Route – but the agency's response is basically non-existent. FEIS at B-7 to 9.

Here, validity is a critical determination because only "mining activities conducted pursuant to the General Mining Law of 1872" remain unaffected by the Idaho Roadless Rule. *See* 36 C.F.R. § 294.25(b). In other words, if mining activities are not conducted pursuant to the General Mining Law of 1872, the Idaho Roadless Rule restrictions fully apply – but the USFS did not apply the Idaho Roadless Rule to the Project. *See* FEIS at B-7 to 8 (Objectors comment and USFS inadequate response).

Additionally, Objectors noted that absent valid rights under the General Mining Law of 1872, the Idaho Roadless Rule only allows "[t]emporary road construction or road reconstruction to reduce hazardous fuel conditions" within community protection zones, or outside of community protection zones provided certain conditions exist. 36 C.F.R. §§ 294.23(b)(2) and (3); *see also Jayne v. Sherman*, 707 F.3d 944, 997 (9th Cir. 2013). The mere fact that Perpetua has staked unpatented lode mining claims along the proposed Burntlog Route does not give Perpetua the right (or the Forest Service the authority) to waive the requirements of the Idaho Roadless Rule. FEIS, at B-7 (restating Objectors' comment that mining claims staked along the proposed Burntlog Route are presumptively invalid); January 2023 Comments, at 23.

Yet, just like the SDEIS, the FEIS states that "soil nail retaining walls on the cut side would be left in place" and "[f]or full bench road construction and road cuts, including soil nail walls and rock cuts, recovery of soil productivity to 40 percent of natural background would be

on a much longer timescale (e.g. likely hundreds to thousands of years) such that they would be considered *permanent* [total soil resource commitments]" (emphasis added). FEIS, at 4-90 to 4-91; *see also* FEIS at 4-581 ("1.5 miles of soil nail walls would remain for stabilization purposes along the roadway after decommissioning. Therefore, the recreation setting in this area would likely appear disturbed for a long time."); FEIS 4-686 ("Areas with soil nail walls would be reclaimed to the foot of the wall; however, soil nail walls would remain."); FEIS 4-708 ("Under the 2021 MMP, soil nail walls would remain within the Burnt Log, Black Lake, and Meadow Creek IRAs after decommissioning the Burntlog Route and this would be considered an irreversible commitment of roadless character.")

Objectors' January 2023 Comments also noted that the proposed borrow pits along the Burntlog Route cannot be permitted as "free use" under 36 C.F.R. § 228.62(d) and 16 § U.S.C. § 477. FEIS at B-7. However, the Forest Service response is that it will "oversee the use of proposed borrow pits intended for construction of the Burntlog Route in compliance with 36 CFR 228.62(d)." FEIS at B-7. This fails to address the problem with permitting the borrow pits under 36 C.F.R. 228.62(d) because at least 35,000 cubic yards of material will be removed to construct the road. FEIS at 4-101. And, the Forest Service doesn't even estimate the amount of borrow pit material necessary to construct the Burntlog Route. *See* FEIS B-7 (identifying that Objectors had requested the FEIS include a determination of the volume (or weight equivalent) of common variety materials that would be excavated annually from the proposed borrow pits to ensure compliance with 36 C.F.R. 228.62(d)). Thus, the Forest Service has failed to explain how it can legally permit, and therefore monitor the borrow pits for compliance when the maximum volume of materials removed by a corporation or individual cannot exceed 5,000 cubic yards during any period of 12 consecutive months.

As was the ruling in *Rosemont*, uses of lands not covered by valid claims under the Mining Law are not "authorized by the mining laws." Thus, in this case, for the Burntlog Route, the agency can only consider approval under the right-of-way (ROW) provisions of Title V of FLPMA (43 U.S.C. §§ 1761-1771) and its implementing regulations—subject to, of course, the Idaho Roadless Rule. As noted herein and in previous comments, due to the significant adverse impacts to environmental and cultural resources, and Treaty Rights, the Project, including the Burntlog Route, is not in the public interest and does not qualify as an acceptable ROW.

In comment #1936, we stated that new construction for the Burntlog Route violates National Forest travel regulations. Forest Service regulations provide that "Where there is existing access [...] that is adequate or that can be made adequate, there is no obligation to grant additional access through National Forest System lands." (36 C.F.R. 251.110(c) and (g)).

Perpetua is claiming that it needs to propose construction and operations related to the Burntlog Route to provide access related to reserved or outstanding rights. However, as detailed

above, there is already reasonable access to the Stibnite area by way of Forest Roads 412 and 375 as evident with the Forest Service's development of the Johnson Creek Alternative. These same roads previously supported decades of large-scale mining activities, including open pit cyanide leach operations. There are also doubts about whether all of Perpetua's claims are valid, as detailed above. As such, we do not believe that any Forest Plan amendments to allow additional road construction are needed or legally supportable.

In our comments on the SDEIS, we noted that the Burntlog Route is also impermissible under the Idaho Roadless Rule (36 C.F.R. 294, Subpart C). The Idaho Roadless Rule generally prohibits road construction in Idaho Roadless Areas (IRA), including the Black Lake (5,335 ac.) and Burnt Log (23,699 ac.) roadless areas through which the proposed Burntlog Route would pass. The large majority of land in these two IRAs is classified by a "Backcountry/ Restoration" management theme by the Idaho Roadless Rule. DEIS at 3.23-7. The Rule provides a limited exception for road construction to access valid existing claims when it is found to be needed: "Road construction is only permissible in Idaho Roadless Areas designated as Backcountry/Restoration when the Regional Forester determines … (iii) A road is needed pursuant to statute, treaty, reserved or outstanding rights, or other duty of the United States." 36 C.F.R. § 294.22(b)(1) (emphasis added). The inclusion of the word "needed" is significant in the consideration of the road construction associated with this Project. It requires the Regional Forester to consider the necessity of the road construction in balancing the underlying intent and direction of the Idaho Roadless Rule (to protect roadless values and integrity) with any statutory and/or outstanding rights. In this instance there is no "outstanding right" because that right is currently satisfied by existing access along the Johnson Creek and up the East Fork South Fork Salmon River (identified as the Yellow Pine Alternative in the DEIS and the Johnson Creek Alternative in the SDEIS) which does not bisect roadless areas.

In response to these comments, the FEIS added a Travel Management Rule analysis to Section 4.19 of the Final EIS. However, this Section fails to adopt appropriate minimization criteria and fails to acknowledge the fact that there is already access provided by way of the Johnson Creek Alternative which fulfills the reasonable access afforded under 36 C.F.R. 228. As such, the normal Forest Plan standards, objectives, travel regulations and the Idaho Roadless Rule still apply with regard to the proposed Burntlog Route. As a remedy, the Forest Service cannot select the Burntlog Route alternative as proposed.

III. THE PROJECT FAILS TO COMPLY WITH REQUIREMENTS FOR SPECIAL USES ON FEDERAL LANDS AND RIGHTS OF WAY UNDER FLPMA TITLE V

Like with the other Project facilities proposed on the federal lands, the Forest Service is under the mistaken belief that the access/support corridors and uses thereof are subject only to the

Part 228A regulations, although it does consider the electrical transmission line to require a special use permit/Right-of-Way (ROW) under FLPMA.

Contrary to the Forest Service's mistaken belief, as noted herein, unless the proposed transmission lines, access roads, and other crossings of federal land are on verified valid claims under the Mining Law, these uses are regulated under FLPMA, not under any assumed "rights" under the Mining Law. *See* FEIS at B-8 to 12 (Objectors' comments and USFS's inadequate response).

The Objectors detailed the failure of the agency to meet the environmental protection, public interest, financial, and other requirements (including mandatory duties to ensure that all Treaty rights are fully protected) in both failing to regulate the access route and other facilities, including the transmission line, under FLPMA and its implementing regulations. The DROD and FEIS fail to meet these requirements, as detailed in Objectors' comments, which were largely ignored. (FEIS at B-8 to 12).

IV. THE FEIS LACKS ANALYSIS AND COMPLIANCE WITH THE CWA, INCLUDING THE 404(b)(1) GUIDELINES AND RELATED WETLAND AND WATER IMPACTS

The Objectors submitted detailed comments regarding the failure of the Forest Service to fully analyze and protect wetlands and waters affected by the Project. *See, e.g.,* FEIS at B-23 to 25 (and agency's inadequate response). The USFS illegally deferred much of its review of, and its water protection duties under its Organic Act and other laws and regulations, to the Army Corps of Engineers: "The USACE will ultimately decide whether a Section 404 permit can be issued for the Project. Compliance with the Clean Water Act Section 404(b)(1) guidelines will not be determined through the NEPA process, but a final decision will come following the receipt of a complete application by the USACE." FEIS at B-937 to 938. Yet the USFS is poised to issue a Final ROD and approve the Project without this analysis and required findings, in violation of the CWA, Organic Act, and related requirements.

V. THE PROJECT FAILS TO COMPLY WITH THE NATIONAL FOREST MANAGEMENT ACT (NFMA)

The DROD and FEIS fail to ensure compliance with all of the requirements of the Payette and Boise Forest Plans in violation of the National Forest Management Act (NFMA), 16 U.S.C. § 1601 *et seq.* Congress enacted NFMA in 1976 to establish a new legal framework for managing natural resources on National Forest lands. Among other requirements, NFMA requires the Forest Service to prepare a land and resource management plan, or "forest plan," for each National Forest. 16 U.S.C. § 1604(a). Each plan must include standards and guidelines for how the forest shall be

managed. 16 U.S.C. §§ 1604(c), (g)(2) & (g)(3). Once a forest plan is adopted, all resource plans, permits, contracts, and other instruments for use of the lands must be consistent with the plan. 16 U.S.C. § 1604(i). "It is well-settled that the Forest Service's failure to comply with the provisions of a Forest Plan is a violation of NFMA." *Native Ecosystems Council v. USFS*, 418 F.3d 953, 961 (9th Cir. 2005). *See also Idaho Conservation League v. U.S. Forest Serv.*, No. 1:16-cv-0025-EJL, 2016 WL 3814021 at *17 (D. Idaho, Jul. 11, 2016) (Forest Service violated NFMA by approving mine exploration without following Boise Forest Plan standard and guideline to identify sensitive plant occurrences and habitat and conduct up-to-date surveys). Failing to follow, or to evaluate and document compliance with, a Forest Plan provision can also be a NEPA violation. *See ONDA v. BLM*, 625 F.3d 1092, 1110–11 (9th Cir. 2010) (NEPA analysis must include "considerations made relevant by the substantive statute driving the proposed action"). *See also Westlands Water Dist. v. United States Dept. of Interior*, 376 F.3d 853, 866 (9th Cir. 2004) ("When an action is taken pursuant to a specific statute, the objectives of that statute serve as a guide by which to determine the reasonableness of alternatives" examined under NEPA).

The Forest Plans for the Payette and Boise National Forests that apply to the Stibnite Gold Project set forth numerous standards, guidelines, goals, and objectives to protect the environment and cultural resources. SDEIS at 4-4. However, the Project, as proposed for approval, fails to comply with many Forest Plan provisions, and the Forest Service has failed to explain how the Project complies with many other Forest Plan provisions in violation of NFMA, the Organic Act, and NEPA.

As the Objectors detailed in their previous comments, FEIS at B-675 to 692, the review and approval of the Project violates NFMA and the Organic Act. The agency's response, *id*., disagrees, but does not offer credible legal or factually-valid justifications. *See also* FEIS at B-34 (Response to the Nez Perce Tribe's comments, erroneously asserting that "review and approval of mining operations on the NFS lands needs to consider what level of environmental protection is reasonable and feasible instead of forcing compliance with all Forest Plan goals or Objectives."). Due to the supposed "rights" under the Mining Law, the agency felt it had to amend the Forest Plan: "There is a need to amend the Boise and Payette National Forest Land and Resource Management Plans to fully implement the Stibnite Gold Project." DROD at 40.

First, as detailed herein and in Objectors' previous comments, the fact that Perpetua has filed claims under the Mining Law covering the public lands at the site does not mean that the Forest Service's obligations under federal public land laws like the Organic Act and NFMA do not apply, or that the agency's authority under these laws are reduced in any way. Nor does it require or presume that the agency is compelled to amend the Forest Plan to accommodate such unsubstantiated statutory "rights." That was the agency's argument that was rejected most recently in *Rosemont*. Relatedly, by amending the Forest Plan under the erroneous view that it was compelled by alleged statutory rights under the Mining Law, the agency violated its duties under

the Organic Act to protect forest resources, including water flows, wildlife, and water quality.

Critically, NFMA is not subservient to the 1872 General Mining Law. FEIS at B-675 to B-677. As Objectors stated:

> "The agency may attempt to rely on another provision of the Organic Act, one cautioning that the creation of national forests was not meant to categorically prevent the exercise of valid rights under the Mining Law or for other lawful purposes. 'Nothing in section . . . 551 of this title shall be construed as prohibiting … any person from entering upon such national forests for all proper and lawful purposes, including that of prospecting, locating, and developing the mineral resources thereof.' 16 U.S.C. § 478. But section 478 does not override the duties Congress gave it in the same enactment 'to improve and protect the forest [and] secur[e] favorable conditions of water flows' (§ 475) and 'preserve the forests thereon from destruction.' *Id.* § 551. Section 478 was included in the Organic Act to make clear that the Act did not withdraw the national forests from the filing of new claims under the Mining Law. It did not deny the Forest Service meaningful regulatory authority over such operations. That was made plain by Congress's simultaneous mandate that the Forest Service 'regulate their occupancy and use' so as to 'preserve the forests thereon from destruction,' 16 U.S.C. § 551, protect them against 'depredations,' *id.*, and to require persons seeking to develop mineral resources to "comply with the rules and regulations" of the Service. *Id.* § 478."

See January 2023 Comments, at 59 n.103.

The plain text of the Organic Act, which was enacted decades after the Mining Law, does nothing to limit the authority of the Forest Service to improve and protect national forests from destruction or depredations. Even so, the Forest Service's response to Objectors' comments was that ''plans can be amended in any manner whatsoever," citing 16 U.S.C. 1604(f)(4), and that ''[t]he responsible official has the discretion to determine whether and how to amend the plan," citing 36 C.F.R. 219.13(a). FEIS at B-675.

The Forest Service's reasoning fails to address the issue Objectors raised in their comments because 16 U.S.C. 1604(f)(4) makes "significant change" to a forest plan subject to compliance with 16 U.S.C. 1604(e), which shall not be "in derogation of[] the purposes for which the national forests were established as set forth in section 475 of this title." Despite Objectors' explanation about how the proposed forest plan amendments constituted significant change to the forest plan, *see* January 2023 Comments at 62-78, the Forest Service failed to address or explain why this statutory requirement should be ignored given that amendments to the forest plan were to accommodate the long term (and in some cases permanent), irreversible and total commitment of forest resources directly and indirectly attributable to the Stibnite Gold Project. *See* DROD at at 7

("Because the amendments apply to only the Stibnite Gold Project, and because any potential adverse effects from Stibnite Gold Project implementation will be addressed through environmental protection measures and mitigation, they are not considered a significant change to the Land and Resource Management plans for the purposes of the National Forest Management Act (36 CFR 219.13(b)(5))."); *see also* FEIS at A-1 (claiming that "[w]here practicable, sites are returned to a condition consistent with management emphasis and objectives.").

This justification is simply unlawful because, as noted herein, the Forest Service, in certain critical circumstances, has not only failed to account for permanent (or near permanent) depredations of forest resources but also *all* "valid existing rights"—critically, all treaties made under the authority of the United States—that are necessarily integrated within the landscape. *See* 16 U.S.C. 1604(i).

VI. FAILURE TO MINIMIZE ALL ADVERSE ENVIRONMENTAL IMPACTS AND TO PROTECT PUBLIC RESOURCES UNDER THE ORGANIC ACT

As detailed by the Objectors (FEIS at B-12 to 15), even under the Forest Service's erroneous decision to regulate the Project solely through its Part 228A regulations, as noted herein, the agency failed to minimize all adverse impacts, and to protect public lands and waters (both quality and quantity), as shown herein.

Under the Organic Act and Part 228A regulations, the agency must "maintain and protect fisheries and wildlife which may be affected by the operations." 36 C.F.R. § 228.8(e). These impacts also violate the Forest Service's duties to "minimize adverse environmental impacts on National Forest surface resources." 36 C.F.R. § 228.8. "The operator also has a separate regulatory obligation to 'take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.' 36 C.F.R. § 228.8(e)." *Rock Creek All. v. Forest Serv.*, 703 F. Supp. 2d 1152, 1164 (D. Mont. 2010) (mine approval violated Organic Act and 228 regulations by failing to protect water quality and fisheries). "Under the Organic Act the Forest Service must …require [the project applicant] to take all practicable measures to maintain and protect fisheries and wildlife habitat." *Id.* at 1170. *See also Save Our Cabinets v. U.S. Dep't of Agric.*, 254 F. Supp. 3d 1241, 1249 (D. Mont. 2017) (Forest Service approval of mining project violated duties under CWA and Organic Act to ensure compliance with water quality standards). *See also Hells Canyon Pres. Council v. Haines*, 2006 WL2252554, *4-5 (D. Or. 2006) (Forest Service mine approvals violated state CWA standards).

The agency's response fails to adequately respond to the Objectors' issues and fails to show how its review and approval of the Project complies with the Organic Act and other requirements noted by Objectors. (FEIS at B-12 to 15). This includes the agency's reliance on decades (or more) of water treatment, which as Objectors detailed violates the agency's duties

under these laws and requirements. And even this is suspect, as the agency admits that: "The need for operation of onsite water treatment is predicted to decrease after mine operations cease until about mine year 40 when treatment **might** be able to be terminated." FEIS at B-14 (emphasis added). As Objectors noted, in addition to the basic NEPA failure to fully analyze this issue, allowing such long-term or perpetual pollution fails to meet the agency's legal requirements under the Organic Act and the agency's regulations and policies.

As stated in Objector 2023 Comment Letter (p. 78-80), the Organic Act prevents the Forest Service from adversely affecting public waters, such as the waters and springs that will be adversely affected/eliminated by the project. This is also true for the critical wetlands, riparian areas, and Groundwater Dependent Ecosystems that will be severely impacted by the project. In addition to the Executive Order on Wetlands Protection (which requires the Forest Service to protect wetlands), the Organic Act requires the Forest Service to protect public land water resources, which has not been done.

In response, the FEIS (B-13) states that "Impacts of the SGP on surface water and groundwater resources are described in Sections 4.8 and 4.9 of the SDEIS. Impacts to wetlands and riparian resources are described in Section 4.11. These sections also include descriptions of any mitigative measures proposed by the Forest Service to avoid or reduce certain of these impacts or their severity." It further states (FEIS at B-277) that: "SDEIS Section 4.8.2.2 describes predicted effects on surface water flows, groundwater levels, and groundwater dependent ecosystems. Reductions in stream flow are presented in Figures 4.8-11 through 4.8-17 with groundwater drawdown depicted in Figure 4.8-9 and its relationship to groundwater dependent ecosystems presented in Figure 4.8-10."

This is inadequate. The FEIS (p. 2-144) acknowledges that: "There are 93 seep and spring locations within the area of groundwater drawdown that could be affected by lower water levels *to the extent that any of these specific seeps or springs are receiving discharge from the aquifer affected by groundwater pumping*." (Emphasis added*).* Thus, the FEIS conflicts with NEPA because it has failed to determine which springs/seeps are hydrologically connected, and therefore has failed to take a hard look at the potential impacts. Similarly, it fails to comply with the Organic Act because it fails to minimize impacts.

According to FEIS (B-914), "Natural variability in seep and spring flows introduces uncertainty into the prediction of impacts associated with Project alternatives. Seep and spring locations may be hydraulically connected or disconnected from the groundwater areas affected by mine dewatering. Therefore, the potential for these impacts is incorporated in *site water resources monitoring to identify Project effects on these surface water resources*." (Emphasis added).

This response is also inadequate. The proposal to identify project effects on surface water resources after the NEPA process is in conflict with the requirements to analyze these impacts prior to project approval. *See,e.g., W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 491 (9th Cir. 2011) (NEPA "'hard look' 'must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made'" (*quoting Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000)); *Churchhill County v. Norton*, 276 F.3d 1060, 1072-73 (9th Cir. 2001) (NEPA requires "coherent and comprehensive up-front environmental analysis to ensure informed decision making to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct"). *See also N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1084 (9th Cir. 2011) ; *Or. Natural Desert Ass'n v. Jewell,* 840 F.3d 562 (9th Cir. 2016) (both reversing where agency failed to establish baseline conditions or identify sensitive resources affected by project).

VII. THE FEIS AND DROD FAIL TO INCLUDE THE REQUIRED ANALYSIS OF, AND INCLUSION OF, THE DEPARTMENT OF DEFENSE'S FINANCIAL INVOLVEMENT IN THE PROJECT

The DROD and FEIS little mention the significant involvement of the U.S. Department of Defense (DOD) in the review, support, and approval of the Project–which has only recently arisen and involves substantial DOD financial support of the Project development without any NEPA review. As stated in a DOD announcement from late 2022:

> The Office of the Assistant Secretary for Industrial Base Policy, through its Defense Production Act (DPA) Investments Program and the Air Force Executive Agent, issued its first critical minerals award using Ukraine Supplemental Appropriations funds to Perpetua Resources Idaho, Inc. ("Perpetua") to secure an American source of critical minerals for missiles and munitions.
>
> The DPA Investments Program will provide $24.8 million to Perpetua to complete environmental and engineering studies necessary to obtain a Final Environmental Impact Statement, a Final Record of Decision, and other ancillary permits. Perpetua will perform this study work related to its Stibnite-Gold Project in central Idaho through 2024.

See "DoD Issues $24.8M Critical Minerals Award to Perpetua Resources," Dec. 19, 2022, https://www.defense.gov/News/Releases/Release/Article/3249350/. (attached hereto).

More recently, Perpetua announced in August 2023 and February 2024 that it has received further DOD funding in the amounts of $15.5 million and $36.4 million, respectively, bringing

total DOD support to $59.4 million under the Defense Production Act. *See* Perpetua News Releases (attached hereto).

The stated purpose of this massive DOD funding to Perpetua is to promote antimony production at the Project site, because antimony is designated as a critical mineral with defense applications. By providing Perpetua with this heavy subsidization for getting the Project permitted and developed, however, DOD is making a massive financial commitment by the federal government to ensuring that the Stibnite Project is also developed for its primary stated purpose, i.e., to extract gold (along with silver). And the federal subsidies provided by DOD for development of the Project will directly support and cause the long-term destruction and degradation of the many outstanding and valuable resources of this landscape in the headwaters of the South Fork Salmon River and including its fisheries, wildlife, recreational and many other values articulated by Objectors and the Nez Perce Tribe.

Despite this, there is little mention in the FEIS or DROD of the DOD's substantial involvement in the review and proposed approval of the Project. *See* Nez Perce Tribe's January 5, 2023 comments. At most, the FEIS merely says that "The Final EIS includes mention of the DoD grant which was announced after the SDEIS was released. The Forest Service understands the grant funds are for environmental and engineering work leading to a ROD. The Forest Service is not aware that this work will result in new information relevant to environmental concerns or bearing on the Proposed Action or its impacts to necessitate another SDEIS." FEIS at B-55.

At a minimum, this raises significant issues regarding the objectivity of the federal government's review and approval of the Project, which the USFS has not addressed, as it is required to do under NEPA, the Organic Act, and the other requirements noted herein.

Moreover, Objectors have heard reports that DOD may have been putting pressure on other federal agencies, including the USFS, to finalize their approval of the Project and ensure it moves forward. This is wholly contrary to NEPA and the USFS must withdraw the FEIS and DROD in order to fully disclose all communications it may have received from DOD or other Administration officials relating to the Project, and fully analyze how the DOD funding for antimony production may alter or affect the Project design, operations, mitigation and reclamation.

It should also be noted that some of the Objector groups have filed requests under the Freedom of Information Act (FOIA) for information and documents regarding the DOD's involvement with the Project. To date, the agencies have failed to provide the requested information, further compromising the agency's duties under NEPA and related laws as noted herein.

VIII. FAILURE TO FULLY REVIEW IMPACTS FROM THE TRANSPORTATION AND PROCESSING OF ORE FROM THE PROJECT

As Objectors noted, the USFS failed to fully consider the direct, indirect, and cumulative impacts from the transportation and processing of the ore from the Project. *See e.g.*, SFEIS at B-54: "Connected Actions associated with the long-distance transport of minerals, namely antimony concentrate, from the mine site to locations for processing are not identified or analyzed." An EIS for a mining operation must fully review the impacts from off-site ore processing and transportation. *S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of the Interior*, 588 F.3d 718, 725 (9th Cir. 2009). "[T]he air quality impacts associated with transport and off-site processing of the five million tons of refractory ore are prime examples of indirect effects that NEPA requires be considered." *Id*. The Ninth Circuit has also rejected an argument that the agency can avoid reviewing impacts simply because the mining company did not provide the necessary information. "[I]nsofar as [the agency] has determined that it lacks adequate information on any relevant aspect of a plan of operations, [the agency] not only has the authority to require the filing of supplemental information, it has the obligation to do so." *Ctr. for Biological Diversity v. U.S. Dep't of Interior*, 623 F.3d 633, 644 (9th Cir. 2010) (emphasis in original).

The agency's response shows how this failure violates NEPA and USFS requirements, merely stating that: "The transportation impact analysis area in the Final EIS as described in Section 3.16.2 includes SH 55 from Cascade to McCall. However, the Transportation Baseline Study (HDR 2017l) considered a larger analysis area including SH 55 at Cascade south to I-84 and SH 55 to New Meadows and US 95 from New Meadows north to Grangeville. The current analysis area and analysis has been deemed sufficient and the long-distance transport of minerals, namely antimony concentrate, from the mine site to locations for processing are identified and analyzed." FEIS at B-54.

No further analysis is provided, including none regarding the off-site processing of the ore – in violation of NEPA, the Organic Act, the ESA, and other laws and requirements noted in the Objectors' comments and herein.

IX. THE FEIS VIOLATES NEPA

A. The purpose and need are unreasonably narrow.

As detailed by Objectors, the Forest Service's stated purpose and need for the SGP are unreasonably narrow, in violation of NEPA. *See* SSFS et al. Jan. 9 2023 Comments at 89-92; FEIS at B-46–B-48. An agency violates NEPA when it "define[s] its objectives in unreasonably narrow terms." *Nat'l Parks & Conservation Ass'n v. BLM*, 606 F.3d 1058, 1072 (9th Cir. 2010). "A purpose and need statement will fail if it unreasonably narrows the agency's consideration of

alternatives so that the outcome is preordained."*Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1084 (9th Cir. 2013).

> One obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose so slender as to define competing "reasonable alternatives" out of consideration (and even out of existence). The federal courts cannot condone an agency's frustration of Congressional will. If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill its role. Nor can the agency satisfy the Act.

Simmons v. U.S. Army Corps of Eng'rs, 120 F.3d 664, 666 (7th Cir. 1997); *see also Citizens Against Burlington v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991) ("[A]n agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action.").

While the Forest Service is permitted to take the applicant's purposes into consideration, it cannot draft a narrow purpose statement that restricts the consideration of alternatives to one motivated by private interests. *Nat'l Parks & Conservation Ass'n*, 606 F.3d at 1072. "[A]n applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable." *Sylvester v. U.S. Army Corps of Eng'rs*, 882 F.2d 407, 409 (9th Cir. 1989). Federal courts have found that NEPA prevents federal agencies from effectively reducing the discussion of environmentally sound alternatives to a binary choice between granting and denying an application. *See e.g., Save Our Cumberland Mountains v. Kempthorne*, 453 F.3d 334, 345 (6th Cir. 2006).

Here, the Forest Service defined its objectives in unreasonably narrow terms, and as a result, failed to consider other reasonable alternatives and proposed reaching a preordained conclusion in violation of NEPA.

The FEIS states, with respect to the Forest Service's purpose and need:

> 1.6.1 Purpose and Need for Federal Action
>
> The Forest Service purpose is to consider approval of Perpetua's proposed use of the surface of NFS lands in connection with operations authorized by the U.S. mining law as first described in the Plan submitted September 2016, then refined in 2019 (Brown and Caldwell 2019a), and further modified in 2021 as the 2021 MMP (Perpetua 2021a). The Forest Service's need for action is to ensure that the proposed occupancy and use of NFS lands is consistent with statutory and

> regulatory requirements. For purposes of this environmental analysis, the agency is assuming the proposed uses would be able to be authorized under existing regulatory authorities. However, the agency will need to evaluate the eventual applications for rights of way to make a final determination.
>
> The need for the action is to:
>
> Consider approval of Perpetua's 2021 MMP for development of the SGP to mine gold, silver, and antimony deposits that, where feasible, would minimize adverse environmental impacts on NFS surface resources; and ensure that measures are included that provide for mitigation of environmental impacts and reclamation of the NFS surface disturbance (FEIS at 1-8).

First, the Forest Service's focus on the general need to support mineral development under U.S. mining law is misplaced. The Forest Service's primary mandate is to protect the forest from destruction and depredations under the 1897 Organic Act. The agency's guiding congressional mandate regarding the national forests is "to regulate their occupancy and use and to preserve the forests thereon from destruction." 16 U.S.C. § 551. Yet, as discussed throughout these comments, the SGP would be inconsistent with numerous and important aspects of the Payette and Boise Forest Plans and other environmental laws and standards, would adversely affect public resources, would restrict or eliminate uses and rights enshrined in treaties with the Nez Perce Tribe, and would otherwise significantly degrade forest resources.

Instead of focusing on the purpose and need on fostering mining, the Forest Service should focus on its authorities and duties under the Organic Act, the CWA, ESA, NFMA, NEPA, and other applicable laws and regulations. This way the Forest Service could consider alternatives and mitigation to Perpetua's full-scale mine, including alternatives already proposed and/or considered in earlier comments and agency documents, such as: a cleanup/remediation-first alternatives; different mining method alternatives, like underground mining; different processing methods; different facility locations; different water management.

Second, the Forest Service's assertion in the purpose and need statement that for "purposes of this environmental analysis, the agency is *assuming* the proposed uses would be able to be authorized under existing regulatory authorities," and that it will evaluate later whether Perpetua's proposal could be authorized, also violates NEPA because it unreasonably limits the alternatives the Forest Service considered. FEIS at 1-8 (emphasis added). By making the assumption that all of Perpetua's proposed activities would be authorized, the Forest Service is considering only two very similar alternatives—each of which authorizes the full suite of mining Perpetua has proposed in the manner the company proposes doing them. To credibly evaluate the purpose and need for this Project and associated features of it, the entire section needs to be rewritten following

determination of the legal status of Perpetua's claims and other asserted rights.

In response to comments, the Forest Service doubles down on its position that it is constrained by mining law regulations to consider Perpetua's proposed plan, while continuing to ignore its duties under other environmental protection laws discussed above, and sticking to the same unreasonably narrow purpose and need. *See* B-46–B-47.

B. The FEIS fails to consider a reasonable range of alternatives

As detailed by Objectors, the FEIS fails to consider a reasonable range of alternatives, and it improperly dismisses viable alternatives from consideration. *See* SSFS Jan. 9 2023 Comments at 82-89; FEIS at B-99–B-104.

Under NEPA, federal agencies are instructed to "inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1 (1978). NEPA requires an EIS to describe and analyze "every reasonable alternative within the range dedicated by the nature and scope of the proposal." *Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1087 (9th Cir. 2013). Consideration of alternatives "is the heart of the [EIS]," and agencies should "[r]igorously explore and objectively evaluate all reasonable alternatives" that relate to the purposes of the project and briefly discuss the reasons for eliminating any alternatives from detailed study. *Id.*; 40 C.F.R. § 1502.14 (1978).

While an EIS "need not consider an infinite range of alternatives, only reasonable or feasible ones," the failure to examine a reasonable range of alternatives renders an EIS inadequate. *Id. See also Idaho Conservation League v. Lannom*, 200 F. Supp. 3d 1077, 1090–91 (Payette National Forest violated NEPA by failing to discuss any alternatives that reduced ground disturbing mining activities while still meeting purpose and need). In discussing alternatives, the Forest Service must state how the alternatives "will or will not achieve the requirements of . . . other environmental laws and policies." 40 C.F.R. § 1502.2(d). A failure to consider a reasonable range of alternatives or "present complete and accurate information to decision makers and to the public" regarding the alternatives will violate NEPA. *See Natural Resources Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 813–14 (9th Cir. 2005).

An agency derives its project alternatives from the environmental impact statement's "purpose and need" section, which defines "the underlying purpose and need to which an agency is responding in proposing the alternatives including the proposed action." *City of Carmel-by-the-Sea*, 123 F.3d at 1155; 40 C.F.R. § 1502.13. The reasonableness of an alternative is governed by a given project's "purpose and need." *Id.* Agencies enjoy considerable discretion in defining the purpose and need of a project. *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1066

(9th Cir. 1998). However, in doing so "an agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-by-the-Sea*, 123 F.3d at 1155.

1. The refusal to consider any alternatives to "the Mining Portion" of Perpetua's proposed mine violates NEPA

The FEIS, like the SDEIS, considers only two action alternatives: the 2021 MMP (Perpetua's proposal); and the Johnson Creek Route Alternative. While the Johnson Creek Route Alternative considers a different access route to the site, there is no other difference. As the FEIS states: "The mining portion of this alternative would be the same as the 2021 MMP." FEIS at 2-3. There is no difference between these two action alternatives when it comes to:

- Mine pit locations, areal extents, and mining and backfilling methods;
- Transportation management on existing and proposed roads
- Pit dewatering, surface water management, and water treatment
- Ore processing
- Lime generation
- Tailings storage facility (TSF) construction and operation
- TSF buttress construction methods
- Water supply needs and uses
- Management of mine impacted water and stormwater runoff
- Electrical transmission lines
- Stibnite Gold Logistics Facility (SGLF)
- A road maintenance facility
- Surface and underground exploration
- Stibnite Gold Project worker housing facility

FEIS at 2-3.

Perpetua's proposal is for *mining*. While alternative access routes are an important consideration, it is "the mining portion" of Perpetua's proposal which will have the greatest number of, the most severe, and the longest lasting environmental impacts. Yet, the FEIS fails to consider any alternatives related to any aspects of "the mining portion" of Perpetua's proposal. This violates NEPA. To consider a reasonable range of alternatives, the Forest Service must consider one or more alternatives to "the mining portion" of Perpetua's proposal, such as alternatives to: mine pit locations and extents; mining and backfilling methods; pit dewatering, surface water management, and water treatment; ore processing; and TSF construction and operation. These are major, controversial issues with huge and lasting environmental implications; yet the FEIS does not consider any alternatives with any difference when it comes to these issues.

In the August 2020 DEIS, the Forest Service did consider two additional alternatives to "the mining portion" of Perpetua's proposal. *See* FEIS ES-1. But in the FEIS, the Forest Service eliminated those alternatives from further consideration and is no longer considering any alternatives to "the mining portion" of Perpetua's proposal. Without considering any alternatives to "the mining portion" of Perpetua's proposal, the Forest Service is not considering a reasonable range of alternatives as required by NEPA. Additionally, the Forest Service improperly dismissed viable alternatives proposed in public scoping comments and at other points which would satisfy the purpose and need of the project and could reduce the adverse environmental impacts, as discussed for specific alternatives in the next section of these Objections.

In response to comments, the Forest Service points to Section 2.6 of the FEIS, "Alternatives Considered but Eliminated from Detailed Study," to assert that it "considered a broad range of alternatives" though it admits those "were ultimately dismissed from further detailed study for the reasons cited in section 2.6." FEIS at B-100. Merely considering the possibility of studying alternatives in an EIS but then declining to actually develop and study any of those alternatives does not count toward meeting the Forest Service's duty to consider a reasonable range of alternatives under NEPA. Moreover, as explained in the next sections of these Objections, the excuses the Forest Service gives in Section 2.6 of the FEIS for eliminating specific alternatives are flawed.

Additionally, in response to comments, the Forest Service repeatedly rejected specific alternatives proposed by Objectors and other commenters by stating: "There is no need to disregard Perpetua's purpose and need for the Project and to develop alternatives that may be purely conjectural and whose implementation would be remote and speculative." FEIS at B-98, B-105, B-106, B-110, B-111, B-112, B-113, B-114, B-115, B-118, B-119, B-120. The Forest Service describes that purpose and need as follows: "The 2021 MMP describes Perpetua's primary objectives based on professional examination of the mineral reserves, economics, and common sense. The SGP mine plan was designed to reasonably produce the target metals with an economically efficient operation." FEIS at B-101. First, the Forest Service is wrong in suggesting it is limited to considering Perpetua's purpose and need only. As discussed in the preceding section, this unreasonably constrains the Forest Service and fails to consider the full suite of duties the agency has under NEPA and other environmental laws. Second, the Objectors are not asking the Forest Service to "disregard Perpetua's purpose and need." Objectors have put forth many alternatives which would still allow Perpetua to efficiently and economically produce target metals. Perpetua has not developed the *only* proposal for efficient and economic producing metals, and the Forest Service is wrong to feel straightjacketed to consider only Perpetua's specific mining proposal. Even those alternatives proposed by Objectors that might make the project somewhat less profitable will still meet Perpetua's overall goals of profitably producing metals and should be developed as feasible alternatives—even if they are not Perpetua's first choice or will not make the maximum amount of money. That is the point of NEPA's requirement to consider a reasonable

range of alternatives.

By refusing to develop any alternatives to "the mining portion" of Perpetua's proposal, the Forest Service made it a foregone conclusion that Perpetua's preferred mining plan would be approved, and deprived the public from seeing and itself from considering the comparative pros and cons of any other options that still allow mining, in violation of the duty to require a reasonable range of alternatives under NEPA.

2. The Forest Service's excuses for refusing to develop specific alternatives are unreasonable

a. Underground Alternative

As detailed by Objectors (SSFS Jan. 9 2023 Comments at 83, 86-88; FEIS at B-99-B-100), the FEIS did not provide adequate justification for eliminating underground mining as an alternative. Unlike the Feasibility Study, which aggressively promotes the possibility for underground mining to potential investors, the FEIS avoids serious discussion of underground mining as a possibility. Underground mining is declared to be uneconomic, but there is no quantitative information provided in theFEIS to defend that supposition. The potential for underground mining should be viewed first in the light of a choice as an environmentally preferable FEIS alternative. Underground mining would mean less waste disposal on the surface, and less disruption of existing surface water flows, while still allowing removal of the existing source of contamination proposed for the open pit mining alternative. In the haste to eliminate underground mining as a consideration, a potential environmentally preferable option is not being properly analyzed.

As described in CSP2 (2022), the FEIS does not provide adequate justification for eliminating underground mining as an alternative to be considered in the FEIS. In explaining why underground mining was eliminated previously as a consideration in the SDEIS, the rationale presented begins by asserting:

> *"In aggregate, grades for these three deposits above a 0.48 grams per ton (g/t) gold cut-off grade averaged 1.43 g/t gold, 1.91 g/t silver, and 0.064 percent antimony (M3 2021).* ***Typical economic cutoff grades for underground mine operations are approximately 5 g/t gold****." (SDEIS 2022,* ***emphasis added****)*

The basic consideration for potential economic viability must begin by considering how much gold that is greater than the cutoff grade has been identified, and whether this amount would justify underground mining. This is not addressed in the SDEIS analysis.

In addition, if underground mining were to take place, the cutoff grade would likely be less

than the 5 g/t proposed in the SDEIS. The reference cited in the SDEIS, the Stibnite Gold Project Feasibility Study (M3 2021), has an entire section devoted to the discussion of "*Potential high-grade underground exploration prospects*" (M3 2021, Section 9.8). In that section M3 used "gold cutoff" values of 2.4 g/t and 3 g/t, both of which are well below the 5 g/t cited in the SDEIS. The SDEIS does not give a citation for its choice of 5 g/t as "*Typical economic cutoff grades for underground mining* ...". The 5 g/t cutoff grade is not mentioned in the Feasibility Study. The choice of a typical cutoff grade for underground mining in the SDEIS should at least be consistent with the information being presented to the company's potential investors in its technical reports.

Unlike the Feasibility Study, which aggressively addressed the possibility for underground mining to potential investors, the FEIS appears to avoid serious discussion of underground mining as a possibility by proposing that underground mining is economically unfeasible, then failing to defend that premise with any quantitative analyses.

The potential for underground mining should also be viewed in the light of a potential choice as an environmentally preferable FEIS alternative. Underground mining would mean less waste disposal on the surface, and less disruption of existing surface water flows, while still allowing removal of much of the existing waste sources of contamination proposed for the open pit mining alternative. TheFEIS should also consider this alternative in terms of reduced impacts to soils. Section 4.5.2.2 indicates that Total Soil Resource Commitment (TSRC) guidelines in the PNF Forest Plan to limit TSRC to 5% of activity area would be violated with the project leading to a TSRC of 17%. Reclamation activities would not reduce this amount as noted on p. 4-78:

> "*As a general rule, the processes responsible for restoration of soil productivity occur over a very long timeframe (centuries to millennia) and do not directly correlate to successful reclamation, which is mainly oriented to short-term objectives."*

And,

> "*Thus, the recovery of greater than 40 percent soil productivity within a 50-year timeframe is unlikely (Forest Service 2022c)."*

This conclusion led the Forest Service to propose a Forest Plan Amendment (FPA) which would waive the TSRC guidelines. The Forest Service should consider whether an underground alternative would reduce these unacceptable impacts to soils and the deficit in available reclamation materials. In the haste to eliminate underground mining as a consideration, a potential environmentally preferable option is not being properly analyzed.

In response to comments, the Forest Service just points to Section 2.6.1.1 of the FEIS as justification for the decision not to consider this alternative. FEIS at B-100. But this Section of the

FEIS just repeats the faulty rationales from the SDEIS and does not adequately address the above concerns and violates NEPA.

b. Dry stack tailings

As detailed by Objectors (SSFS Jan. 9 2023 Comments at 83-84; SFEIS at B-101), the SDEIS did not include an alternative that examines a dry stack tailings facility or a mining footprint limited to the existing footprint of previous disturbance. Given the significant negative issues of placing the Tailings Storage Facility in the upper Meadow Creek streambed, wetlands, and RCAs, the Forest Service should develop an alternative that essentially limits tailings production to the volume that can be safely stored without inundating wetlands, RCAs or streams. Thus, the limiting factor for mining would be tailings storage. Once all the suitable, non-sensitive areas are used for tailings storage sites, mining should cease.

In response to comments, the Forest Service just says it cannot ignore Perpetua's purpose and need and points to Section 2.6.2.2 of the FEIS as justification for the decision not to consider this alternative. FEIS at B-101. But this Section of FEIS just repeats the faulty rationales from the SDEIS and does not adequately address the above concerns and violates NEPA.

c. Relocating tailings and/or waste rock back into main pits

As detailed by Objectors (SSFS Jan. 9 2023 Comments at 84; FEIS at B-101), we also recommended developing an alternative in which the tailings and/or waste rock are relocated back into the main pits (or other geologically stable area). While rehandling this material would require additional expense, the Forest Service should compare this with the cost of dealing with a catastrophic dam failure, contamination, and effects of downstream public health and fisheries issues. We appreciate rounding the crests and utilizing variable slope angles of waste rock piles to blend in with natural landforms where this can be done without compromising stability or integrity of the waste rock piles. The Forest Service's response to comments (FEIS at B-101) states this would be impractical and brushes off the risk of failure of the TSF embankment as a "worst-case scenario assumption not required by NEPA." In truth, this is a real risk that must be considered to comply with NEPA and the Forest Service's other legal duties, like minimizing impacts under the Organic Act.

d. Antimony emphasis

As detailed by Objectors (SSFS Jan. 9 2023 Comments at 84; FEIS at B-101), given Perpetua's repeated statements that antimony production is one of the primary goals and the grants from the Department of Defense, the Forest Service should develop an alternative emphasizing antimony recovery. In the SDEIS, it is noted that only 15 to 20% of the total mill feed would

contain sufficient antimony mineral grades to warrant production of antimony concentrate. We suggest developing an alternative focused on only developing the ore that contains high antimony mineral grades. This mineralized area would still contain some gold and silver but could dramatically reduce the footprint, wetlands impacts, and water treatment costs. Perpetua has already received a subsidy to mine this material so there is no longer a need to fully fund this project through gold extraction. In response to comments, the Forest Service states that the payable value for gold dominates over that for antimony and silver, and then asserts: "Therefore, limiting the Project to *only* the antimony production would severely impact the economics of the SGP." FEIS at B-101 (emphasis added). The Forest Service misconstrued Objectors' proposal, which is to develop and consider an antimony *emphasis* alternative that would still allow mining gold and would be economically viable; not a strawman antimony *only* alternative.

e. Early closure or long-term cession of mining activities

As detailed by Objectors (SSFS Jan. 9 2023 Comments at 84-85; FEIS at B-101-B-102), the FEIS fails to include an alternative that considers early closure or long-term cession of mining activities due to the sequence of ore production anticipated for the SGP and/or inherent volatility of gold prices. Perpetua's 2021 Feasibility Study indicates that Mill Feed and Gold Head Grade peaks at production year 4 before sharply declining for the remaining 11 years of the life of the mine. M3 Engineering and Technology Company, *Stibnite Gold Project Feasibility Study Technical Report*, at 1-15, 22-2 (2020), https://perpetuaresources.com/wp-content/uploads/2021/06/2021-01-27-feasibility-study.pdf.

Notably, while the average gold grade (g/t) declines over time, the amount of development rock that must be removed to reach the lower grade ores increases. *Id.* at 1-13. In short, the SGP becomes a less profitable mining operation overtime. *Id.* at 22-6; *see also* Perpetua Resources Corp., *Investor Presentation*, at 33-36 (Jan. 2023), https://perpetuaresources.com/wp-content/uploads/Perpetua-Resources_Investor-Presentation_January-2023_FINAL.pdf. Given uncertainty in gold, silver, and antimony prices, early closure is a reasonably foreseeable possibility for the SGP. Even if an early closure alternative is not developed, the FEIS must address how long the mine will remain idle (i.e., in "care and maintenance") before the operator is required to enter a permanent closure phase. This is critically important because the anticipated "back-filling" of both the Hangar Flats Pit and the Yellow Pine Pit as well as other reclamation activities (backfilling the Midnight Pit) rely on development rock mined from the SGP's lowest grade deposit within the West End Pit. SDEIS 2-45 ("*Development rock to backfill the Yellow Pine pit would be sourced predominantly from the West End pit*, with minor quantities originating from the Yellow Pine and Hanger Flats pits.") (emphasis supplied).

If mine sequencing fails to follow that which is proposed in the 2021 MMP, the whole plan falls apart and the Payette National Forest is back to square one with even deeper and more giant

holes in the ground than currently exist. **Failure to plan, is planning to fail.** The FEIS must consider and evaluate plans for early closure at critical mining phases that if not achieved would significantly impact the mine operator's ability to perform proposed restoration and reclamation actions (For example, a critical mining phase would be mining the West End deposit. The FEIS must evaluate how to address the Hangar Flats and Yellow Pine pits if development rock is not available to backfill them.)—actions the FEIS assumes are events that *will* occur.

In response to comments, the Forest Service says: "The situation described in the comment that gold and silver pricing could drop in the future to a point where continued mining at the SGP would be terminated early is considered speculative and not foreseeable." FEIS at B-102. This is not speculative. Prices do fluctuate. Mines open and close depending on mineral prices.

f. Off-site processing of gold concentrates

As detailed by Objectors (SSFS Jan. 9 2023 Comments at 88-89; FEIS at B-104), the Forest Service evaluated and rejected Off-Site Gold Processing in Section 2.6.2.1 of the FEIS that states:

> Under this alternative, raw ore would be processed off-site and would reduce the amount of reagents transported and used at the SGP, and the number of employees traveling to the site. It would also eliminate the need to store mill tailings at the SGP site. Transporting approximately 22,000 tons per day by trucks to an offsite mill would require approximately 550 round trips daily during the 15 years of mine operations. This would greatly increase the air emissions and transportation impacts of the SGP and dramatically increase operational costs. The main problem with this alternative is that there currently is no commercial milling operation in the U.S. West that could economically process the SGP ore. So, a new mill, with all the same associated environmental impacts as the proposed SGP on-site mill would need to be constructed." (Emphasis added)

However, the 2021 Technical Feasibility Report disclosed that pilot tests showed that the processes were technically and economically viable. Furthermore, that report indicated, "Average estimated supplemental loss in gold recovery was 3.3%, compared with the flotation of an on-site POX-ready concentrate." This implies a 25 to 30-fold concentration of LOM gold grades, reducing the required trucking to 20 loads/day (versus the 550 loads/day referenced by the SDEIS) at concentrate metals values comparable to the antimony concentrate Perpetua intends to ship to Asia or the Middle East to be processed. This alternative would minimize, or eliminate, the highly toxic POX/CN leaching processes at Stibnite. This would reduce the total TSF arsenic disposal burden by >85% or by >350,000 tons, with the remainder of the arsenic burden being disposed of in Class 1 facilities in Nevada rather than the sensitive headwaters of the EFSFSR. This would result in a 55% decrease in on-site disposal of arsenic, and elimination of labile Arsenic downstream of the

flotation circuits.

These findings certainly suggest that off-site processing of gold concentrates meet the Alternatives criteria noted by the SDEIS: i) Does the alternative, including a combination of component options, meet the purpose and need of the SGP *(yes)*, ii) Does the alternative or component option potentially reduce environmental effects to at least one resource *(yes)*, iii) is the alternative or component option technically feasible *(yes)*, and iv) is the alternative or component option economically feasible *(yes)*.

The Forest Service should include off-site processing of gold concentrates as an alternative in a revised Supplemental DEIS.

In response to this comment, the Forest Service asserts: "The main benefit of this alternative asserted by the commenter would be to reduce labile arsenic in the on-site TSF. Because the TSF is designed to operate with no discharge of tailings downstream in any case, this alternative would not change the reasonably foreseeable environmental impacts of the Project." FEIS at B-104. This response is inadequate because the TSF will result in seepage to groundwater. Therefore, there will be environmental benefits to reducing arsenic in the TSF.

C. The FEIS fails to adequately analyze and disclose the direct, indirect and cumulative impacts of the project.

One of NEPA's fundamental goals is to "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." 42 U.S.C. § 4321. Accordingly, the scope of NEPA review is quite broad, and agencies are required to evaluate "any adverse environmental effects which cannot be avoided should the proposal be implemented." *Id.* at 4332(C)(ii). Agencies must disclose and consider direct, indirect, and cumulative effects on "ecological . . . aesthetic, historic, cultural, economic, social, or health" interests. 40 C.F.R. § 1508.1(g)(1) (1978).

Agencies must consider the reasonably foreseeable direct, indirect, and cumulative effects. Direct effects are those effects "which are caused by the action and occur at the same time and place." 40 C.F.R. § 1508.8(a). Indirect effects are those "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b) (1978). "Indirect effects may include . . . related effects on air and water and other natural systems, including ecosystems." *Id.*; *see also S. Fork Band Council v. U.S. Dep't of Interior*, 588 F.3d 718, 725 (9th Cir. 2009) (air quality impacts associated with transport and off-site processing of ore are "prime examples of indirect effects that NEPA requires be considered"); *Mont. Envtl. Info. Ctr. v. Off. of Surface Mining*, 274 F. Supp. 3d 1074 (D. Mont. 2017) (NEPA analysis for coal mining failed to take hard look at reasonably foreseeable indirect and cumulative effects of coal train transportation beyond immediate area); *WildEarth Guardians v. Zinke*, CV 17-80-BLG-SPW-TJC,

2019 WL 2404860 (D. Mont. Feb. 11, 2019) (NEPA violation where agency failed to consider shipping destinations, rail routes, and coal plants receiving coal from mine).

Cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.27(7). "[W]here several actions have a cumulative . . . environmental effect, this consequence must be considered in an EIS." *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1378 (9th Cir. 1998) (quotation and citation omitted).

> "[A]n EIS must catalogue adequately the relevant past projects in the area. It must also include a useful analysis of the cumulative impacts of past, present and future projects. This requires discussion of how future projects together with the proposed project will affect the environment. The EIS must analyze the combined effects of the actions in sufficient detail as to be useful to the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts. Detail is therefore required in describing the cumulative effects of a proposed action with other proposed actions."

Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d 800, 809–10 (9th Cir. 1999) (cleaned up). The Ninth Circuit has, time and again, rejected NEPA analyses that unreasonably limit the geographic scope of a cumulative impacts analysis. *See Bark v. U.S. Forest Serv.*, 958 F.3d 865, 871–73 (9th Cir. 2020); *Klamath-Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 993–97 (9th Cir. 2004); *Idaho Sporting Cong. v. Rittenhouse*, 305 F.3d 957, 973 (9th Cir. 2002); *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 902 (9th Cir. 2002); *Kern v. BLM*, 284 F.3d 1062, 1078–79 (9th Cir. 2002); *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990).

NEPA requires that an agency use state of the art science to make sound scientific decisions. *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 79 n.31 (D.D.C. 2019); 40 C.F.R. §§ 1500.1(b), 1502.22(b), 1502.24. The chosen methodology must be accurate and defensible. *See Nat. Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 813 (9th Cir. 2005) (holding that agency's "misleading" economic methodology violated NEPA's "procedural requirement to present complete and accurate information to decision makers and to the public to allow an informed comparison of the alternatives").

As detailed by Objectors, (SSFS Jan. 9, 2023 Comments at 92-93, 328-329; FEIS at B-55–B-56) many issues throughout their comments on the SDEIS showed that the analyses of the direct, indirect, and cumulative impacts contain a number of unreasonable deficiencies, omissions, and errors that they and their experts identified as being critical for an adequate analysis and disclosure of potential environmental impacts for several resources. The same is now true for the FEIS, as

explained for many issues throughout these Objections.

For a complex project in a sensitive environment, such a FEIS is unacceptable. The Forest Service must correct these errors, must take a hard look at all reasonably foreseeable direct, indirect, and cumulative effects, and must then issue a revised or supplemental EIS for public comment.

X. THE FEIS DOES NOT ADEQUATELY EXPLAIN AND DEMONSTRATE HOW THE PROJECT WOULD COMPLY WITH THE ENDANGERED SPECIES ACT.

The Endangered Species Act ("ESA") represents "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978). "The plain intent of Congress in enacting this statute was to halt and reverse the trend towards species extinction, whatever the cost." *Tennessee Valley Authority,* 437 U.S. at 184. In enacting the ESA, Congress spoke "in the plainest of words, making it abundantly clear that the balance has been struck in affording endangered species the highest of priorities, thereby adopting a policy which it described as 'institutionalized caution.'" *Id*. at 194.

"One would be hard pressed to find a statutory provision whose terms were any plainer than those in [Section] 7 of the Endangered Species Act." *Tennessee Valley Authority,* 437 U.S. at 173. "It's very words affirmatively command all federal agencies 'to *insure* that actions *authorized, funded, or carried out* by them do not *jeopardize* the continued existence' of an endangered species or '*result* in the destructions or modification of habitat of such species.'" *Id*., (quoting 16 U.S.C. 1536) (emphasis in original).

Pursuant to Section 7 of the ESA, each federal agency must consult with the United States Fish and Wildlife Service ("FWS") and/or NOAA Fisheries to ensure that any proposed action is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of the species' critical habitat. 16 U.S.C. § 1536(a)(2). As recognized in the FEIS, FWS "generally manages ESA-listed terrestrial and freshwater plant and animal species." FEIS, p. 3-336. NOAA Fisheries is responsible for marine fisheries, including anadromous fish.

During Section 7 consultation, the action agency, FWS and/or NOAA Fisheries must use the best scientific data available. 16 U.S.C. § 1536(a)(2). If the proposed action "may affect" any listed species or critical habitat, the action agency must engage in "formal consultation" with FWS and/or NOAA Fisheries. 50 C.F.R. § 402.14(a). To complete formal consultation, FWS and/or NOAA Fisheries must provide the action agency with a "biological opinion" explaining how the proposed action will affect listed species and critical habitat. 16 U.S.C. § 1536(b)(3); 50 C.F.R. § 402.14(g)(3)-(4), (l)(1). The biological opinion must include the current status of the listed species,

a detailed discussion of the "effects of the action" on listed species and critical habitat, and the expert agency's conclusion as to whether the action is likely to jeopardize a listed species or adversely modify critical habitat. 16 U.S.C. § 1536(b)(3)(A); 50 C.F.R. § 402.14(h); *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 518 (9th Cir. 2010).

If FWS and/or NOAA Fisheries conclude that the action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, FWS and/or NOAA Fisheries must outline "reasonable and prudent alternatives" to the proposed action. 16 U.S.C. § 1536(b)(3)(A). If FWS and/or NOAA Fisheries conclude in the biological opinion that the action is not likely to jeopardize listed species, or destroy or adversely modify critical habitat, the expert agency must provide an "incidental take statement" with the biological opinion, specifying the extent of incidental takings of listed species, the "reasonable and prudent measures" considered necessary or appropriate to minimize such impact, and the "terms and conditions" that must be complied with to implement those measures. *Id*. § 1536(b)(4); 50 C.F.R. § 402.14(i). If at any time the anticipated amount of incidental taking is exceeded, the agencies must immediately reinitiate consultation. 50 C.F.R. § 401.14(i)(4); *id*. § 402.16(a).

The ESA mandates that "federal agencies take no action that will result in the 'destruction or adverse modification' of designated critical habitat." *National Wildlife Federation v. National Marine Fisheries Service,* 524 F.3d 917, 933 (9th Cir. 2007) (*quoting* 16 U.S.C. 1536(a)(2)). "Destruction or adverse modification" of critical habitat is defined as a "a direct or indirect alteration that appreciably diminishes the value of the critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical. 50 C.F.R. § 402.02. The agencies must consider impacts that appreciably diminish the value of critical habitat for either the survival or recovery of the species. *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d at 934; *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059, 1069-71 (9th Cir. 2004).

Thus, the agencies' assessment of the impacts of a proposed action on a listed species' critical habitat must include the project's impact on the species' habitat in terms of the species' recovery as well as its survival, and how the action may impact the physical or biological features that were the basis for the species' critical habitat determination. 50 C.F.R. § 402.02; *National Wildlife Federation*, 524 F.3d at 935; *Gifford Pinchot*, 378 F.3d at 1069. In addition, the agencies are not allowed to characterize as "insignificant" the potential impacts on a species' critical habitat by considering only the broad scale or long-term impacts. *National Wildlife Federation*, 524 F.3d at 935; *Gifford Pinchot*, 378 F.3d at 1069. The agencies have failed to do so here.

As acknowledged in the FEIS, ESA-listed Canada lynx, Northern Idaho ground squirrel, wolverine, and monarch butterfly all occur within the Project area and would likely be impacted by the Project. FEIS, p. 3-346. The FEIS also acknowledges that ESA-listed Chinook salmon,

steelhead trout, and bull trout also occur within the Project area and also would likely be impacted by the Project. FEIS, p. 3-274. All of these species are listed as threatened under the ESA, except the monarch butterfly which is a candidate for listing. The FEIS is inadequate in assessing and disclosing the direct, indirect and cumulative impacts of the Project on these species and fails to demonstrate compliance with the ESA.

The FEIS is insufficient in a number of ways. First, despite acknowledging in the Biological Assessment that Southern resident killer whales could be "directly affected by the Project's reduction in the number of potential prey (e.g. Chinook salmon)," Biological Assessment at 473, the FEIS entirely fails to include an analysis of the Project's impacts to this species, in violation of NEPA and the ESA.

Additionally, it appears that the Project area is within the Bitterroot Ecosystem Recovery Zone for grizzly bears. There have been confirmed sightings of male grizzly bears in the Salmon-Challis National Forest. *See* https://idfg.idaho.gov/press/fg-alerts-hunters-and-recreationists-confirmed-grizzly-sighting-north-salmon. However, the FEIS entirely fails to disclose that the Project is within the Recovery zone and further fails to discuss and consider impacts the Project may have on grizzly bear connectivity, survival, and recovery.

Moreover, the environmental baseline used to assess the impacts of the Project is improperly defined and improperly analyzed for each of the species the FEIS analyzed. The "environmental baseline" is the condition of the listed species before the proposed action. 50 C.F.R. § 402.02. The baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area and the impact of State or private actions which are contemporaneous with the consultation in process. The baseline is a "snapshot" of a species' health at a specified point in time which folds in the effects of past and ongoing human and natural factors leading to the current status of the species, as well as an analysis of the local ecosystem and the species' habitat in the action area. Here, the FEIS failed to include and analyze the past and present impacts to Canada lynx, Northern Idaho ground squirrel, wolverine, monarch butterfly, Chinook salmon, steelhead trout, and bull trout and their critical habitats as part of the environmental baseline. Further, the FEIS fails to properly define the entire "effects of the action" and the "action area" or evaluate and analyze how the Project, including its interdependent and interrelated parts, may affect Canada lynx, Northern Idaho ground squirrel, wolverine, monarch butterfly, Chinook salmon, steelhead trout, and bull trout and their critical habitats and recovery.

The Project is within designated critical habitat for Chinook Salmon, steelhead, bull trout. The FEIS acknowledges that the Project would impact the designated critical habitat for these species within and downstream of the Project area. FEIS p. 4-352. Because the Project would result in the destruction and adverse modification of critical habitat for these species, the Project violates Section 7 of the ESA and cannot proceed.

NOAA Fisheries listed the Snake River spring/summer-run Chinook Salmon Evolutionary Significant Unit as threatened under the ESA in 1992. FEIS p. 3-274. The Forest Service acknowledges that this threatened species is found throughout the analysis area, including the South Fork Salmon River subbasin. *Id.* Additionally, designated critical habitat for Chinook salmon "includes all presently and historically accessible rivers and streams within the analysis area, except for the Payette River drainage." *Id.*, p. 3-278. The Project would result in long-term and/or permanent destruction of Chinook critical habitat and directly take the species. The population of Chinook salmon and steelhead is low and perilous. The impacts from the Project will likely destroy several generations of these species resulting in the permanent loss within this watershed. The mitigation measures proposed to offset the impacts to these species are disconnected, uncertain to occur and uncertain to mitigate the negative impacts. For example, the FEIS acknowledges that the East Fork Fish Tunnel's benefits are uncertain and further, the implementation plan is ill described. Additionally, the FEIS inappropriately limits its analysis area for Chinook critical habitat. *Id.* The FEIS must adequately consider the downstream impacts to critical habitat in addition to the impacts the Project will have on critical habitat within the Project area. The failure to consider these impacts violates both NEPA and the ESA. The FEIS fails to adequately analyze the Project's impact to this species and its critical habitat in violation of NEPA and the ESA.

NOAA Fisheries listed the Snake River Basin Steelhead Distinct Population Segment as threatened in 1997. FEIS, p. 3-288. The threatened steelhead is found in the East Fork, South Fork Salmon River drainage and its tributaries downstream of the Yellow Pine pit lake. *Id.* NOAA Fisheries has also designated critical habitat for Snake River Basin steelhead throughout much of the analysis area, including the East Fork, South Fork Salmon River drainage to approximately 0.4 km upstream of the confluence with Sugar Creek. *Id.* The Forest Service recognizes that the Project would permanently adversely affect steelhead, including its critical habitat through changes in water temperature and flow. *Id.*, pp. 4-395. The Project would result in long-term and/or permanent destruction of steelhead critical habitat and directly take the species. However, the FEIS's analysis fails to adequately consider direct, indirect and cumulative impacts to the species and the impacts to this species is likely much greater than considered in the FEIS. For example, the analysis fails to consider whether the Project will inhibit the recovery of the species particularly when, as the FEIS claims, the SFSR population currently has a moderate abundance/productivity risk.

The FEIS also notes that the flow-productivity model is based on proxy data from the Lemhi River which has entirely different physical and biological characteristics and does not adequately represent the impacts to productivity to the steelhead population in and around the Project area. FEIS p.3-291. The FEIS indicates that the East Fork SFSR and Meadow Creek will reduce productivity by 30%. FEIS p. 4-397. Thus, the impacts to productivity are likely much greater than disclosed. The FEIS's conclusion that the impacts on steelhead productivity will be minor to moderate, FEIS p. 4-397, is unsupported. At a minimum, the FEIS's analysis fails to

adequately consider impacts to abundance/productivity and fails to disclose and consider the Project impacts to the survival and recovery of steelhead.

Additionally, the FEIS fails to consider how the continued blockage beyond Yellow Pine pit lake would continue to impact generations of the population and how that will impact future recovery. The FEIS also does not clearly articulate the baseline and disclose all relevant factors- the FEIS states that "steelhead have not been found upstream of Yellow Pine pit lake," FEIS p. 3-291, but also discloses that aquatic surveys identified at least two locations where steelhead were identified above Yellow Pine pit lake. FEIS Figure 3.12-7. The FEIS does not clearly disclose and explain why it dismissed these two locations. The FEIS's false assumption and its ultimate determination regarding impacts to species above Yellow Pine pit lack is unsupported or at a minimum not clearly explained.

The FEIS also does not adequately discuss and disclose the environmental baseline for steelhead, fails to adequately analyze the Project's impact to this species and its critical habitat, and fails to provide a rational connection between the facts and its conclusion in violation of NEPA and the ESA.

FWS listed the Columbia River Distinct Population Segment of bull trout in 1998. FEIS, p. 3-294. Bull trout are currently known to use spawning and rearing habitat in at least 28 streams within the South Fork Salmon River subbasin. *Id*. FWS also designated critical habitat for bull trout throughout the South Fork Salmon watershed, including the East Fork, South Fork Salmon River. *Id*. Bull trout are among the most sensitive to changes in environmental variables. FEIS p. 3-274. The FEIS acknowledges that the threats to bull trout persistence are the "combined effects of habitat degradation, fragmentation and alterations associated with dewatering, road construction and maintenance, mining, grazing; the blockage of migratory corridors by dams or other diversion structures; poor water quality; incidental angler harvest; entrainment into diversion channels; and introduced non-native species." FEIS p. 3-295.

The Forest Service acknowledges that the Project would adversely affect bull trout, including its critical habitat in a major and permanent way. *Id*., pp. 4-402-408. But the FEIS fails to adequately assess direct, indirect and cumulative impacts and fails to adequately define and disclose the environmental baseline for this species and the impacts to this species and habitat are likely much greater than disclosed. Specifically, the FEIS fails to adequately consider and disclose the impacts mining operations will have on the turbidity of the streams, water temperature, and PCEs. The FEIS's analysis discounts the impacts that the Project will have to the current and future populations of bull trout in the Project area and fails to consider how the Project will impact the recovery and survival of this species. Moreover, the FEIS improperly relies on uncertain mitigation measures to offset the Project's impact to the species. This violates NEPA and the ESA.

The FEIS discloses that the Project would significantly reduce suitable habitat for Canada lynx, wolverine, Northern Idaho ground squirrel, and Monarch butterfly. FEIS p. 4-423, 417. The FEIS effects analysis inadequately considers and discloses impacts to these species including the cumulative impacts of increased vehicle traffic, the reduction of connectivity, continued reduction of habitat, habitat fragmentation. The cumulative impacts of past mining, logging, and other federal actions has fragmented habitat and resulted in a loss of wildlife travel corridors. Moreover, other reasonably foreseeable activities will impact these species and have not been adequately analyzed. The FEIS fails to disclose any and all reasonably foreseeable future activities that may impact wolverine, Northern Idaho ground squirrel and Monarch butterfly.

For example, the Project would directly and indirectly impact over 80,000 acres of lynx habitat in seven different lynx analysis units. *Id.* The FEIS acknowledges that the Project would result in long-term and permanent impacts to lynx. *Id.* The FEIS inaccurately mapped lynx habitat and therefore did not fully address the impacts to all lynx habitat in the Project area. Further, the FEIS failed to disclose and adequately address, among other things, the impacts that vehicle traffic and road construction will have on the species. The FEIS presents a flawed wolverine analysis, in part, by associating Project impacts to only a fraction of recognized and suitable habitat (>340,000 acres) in the analysis area FEIS p. 4-429. The FEIS acknowledges that wolverines have been well documented in the area and the Project will "likely adversely affect" the species. *Id.* The authorized Project would result in permanent and long term direct and indirect impacts from loss of habitat, habitat fragmentation, noise, light, and increase over the snow recreation. *Id.* Direct mortality would result from vehicles on the Burntlog Route. The FEIS fails to consider the cumulative impact of increased potential for non-target capture or mortality from trapping activities resulting from increased access to extremely remote terrain. The FEIS also fails to adequately consider the impact the Project will have on climate change and it's associated impacts on wolverines.

For the Northern Idaho Ground Squirrel, the primary threat to their survival and recovery is the loss of suitable habitat. FEIS p. 3-352. This species has one of the smallest ranges of all Northern American land mammals. The Project will result in over 5,200 acres of habitat disturbance. FEIS p. 4-426. The FEIS and DROD fail to include any EDF's in relation to evaluating NIDGS habitat and did not consider impacts that underground noise and vibrations may have on the species.

For the monarch butterfly, the Project area is within the species' summer breeding range. FEIS p. 3-357. The primary threats to this species include habitat loss and fragmentation, loss of milkweed (which the monarch is largely dependent on for reproduction), and intensified weather events that impact populations. *Id*. The Project will result in the destruction of monarch butterfly habitat. FEIS p. 4-433. The FEIS fails to adequately address the impacts the Project will have on climate change which will in turn impact monarch populations through more intense weather events. Additionally, the FEIS fails to adequately consider the direct, indirect and cumulative impacts hazardous waste will have on the species recovery and survival at an individual and

population level. The FEIS fails to consider and disclose the fish habitat restoration portion of the project will impact the monarch butterfly through reduction of vegetation.

The Agencies' analysis on the adverse impacts of the Project on lynx, wolverine, Northern Idaho ground squirrel, threatened fish and their designated critical habitat fails to comply with Section 7 of the ESA and fails to take a hard look under NEPA. 16 U.S.C. § 1536(a)(2). The failure to comply with these legal requirements has resulted in a failure to provide a detailed discussion of effects and thus the Agencies' jeopardy analysis and "hard look" conclusions are ill informed. The resulting impacts determination, mitigation measures and incidental take statement therefore does not fully satisfy the requirements of the ESA. Moreover, the Agencies have failed to utilize the best scientific data available. 16 U.S.C. § 1536(a)(2). The Agencies must also consider all phases and the entire scope of the agency action. *See Conner v. Burford*, 836 F. 2d 1521 (9th Cir. 1988); *Greenpeace v. NMFS*, 80 F. Supp. 2d 1137 (W.D. Wash. 2000). The Agencies have failed to do so here and have further arbitrarily limited the time frame of the proposed action. *See Wild Fish Conservancy v. Salazar*, 628 F.3d 513 (9th Cir. 2010); *American Rivers v. U.S. Army Corps of Engineers*, 271 F. Supp. 2d 230 (D.D.C. 2003).

In order to determine whether the Project's adverse impacts may jeopardize one or more of the listed species under the ESA, the Agencies must identify each of the species' tipping points for survival and recovery, and then determine whether the project's impacts would reach that threshold. *Ctr. for Biological Diversity v. Salazar*, 804 F. Supp. 2d 987, 999-1000 (D. Ariz. 2011). The agencies have failed to discuss and disclose at what point survival and recovery will be placed at risk for each species. Therefore, they cannot adequately conclude whether or not jeopardy may result from further impairments to habitat that is already degraded. *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 936 (9th Cir. 2008).

The Agencies may rely on mitigation measures "only where they involve 'specific and binding plans' and 'a clear, definite commitment of resources for future improvements' to implement those measures." *Ctr. for Biological Diversity*, 804 F. Supp. 2d at 100, quoting *Nat'l Wildlife Fed'n*, 524 F.3d at 935-36. Furthermore, "mitigation measures supporting a no jeopardy or no adverse modification conclusion must be 'reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.'" *Id.*, quoting *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002). The mitigation measures here fail to meet this standard.

Overall, despite the anticipated, significant adverse impacts to listed species and critical habitat, the Agencies fail to demonstrate that the Project can meet the strict standards under the ESA to protect the listed species and to ensure that there will be no destruction or adverse modification of their designated critical habitats.

XI. MANY SERIOUS AND UNRESOLVED CONCERNS ABOUT THE PROJECT ANALYSES REQUIRE A REVISED OR SUPPLEMENTAL EIS TO COMPLY WITH NEPA

As detailed by Objectors in their comments on the SDEIS, there are many serious and unresolved concerns about the SGP which warrant preparation of a further supplemental Draft EIS for public review and comment before any Final EIS is approved. *See* SSFS Jan. 9, 2023 Comments at 30-45. CEQ regulations provide:

> NEPA regulations must ensure that the environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.

40 C.F.R. § 1500.1 (1978). If an EIS "is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft . . . ." 40 C.F.R. § 1502.9(a) (1978). The FEIS is riddled with data gaps, inaccurate description of the current environmental conditions, missing but available baseline information, among other concerns, which require revising and/or supplementing the SFEIS and taking additional public comment to comply with NEPA.

NEPA's purpose is "to foster excellent action," and the "NEPA process is intended to help public officials make decisions that are based on an understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." 40 C.F.R. § 1500.1(c) (1978). To this end, an EIS must "provide full and fair discussion of significant environmental impacts." *Id.* at 1502.1 (1978).

NEPA requires that "environmental information is available to public officials and citizens before decisions are made and before actions are taken." *Id.* at 1500.1(b) (1978). In an EIS, an agency must explain its methodology and results, and include its baseline studies as an appendix for the public to review.

"[T]he very purpose of NEPA's requirement that an EIS be prepared for all actions that may significantly affect the environment is to obviate the need for speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action." *LaFlamme v. FERC*, 852 F.2d 389, 400 (9th Cir. 1988). "NEPA requires that the agency provide the data on which it bases its environmental analysis." *N. Plains Res. Council*, 668 F.3d at 1083. NEPA, thus, requires transparency and placing the high-quality information the agency relied on before the public, before approving a project. *See, e.g.*, *Idaho Conservation League v. Lannom*, 200 F. Supp. 3d 1077, 1088 (D. Idaho 2016) (Payette National Forest violated NEPA when it concluded "internally" that mining proposal complied with law but where agency's calculus "was

not shared with the public in any written analysis"). This is true of supposedly confidential information too. Id. at 1089 ("The transparency that NEPA requires was ignored when [the mining company] and the Forest Service held a confidential meeting. . . . Under NEPA, the agency cannot rely on material that is kept secret from the public. . . . [T]he agency either must explain it did not rely on this confidential information or, if it did rely upon it, describe the information and how it affected the agency's decision.").

Additionally, in determining whether an EIS fosters informed decision-making and public participation, courts consider not only the content of an EIS, but also its form. (S*ee State of Cal. v. Block*, 690 F.2d 753,761 (9th Cir. 1982)). The NEPA document "is where the [agency's] defense of its position must be found." *Or. Natural Desert Ass'n v. Rose,* 921 F.3d 1185, 1191 (9th Cir. 2019). To provide a "full" and "fair" discussion of environmental effects, an agency must address issues "up front" and cannot "cobble together a 'hard look' from various other analyses." *See Nat'l Parks & Conservation Ass'n v. BLM*, 606 F.3d 1058 (9th Cir. 2010) (NEPA violation where "[a] reader seeking enlightenment on the issue would have to cull through entirely unrelated sections of the EIS and then put the pieces together."). *See also Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1216 (9th Cir. 1998) ("NEPA emphasizes the importance of coherent and up-front environmental analysis to ensure informed decisionmaking").

A. The SDEIS improperly relies on inaccurate or incomplete baseline data.

As detailed by Objectors in their comments (SSFS Jan. 9, 2023 Comments at 31; SFEIS at B-44-B-45), to take the required "hard look" under NEPA, an EIS must describe the environmental baseline of the areas to be affected. 40 C.F.R. § 1502.15. An accurate baseline is "essential" to an informed analysis. 40 C.F.R. § 1502.21(b). Baseline conditions are necessary to "determine what effect the project will have on the environment" and thus to comply with NEPA. *Great Basin Res. Watch v. BLM*, 44 F.3d 1095, 1101 (9th Cir. 2016). "Without establishing the baseline conditions which exist . . . before [a project] begins, there is simply no way to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA." *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 520 (9th Cir. 1988).

An agency cannot rely on post-approval surveys, studies, or mitigation as a substitute for suitable baseline information. *See N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1083 (9th Cir. 2011). For example, courts have held that the Forest Service violates NEPA when it approves a mine exploration project without gathering baseline groundwater hydrology information to assess impacts of drilling before approving a project. *Idaho Conservation League v. U.S. Forest Serv.*, No. 1:11-cv-00341-EJL, 2012 WL 3758161, *14 (D. Idaho Aug. 29, 2012); *Gifford Pinchot Task Force v. Perez*, No. 03:13-cv-00810-HZ, 2014 WL 3019165 (D. Or. 2014); *Idaho Conservation League v. U.S. Forest Serv.*, No. 1:16-cv-0025-EJL, 2016 WL 3814021, *10 (D. Idaho July 11, 2016); *Idaho Conservation League v. U.S. Forest Serv.*, No. 1:18-cv-504-BLW,

2019 WL 6896908 (D. Idaho Dec. 18, 2019). While it may be permissible in some circumstances for an agency to estimate baseline conditions–instead of conducting actual measurements–by using data from a similar area, computer modeling, or some other method, the agency's method "must be based on accurate information and defensible reasoning." *Oregon Natural Desert Ass'n v. Jewell*, 840 F.3d 562, 570 (9th Cir. 2016).

As shown throughout many sections of these Objections, the Forest Service failed to gather and utilize adequate baseline data—data which is available or readily attainable. The Forest Service must correct these errors by gathering and utilizing up-to-date, accurate baseline data, and must issue a revised or supplemental EIS for public comment.

B. There are several unsupported assumptions, unknowns, and changing circumstances about the Stibnite Gold Project.

As detailed by Objectors in their comments (SSFS Jan. 9, 2023 Comments at 31-33), Throughout the FEIS and its supporting documents, the Forest Service makes numerous unsupported and unreasonable assumptions about the Stibnite Gold Project on issues that are unknown, subject to change, and/or still being decided–issues that could have major implications on the likely environmental effects, feasibility, and other factors related to each alternative, including the proposed action, and for the associated mitigation and monitoring.

For example, degraded water quality is a major concern both in the short and long term. Water quality effects will depend significantly on the CWA permitting for the mine site. But Perpetua and the Forest Service have failed to disclose in any detail what types of CWA permits will be issued for which point sources, where those permitted point sources will be located, which standards will apply to them, and other important factors. In response to comments, the Forest Service still does not answer these questions and simply states that Idaho DEQ will issue CWA permits and make those determinations later. *See* FEIS at B-237.

The Forest Service also fails to fully disclose or fully consider in the FEIS that Perpetua is exploring for additional mining opportunities at the site. For example, it proposes to approve underground exploration of the Scout Prospect, with extremely limited data and analysis. Further, while the FEIS does acknowledge that Perpetua's Golden Meadows exploration project was previously approved and suggests that it might still be underway, the Forest Service fails to explain how Perpetua is using this exploration to identify additional mining opportunities beyond the scope of the Stibnite Gold Project as proposed and discussed in the FEIS, or what the potential cumulative effects are.

Perpetua's mining claims along the proposed Burntlog Route also suggest that additional mineral exploration activities may be reasonably foreseeable. If Perpetua does not plan to conduct

any exploration or development on these sites, it is unclear if these claims are valid. The idea that additional mineral exploration and development will be occurring in one or more of these locations brings into question the overall timeline for mine closure and restoration. In response to comments, the Forest Service asserts that the FEIS includes a "resource-by-resource analysis of the effects of the [mine] development and exploration" and says: "If the future exploration or development drilling activities exceeded what was included in the mine plan of operations, the Forest Service would evaluate what additional NEPA analysis may be needed." *See* FEIS at B-57. But this ignores the issue of what additional mineral activities are already reasonably foreseeable and should be considered now.

Since the SDEIS, Perpetua has abandoned some mining claims and submitted new mining claims, as discussed already. The Forest Service cannot simply assume the claims are valid, the claims cover the proposed activities, and that the Stibnite Gold Project will have the same effects as it would have previously under the different configuration of claims.

Instead of rushing ahead to approve Perpetua's mine, the Forest Service should take the time to resolve these uncertainties or should at least disclose these uncertainties and properly factor them into the SDEIS and its analyses.

C. The limited temporal and geographic scales render the analyses inadequate.

As detailed by Objectors in their comments, the Forest Service unreasonably constrained the temporal and geographic scales of its analyses, rendering them inadequate. SSFS Jan. 9, 2023 Comments at 34-36; FEIS at B-45-B-46. In response, the Forest Service simply stood by its choices, which violate NEPA. *See id.*

"[A]n agency has the discretion to determine the physical scope used for measuring environmental impacts," so long as its choice represents a reasoned decision and is not arbitrary. *Idaho Sporting Cong. v. Rittenhouse*, 305 F.3d 957, 973 (9th Cir. 2002). Similarly, an agency's discretion to determine the temporal scope of its NEPA analysis requires the agency to consider the relevant factors and provide a rational connection between the facts found and the choice made. *Selkirk Conservation All. v. Forsgren*, 336 F.3d 944, 962 (9th Cir. 2003). An agency must offer a "reasonable justification for why it drew the line where it did." *Friends of the Wild Swan v. Weber*, 767 F.3d 936, 944 (9th Cir. 2014).

As set forth throughout these Objections, the Forest Service arbitrarily constrained the temporal and/or geographic scope of its effects analysis to omit disclosure and evaluation of potential significant effects caused by the Stibnite Gold Project. The Terrestrial Wildlife Technical Report (Egnew and Mack 2022), submitted herewith and incorporated by reference herein, also referenced this omission (P. 5). For example, as discussed in more detail later in these comments,

data collected to model baseline conditions is limited to small areas of the mine site and are spatially-biased. *See infra*.

As described in Lubetkin (2022), the transport of hazardous materials to the mine site will involve a much larger geographic area than the transportation route identified in the SDEIS. Instead of only considering the transportation corridor from SH-55 at Cascade to the mine site, the true measure of the communities and environment at risk will extend to the distribution points of the reagents brought to the mine and the destinations of the ore concentrate and wastes taken from it. Spills of hazardous materials may have significant impacts to public health and the environment that must be fully analyzed in the FEIS.

Similarly, as described below, Chapter 4 of the FEIS only analyzes effects to fisheries or water quality at the mine site area; it fails to analyze consequences of the project to fisheries and surface water quality in the larger analysis area downstream and outside of the local mine site. For example, impacts to waters downstream of the Yellow Pine pit lake -- which may be the most impacted waters--are not evaluated. Such impacts that could occur well-beyond the local mine site include, but are not limited to, increased water temperatures, increased risk of hazardous spills, increased detrimental impacts from roads, and increased metals concentrations. The geographic scale of the impacts does not match, and well exceeds, that of the management areas identified and affected by the proposed Forest Plan amendment at FEIS, Appendix A-3. By failing to include impacts beyond the mine site, the geographic scope of the proposed amendment was unreasonably narrow. The true impacts of this proposed amendment were neither considered nor disclosed to the public.

Temporal data is also limited. As discussed below, the SFEIS fails to address the potential long-term impacts of water treatment at the West End Pit and the Tailings Storage Facility, which may continue for an indefinite period of time. This is particularly important when it comes to the FEIS's failure to provide a financial assurance calculation, which is necessary to ensure that sufficient funds are available for reclamation in the event that the company files for bankruptcy or is otherwise unable to complete reclamation. It is important to disclose and analyze the assumptions that will be made in establishing the financial assurance, the amount of post-closure financial assurance needed to protect the public if water treatment is required beyond Mine Year 40.

The Forest Service deferred the financial assurance calculation until after the ROD, yet the information that is available at this stage of the mine design, and for the FEIS analysis, is more than sufficient to analyze the reclamation and closure costs. In fact, those calculations have already been made in the Feasibility Study (M3 2021). The Forest Service has decided not to include them in the FEIS. By doing so, the FEIS fails to take a hard look at the financial assurance calculations for reclamation and closure costs at the proposed SGP, including those water treatment liabilities

that may continue for an undetermined time.

Geographical and temporal limitations in the effects analyses can result in both underestimated and unrealized significant impacts that will not be disclosed in the FEIS. The Forest Service must expand the geographic and temporal scales of the analyses and disclose the potential impacts in a supplemental or revised EIS for public review.

D. The FEIS fails to include essential information and project designs.

As stated by Objectors, the SDEIS omitted critical information for the evaluation of the impacts of the Stibnite Gold Project, which are not included in the FEIS. *See* SSFS Jan. 9, 2023 Comments at 36; FEIS at B-99-B-100. Some of these items include:

- An analysis under the CWA 404(b)(1) guidelines
- A detailed reclamation plan
- Plans and analysis of underground exploration (Scout Prospect Tunnel)
- A description of financial assurance calculations
- Designs of the transmission line upgrades and construction
- A fugitive dust control plan
- Sediment modeling
- Cyanidation facility permanent closure plan
- BIOP (NMFS) BIOP (USFWS)
- Burntlog Route Access Plan

In response to comments, the Forest Service says that when preparing an EIS it "attempts" to evaluate effects by seeking information from the "project proponent and other sources" to make reasonable evaluations, said the "Forest Service believes it has accomplished this" here, and said it does not need to consider more specific design and operating descriptions during the NEPA process. FEIS at B-99-B-100.

This reliance on future studies and design plans violates NEPA, as NEPA's entire purpose is to ensure that environmental considerations are taken into account *before* a decision is reached. The Forest Service should have obtained--and Perpetua should have provided--all this information before issuance of the FEIS. Without the missing information, the Forest Service and the public cannot assess the full impacts of the project or meet the basic requirements of NEPA.

E. There are significant changed circumstances and new information since the SDEIS and FEIS were released that require preparation of a revised or supplemental EIS.

As detailed by Objectors, multiple changed circumstances and new information require supplementing the SDEIS. *see* ICL et al. Jan. 9 2023 Comments at 36-39. NEPA requires preparation of a supplemental EIS if there are "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(ii) (1978). *See Idaho Conservation League v. U.S. Forest Serv.*, 2016 WL 3814021, No. 1:16-cv-00025-EJL (D. Idaho July 11, 2016) (Forest Service violated NEPA when it failed, before approving mine exploration, to resurvey baseline plant populations and habitat conditions after "changed circumstances" caused by recent wildfire and fire-fighting activities). As discussed below, many of these issues remain unaddressed. And more changed circumstances and/or new information have arisen since the SDEIS was released.

1. Department of Defense grant

As Objectors previously stated, a significant new development occurred on December 19, 2022, when the Department of Defense announced $24.8 million in grant funding for the Stibnite Gold Project, stating that:

> The DPA Investments Program will provide $24.8 million to Perpetua *to complete environmental and engineering studies* necessary to obtain a Final Environmental Impact Statement, a Final Record of Decision, and other ancillary permits. Perpetua will perform this study work related to its Stibnite-Gold Project in central Idaho through 2024.

A similar press release by Perpetua Resources further emphasizes the development of essential information related to the SGP, including environmental baseline data monitoring, environmental and technical studies, as provided by new grant funding, announced on December 19, 2022:

> Under the funding agreement, Perpetua may request reimbursement for certain costs incurred over 24 months *related to environmental baseline data monitoring, environmental and technical studies and other activities* related to advancing Perpetua's construction readiness and permitting process for the Stibnite Gold Project.

Our comments urged that these environmental and engineering studies, which the DoD press release says Perpetua will perform through 2024, and are deemed "necessary to obtain a

Final Environmental Impact statement," must be provided for public review and comment in the NEPA process. But in response to comments, the Forest Service sticks its head in the sand and simply says: "The Forest Service is not aware that this work will result in new information relevant to environmental concerns or bearing on the Proposed Action or its impacts to necessitate another SDEIS." FEIS at B-46.

Similar additional grants from the Department of Defense have followed.[1] Perpetua Resources reported in the attached news release on February 12, 2024, the award of up to $34.6 million in additional funding. The Department of Defense also entered into an Ordnance Technology Initiative Agreement of up to $15.5 million to Perpetua Resources under the Prototype Other Transaction Authority of the DoD through the DoD Ordnance Technology Consortium, which Perpetua Resources reported in the attached August 21, 2023 news release. But the Forest Service fails to address these or their bearing on the NEPA process.

2. Whitebark pine listing

On December 15, 2022, toward the end of the SDEIS comment period, the U.S. Fish and Wildlife Service listed whitebark pine (*Pinus albicaulis*) as threatened under the Endangered Species Act (ESA). *See* 87 Fed. Reg. 76882 (12/15/2022). This rule became effective January 17, 2023. Due to the listing, there are now additional restrictions regarding the removal of whitebark pine: "The protections for whitebark pine also make it illegal to remove, possess, or damage the tree on federal lands." *Id.* Federal actions that may impact whitebark pine must now go through ESA Section 7 consultation with the U.S. Fish and Wildlife Service to make sure that project activities will not jeopardize this species.

NEPA requires informed public comment on proposed actions and any choices or alternatives that might be pursued with less environmental harm. The Forest Service must, therefore, account for these changed circumstances in a new supplemental or revised SDEIS and issue it to the public for review. The Forest Service must not only include updated baseline information and effects analysis, but must also include appropriate project modifications and additional mitigation measures.

[1] U.S. Department of Defense Press Release, "DOD Issues $24.8 M Critical Minerals Award to Perpetua Resources," December 19, 2022; Perpetua Resources Press Release, "Perpetua Resources Receives Critical Minerals Award of up to $24.8 Million Under the Defense Production Act, December 19, 2022; Justia, "Technology Investment Agreement between the United States of America and Perpetua Resources Idaho, Inc., December 16, 2022; Perpetua Resources Press Release, "Perpetua Resources Awarded Up To $15.5 Million In Department Of Defense Funding to Demonstrate a Fully Domestic Antimony Trisulfide Supply Chain, August 23, 2023; and Perpetua Resources Press Release, "Perpetua Resources Receives Up To An Additional $34.6 Million Under the Defense Production Act, February 12, 2024.

3. WOTUS rule change

As detailed by Objectors, on February 2022, the Corps adopted the pre-2015 WOTUS rule, which no longer categorically excludes ephemeral features as jurisdictional waters and the General Condition 23(d) Stream Mitigation threshold changed to all losses of stream bed that exceed 3/100-acre. *See* SFEIS at B-231. Objectors raised the concern that it is not clear how the Corps' jurisdiction review will address impacts to WOTUS identified in the SDEIS, including whether this would increase the impacted acreage if adopted. Objectors urged that the results of this review including (identification of acreage, full analysis and disclosure of impacts) need to be addressed in a revised SDEIS. In response, the Forest Service simply said the USACE would decide this through its CWA 404 permitting process, and that the Forest Service does not need to consider the level of impact or mitigation. *See id.* This is a curious statement since the Forest Service admits elsewhere in response to comments that "the USACE is a Cooperating Agency for the Project and has been involved with the coordination and preparation of the EIS" and that the "USACE, in coordination with the Forest Service, will also be responsible for reviewing and approving the Compensatory Mitigation Plan for wetland impacts." The Forest Service cannot ignore these responsibilities now, leaving it for the USACE to decide later outside the public NEPA Process.

4. CEQ guidance on climate change

As detailed by Objectors, the Forest Service must incorporate CEQ's recent interim guidance to assist federal agencies in analyzing greenhouse gas emissions and climate change effects of their proposed actions under NEPA. *See* SFEIS at B-166. As CEQ poignantly reminds all federal agencies:

> Given the urgency of the climate crisis and NEPA's important role in providing critical information to decision makers and the public, NEPA reviews should quantify proposed actions' GHG emissions, place GHG emissions in appropriate context and disclose relevant GHG emissions and relevant climate impacts, and identify alternatives and mitigation measures to avoid or reduce GHG emissions. CEQ encourages agencies to mitigate GHG emissions associated with their proposed actions to the greatest extent possible, consistent with national, science-based GHG reduction policies established to avoid the worst impacts of climate change.

Council on Environmental Quality, [CEQ-2022-0005], National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change), 88 Fed. Reg. 1196, 1197 (Jan. 9, 2023).

In response to comments, the Forest Service said it had discretion whether or not to apply

the guidance to the SGP since this NEPA process was already underway and that the Forest Service declined to do so here. FEIS at B-166. Thus, the Forest Service admits "this EIS does not include all new recommendations such as applying social cost of GHG estimates to the incremental metric tons of each individual type of GHG emissions expected from the Proposed Action and its alternatives." *Id.* The Forest Service abuses its discretion, undermines the public NEPA process, and fails to take a hard look by overlooking the latest guidance on climate.

F. The FEIS contains multiple discrepancies between references listed in the document and those available on the Forest Service website, with implications for public review.

As detailed by Objectors, as described in Maest (2022), the SDEIS contained multiple discrepancies between references listed in the document and those available on the USDA Forest Service website; and the implication from these discrepancies is that the SDEIS was not adequately reviewed before it was released to the public, and, even more concerning, the SDEIS may not have used the most up-to-date data and information in its preparation. *See* SSFS Jan. 9, 2023 Comments at 39-40. At the time of the FEIS review, the Forest Service had not updated the website to provide the more recent references.

Table 1. Discrepancies between geochemistry and water quality references cited in the SDEIS and those available on the USDA Forest Service website.

As listed in SDEIS, Section 7.1 References	**Available from USDA Forest Service website, Project Documents[1]**
Brown and Caldwell. 2021b. Stibnite Gold Project Water Management Plan. Prepared for Perpetua Resources Idaho, Inc. October 2021.	Brown and Caldwell. 2021. Stibnite Gold Project Water Management Plan. Prepared for Perpetua Resources Idaho, Inc. *December*. 638 pgs. (more recent)
Brown and Caldwell. 2021c. Stibnite Gold Project. Environmental Monitoring and Management Program. Prepared for Perpetua Resources Idaho, Inc. May 2021.	Brown and Caldwell. 2021. Stibnite Gold Project Environmental Monitoring and Management Program. Prepared for Perpetua Resources Idaho, Inc. *September*. 64 pgs. (more recent)
Brown and Caldwell. 2021d. Stibnite Gold Project. Development Rock Management Plan. Prepared for Perpetua Resources Idaho, Inc. October 2021.	Brown and Caldwell, *2022*. Final Development Rock Management Plan. Prepared for Perpetua Resources Idaho, Inc. *May*. 143 pgs. (more recent)

Not listed in SDEIS	Brown and Caldwell. 2021. Stibnite Gold Project Water Resources Monitoring Plan. Prepared for Perpetua Resources Idaho, Inc. November. 50 pgs.
SRK Consulting (SRK). 2018b. Stibnite Gold Project Proposed Action Site-Wide Water Chemistry (SWWC) Modeling Report. Prepared for Midas Gold Idaho, Inc. December 2018.	SRK Consulting (SRK). *2021*. Stibnite Gold Project ModPRO2 Site-Wide Water Chemistry (SWWC) Modeling Report. Prepared for Perpetua Resources Idaho, Inc. *October*. 558 pgs. (more recent)
SRK Consulting (SRK). 2021a. Stibnite Gold Project Baseline Geochemical Characterization Report – Phase 1 and Phase 2. Prepared for Perpetua Resources Idaho, Inc. December 2021. (not available on USDA website)	SRK Consulting (SRK). *2021*. Stibnite Gold Project Comprehensive Baseline Geochemical Characterization Report. Prepared for Perpetua Resources Idaho, Inc. *November*. 3514 pgs. (not as recent but may be a more comprehensive report)
1 https://www.fs.usda.gov/project/?project=50516 *Italics in the column to the right highlight the discrepancies in dates.*	

The FEIS identifies extensive and significant other problems in the SDEIS which require correction, and a supplemental document for public review. The FEIS (p. B-148-156) identifies over 50 edits to the Air Quality Section alone, including incorrect data (See comments 127, 129, 141, 143, 144, 163, 171, 172), incorrect references (See comments 173, 174, 176, 163, 162, 159, 158, 157, 152, 153, 154, 155, 156) incorrect regulatory references (139, 140, 166, 167) and other substantive edits to SDEIS text that alter conclusions about the extent and severity of harm (See comments 142, 148, 170, 177).

G. Failure to calculate financial assurance for reclamation and closure

As detailed by Objectors, the FEIS fails to include an analysis of the financial assurance associated with reclamation and closure. *See* SSFS Jan. 9, 2023 Comments at 40-43. As Objectors explained, the public is ultimately liable for this cost if the company cannot pay it, and it is liable for any difference between the amount established by the Forest Service for the financial assurance, and cost overruns of reclamation and closure that may occur. Cost estimates must be made conservatively in order to protect the public.

In the 2019 Prefeasibility Analysis, the cost estimate for the financial surety was $66.5

million. In the 2021 Feasibility Study that cost estimate increased to $100 million. This cost calculation is not included in the FEIS analysis, only in the feasibility analyses, but it has potential significant financial impact on taxpayers and the public. There is no technical justification for delaying the analysis of these calculations, since the calculations have already been done. The public deserves to be able to comment on these calculations as a part of the FEIS.

In his Technical Report from the Center for Science in Public Participation (CSP2 Review of Comment Responses on DSEIS), Dr. David Chambers provides an important perspective on bonding, starting with a citation from SDEIS 2-91:

> The SDEIS notes that, "Perpetua would be required to post financial assurance to ... provide adequate funding to allow the Forest Service to complete reclamation and post-closure operation, including continuation of any post-closure water treatment, maintenance activities, and necessary monitoring for as long as required to return the site to a stable and acceptable condition in the event Perpetua was unable to do so." CSP2 Review of Comment Responses on DSEIS.

Our organizations were joined by the EPA and others in raising concerns about the lack of a transparent process to determine the financial assurance bond. In the FEIS, the Forest Service responded that financial assurance amounts and mechanisms would be determined in a subsequent Forest Service decision following the approval of the mine and reclamation plan. FEIS at B-48.

This response is insufficient. We note that previous Forest Service decisions at Stibite were insufficient and resulted in both taxpayer costs and remaining environmental degradation. We remain concerned with costs to taxpayers and impacts to the human environment if the bond is insufficient to cover mine reclamation and closure, including water treatment in perpetuity. As part of our objection, we are incorporating the October 2024 technical report from Dr. David Chambers (CSP2 Review of Comment Responses on DSEIS), which provides additional details on these oversights.

> The public is ultimately liable for this cost if the company cannot pay it, and the public is liable for any difference between the amount eventually established by the Forest Service and the actual cost of reclamation and closure.
>
> In the 2019 Prefeasibility Study, the cost estimate for the financial surety was $66.5 million. In the 2021 Feasibility Study that cost estimate increased to $100 million. These cost calculations are not included in the EIS analysis, only in the Prefeasibility analyses, but they have potential significant financial impact on taxpayers and the public. There is no technical justification for delaying the analysis of these calculations, since the mining alternative has already been determined, and the financial assurance calculations have already been done. The public deserves to be able to comment on these calculations as a part of the EIS. (CSP2 Review of Comment Responses on DSEIS, referring to comment numbers 2, 8 and 9).

Our suggested remedy is to include an analysis in a Supplemental DEIS of the financial surety associated with estimated reclamation, closure and water treatment costs, which are already available.

When mines are developed, financial assurance is required by federal land managers and many state regulatory agencies. Financial assurance is necessary to cover the cost of reclaiming the disturbed surfaces of the mine, and to pay for all post-closure requirements. In this case, a significant part of the financial assurance will be for the cost of water treatment.

It is also important to note that the financial assurance does not cover the cost of a potential mine accident. The financial assurance only covers planned closure. The financial assurance requirement is important for several reasons. First, there have been numerous instances in virtually every state of mining companies filing for bankruptcy without sufficient financial resources to complete their reclamation and closure obligations. In these instances, the government regulatory agencies did not require enough financial assurance to cover the actual costs of mine closure. In British Columbia, it is estimated that the province holds over $1 billion less than the full value for financial assurance required to reclaim BC mines. If the mining company cannot clean up and close the mine, then the public becomes liable either for the cost of cleanup, or for the environmental consequences of the damaged mine site.

There is significant political pressure to keep the costs of these financial assurances as low as possible in order to enhance the economic viability of the mine. This has led to significant underestimations of the amount of financial assurance required to close a mine after a bankruptcy. Alaska, Montana, Nevada, South Dakota, and other states have been victims of this problem. In each instance, taxpayer dollars were required to augment inadequate financial sureties.

Second, the amount of money required to close the mine and to perform post-closure water treatment can be enormous. The present financial assurance for closure of the Red Dog mine in Alaska is $563 million, most of which is related to water treatment in perpetuity. At closure, the Red Dog Mine plans to treat approximately 1.8 billion gallon/year, which drives the majority of the financial assurance requirement. Perpetual water treatment at Stibnite would add hundreds of millions of dollars to the closure cost, which must be covered by the financial assurance.

The method the agency uses to calculate financial assurance is an important issue that is not covered in the EIS. Public disclosure, and an opportunity to review the cost calculations, is not only appropriate, but the potential financial and/environmental impact on the public is also significant.

The National Environmental Policy Act requires federal agencies to undertake a pre-action analysis in the form of an Environmental Impact Statement (EIS) of potential environmental impacts for “major Federal Actions” that may “significantly affect” the quality of the human environment. 42 U.S.C. § 4332(2)(C).

At the time of the DEIS, the applicable version of the Code of Federal Regulations, Title 40: Protection of Environment defined "human environment" as:

> **§1508.14 Human environment**
>
> Human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. (See the definition of "effects"(§1508.8).) This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment. (emphasis in original)

If a financial guarantee is required to protect environmental values, like clean water and fish, then 40 CFR 1508.14 clearly suggests that the significant financial assurance required by agency regulations should be evaluated in an EIS.[2] When a federal agency intentionally decides to ignore analyzing the requirement for a financial assurance to protect the environment, the message it clearly sends is that it is not confident in its ability to defend its financial assurance calculations to the public. Deferring the analysis of the financial assurance requirement until later in the permitting process expedites the permitting process, as well as make it more difficult, if not impossible, for the public to review and comment on the adequacy of the financial assurance requirement.

Reclamation and Closure costs are not only a significant factor for calculating the capital costs of a mine, but are also a potential major liability to the public if they are not properly calculated and managed. This means reclamation and closure costs could have a major potential impact on the economic environment of both the community hosting the mine, and the taxpayers who would be liable to pay the costs of reclamation and closure if the mining company becomes financially insolvent. Under the NEPA definition of "significant environmental impact," the potential impacts of an inadequately calculated financial assurance for the reclamation and closure of this mining project could have significant economic, social, and environmental impacts. The financial assurance should be analyzed as a part of the FEIS.

In the FEIS, it is important to disclose and analyze the assumptions that will be made in establishing the financial assurance, the amount of post-closure financial assurance needed to protect the public if water treatment is required beyond Mine Year 40. At a minimum, tens of millions of dollars are at issue.

However, in the SDEIS it is noted: "Calculation of the initial bond amount would be

[2] Current regulations define Human Environment to mean "comprehensively the natural and physical environment and the relationship of present and future generations with that environment. (See also the definition of "effects" in paragraph (i) of this section.)." 40 C.F.R. 1508.1(r). This in no way changes the analysis provided herein.

completed following the Record of Decision (ROD) when enough information is available to adequately and accurately perform the calculation." (SDEIS2022).

The information available at this stage of the mine design, and for the FEIS analysis, is more than sufficient to analyze the Reclamation and Closure costs. In fact, those calculations have already been made in the Feasibility Study (M3 2021). The Forest Service has decided not to include them in the FEIS. By doing so, the Forest Service is playing a classic game of "hide the ball."

The DEIS for the Idaho Cobalt Project on the Salmon-Challis National Forest included a draft bond calculation of $44 million dollars.

In response to comments, the Forest Service simply asserts that: "The calculation of reclamation costs and estimated financial assurance amounts and mechanisms would be based on the final approved mine and reclamation plan in the ROD. That bond amount would be specified in a subsequent Forest Service decision following the ROD." FEIS at B-48. Elsewhere, the Forest Service notes that financial assurances will--when determined--meet regulatory requirements. *See* FEIS at B-30, B-75. This hides the ball from the public, and fails to use reasonably available information during the NEPA process to address this issue.

The EPA (FEIS, p. B-46) also highlights the importance of disclosing financial assurance calculations, stating that "EPA continues to recommend that the FEIS provide a more specific discussion of the estimated financial assurance amount and mechanism, particularly given the water management needs at the site (including post-closure). This would provide a basis for evaluating whether the planned reclamation and closure activities would be effective (funded) in the event of a bankruptcy or compliance issues. Other mining EISs have included financial assurance estimates that comport with the draft reclamation and closure plans and acknowledge that the final financial assurance would be determined after the ROD. For example, see the Donlin Gold Project EIS, the Haile Gold Project EIS, and the Northmet Project EIS. This level of disclosure is also important for the SGP. Failure to obtain sufficient financial assurance at the Stibnite Mine Site in the past has resulted in significant, unaddressed contamination at the Site. If not for the NEPA process, there would be no public disclosure of financial assurance estimates. We understand that draft estimates are currently available."

H. Failure to include necessary information on the tailings dam

Another serious flaw in the technical analysis raised by Objectors (*see* SSFS Jan. 9, 2023 Comments at 43; SFEIS at B-60) is the failure to include technical reference documents containing technical specifications and analysis of the tailings dam. The FEIS refers to calculated factors of safety for both static and seismic considerations, and provides the updated seismic risk analysis necessary to make these calculations, but is still lacking the basic engineering specifications for

the dam itself. For example, there is no discussion of the specifications for the fill for the different sections of the dam, and how the quality assurance for dam construction will be performed. Developing this information is standard procedure for an EIS, and since the fundamental dam design does not appear to have changed since at least 2017, there should have been more than sufficient time to develop this information.

In response to comments, the Forest Service ignores this issue by pointing to IDWR as "the proper authority in Idaho to regulate design, construction and operation of dams, including tailings disposal facilities." *See* FEIS at B-60. Even if true, this does not excuse for the Forest Service from taking a hard look in the FEIS at issues related to the tailings dam. Again, the Ninth Circuit has rejected this approach. *See Klamath-Siskiyou Wildlands Center v. BLM,* 387 F.3d 989, 998 (9th Cir. 2004). "A non-NEPA document – let alone one prepared and adopted by a state government –cannot satisfy a federal agency's obligations under NEPA." *S. Fork Band Council v. Dept. of Interior*, 588 F.3d 718, 726 (9th Cir. 2009). *See also Klamath-Siskiyou*, 387 F.3d at 998 (rejecting as "without merit" argument that agency may avoid NEPA where a "facility operates pursuant to a state permit"); *Great Basin Mine Watch*, 456 F.3d at 973 (rejecting argument that requirements or limits in other permits satisfy NEPA's mandate to provide the "quantified analysis" of impacts).

This is particularly concerning in light of the recent decision by the federal district court in Alaska for the proposed Donlin gold mine. *See Orutsararmiut Native Council v. U.S. Army Corps of Engineers,* No. 3:23-CV-00071-SLG, 2024 WL 4349692 (D. Alaska Sept. 30, 2024) (finding NEPA violation for failing to adequately consider risk of tailings spill).

I. Insufficient information about the autoclave

The autoclave is a major component of the ore processing system, as Objectors explained. *See* SSFS Jan. 9, 2023 Comments at 43; FEIS at B-60. It operates at very high temperatures, and requires pure oxygen as a continual input. Any mercury in the ore processed in the autoclave will be volatilized into the autoclave exhaust, along with other potential contaminants, like arsenic. There is no detailed discussion of this system, its emission controls, or how its fuel and oxygen needs will be met. Because the mercury emission control systems must operate at a very high efficiency in order to conform to air quality requirements, monitoring their performance is very important. There is no discussion of the efficiency at which these control systems must operate, or how and when the mercury emission control systems will be monitored. Autoclave operation needs to be given more importance in the FEIS, and a thorough discussion of the monitoring for air emissions from the autoclave, for mercury and any other potential contaminants, needs to be provided.

In response to comments, the Forest Service ignores this issue by pointing to IDEQ as "the proper authority in Idaho to regulate design, construction and operation of ore processing facilities

and their environmental controls." *See* FEIS at B-60. This does not excuse the Forest Service from taking a hard look at issues related to the autoclave in the FEIS and prior to making a decision on the SGP. The Ninth Circuit has explained that federal agencies cannot comply with NEPA by relying on state permitting processes and non-NEPA documents. *See Klamath-Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 998 (9th Cir. 2004). "A non-NEPA document – let alone one prepared and adopted by a state government –cannot satisfy a federal agency's obligations under NEPA.";*S. Fork Band Council v. Dept. of Interior*, 588 F.3d 718, 726 (9th Cir. 2009). *See also Klamath-Siskiyou*, 387 F.3d at 998 (rejecting as "without merit" argument that agency may avoid NEPA where a "facility operates pursuant to a state permit"); *Great Basin Mine Watch*, 456 F.3d at 973 (rejecting argument that requirements or limits in other permits satisfy NEPA's mandate to provide the "quantified analysis" of impacts).

Building on these concerns, we are including an October 2024 technical report from Dr. David Chambers (CSP2 Review of Comment Responses on DSEIS). In our SDEIS comments, we had included Dr. Chambers's recommendation that more details about the autoclave were needed. While the FEIS included some additional information about the autoclave, the FEIS failed to include any information about the oxygen supply or mercury emissions:

> Section 4.3.2.2 Ozone and Secondary PM2.5 Analyses, referenced in the Forest Service response, contains no mention of mercury. In the FEIS, the description of the autoclave mercury removal system consists of one sentence, "*Control of the autoclaves include the uses of a venture scrubber, vent gas cleaning tower, vent gas stream condensing tower and at least one sulfur-impregnated activated carbon filter.*" (FEIS, p. 4-42) Likewise, in the FEIS Air Quality Specialist Report (2023), while there is extensive discussion of the modeling that produced the estimate of annual mercury emissions, including from the autoclave, there is no discussion of how efficient the mercury removal system for the autoclave will be at the Stibnite Project, or how often mercury emissions will be monitored for any of the mercury emission sites at Stibnite.

Proper management of mercury, a neurotoxin, is critical to protect human health and the environment. The Forest Service failed to disclose sufficient information about mercury management, removal, and monitoring, particularly with regard to the autoclave. To remedy this, the Forest Service should discuss how efficient the mercury removal system for the autoclave will be, how often mercury emissions will be monitored for all of the mercury emission, and the underlying assumptions for the air quality modeling.

J. Additional information needed about underground exploration

As Objectors stated (*see* SSFS Jan. 9, 2023 Comments at 43-44; FEIS at B-60), a mile-long exploration tunnel is being authorized as part of the FEIS. Underground exploration could potentially further impact water quality and quantity, beyond what is already proposed for above

ground activities. Drilling this exploration tunnel involves the surface disposal of rock with undefined geochemical properties, which could affect the type and level of contaminants that leach from this rock. The lack of information, data, and analysis provided in the FEIS on the potential for underground exploration is blatantly insufficient to authorize an activity of this scope.

In response to comments, the Forest Service stated:

> SDEIS Section 3.9.4.2 describes the geochemical characteristics of proposed mined materials. These characteristics are associable with lithology as determined from testing drill hole samples.
>
> Because the Scout Decline was included in the proposed mine plan, it was analyzed in the EIS. Activity beyond the currently proposed decline installation and exploration drilling would require additional permitting through NEPA.

FEIS at B-60.

Inferring characteristics from other locations and limited drill samples of the underground area is not sufficient analysis to permit underground exploration or mining. Stand alone exploration tunnels such as this have typically warranted their own NEPA analyses, such as for the underground exploration and development of the Idaho Cobalt Project, in which the Forest Service disclosed the geochemical properties of the underground material, discussed how this material was going to be segregated, handled, stored or backfilled, and included extensive information on water quality monitoring and water treatment related to underground mining.

There are cautionary tales right here in Idaho as to why proper analysis of underground mining is needed. In 1994, the Boise National Forest permitted underground exploration of the Talache Level 900 adit through a Categorical Exclusion without taking a hard look at water treatment needs. The Forest Service did not require a bond for water treatment and has been entirely reliant on the absentee operator to deal with this discharge. Under a court-ordered settlement, the operator obtained an NPDES permit for this discharge in 2009 but has been unable to effectively treat this water since, leading to frequent arsenic and iron discharge concentration violations. The operator was subsequently penalized $2 million dollars for Clean Water Act violations and ordered to come into compliance. More recently, since the spring of 2020, arsenic concentrations within discharge from the 900 adit have significantly increased exceeding modern permitted arsenic standards by as much as 12,000%. Despite court order and recent letters from the Boise National Forest to the mining company, the site continues to violate the Clean Water Act to this day. The Payette National Forest needs to fully address all aspects of the underground exploration for the SGP.

K. Additionally, the FEIS includes new data that was not provided during the DEIS or SDEIS for public review and comment.

1. New Sediment Data

The FEIS at 4-281 includes new information and analysis (not disclosed at the time of the SDEIS) on sediment generation, delivery and accumulation in streams associated with travel activities with the SGP: "The Geomorphic Roads Analysis and Inventory Package Lite (GRAIP Lite) model was used to simulate sediment generation and sediment delivery to streams by travel activities associated with the SGP (Tetra Tech 2024). Based on these model results, sediment accumulation in streams is also modeled. The GRAIP Lite model used terrain data and selected parameter values representing road materials, maintenance level, and usage to calculate sediment quantities."

This new information was not provided during the DEIS or SDEIS for public review and comment, and therefore violates NEPA. This analysis is also inadequate because it acknowledges major deficiencies:

> 1) It fails to adequately model new segments of the Burntlog Route. Tetra Tech 2024, (p. 9) states that "It should be noted that over the course of the construction period (2 years), new segments of the Burntlog Route will be constructed and will exist by the end of the 2 year period. However, it is difficult to accurately model sedimentation rates during a period of changing conditions, thus the additional length of roadway is not included in the Construction Scenario 2 sedimentation modeling."
>
> 2) The model uses a road surface treatment (BST) to model the Burntlog Route that doesn't apply to the route. BST is not currently proposed or approved for project use. As stated in Tetra Tech 2024, p. 25, "An accurate estimate of road sedimentation during operations is limited by the capacity of the GRAIP Lite model to interpret the range of input values for road surface types (specifically, the effectiveness of BST on the Burntlog Route)." Instead, it uses averages of two different scenarios - neither of which is an accurate representation of SGP plans.
>
> 3) The report results include analysis of sediment loading at particular watershed crossings, however the report fails to identify the rivers/streams that are receiving the sediment. In some cases the watershed crossings (bridges/culverts, etc.) are close together - indicating more significant impacts to certain stream segments. Yet, the streams aren't identified, and the data/analysis isn't provided in a format that is necessary to understand potential impacts to water quality and aquatic life.

4) The model doesn't account for climate change, and therefore underestimates potential impacts.

XII. The FEIS and DROD Have Not Ensured That All State and Federal Environmental and Natural Resource Requirements Have Been Met

Under federal law and regulation, the Forest Service cannot finish its review of, or approve any activity, until it has been demonstrated that all requirements of state and federal law and regulation have been met. Under NEPA, the "Environmental impact statements shall state how alternatives considered in them and decisions based on them will or will not achieve the requirements of sections 101 and 102(1) of NEPA, the regulations in this subchapter, and other environmental laws and policies." 40 CFR §1502.2(d).

The Organic Act, 36 C.F.R. Part 228 regulations, FLPMA and other laws noted herein require compliance with all state and federal environmental requirements (such as air and water quality standards and requirements). *See* 36 C.F.R. §228.8. As noted, NEPA requires that the agency verify such compliance during the NEPA process.

To date, that has not been shown. For example, regarding air quality, the project's air permit is currently on remand due to errors and inadequacies in assessing arsenic emissions.

This also applies to Perpetua's failure to secure the necessary water rights to operate the project. Currently, the project has not secured those rights, which are under challenge.

The lack of a water right to operate the mine requires the federal government to deny the proposed project. In *Far West Exploration, Inc*, 100 IBLA 306, 309 (1987), the Interior Department stated that "there was no choice for BLM but to reverse itself and rescind approval of [the claimant's] mining plan" since the company "failed to establish that it had appropriated a water right to accomplish the mining use described by the [claimant's] plan."

Further, since Perpetua and the USFS rely on the company's asserted "rights" under the Mining Law on its claims, those rights must satisfy the applicable legal requirements. In order to have a valid mining claim under the Mining Law (and any associated millsites relying on valid mining claims), it must contain the discovery of a valuable mineral deposit. 30 U.S.C. §22. Without a verified water right to support potential mining, a discovery does not exist. As held by the Interior Department:

> Beyond a mere showing of [mineral] values, there must also be a showing that the mining claimant has a reasonable prospect of success in mining and removing the mineral at a profit. *See In re Pacific Coast Molybdenum Co.*, 75 IBLA 16, 90 I.D. 352 (1983). For example, if water is absolutely essential to the mining and milling processes, such that without it there is no possibility of successfully mining the

> claim, the presence or absence of water will be determinative of the existence of a discovery, quite apart from the values disclosed by sampling. *See United States v. Osborne, 28 IBLA 13, 33-35 (1976), aff'd sub nom., Bradford Mining Corp. v. Andrus*, Civ. No. LV-77-218 (D. Nev. Mar. 15, 1979).

Desert Survivors, 80 IBLA 111, 119 (Burski, J. concurring).

Regarding Idaho mining regulations, the FEIS and DROD do not ensure that all state requirements have been met. For example, the FEIS at 4-87 states that "All the SGP-related disturbance at the mine site would be subject to reclamation activities, with the exception of approximately 278 acres associated with the Hangar Flats high walls, the West End pit lake and high walls, Yellow Pine pit high walls, and the Stibnite Lake feature. These areas would remain a permanent commitment of soil resources (a large portion of which would occur on private patented mining claims). For all other areas in the activity area, disturbance would be subject to the reclamation activities detailed in the Reclamation and Closure Plan (Tetra Tech 2019a, 2021a)." The Reclamation and Closure Plan (p. 3-5) also states that reclamation will not be conducted on pit highwalls, Stibnite Lake and the Midnight, West End and Plant Site Ponds.

However, according to the Idaho Regulatory Agency (FEIS, p. B-157), "While the Forest Service may look at the 278-acre disturbances as a total soil resource commitment (TSRC), the IDL will require grading, recontouring and seeding where applicable on all disturbed land. Highwall benches can be reclaimed by hauling in quality Growth Medium and reseeding with grasses, shrubs, and conifers. Ponds and lake banks can be re-contoured, re-graded, and seeded to prevent erosion. Proper drainage systems need to be built into the lake and pond configuration to reduce sedimentation. Please note that the Idaho Department of Lands will require an application for mining operations under Idaho Administrative Procedures Act 20.03.02 – 070: Application Procedure and Requirements For Other Mining Operations Including Hardrock, Underground and Phosphate Mining. The IDL will also require an application under IDAPA 20.03.02 - 071: Application Procedure and Requirements for Permanent Closure of Cyanidation Facilities. Reclamation activities will be subject to IDAPA 20.03.02, and not just disturbance subject to the reclamation activities detailed in the Reclamation and Closure Plan (Tetra Tech 2019a, 2021a). This is reiterated (FEIS, p. B-63) by the Idaho Regulatory Agencies, which state that "the referenced Reclamation and Closure Plan (Tetra Tech 2021a) has not been submitted to IDL for review as part of the mine plan reclamation application, and may not meet all requirements of IDAPA 20.03.02."

At a minimum, the FEIS and DROD do not analyze or ensure that these requirements have been and will be met, in violation of NEPA, the Organic Act, the Part 228 regulations, and other requirements noted herein and in the Objectors' previous comments.

Importantly, the Forest Service cannot rely on current or future state or other agency permitting processes or approvals as a substitute for the USFS' NEPA duties. "'A non-NEPA document ... cannot satisfy a federal agency' obligations under NEPA'. … and the reference to the

Project's Clean Air Act permit did nothing to fix that error." *Great Basin Res. Watch v. BLM*, 844 F.3d 1095, 1104 (9th Cir. 2016) (quoting *S. Fork Band Council v. Dept. of Interior*, 588 F.3d 718, 726 (9th Cir. 2009). "[N]or have we allowed federal agencies to rely on state permits to satisfy review under NEPA." *Env'l Defense Ctr. v. Bureau of Ocean Energy Mgt.*, 36 F.4th 850, 874 (9th Cir. 2022).

XIIII. THE FEIS AND ROD FAILED TO RESPOND TO MANY SUBSTANTIVE COMMENTS SUBMITTED BY THE OBJECTORS.

As stated in Objector's 2023 Comment Letter and Objector Comment Letter #2 (January 10, 2023), the following expert comment reports and comments were submitted as part of the public review period for the DEIS and SDEIS:

- Maest (2020, 2022)
- O'Neal (2020)
- Faurot (2020)
- Newberry (2020, 2022)
- Gregory (2022)
- Objector comment letter #2 (ICL and Earthworks, January 10, 2023)

After reviewing Appendix B of the FEIS, it appears that these expert comments were not reviewed nor did the FEIS provide any response to these comments. This violates NEPA, by failing to adequately involve the public in the decision-making process and failing to take a hard look at the SGP's likely impacts.

XIV. THE FEIS AND DROD FAILED TO CONSIDER NEW INFORMATION, ANALYSIS AND MITIGATION OPTIONS RELATED TO THE IMPACTS OF SGP TO AQUATIC LIFE, INCLUDING ESA-LISTED SPECIES, AS IDENTIFIED IN THE BIOPs.

The U.S. Fish and Wildlife Service and National Marine Fisheries Service issued Biological Opinions (BIOPs) after the FEIS and DROD were released.[3] These documents include new information and analysis on the impacts to fish, including ESA-listed species, and other aquatic life from the SGP that were not included in the SDEIS, FEIS and DROD and were not subject to public review.

The BIOPs also incorporate new mitigation measures, which include significant changes to the proposed project (e.g., a new water treatment plant for West End Creek) that NMFS identified

[3] U.S. Department of the Interior, Fish and Wildlife Service, Biological Opinion for the Stibnite Gold Project, 2024-0084691-001, September 5, 2024.
U.S. Department of Commerce, National Marine Fisheries Service, Endangered Species Act (ESA) Section 7 (a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation Act Essential Habitat Response, Stibnite Gold Project, October 7, 2024.

as necessary to comply with the ESA that the Forest Service failed to consider or analyze in the SDEIS, FEIS and DROD. As a result, the FEIS fails to consider important aspects of the problems and relevant information related to listed species, and fails to comply with the requirements under NEPA, the Organic Act and the 228 regulations.

XV. IMPACTS TO RESOURCES

A. GROUNDWATER AND SURFACE WATER HYDROLOGY

Objectors 2023 Comment letter (p. 97-98) as well as Semmens (2022) submitted therewith provided comments that the MODPRO2 numerical groundwater model (the Stibnite Hydrologic Site Model (SHSM)) did not correlate what the SHSM results mean in terms of potential impacts to sensitive ecosystems. Specifically, the SHSM did not estimate the volumes of impacted groundwater nor the rates of impacted groundwater movement in a manner that could identify the magnitude and timing of potential impacts to sensitive downstream ecosystems. Additionally, Objectors stated that the SHSM report did not show drawdown of the water table below ten (10) feet, citing that the average absolute model calibration error is nine (9) feet and that predicted drawdown less than ten (10) feet is "highly uncertain." Semmens (2022) at 11. Drawdown of the water table by up to ten (10) feet may impact sensitive ecosystems that rely on spring discharges and/or baseflow and that may be significantly reduced by drawdown less than ten (10) feet. *Id.*

In response, the Forest Service justified using the 10-foot contour because natural fluctuations in water levels, particularly in fractured rock aquifers, commonly exceed 10 feet and the 10-foot drawdown cone has been used as the threshold for defining the potential drawdown effect in numerous mining EIS documents for over 25 years FEIS at B-232. Further, the Forest Service acknowledged that "numerical models could be used to provide predictions of drawdown of less than 10 feet and that drawdown of less than 10 feet could significantly impact flow in some perennial seeps, springs, and streams," and thus concluded that "the extent of the model domain and the lack of detailed hydrogeologic data outside the mine exploration areas make smaller scale drawdown predictions in these areas unreasonable. *Id*.

The Forest Service's response is inadequate. First, persistent drawdown of the water table up to 10-feet superimposed onto natural fluctuations of the water table would change the natural cycles of water level fluctuations to which ecosystems may be currently adapted—and likely masks reasonably foreseeable impacts to the groundwater system and associated downstream springs, seeps, and streams. The SHSM was conducted as a no-mine model scenario, which forward-ran the model without the simulation of mining activities to get a baseline from which to subtract the mining impacts. The SHSM has monthly stress periods and included components to simulate the streams, including base flow discharge. The calibration of the SHSM should reasonably represent current natural fluctuations of the water table, and the no-mine forward model scenarios should include reasonable future natural fluctuations of the water table, from which to subtract the impacts of mining.

Second, use of a 10-foot drawdown cone to quantify drawdown effects in numerous mining EIS documents is an arbitrary measure of protection of ecosystems at this mining location because there are site-specific characteristics, such as proximity of wells to surface water, the confined topography of the site, and other aquifer characteristics. See Semmens (2022) at 11.

Third, it is unreasonable to extend the SHSM domain into areas without proper hydrogeologic characterization to allow for meaningful impact analysis; however, the 10-foot drawdown contour shown in the SHSM does not extend to the model domain in many areas, including areas of mapped springs and seeps. In other words, without extending the model domain, lower levels of drawdown could be shown with the existing SHSM. Additionally, the downgradient bound of the SHSM is too close to the Yellow Pine pit, as indicated by the 10-foot drawdown contour reaching the boundary, a comment raised by Semmens (2022) at 4, and therefore does not allow for proper testing of the impacts from dewatering the pit.

As referenced in Objectors' 2023 Comment Letter (p. 97-98), Semmens (2022) provided specific comments on the SHSM, including:1) the domain of the SHSM is too close to the Yellow Pine pit which can interfere with drawdown predictions; 2) justification was not provided to indicate that the model grid represents the pit geometries, which is important for proper estimation of dewatering rates, and rate and ultimate level of pit lake formation; 3) the SHSM report inadequately confirmed the reasonableness of modeled vertical hydraulic gradients and the appropriateness of the model layer thicknesses; 4) the sensitivity analysis of modeled values of hydraulic conductivity was inadequate, especially in the area of Midnight Basin, near the West End pit which is shown in the SHSM to be a flow-through pit; and 5) there is bias in the model calibration including at low streamflows, in bedrock monitoring wells, and a spatial bias near the Yellow Pine pit.

These comments were never addressed by the Forest Service.

Objectors also submitted comments (p. 98) that "There was no adoption of science-based widely-available forecasts of climate change in the MWB and SWWB models and simulations that looked out as much as 100 +/- years into the future and informed the Modflow 6 simulations. Thus, there is 100 +/- years worth of bias built into not only these outputs but also in the Modflow 6 simulation outputs, because MWB model outputs of runoff and recharge, used as Modflow 6 inputs and SWWB inputs are based on MWB climate inputs of temperature and total precipitation – with snowfall derived, presumably, from these two time series that start nearly 120 years ago. The temperature and snowfall biases that likely result are unacceptable. The precipitation bias that likely results is small and perhaps acceptable. What was done should not be characterized as the "best available science."

In response, the FEIS (p. B-232) states that, "Quantitative incorporation of climate change forecasts is outside the scope of this analysis. The effects of climate change are described qualitatively in SDEIS Section 4.4.2.2.Sensitivity analyses were performed on the SHSM model

regarding model inputs and assumptions related to climate change that were material to the predictions of dewatering pumping rates, the extent of dewatering drawdown, and groundwater recovery following the cessation of pumping. These predictions were utilized to assess Project effects on groundwater quantity. Uncertainty around these predictions was described in Section 4.8.2.2 with monitoring and modeling update requirements described in Section 4.8.3. Model documentation including sensitivity analyses used to develop the Water Quantity Specialist Report and the SDEIS are provided in their reference sections and were provided by Perpetua to the Forest Service."

This is inadequate. NEPA requires agencies to take a hard look at the potential impacts of the SGP, which must incorporate climate change in its analysis. Data/analysis of climate forecasts are readily available, and the FEIS fails to demonstrate that such a quantitative analysis is outside its scope. In addition, the Objectors submitted comments from Schlinger (2023), which were never addressed in the FEIS or DROD.

B. GROUNDWATER & SURFACE WATER QUALITY

1. The FEIS includes new data that was not provided during the SDEIS for public review and comment.

The FEIS at 4-281 includes new information and analysis on sediment generation, delivery and accumulation in streams associated with travel activities with the SGP: "The Geomorphic Roads Analysis and Inventory Package Lite (GRAIP Lite) model was used to simulate sediment generation and sediment delivery to streams by travel activities associated with the SGP (Tetra Tech 2024). Based on these model results, sediment accumulation in streams is also modeled. The GRAIP Lite model used terrain data and selected parameter values representing road materials, maintenance level, and usage to calculate sediment quantities."

This new information was not provided during the DEIS or SDEIS for public review and comment, and therefore violates NEPA.

2. The effects of climate change are not included in the water models.

As stated in the Objectors Comments (Maest 2022, pgs 1, 3, 4, 20): Climate change needs to be quantitatively evaluated in the water balance and Site Wide Water Chemistry (SWWC) models that are used to predict future water quality resulting from the project.

In response, the FEIS (B-234) stated: Climate change was not explicitly incorporated into numerical water chemistry modeling. SDEIS Section 4.4.2.2 qualitatively describes climate change implications for water quality.

And in response to Samuel Penney on a similar topic: Quantitative description of potential climate

change effects on precipitation and evaporation is outside the scope of the EIS analysis. Qualitative descriptions of the potential effects of climate change on the affected environment are included in SDEIS Section 4.4. (pg. B-277)

The FEIS response is inadequate. Quantitative assessment of the effects of climate change must now be included in the scope of the EIS analysis. As noted in Objector SDEIS comments (Maest, 2022), Executive Order 14008 requires the Chair of the Council on Environmental Quality and the Director of the Office of Management and Budget to ensure that Federal permitting decisions consider the effects of greenhouse gas emissions and climate change. Additional orders may be applicable at this point in time. Neither the site-wide water balance model report (Perpetua, 2021g by B&C) nor the SWWC report included in the FEIS (SRK, 2021b) mention climate change. It is not adequate to use the past climate record to predict future climate conditions. Climate change will change precipitation amounts and timing, and that will strongly affect water balance and water quality. The climate change specialist report (USDA Forest Service, 2023b) only addresses the impacts of the project on climate change, not the impacts of climate change on site water balance, water chemistry, or facility design and sizing. Climate change will increase precipitation variability, which will require mine facilities to be constructed to withstand larger storms to avoid overtopping and the movement of mine-influenced waters (MIW) into groundwater and surface water resources.

The effects of climate change on water quantity and quality could be handled quantitatively in the water models. For example, MIKE SHE is an integrated climate-groundwater-surface water code that is routinely used to incorporate climate change. As noted on their website (DHI, 2024), MIKE SHE enables users to assess the impact of various factors like land use changes, climate variability, and water management interventions on water resources and ecosystems and allows the user to predict future water resource challenges with robust simulations of climate change impacts on hydrology.

The Forest Service should require Perpetua to use an integrated hydrogeologic/hydraulic code, such as MIKE SHE, to quantitatively evaluate the potential effects of increased future climate variability on the Project, and mine facilities should be redesigned to protect against overtopping in future storm events.

3. The proposed water treatment approach is untested

As stated in Objector Comments (Maest 2022, pgs 1, 4, 20, 21), bench-scale testing of the proposed mine water treatment methods is needed; the current evaluation only uses a desk study with outdated references.

In response the FEIS (B-234) states that: The coprecipitation water treatment technologies proposed by the Project have been used effectively for mine water treatment for more than 20 years. Therefore, there is a reasonable expectation that they would be able to achieve water treatment objectives.

The FEIS response is inadequate. The response does not indicate whether coprecipitation is effective for the specific COIs at the Stibnite Gold Project. The predicted maximum antimony concentrations in water treatment plant influent water (FEIS, pg. 4-231, Table 4.9-9) are the highest I (Maest) have ever seen in my many years of working on mine water chemistry. In addition, predicted influent concentrations of arsenic, fluoride, and nitrate/nitrite are highly elevated, as shown in Table 1, and these constituents and antimony are not easy to remove and often need specialized approaches that are not considered in the FEIS.

Table 1. WTP influent sources and their predicted maximum arsenic, boron, fluoride, antimony, sulfate, and nitrate+nitrite concentrations, using results from SRK 2021b,* Appendix D

Source[1]	**Mining Years**	**As (mg/L)**	**F (mg/L)**	**Sb (mg/L)**	**SO_4 (mg/L)**	**NO_2+NO_3 (mg/L as N)**
Hangar Flats Pond	-2 to 4	22	9.0	7.2	576	298
SODA Pond	3 to 17	6.4	9.0	2.8	576	307
Plant Ponds	-1 to 17	6.4	3.3	2.8	316	14
West End Pond	-1 to 10	31	31	0.29	2,298	3,874
Midnight Pond	-2 to 12	1.07	0.65	0.118	35	69
Predicted maximum WTP influent concentrations[2]		30.08	5.6	8.51	7,508	401
Strictest water quality standard used in the water quality analysis[3]		0.010	2	0.0052	250	10

1 The five sources in this table are the contact water collection ponds listed as inflows to the water treatment plant in SRK (2021b, Table 9-1)
2 FEIS, pg. 4-231, Table 4.9-9, for all phases of mining; SO4 concentrations of 7,508 mg/L is from tailings decant solution chemistry (FEIS, Table 3.8-7)
3 FEIS, pg. 3-149, Table 3.9-1
NA not applicable
** Note that the wrong SRK 2021b reference is cited in the FEIS (pg. 7-39). It should be the 2021 SRK SWWC model report from October rather than the 2021 SRK SWWC model sensitivity analysis report DRAFT from November.*

It appears that the comment reviewers did not read Maest 2022 (P. 21), which discusses the shortcomings of this approach and new options: "An alternative antimony and arsenic removal approach by electrocoagulation using iron-aluminum electrodes is described by Song et al. (2014). An article by Inam et al. (2019) describes the effects of water chemistry on antimony removal by chemical coagulation and concludes that oxidized dissolved antimony (Sb(V)) removal did not occur at alkaline pH values. And issues associated with removal of antimony using iron-based

coagulants was examined by Cheng et al. (2020), who found that antimony removal was inhibited by the presence of humic acids and phosphate, as well as by oxidation and aeration. This last finding contradicts the approach proposed by Brown and Caldwell (2021a, Section 8.7.2) that includes an initial oxidation step."

No antimony speciation results are provided, but it is highly likely that oxidized antimony (As(V)) will be present in MIW entering the water treatment plant (WTP), and, using this treatment approach, even reduced antimony will become oxidized, resulting in higher effluent antimony concentrations than predicted in the FEIS (FEIS, pg. 4-232, Table 4.9-10).

In addition, the WTP should have a surge pond or similar to allow mixing of higher and lower concentration MIW. A surge pond to handle and store MIW entering the WTP does not exist. The WTP is unprepared for such high concentrations.

At a minimum, Perpetua should prepare water with predicted maximum concentrations of COIs and do a bench scale experiment to see the effectiveness of the proposed and untested treatment system.

4. Comments on the Site Wide Water Chemistry (SWWC) Model

a. Use of averages underestimates water quality impacts and WTP influent values

As stated in Objector Comments (Maest, 2022, pg. 3, 17, 21): The site-wide water chemistry (SWWC) model relies on inputs from the geochemical characterization program, source terms, the water balance model, and water treatment plant (WTP) effluent quality to predict water quality resulting from development of the Stibnite Gold Project. The model predicts average annual and average monthly concentrations for site water quality and uses average precipitation, runoff, and infiltration without considering climate change. The extensive use of averages will underestimate potential maximum concentrations that will require treatment or management.

This comment was included by Bonnie Gestring, Earthworks, as Comment 82 (FEIS, p. B-234), but no response was provided.

The FEIS is inadequate. The FEIS did not change its approach to using averages. The use of average annual and average monthly predictions for site water quality and average precipitation, runoff, and infiltration without considering climate change and maximum concentrations derived from laboratory leach tests will underestimate potential maximum influent concentrations that will require treatment or management. Importantly, because of the use of average water quantity and quality and minimization of source terms (see Comment 6 below or Section 2.3.3 of Maest 2024), the "maximum" influent concentrations presented in FEIS Table 4.9-9 are not technically maximum values – they are instead maximum average values, and the title of this table should be changed to reflect its derivation. Using averages to derive input values means that the WTP cannot

be relied upon to meet target effluent concentrations. The use of averages for meteorology and hydrologic characteristics also means that the mine facilities will not be designed to withstand the predicted extremes in precipitation expected from climate change. Designing for unrealistic smaller storms will result in overtopping, increased infiltration to groundwater, and transport of MIWs to surface waters.

b. Important mine contaminants are not included in the model or in water treatment, and errors exist in the FEIS target effluent concentration table

As stated in Objector Comments (Maest, 2022, p. 3): The SWWC does not evaluate the effects of ammonia or selenium. Ammonia will result from blasting of the open pits, and selenium can be leached from mined materials. The effluent discharge permit (IPDES) for release of treated water to Meadow Creek may require monitoring and permit limits for both of these mine-related contaminants. The treatment evaluation does not consider the removal of ammonia or selenium.

The primary contaminants of interest (COI) are arsenic, silver, cadmium, copper, mercury, nickel, nitrate/nitrite, lead, antimony, thallium, and zinc, and these are the only constituents that were evaluated for their potential presence in treatment plant influent water quality during operation. However, the Water Management Plan (Brown and Caldwell, 2021a, p. 8-10) notes that the Idaho Pollution Discharge Elimination System (IPDES) permit limits and/or monitoring requirements may be required for temperature, pH, total suspended solids, ammonia, cyanide, cadmium, and selenium. HCT development rock and tailings samples also leached selenium (SRK, 2021b, p. 33 and 35). (Maest, 2022, pg. 18)

In response the FEIS (P. B-234) states that: Project effects on selenium and ammonia concentrations are described in SDEIS Section 4.9.2.2.

The FEIS response is inadequate. The Objector comment is also about the importance of including selenium and ammonia removal targets for the WTP, and of ensuring that the WTP can remove other COIs, and this part of the comment was not responded to. It is clear that selenium, ammonia, and other mine-related COIs will be present in MIWs, but the FEIS does not consider them in the treatment scheme. Excluding these COIs from treatment threatens groundwater and surface water quality in the Project area.

The FEIS (pg. 4-233) states “Constituents that do not have a target effluent concentration were assumed to be unaffected by the treatment process.” Target effluent objectives are listed in Table 4.9-10 (FEIS, 4-232). No targets are included for aluminum, barium, chloride, fluoride, manganese, or selenium, so we must assume that the WTP would not remove these COIs. Aluminum, fluoride, manganese, and selenium were elevated above applicable water quality criteria in the humidity cell, meteoric water mobility, and/or the tailings decant water chemistry test results (FEIS, Tables 3.9-8, 3.9-6, 3.9-7, respectively). Fluoride exceeded applicable standards only in the tailings decant solution, and chloride was elevated in these same samples (57.5 mg/L; FEIS, Table 3.8-7). Cyanide was also elevated above applicable standards in the tailings decant

samples. Although ammonia has a listed target effluent concentration of 2.1 mg/L as N in FEIS Table 4.9-10, its removal in the WTP is not specifically evaluated.

Ammonia

The primary source of ammonia in MIWs is blasting. None of the geochemical tests included materials that were derived from blasting, so of course it would not be present in the test results. However, blasting will elevate both ammonia and nitrate concentrations during operations. Leakage from open pits and mine wastes to groundwater will cause blasting residues (ammonia and nitrate) to reach groundwater resources. Ammonia should have been included in the groundwater chemistry model in the FEIS, but it was not (FEIS, pg. 4-197 – 4-198). Ammonia is also a concern for groundwater-surface water interactions – where groundwater discharges to surface water – because it can adversely affect fish, especially salmonids and early life stages, at low concentrations, depending on the pH and temperature of the receiving water (IDEQ, 2024a; US EPA, 2013).

The predicted maximum WTP influent concentrations of ammonia during construction, operations, and post-closure are all listed as <0.3 mg/L as N in Table 4.9-9 in the FEIS, based on the incorrect assumption that any ammonia from blasting will be oxidized to nitrate, as described in Brown and Caldwell (2021b).

According to Brown and Caldwell (2021b, pg. 8-10), "Ammonia is not shown in Table 8-5 because it was not modeled in the SWWC model. Literature data from many other open pit mines show MIW ammonia concentrations of less than 0.3 milligrams per liter (mg/L) as nitrogen (Ferguson and Leask 1988), which is lower than the treatment objective in Table 8-9. Ammonia concentrations in the treatment influent will be monitored, and the treatment process will be modified if needed." The Ferguson and Leask 1988 document is not listed in the references in the Brown and Caldwell 2021b report. After some searching, the Objectors found the report on a Canadian government website and have included it in the references (Ferguson and Leask, 1988). First, this report is for surface coal mines, not hardrock metal mines such as Stibnite. Further, the results in the report discuss notable percentages and concentrations of ammonia in effluents from the coal mines examined. Three excerpts from the report are informative:

> Most of the nitrogen in effluents was present in the nitrate form (average 87%) with lesser amounts as ammonia (11%) and nitrite (2%). At the receiving water sites upstream of the mines, about 47% of the inorganic nitrogen was present as nitrate and 43% and 9% was present as ammonia and nitrite, respectively. Downstream of the mines, 87% of the inorganic nitrogen was present as nitrate, 10% was present as ammonia, and 3% was present as nitrite. The increase in the proportion of nitrate downstream of the mines compared to upstream reflects the large nitrate loadings from mine effluents. Since explosives contain large amounts of both nitrate and ammonia, the relatively high proportion of nitrate in effluents indicates significant conversion of ammonia to nitrate (nitrification) occurs between the source of nitrogen

> (pits and waste dumping) and the effluent discharge to receiving waters. Predictions for other mines should assume that the majority of inorganic nitrogen released will be present as nitrate. (Ferguson and Leask, 1988, pg. iv)

and

> For all receiving waters, about 69% of the inorganic nitrogen was present as nitrate with 25% and 11% as ammonia and nitrate, respectively. (Ferguson and Leask, 1988, pg. 115)
> and
>
> Table 29 in Ferguson and Leask, 1988, show mean ammonia concentrations (mg/L as N) in Kootenay coal field mine "effluents" ranging from 0.008 to 1.531 mg/L, with only 5 of the 14 data points <0.3 mg/L, and many of the "effluents" are in creeks draining the mine rather than in effluents (one is noted as being upstream).

Adding ammonia removal to the WTP could require a new circuit – it may not be removed by the proposed approach.

A more appropriate comparison is the Buckhorn Mine in northern Washington State. The Buckhorn Mine is a small, underground gold mine that closed in 2017 and if anything used lower amounts of blasting agents than what will be required for blasting open pits at the Stibnite Project. Buckhorn WTP influent ammonia concentrations from the start of mining (January 2008) to February 2014 averaged 4.90 mg/L as N, with a range of 0.01 to 39.3 mg/L as N (n = 156) (Appendix 1). Buckhorn WTP influent nitrate+nitrate concentrations (mg/L as N) averaged 20.4 mg/L and ranged from 0.43 to 106 mg/L (n=388). Nitrate+nitrate concentration results are available from December 2007 to December 2023 (in the most recent data delivery). Note that reporting of influent ammonia concentrations was discontinued in 2014, but monitoring for ammonia continued in the WTP effluent and groundwater and surface water monitoring locations. Figure 1 shows that during operations (2008-2017) WTP influent concentrations of nitrate+nitrite and ammonia exceeded the strictest potentially applicable water quality standards/criteria for the Stibnite Project (10 for nitrate/nitrite and 2.1 for ammonia, mg/L as N). Influent nitrate+nitrate concentrations at the Buckhorn Mine were up to 10 times higher, and ammonia concentrations were up to 18 times higher, than the strictest potentially applicable Stibnite water quality values. As expected, influent nitrate/nitrite concentrations dropped after mining ceased, but during operations, concentrations of nitrate/nitrite and ammonia were quite elevated. Adding ammonia removal to the Stibnite WTP could require a new circuit – it may not be removed by the proposed approach. The Stibnite FEIS does not address the removal of ammonia in its WTP, and this lack of technical attention puts aquatic life at risk in Project receiving waters.

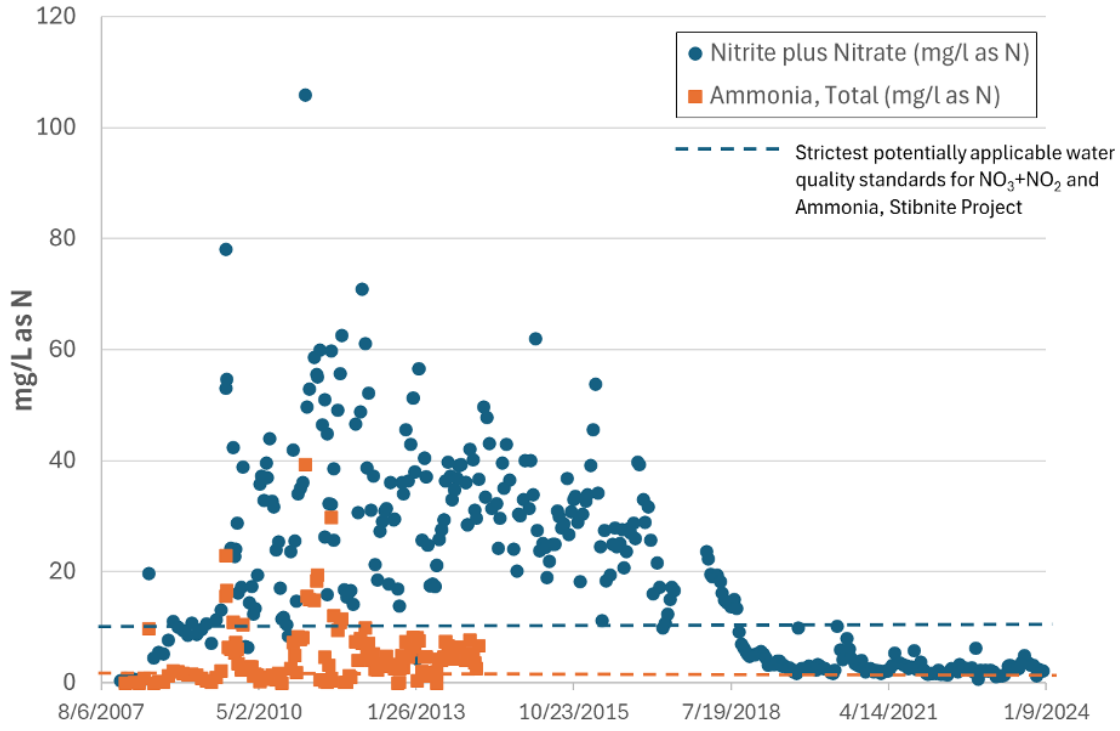

Figure 1. Buckhorn Mine WTP influent water quality for nitrate+nitrate and ammonia concentrations from the start of mining (January 2008) to December 2023. Stibnite water quality standards are included as dashed lines (10 mg/L as N for nitrate+nitrite and 2.1 mg/L as N for ammonia).

Selenium

Selenium was detected in baseline bedrock and alluvial groundwater samples (B&C, 2021b, Tables 3-12 and 3-13). According to the report, "There were no detections of selenium in any humidity cell samples; therefore, provisions for selenium treatment have not been contemplated in this WMP" (B&C, 2021b, footnote to Table 8-5). However, the baseline geochemical characterization report states "Other parameters including mercury and selenium were predominantly only elevated during the initial first flush (weeks one to four) (SRK, 2021a, pg. xviii)." Therefore, the decision to ignore the first flush concentrations has an important effect on what contaminants are considered for treatment in the WTP. Selenium removal could require a separate treatment approach, which would increase costs for Perpetua.

Also note that the FEIS Table 3.9-1 lists the selenium surface water quality standard value used in the water quality analysis as 0.0015 mg/L, but all the tables in Chapter 4 list the Strictest Potentially Applicable Surface Water Quality Criteria for selenium as 0.0031 mg/L, as does Table 3.9-6a and b (average MWMP results). No explanation for the difference is provided. The Idaho surface water rule (IDEQ, 2024a) appears to follow the US EPA criteria for selenium (US EPA,

2021), which prioritizes egg/ovary concentrations over fish tissue (in mg/kg) over water column concentrations (IDEQ, 2024b).

The FEIS includes a maximum predicted influent selenium concentration during construction, operations, and post-closure (Table 4.9-9), but it does not list a WTP effluent target (Table 4.9-10). As noted above, if a COI does not have a WTP effluent target, it is assumed to be "unaffected" by the treatment process (FEIS, pg. 4-233). There is ample evidence that selenium is leached from mined materials, and an effective removal mechanism should be included in the WTP, especially because its aquatic life criterion value is so low. In fact, the strictest potentially applicable surface water quality criterion for selenium in FEIS Chapter 4 tables is incorrect. It is listed as 0.0031 mg/L (see, e.g., FEIS Table 4.9-3), and it should be 0.0015 mg/L, as shown in FEIS, Table 3.9-1.

As noted in SRK (2021b, p. 139), "Predicted water quality for the West End Pond and Hangar Flats Pond suggest selenium concentrations will be above the water quality standard and require treatment during Year -1 and Year -2. The source of the higher selenium concentrations in these ponds is attributed to toe seepage from the TSF Buttress and the West End In-pit Development Rock Storage Facility (DRSF). However, selenium concentrations were below method detection limits in almost all HCT results <u>that were used to develop the source terms</u> (emphasis added) for the TSF Buttress and West End In-pit DRSF. In Year -1 and Year -2, the amount of infiltration through these facilities is significantly lower than subsequent years and peak concentrations of several constituents (e.g., sulfate, arsenic, etc.) occur during these years as a result of the lower water to rock ratio. Selenium concentrations are elevated as a result of scaling laboratory data that are near the detection limit to field conditions during these low infiltration years. Therefore, the elevated selenium concentrations are considered an artifact of the modeling approach and treatment for selenium is not likely needed."

However, selenium was elevated in the first flush samples, which have been ignored in the development of the source terms for the SWWC model. As noted by SRK (2021b, pg. 232): "Several constituents were mobile under the neutral to alkaline pH conditions of the SODA HCTs. … For the sample with the highest sulfide content, aluminum, iron, manganese, mercury, selenium, silver and sulfate were flushed from the cell during the first five weeks of the test, and concentrations of these constituents were above the strictest potentially applicable water quality criteria for these parameters." Please see Section 2.3.3 for more information on the problematic treatment of source terms, related to ignoring first flush results.

Other COIs

As noted above, no water treatment plant targets are established for aluminum, barium, chloride, fluoride, manganese, or selenium, so we must assume that the WTP would not remove these COIs.

<u>Chloride</u>: Ion exchange is proposed to be used to remove nitrate and nitrite (Brown and Caldwell, 2021b, pg. 8-23). Not only will chloride not be removed, it will likely be added by the

proposed treatment approach, specifically ion exchange. Ion exchange is one of the primary methods proposed to remove COIs. According to Brown and Caldwell (2021b, pg. 8-23), Ion exchange targeting all of the dissolved constituents in the WTP influent would produce a residual—waste brine—that cannot be disposed in the TSF because of high arsenic concentration that would likely make the brine a hazardous waste. Therefore, it would have to be transported off site for disposal. Discharging brine to the TSF would also add hundreds of tons of chloride to the ore processing circuit, potentially forming hydrochloric acid in the autoclave and damaging it. The amount of brine requiring disposal, which is a function of the frequency of regeneration, would depend on the total amount of ions that would be removed, not only mercury and arsenic; antimony, phosphate, and potentially manganese and sulfate could also impact it."

In addition to the expected toxicity resulting from ion exchange brine in the proposed treatment scheme, the high chloride concentrations would also show up in the effluent that is planned to be discharged to Meadow Creek. The chloride would result from ion exchange of chloride for sulfate, which is expected to be up to 7,508 mg/L during post-closure as WTP influent and have high concentrations in some sources during operations (see Table 1). The SWWC model did not determine whether this excess chloride would exceed the chloride surface water quality standard of 230 mg/L.

The Buckhorn Mine in northern Washington State started out with an ion exchange mine water treatment system and replaced it with reverse osmosis as the primary approach after seeing chloride concentrations rise precipitously in the effluent that was being discharged to area streams. Figure 1 shows chloride concentrations in WTP influent and effluent from December 2007 through December 2024 (and see Appendix 2). Note that effluent chloride concentrations were higher than influent concentrations until about mid-2010 as a result of the ion exchange system. After the WTP system was changed to a primary RO system, effluent chloride concentrations were low and consistently lower than influent values. Perpetua has not considered the addition of chloride to WTP effluent using the proposed water treatment approach.

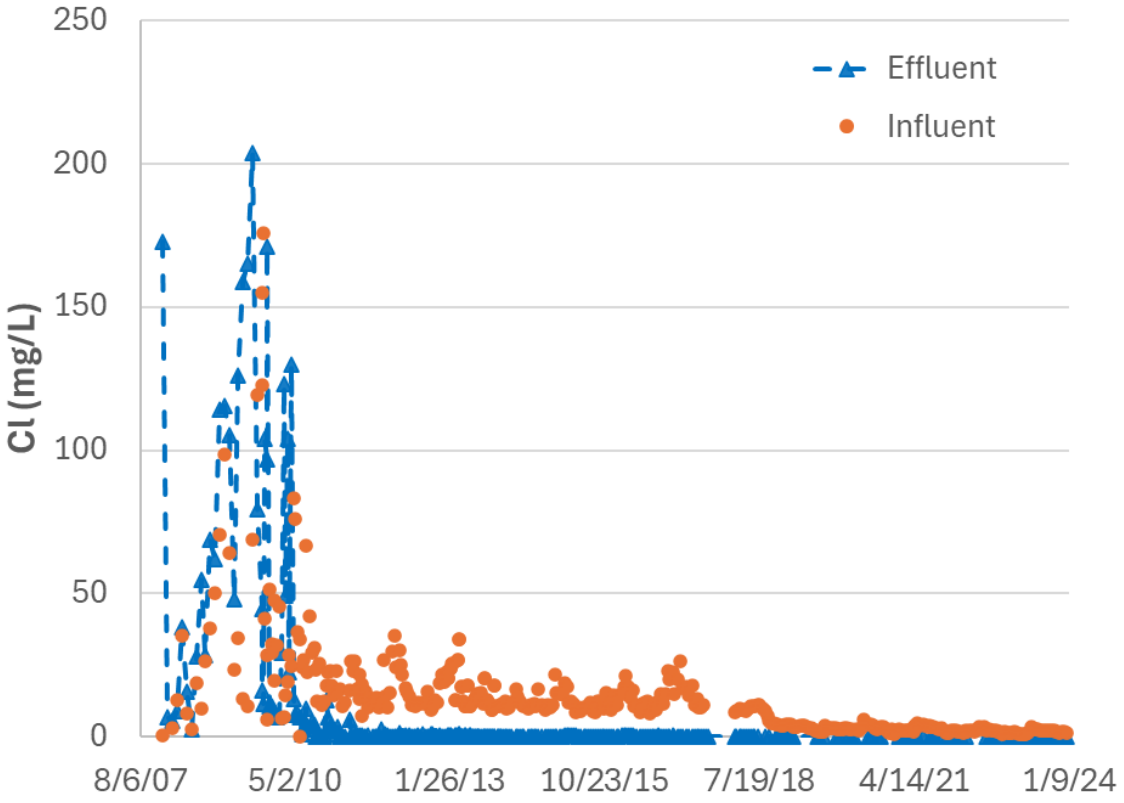

Figure 2. Chloride concentrations at the Buckhorn Mine in water treatment plant influent and effluent from December 2007 through December 2024.

Cyanide: Cyanide was included in the SWWC model, but only for the TSF cover surface water chemistry predictions. Although cyanide has a target effluent concentration (FEIS Table 4.9-10) and is included as a parameter in FEIS Tables 2-4 and 3.9-1, it is not included in two tables in FEIS Chapter 4 related to TSF water quality (Tables 4.9-1 and 4.9-3), even though cyanide is expected to be present in the TSF, including in the TSF buttress and embankment, which will be affected by process water in the TSF. It is also not included in FEIS Chapter 4 tables related to the pits and surface water monitoring locations. Depending on water management plans, cyanide may not be present in the pits; however, it could be present in surface water monitoring locations that receive groundwater input from TSF leakage.

The recently released Biological Opinion (US Department of Commerce, NOAA, 2024, pg. 244) states "Cyanide is also considered a contaminant of concern given its toxicity and presence in the TSF. Even after accounting for liner leakages, cyanide was not included in the SWWC model because it is not expected to persist at detectable concentrations because geochemical conditions that favor rapid breakdown of the cyanide molecule exist at the site (G. Fennemore, personal communication, July 2, 2024)." In addition to not providing a reference for the Fennemore personal communication or any other reference that would support this opinion, cyanide plumes in groundwater and its presence in surface water related to mining has been a

relatively common occurrence, as described in Kuipers and Maest, 2006. For example, "Of the 25 case study mines, 19 (76%) had mining-related exceedances in surface water or groundwater. However, nearly half of the mines with exceedances (8/19 or 42%) predicted low contaminant leaching potential in their EISs. The constituents that most often exceeded standards or that had increasing concentrations in groundwater or surface water included toxic heavy metals such as copper, cadmium, lead, mercury, nickel, or zinc (12/19 or 63% of mines), arsenic and sulfate (11/19 or 58% of mines for each) and cyanide (10/19 or 53% of mines)." (Kuipers and Maest, 2006, pg. ES-9 and ES-10). Adverse impacts of cyanide to groundwater and surface water included:

- cyanide polluted alluvial groundwater at the Pogo Mine in Alaska (pg. 71)
- a cyanide plume from tailings seepage existed at the Golden Sunlight Mine in Montana (pg. 71 and 137)
- the Royal Mountain King Mine in California had exceedances of cyanide in groundwater from heap leach operations (pg. 119)
- the Grouse Creek Mine in Idaho found cyanide in groundwater and surface water due to tailings contact water leakage into groundwater (pg. 123)
- the Beal Mountain Mine in Montana contaminated groundwater and surface water from land application of treated mine water (pg. 131),
- at the Mineral Hill Mine in Montana, tailings leachate escaped the liner system and caused exceedances in alluvial groundwater and surface water (pg. 139)
- Multiple 100+-year storm events caused extensive groundwater and surface water contamination with cyanide and other mine pollutants at the Zortman and Landusky Mine in Montana (pg. 147).

Although these cases are older, they show that escape of cyanide from mine facilities through groundwater to surface water, causing exceedances of water quality standards, can be a common occurrence. These results indicate that cyanide should be included as an analyte in all monitoring locations downgradient of cyanide sources.

5. Errors in the FEIS target effluent concentration table

Table 4.9-10 in the FEIS has some important errors and should be corrected in a Supplemental FEIS. The source for the table is listed as Brown and Caldwell 2021b; Footnote 1 states "Treatment objectives are equivalent to the strictest potentially applied water quality standard." The footnote implies that the treatment targets should be equivalent to the strictest of the applicable groundwater or surface water standards, whichever is lower. Several tables in the FEIS list water quality standards, including Table 2-4 (groundwater and surface water standards), Table 3.9-1 (groundwater and surface water standards), and various tables in Chapter 4 (Tables 4.9-2, -3, -6, -12, -18, -19, -20; all for surface water standards). The errors or questionable entries in Table 4.9-10 are:

· pH: The pH treatment objective is listed as 6.9 – 9.0, but it should be 6.5 – 9.0 for surface water or 6.5 – 8.5 for groundwater (see Table 3.9-1); the Chapter 4 tables list the upper end as pH 9 without a decimal. Not including a decimal will allow a larger acceptable range of pH values.

· Chromium (III): Although Brown and Caldwell lists a treatment objective for Cr(III) in Table 8-9, but no tables in the FEIS include it – with the exception of Table 4.9-10 (WTP targets). Chromium is not even included in the Brown and Caldwell (2021c) Environmental Monitoring and Management Plan – note that the date is incorrect in the FEIS references section (pg. 7-5; it should be September, not May 2021).

· Chromium (VI) and total chromium: The parameter in FEIS Table 4.9-10 is listed as "Chromium (IV)," but it should be Chromium (VI) (typo?). FEIS Table 2-4, groundwater and surface water guidelines/standards, lists the chromium standard as 0.1 mg/L for groundwater and 0.0106 for surface water and states that the surface water standard is for Cr(VI) based on Water Effects Ratio. FEIS Table 3.9-1 lists the groundwater and surface water quality standards as 0.1 mg/L for total chromium.

· Copper: The target effluent objective in FEIS Table 4.9-10 is 0.0025 mg/L, but it is listed as 0.002 mg/L for surface water in Table 2-4, 0.0024 mg/L in Table 3.9-1, and 0.002 mg/L in the remaining tables in FEIS Chapter 4. Which is it?

· Thallium: The target effluent objective in FEIS Table 4.9-10 is 0.005 mg/L, but it is listed as 0.00017 mg/L in Table 2-4 and Table 3.9-1 and the remaining tables in Chapter 4.

· Cyanide: Nearly all the entries in FEIS Table 4.9-10 match those in Brown and Caldwell, 2021b, Table 8-9, WTP Treatment Objectives, with the exception of total cyanide and WAD cyanide: the entries in the FEIS table are switched (that is, total cyanide is 0.0039 mg/L in Brown and Caldwell, while it is 0.0052 mg/L in the FEIS table; the WAD cyanide entries in the FEIS table are similarly switched); total cyanide should be 0.0039 mg/L and WAD cyanide should be 0.0052 mg/L in the FEIS table. However, the Idaho rules state that cyanide should be analyzed as WAD for groundwater (IDEQ, 2024b) and "expressed as WAD" for surface water (IDEQ, 2024a). The applicable standards for cyanide are therefore confusing (should they all be for WAD cyanide?), and the correct parameter and analytical method should be corrected in all FEIS tables.

· Selenium: Selenium does not have a target effluent concentration in Table 4.9-10 and is not included in the SWWC model. As noted in my comments on selenium in this Section, FEIS Table 3.9-1 lists the selenium surface water quality standard as 0.0015 mg/L, but all the tables in Chapter 4 list the Strictest Potentially Applicable Surface Water Quality Criteria for selenium as 0.0031 mg/L, as does Table 3.9-6a and b.

· Missing targets: As noted earlier in this Section, no effluent targets are included in Table 4.9-10 for aluminum, barium, chloride, fluoride, manganese, or selenium, even though these COIs are present in leachate from mine sources. We therefore must assume that the WTP would not remove these COIs.

The multiple errors and omissions found in this single table add to the errors in the EIS references noted in by SDEIS comments and in this document and demonstrate a lack of care and quality control on the Stibnite EIS documents released to the public.· The FEIS has some critical errors and omissions regarding water chemistry, modeling, and mine planning that affect the predictions of potential impacts to water quality.

6. Source terms used in the SWWC model ignore likely maximum releases from mined materials

As stated in Objector Comments (Maest 2022, p. 2-3): Source terms were created using leaching rates and concentrations from long- and short-term leach tests, respectively. They are expressed as rates (in mg/kg/week) and are one of the most important inputs to the SWWC model for predicting water quality. The "first flush" of contaminants is released during the early weeks of humidity cell testing, but rates from those times were not used to develop source terms. Instead, lower average "steady-state" rates from later times in testing were used. The first flush of contaminants from mined materials will occur when weathered wastes and ore are flooded (e.g., in flooded pits) and when weathered wastes and ore are wetted from storm events or snowmelt, especially after a previous dry period. Such conditions will exist at the SGP site in waste and ore stockpiles, backfilled pits, pit walls, and in the TSF Buttress/Embankment. Because the first-flush rates have been ignored, the source terms for development rock and ore will underestimate the release of contaminants from mine facilities during operations and closure/post-closure.

In response the FEIS (B-233) states: The use of first flush kinetic test leaching data is described in SDEIS Section 3.9.4.2 with potential implications for predictive modeling described in SDEIS Section 4.9.2.4.

FEIS, Chapter 3, Section 3.9.4.2, pg. 3-172: In the development of source terms, the initial flushes from the HCTs were not utilized (SRK 2018a) because the first flush chemistries would be indicative of material leaching during the mine operating period, when leachate would be collected as contact water for water treatment or would be expected to dissipate in the near-term due to dilution and/or solubility controls.

The FEIS response is inadequate. Source terms used in the SWWC model are one of the most important controls on model results: if source terms are consistently underestimated, the predicted concentrations in surface water, groundwater, and MIW will also be consistently underestimated. The response in FEIS Section 3.9.4.2 is incorrect in several ways, as discussed in the following subsections.

First flush results: First flush chemistries are indicative of exposed mined material leaching during all phases of mining after a storm event that follows a dry period and after snowmelt.

A comment from Perpetua (FEIS, App. B, pg. B-297) states "Steady state chemistry is typically considered more representative for use in geochemical predictions (Maest and Kuipers, 2005; Price 1997)." Although that sentence is included in my 2005 report, Perpetua neglects to include the subsequent two sentences: "These inputs are used to predict future water quality based on laboratory or field-scale experiments. However, differences in weathering rates and reactants produced under field and laboratory conditions can cause large differences between experimental and actual conditions, especially if reactive surface areas are not included in the model." In addition, my more recent 2017 paper (Maest and Nordstrom, 2017) states "Unlike early flush behavior in the laboratory, secondary salt dissolution in the field repeats continually and is linked to precipitation events. Early flush and maximum sulfide oxidation results from HCTs should be retained and used in environmental models and facility design."

First flush concentrations are often, but not always, the highest values in HCT results. First flush results should have been incorporated into the SWWC by taking them into account when creating source terms. This would allow the WTP to be able to remove high concentrations when relevant meteorological or hydrological conditions exist.

Leachate and contact water capture: The capture of leachate and contact water is never 100% effective. MIW from waste piles, ore stockpiles, and open pits can and will infiltrate to groundwater, and runoff and infiltration from these facilities can and will escape capture despite best efforts. If this were not the case, we would not see the extensive groundwater plumes that are so common at existing and closed mine sites. See related comments in Section 2.3.2 and 2.3.5.

Dissipation of leachate: The dissipation of leachate concentrations by dilution and/or solubility controls can be and supposedly has been handled in the SWWC model – this is not a reason to ignore first flush concentrations. Many other mines do incorporate first flush results, typically by incorporating them in average values. While this is not ideal and will likely underestimate potential maximum leachate concentrations from sources, it is an acknowledgment that first flush results do indicate the presence of contaminants that will be leached over time at mine sites. The FEIS has instead chosen to completely ignore first flush values and use unrealistic source term values.

7. Comparison to relevant water quality standards

As stated in Objector Comments (Maest 2022, pgs 4, 22): Surface water quality standards must be protective of aquatic life. The lack of aquatic life criteria for antimony is concerning. The SDEIS must consider the potential impacts of antimony on aquatic life. As described in more detail in Maest (2022), a chronic aquatic life guideline for antimony should be incorporated to provide adequate protections for fish and other aquatic life. The selenium standard used to compare to predicted surface water concentrations in the SWWC model may not reflect the most updated

approach used by the U.S. EPA that includes monitoring of not only water but also aquatic biota.

In response, the FEIS, App. B (pg. B-235) states: An antimony standard of 0.0052 mg/L applied for surface water was based on a drinking water standard. This value is lower than the 0.190 mg/L standard for aquatic life.

As described in SDEIS Table 3.9-1, the selenium standard utilized is the EPA freshwater aquatic life criteria.

The FEIS response is inadequate. The FEIS is using a surface water antimony standard of 0.0052 mg/L (dissolved). This value is not a drinking water standard – it is a criterion for the protection of human health, based on the consumption of water and fish (IDEQ, 2024a, Table 2). The groundwater quality standard listed in FEIS Table 3.9-1 of 0.006 mg/L is a primary drinking water standard. The response also states that this value is lower than the 0.190 mg/L standard for aquatic life. However, this is not a standard for protection of aquatic life; it is also a criterion for the protection of human health, based on consumption of fish only (IDEQ, 2024a, Table 2).

The antimony standards listed in the FEIS tables are protective of human health, and probably also aquatic life (considering that the British Columbia chronic aquatic life guideline for antimony is 0.009; Maest, 2022, pg. 22), but the response in FEIS App. B serves as another example of the lack of care or experience in finalizing the FEIS.

8. Important contaminant pathways are not included in the model

As stated in Objector comments (Maest 2022, pg 3): The SWWC model includes individual conceptual models for the pits and the TSF but does not include an overall conceptual model for the entire site. The SWWC model also does not consider the stream sediment (surface water-stream sediment) or food-chain (sediment-macroinvertebrates/periphyton-fish) pathways, and no monitoring of these environmental media (sediment, macroinvertebrate, periphyton contaminant content) is proposed.

Although the movement of contaminants from the TSF and the pits is considered in the water balance model, the future use of groundwater for drinking water has been excluded from consideration in the SDEIS. The potential for domestic groundwater use in the future cannot be discounted. The Forest Service is obligated to ensure that the proposed mine plan is in compliance with all applicable state and federal laws. (Maest, 2022, pg. 3).

In response, the FEIS (App B, B-234) states: Project component conceptual models are incorporated into the overall conceptual model depicted in SDEIS Figure 4.9-1. Surface water chemistry analysis incorporates sediment control measures as described in Chapter 2 of the EIS to limit effects of Project-related sediment.

Drinking water was not considered as a potential exposure pathway in the assessment of human health effects as described in SDEIS, however the drinking water standard of 0.010 ppm

As is the lowest applicable criteria for the project as the South Fork is designated as a drinking water source. S Section 4.18.2.2 (sic). However, the water quality analysis compares predicted groundwater analyte concentrations to drinking water standards and existing conditions which do not currently meet drinking water standards. The SDEIS notes that under the current condition, water treatment is required for use of groundwater as a drinking water source.

The FEIS response is inadequate. The conceptual models form the basis of modeling and monitoring at mine sites. Note that the FEIS, in Figure 4.9-1 Project Management Components, indicates that percolation of contact water from the TSF Buttress, pit backfill, development rock, ore stockpiles, and the tailings storage facility (TSF) underdrain flow will not be captured. The diagram further assumes that dewatering of the open pits will capture 100% of their contact water that has percolated to groundwater. The response to one of the SDEIS comments in FEIS App. B (pg. B-222) states "Tailings storage facility underdrain flow would consist of groundwater emerging below the facility liner and would not be in contact with the tailings materials."

The conceptual model for the TSF is shown in FEIS Figure 4.9-5. The diagram shows the liner but no underdrain and indicates that process water from the facility will seep to groundwater during operations, post-closure prior to cover placement, and post-closure after cover placement, presumably by defects in the liner – contradicting the response in FEIS Appendix B. The Brown and Caldwell (2021b, pg. 1-10) Water Management Plan report states that the TSF underdrains will collect spring and seep flows beneath the impoundment to a monitoring sump, where flows will be monitored for water quality, then, depending on the results, either discharged to Meadow Creek, used as makeup water, or sent to a contact water pond for later use, evaporation, or treatment and discharge. The FEIS (pg. 4-143) states that the TSF underdrain water below the liner would report to a sump where water flow and quality would be monitored. The FEIS does not discuss the disposition of TSF underdrain water depending on the monitoring results.

The FEIS discussion, including in Appendix B, and its depiction of contact water capture is inconsistent and does not accurately reflect the underlying consultant reports. The FEIS should be corrected in these instances and a Supplemental FEIS should be produced and released for public comment.

9. The/FEIS fails to address the release of sediment and other pollutants discharged from the road culverts and other management structures.

As stated in Objector 2023 Comment Letter #2, in addition to the inadequacies of the SDEIS ann FEIS noted herein, there are additional water quality concerns that have not been adequately addressed. For example, the FEIS does not adequately discuss the company's release of sediment and other pollutants discharged from the road culverts and other water management structures at the site and along the access routes. As the Ninth Circuit has stated:

Further, the term man-made "conveyance," the essential trigger for finding a "point

> source" under the CWA, is broadly defined. [W]hen stormwater runoff is collected in a system of ditches, culverts, and channels and is then discharged into a stream or river, there is a "discernable, confined and discrete conveyance" of pollutants, and there is therefore a discharge from a point source. In other words, runoff is not inherently a nonpoint or point source of pollution. Rather, it is a nonpoint or point source under § 502(14) depending on whether it is allowed to run off naturally (and is thus a nonpoint source) or is collected, channeled, and discharged through a system of ditches, culverts, channels, and similar conveyances (and is thus a point source discharge).

Nw. Envtl. Def. Ctr. v. Brown, 640 F.3d 1063, 1070–71 (9th Cir. 2011) (culverts directing stormwater flows are point sources subject to NPDES permitting) *overturned on other grounds Decker v. Nw. Envtl. Def. Ctr.*, 568 U.S. 597 (2013). The Ninth Circuit reiterated, in light of the Supreme Court's and its previous decision in those cases, that:

> The Court left intact our holding that "when stormwater runoff is collected in a system of ditches, culverts, and channels and is then discharged into a stream or river, there is a 'discernable, confined and discrete conveyance' of pollutants, and there is therefore a discharge from a point source" within the meaning of the Clean Water Act's basic definition of a point source in 33 U.S.C. § 1362(14).

Nw. Envtl. Def. Ctr. v. Decker, 728 F.3d 1085–86 (9th Cir. 2013). Thus, the quality and quantity of discharges from the culverts, diversion channels, and other water management structures must be covered by an NPDES permit and be considered when determining whether a project meets all water quality requirements under NEPA, the Clean Water Act, NFMA, Tribal Treaty Rights, the Organic Act and their implementing regulations and policies. *See Friends of Pinto Creek v. EPA,* 504 F.3d 1007, 1015-16 (9th Cir. 2007).

The FEIS (Appendix B) fails to include a response to this comment. The FEIS has added information from new sediment modeling that identify significant potential impacts from sediment to streams along the road and utility corridors, yet it fails to look at the specific water quality impacts (turbidity, TSS, etc.) associated with discharges of sediment from these conveyances into these streams. It fails to include baseline data to characterize water quality data in the applicable receiving waters, and it fails to identify water quality monitoring stations along the transportation and utility corridors to measure water quality.

10. Groundwater quality protections must account for public use.

As described in Objector 2023 Comment Letter (p. 102-103), the FEIS fails to use the most recent arsenic groundwater standard of 0.05 mg/l; fails to consider human health concerns related to groundwater pollution, and allows the proposed project to worsen groundwater quality.

In response, the FEIS (p. ES-17) states that, "There are no active domestic groundwater wells used for residential drinking water within 15 miles of the SGP. Because groundwater is not currently used as a public drinking water source at the SGP and is assumed to be unlikely to be used as a drinking water source in the future, the Agency for Toxic Substances and Disease Registry Public Health Assessment conducted for the existing mine site eliminated the groundwater as drinking water pathway from consideration as a public health concern (ATSDR 2003)." In response to our comments, the FEIS at B-235 further states that: "The exposure analysis conducted in ATSDR 2003 remains valid as the condition of the site relative to domestic use has not changed."

This response is inadequate. The ATSDR (2003, p.1) based its decision to eliminate groundwater as a pathway for human exposure because "...there are no known intakes within 15 miles downstream of the site." This is no longer accurate. The FEIS (P. 242) states that "IDWR has several domestic wells on record in Yellow Pine." and therefore the FEIS has been edited to reflect the proximity of water wells to more than 8 miles in a downgradient direction in terms of the EFSF River. As discussed in our comments, it is reasonable to expect that groundwater resources in the area may be needed for drinking water resources in the next 60+ years of mine life, given the increase in population, demands on water resources and the effects of climate change. According to IDEQ, ground water supplies drinking water to 95% of Idaho citizens. As Idaho's population grows, so does the need for clean, usable groundwater, with recent reports pointing to Idaho's population boom putting demands on domestic water supplies.

The FEIS also responds by stating that "While the majority of these monitoring well results exhibit antimony concentrations below the drinking water standard, most monitoring well results show an exceedance of the arsenic drinking water standard. Therefore, the area currently does not appear to be a viable source of drinking water without use of water treatment to remove arsenic."

This response is also inadequate because the FEIS Water Quality specialist report, (p. 80) states that the East Fork SFSR drainage in the Stibnite Mining District has drinking water supply as a designated use, and Idaho groundwater quality standards apply through the Stibnite Mining District. Therefore, the Forest Service should consider the effects of groundwater pollution on human health.

The FEIS also states that, "Figure 4.9-20 shows the predicted spread of groundwater from under the TSF facility over a 100-year timeframe. The spread of the plume is contained within a rugged, mountainous area administered by the Forest Service. Installing culinary water wells within this area in the future is not reasonably foreseeable."

The response is also inadequate because there are private patented lands within the project area in addition to Forest Service lands. Furthermore, it is reasonable to foresee the existing pollution addressed through CERCLA and other potential clean-up efforts over the next 100-years.

It's not appropriate for the Forest Service to authorize groundwater sacrifice zones for new projects, when the existing pollution could be addressed through other channels.

11. The FEIS must take a hard look at potential impacts to groundwater and provide adequate data, including maps of existing and predicted groundwater plumes.

As stated in Objectors 2023 Comment Letter (p. 103), the FEIS fails to provide sufficient information to determine the extent of groundwater pollution from the proposed SGP, detailed information about applicable groundwater standards and compliance points, and whether groundwater standards will be met. The FEIS must include appropriate modeling, with detailed maps to document the existing and anticipated groundwater plumes at the site, similar to those done for the East Smoky Canyon EIS. Without this information, it is impossible to determine the geographic extent of groundwater pollution.

In response, the FEIS at B-235 states that: "In the Project area, topography focuses groundwater flows along narrow drainage bottoms that also host streams at their ground surfaces. Areas of groundwater affected by historical and proposed operations are elongated along these valley bottoms. SDEIS Figures 3.9-20 and 3.9-21 show the locations where monitoring well observations indicate the presence of arsenic and antimony concentrations above water quality standards as part of existing conditions. These locations are associated spatially with the valley bottoms and their surface streams." It further states that "SDEIS Figure 4.9-20 illustrates the source and destination of groundwater movement from mine facilities through groundwater to the surface water drainage areas. The affected groundwater areas are located between the mine pit source areas and the indicated receiving surface waters."

This response is inadequate. Figures 3.9-20 shows the locations where monitoring well observations indicate the presence of arsenic and antimony concentrations above water quality standard as part of existing conditions, but fail to document the geographic extent of existing groundwater pollution. Figure 4.9-20 provides a rough illustration of the predicted discharge of groundwater to surface water, but it does not quantify the geographic extent of groundwater contamination (plumes) over time. Neither figure compares the existing groundwater plume to the potential new groundwater plume associated with the SGP to quantify the direct, indirect and cumulative geographic extent of groundwater pollution.

12. A TMDL is required for 303(d) listed streams.

As stated in Objectors 2023 comment letter (p. 104-105), a TMDL should be completed for all 303(d) listed streams at the Mine Site, including but not limited to the East Fork SFSR (1st, 2nd and 3rd order streams (See Table 3.9-17). The SDEIS also identifies numerous 303(d) limited streams along the access road and utility corridor. A TMDL should be completed for all 303(d) listed streams along the access road and utility corridor, and where TMDLs are already developed,

the SDEIS must demonstrate that the impacts from proposed mine activities will not result in further impairment. The FEIS must take a hard look at the potential direct, indirect and cumulative impacts of the proposed impacts (including vegetation clearing, sediment loading, etc.). These impacts must be quantified, and climate change must be taken into account. It is also inadequate to assert that BMPs or specific design requirements will adequately address the potential impacts, without providing data to support that assertion. A qualitative assessment is inadequate to understand the potential impacts to these resources. Please see additional detailed comments on this issue from Newberry (2022).

In response to Objector comments, the FEIS (P. B-236) states that, "Establishment of TMDLs is the purview of IDEQ as described in SDEIS Section 3.9.3. The Forest Service is evaluating the effect of the Project on surface water and groundwater chemistry via a comparison of predicted water chemistry to observed existing conditions and numerical water quality standards."

This response is inadequate. The Forest Service is required to demonstrate that the proposed mine will comply with the Clean Water Act, and not defer to another agency or permitting process. The FEIS fails to respond to the other issues raised.

13. The FEIS fails to demonstrate that the proposed project will comply with Clean Water Act requirements for mercury, nor does it adequately analyze the impacts of mercury pollution.

As stated in the Objector 2023 Comment Letter, (P. 105), "the SDEIS fails to demonstrate that the proposed project will comply with Clean Water Act requirements for mercury. According to the SDEIS (p. 4-353), mercury concentrations in the East Fork SFSR downstream of Sugar Creek would be predicted to increase during active mining due to expanded excavation. Baseline, predicted active mine, and predicted post-closure mercury concentrations in the East Fork South Fork Salmon River downstream of Sugar Creek are not predicted to exceed the aquatic life criteria. However, uncertainty remains whether incremental changes in mercury concentrations beyond baseline would increase bioaccumulation of methylmercury in fish tissue at concentrations exceeding the tissue-based criterion."

Objectors comments also stated that "The SDEIS (p. 4-353) further states that "Long-term, regional influences on downstream mercury methylation are not quantified." Idaho has adopted the fish tissue residue criterion for mercury as the state's water quality standard. The SDEIS must demonstrate that the mine plan will be in compliance with the state's tissue-based water quality standard, not defer to some potential future action. It must also analyze the long-term regional influences on downstream mercury methylation, and the potential impacts to water quality, aquatic, avian and other wildlife."

In response to Objector comments, the FEIS (p. B-382) states that "SDEIS Section 4.9.2.2 describes predicted mercury concentrations that remain below applicable standards. Application of a methylation ratio to these predicted mercury concentrations indicates that methylmercury concentrations would remain below standards in the Project area. Limitations on information regarding mercury methylation downstream of the Project area are disclosed, but information on future downstream conditions is not available for detailed assessment. However, the potential for mercury methylation in surface water departing the SGP is not changed compared to existing conditions and therefore, Project-related effects on methylation downstream are not anticipated."

This response is not adequate. The FEIS must demonstrate that the project will comply with the CWA, yet it leaves the potential for exceedances of fish-tissue criteria due to incremental increases in mercury unresolved.

The FEIS is also inadequate because it fails to take a hard look at the potential impacts of mercury on fish and other aquatic life. The FEIS at 2-146 predicts mercury concentrations in EFSFSR *downstream* from SGP of 3.0 ng/l to 10.0 ng/l. The FEIS (B-294) states that the 12 ng/l water quality standard will be the applicable mercury standard at the site. Yet, the FEIS indicates that this will not adequately protect fish. *The FEIS (p. 4-381) table footnote states that for mercury, NMFS (2014) and USFWS (2015a) both determined jeopardy for the chronic criterion proposed by EPA for Idaho Water Quality Standards (0.000012 mg/L total mercury).* NMFS (2014) directed EPA to promulgate or approve a new criterion. In the interim, implement the fish tissue criterion that IDEQ adopted in 2005. Where fish tissue is not readily available, then NMFS specified application of *a 0.000002 mg/L criteria (as total mercury) in the interim*. (Emphasis added)

The FEIS response to comments (B-382) fails to respond to our comments about its failure to take a hard look at the impacts to fish, aquatic, avian and other wildlife from mercury. However, the NMFS BIOP underscores the potential pathways for mercury exposure and the significance of these potential impacts.

NMFS 2024 BIOP (p. 354) states that "The new point and nonpoint sources of contaminants will impact water quality (contaminant concentrations and temperature) to *a degree that is reasonably certain to result in incidental take of ESA-listed species*. NMFS determined that incidental take is reasonably certain to occur as follows: (1) the proposed action will alter water quality within the mine site area in Meadow Creek, Sugar Creek, and the EFSFSR; and downstream from the mine site in the EFSFSR; (2) the affected habitat is or will be occupied by SR spring/summer Chinook salmon and SR Basin steelhead; *(3) concentrations of copper, arsenic, mercury, and contaminant mixtures will be at levels associated with sublethal adverse effects for salmon and steelhead including, but not limited to: avoidance (adults and juveniles); reduced growth (juveniles); reduced ability to detect and avoid predators or capture prey; (4) mercury*

loads in West End Creek will substantially increase during operations, adding to the mercury load in Sugar Creek and the EFSFSR, which are already mercury-impaired; (5) stream temperatures are predicted to reach levels that could cause adult Chinook salmon to suffer pre-spawn mortality, reduced gamete viability, delayed or blocked migration; reduced survival of incubating Chinook salmon embryos; and reduced growth of juvenile Chinook salmon and steelhead rearing in Meadow Creek and the EFSFSR." (Emphasis added)

The NMFS BIOP (p. 303) states that during early closure, mercury concentrations in lower West End Creek will remain above levels that can contribute to harmful bioaccumulation of mercury. Ultimately, individual contaminants and contaminant mixtures are expected to continue to negatively impact the ability of the water quality PBF to support spawning and incubation, juvenile rearing, and adult/juvenile migration.

The significance of these impacts are also highlighted by the NMFS BIOP (p. 358 & 367), which identified a new water treatment requirement in the terms and conditions that it states must be met "to be exempt from the prohibitions of section 9 of the ESA." It states that "During operations, when West End Creek is diverted around the West End Pit, Perpetua will treat water in West End Creek prior to discharge to the existing channel below the West End Pit. The objective of treatment is to reduce total mercury concentrations to levels that currently exist as YP-T-6 and to not increase total mercury loading to Sugar Creek during operations." This water treatment system is not included, nor was it analyzed in the FEIS/DROD.

The BIOP also underscores the impacts to fish above its screening level for mercury of 2 ng/l, which it states is equivalent to the reasonable and prudent alternatives identified by NMFS (2014) and very similar to the recently proposed aquatic life water column criterion for mercury in Idaho (EPA 2024). The BIOP identifies predicted and maximum concentrations for mercury for specific stream reaches in the project area that would exceed the 2 ng/l screening criteria during Operations, Early Closure and Late Closure, including Meadow Creek, Sugar Creek and the EFSF (NMFS BIOP, Table 47, p. 246 and the FEIS, Table 4.12-4, p. 4-378)

As such, the FEIS also fails to comply with the Organic Act and Part 228 regulations for its failure to require additional treatment options to reduce mercury to levels that are protective of fish (e.g., below the 2 ng/l screening level). The Organic Act and Part 228A regulations require the agency to "maintain and protect fisheries and wildlife which may be affected by the operations." 36 C.F.R. § 228.8(e). These impacts also violate the Forest Service's duties to "minimize adverse environmental impacts on National Forest surface resources." 36 C.F.R. § 228.8. "The operator also has a separate regulatory obligation to 'take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.' 36 C.F.R. § 228.8(e)."

The FEIS is also inadequate because the FEIS at 4-297 acknowledges the failure to consider all sources of mercury in water quality model predictions, "The surface water quality model predictions *do not include mass loading* inputs from permitted IPDES outfalls that would be required for the SGP. Additionally, *mercury inputs from atmospheric deposition caused by the SGP have not been considered* in the model. Mercury deposition rates from the air quality analysis of SGP emissions are predicted to be 0.056 g/km2/year compared to baseline deposition rates estimated to be between 12.7 and 13.9 g/km2/year (Air Sciences 2021a)."

Even if the mercury inputs from atmospheric deposition were included, the FEIS underestimates potential atmospheric mercury deposition. As highlighted by the EPA, (B-144), "The DSEIS states "[t]his analysis indicates a maximum estimated increase in Hg deposition rate of 0.4 percent or less of the existing background rate. However, it should be recognized that this rate underestimates the total Hg deposition, as the mechanism of Hg0 flux is not included in the screening model. While we appreciate the inclusion of the sentence indicating a reason why this percent increase is underestimated; the reason listed is only part of the reason for the underestimation. As mentioned in a previous section, the background Hg deposition values based on data from more than 10 years ago is also biased high due to subsequent emission controls. Therefore, the 0.4% increase underestimates Hg deposition because 1) it does not include Hg0 deposition; and 2) the background deposition rates are overestimated for current conditions."

The FEIS acknowledges the EPA's assertions (p. B-144) "The estimates for total Hg deposition are based on the information available at the time of developing the SDEIS. The analysis discloses uncertainties in its forecasting and the use of potentially non-conservative assumptions to provide context for its forecasts and estimates."

As further described in the FEIS at 4-273, "Ratios of stream mercury loads to atmospheric mercury deposition rates have been reported in watersheds affected by gold and silver mining (Domagalski et al. 2016). The effects of aerial mercury deposition on stream loads are variable based on watershed area, mineralization present, land development, rainfall, and soil adsorption characteristics. Because the ratios reported in Domagalski et al. 2016 are variable and dependent on site-specific characteristics, *they have not been quantitatively applied for the analysis of the SGP watershed*."

The FEIS (p. 4-297) also states that, "Model-predicted concentrations generated by the SWWC *Model are for the dissolved fraction only and may underpredict concentration levels for constituents such as mercury that have been shown to occur in particulate form*. It asserts that surface water runoff would be managed via design features and Forest Service requirements during operations and facility closure utilizing revegetated growth media and/or covers would inhibit particulates in runoff contributing to constituents in surface water (Forest Service 1980; Chang et al. 2024; Guo et al. 2021). This is inadequate. The FEIS fails to provide any data to support the

conclusion that design features, Forest Service requirements, revegetated growth media and/or covers would adequately inhibit particulates in runoff from contributing mercury to surface water, particularly given the proposed elevated mercury concentrations in reclamation materials at the site.

The FEIS is also inadequate because it failed to consider the adverse effects on other aquatic, avian and terrestrial wildlife, as specified in Objector comments (P. 105). The NMFS BIOP describes potential pathways to mercury exposure that may result in significant impacts:

NMFS BIOP (P. 297), "Mercury concentrations will increase in streams within the Project area, resulting in greater potential for bioaccumulation of mercury in macroinvertebrates. As described in Appendix F, dietary mercury concentrations exceeding 2 mg/kg dw (DePew et al. 2012) can result in adverse behavioral effects. Berntssen et al. (2003) documented increased oxidative stress in Atlantic salmon parr fed diets of 4.35 mg/kg dw MeHg."

NMFS BIOP (p. 237), "Contaminants may remain suspended in the water column, settle onto stream substrates, diffuse into interstitial pore spaces, or be taken up by benthic organisms, plankton, fish, or other species. Kraus et al. (2022) documented mercury movement from aquatic ecosystems to terrestrial ecosystems when aquatic invertebrates emerged as adults and were preyed upon by riparian spiders. Ultimately, the risk of toxicity from contaminant exposures is greatest within the mine site and is generally expected to decrease with downstream distance. Mercury is an exception to this general rule of thumb, because methylation is expected to continue to occur downstream."

NMFS BIOP (p. 306) also identifies impacts to other aquatic life, stating that "The food/forage PBF can also be affected by changes in water quality (e.g., stream temperature, dissolved oxygen, chemical contamination), water quantity, sedimentation, and clearing of riparian vegetation. Reduction in stream flow will reduce food availability in all affected stream reaches during construction through closure, and in Sugar Creek and downstream reaches *for approximately 135 years post closure*. The BIOP goes on to say that "the quality of prey items will be reduced at the mine site and in downstream reaches of the EFSFSR" and "*mercury concentrations are expected to slightly increase in prey items*." (emphasis added)

These issues are not adequately addressed in the SDEIS, FEIS and DROD.

14. The SDEIS fails to provide baseline data to characterize organic carbon or quantify the increase in organic carbon from the sewage treatment plant and its potential impacts.

As raised in Objectors 2023 comment letter (p. 106-107), the SDEIS (4-220) predicts 25,000-50,000 gallons per day of discharge from the sewage treatment plant to the EFSFSR. SDEIS fails to provide current baseline data to characterize organic carbon in area streams. (Water Specialist Report p. 67) It relies on another study (Holloway 2017) in which water quality data was collected in 2015 - data which is now nine years old and outdated. As noted in our comments, the SDEIS (p. 452) predicts increases in organic carbon loading rates in the East Fork SFSR, but it hasn't modeled potential surface water quality changes resulting from the wastewater treatment plant discharges. The SDEIS must provide current baseline data to characterize organic carbon in area streams, and quantify the potential impacts to surface water from the sewage water treatment plant, including the potential for increased algae. It should also analyze the cumulative effects of increased carbon and other pollutants from the sewage treatment plant on the EFSFSR and associated aquatic life, in association with the other potential impacts, such as predicted increases in stream temperature associated with climate change, increases in mercury from air deposition, and other potential impacts.

In response to Objector comments, the FEIS (p. B-237) states that, **"**Baseline organic carbon data are described in SDEIS Section 3.9.4.4. As described in that section, the poorly developed soils and sparse vegetation in the drainage area are associated with low organic carbon concentrations in surface water. The general soil conditions in place at the time that the data were collected remain in place. Therefore, it is reasonable to conclude that surface water organic carbon concentrations have remained low."

The FEIS further states that, "The effects of treated wastewater on surface water organic carbon concentrations are described qualitatively in SDEIS Section 4.9.2.2. The quantitative changes in organic carbon concentrations would be dictated by IPDES permit limitations. The IPDES permit limitations combined with the relatively low volume of discharge compared to receiving stream flow led to the conclusion that changes in surface water organic carbon concentrations would be incrementally small compared to existing conditions. As described in the SDEIS, sewage systems would be equipped with waste containment and runoff control structures to prevent escape of untreated sewage to surface water."

This response is inadequate. There is no quantitative analysis of the impacts of organic carbon or any other constituents of the sewage treatment plant in this section. NEPA requires agencies to take a hard look at the potential impacts of proposed activities and not defer to another agency permitting processes. Current baseline data is necessary to characterize existing conditions and determine the potential impacts of increased organic carbon from the sewage treatment plant.

This baseline data and analysis is particularly necessary because organic carbon can increase mercury methylation, which is an important water quality issue for area streams. According to the FEIS (P. 4-273), "There are many factors that affect methylmercury formation

as methylation efficiency is influenced by pH, sulfate, *total organic carbon*, bacteria activity, and wetland abundance (Figure 4.9-26). An incremental increase in organic carbon content due to wastewater effluent (as described above) could yield an incremental increase in methylation potential."

The significance to fish is highlighted in the NMFS BIOP (2024) (P. 332), which states that "an incremental increase in organic carbon content in the EFSFSR due to sanitary wastewater effluent could increase in methylation potential in the EFSFSR. Bioaccumulation of mercury in fish tissue is not expected to reach lethal levels; however, some fish may experience sublethal effects." It further states (p. 254) that, "The proposed action is expected to cause incremental increases in total mercury in the water column of streams inhabited by salmon and steelhead. These increases could lead to greater bioaccumulation of mercury in fish tissues. Additionally, an incremental increase in organic carbon content in the EFSFSR due to sanitary wastewater effluent could increase in methylation potential in the EFSFSR, contributing to increased bioaccumulation. For these reasons, the ability of the water quality PBF to support rearing juvenile salmon and steelhead will be further reduced as a result of the proposed action."

15. The Forest Service should not approve any operations that increase water pollution, especially in impaired waters.

As stated in Objector 2023 Comment Letter, (p. 107-108), in addition to the increased pollution in water bodies in (6), there are additional areas where the SDEIS predicts that water quality will exceed standards or worsen existing conditions as a result of mining activities.

- The SDEIS (p. 4-192) predicts that subsurface infiltration from the TSF embankment and buttress will mix with the alluvial groundwater under the facility footprint, resulting in a groundwater chemistry with antimony and arsenic concentrations above the strictest potentially applied water quality standards. Infiltration from the unlined TSF buttress is predicted to have a more notable effect on groundwater analyte concentrations. Specifically, mixing of infiltrated leachate with previously unimpacted alluvial groundwater is predicted to increase antimony and arsenic groundwater concentrations above existing conditions and groundwater standards. (SDEIS, p. 4-243)

- The SDEIS predicts that a small portion of the groundwater flow from the Yellow Pine pit backfill would reach groundwater to the west of the EFSFSR channel, where antimony and arsenic concentrations are currently below standards, and could cause an increase in groundwater concentrations for those two pollutants. (p. 4-244).

○ Immediately downstream of the West End pit on West End Creek at node YP-T-6 (above the confluence with Sugar Creek), predicted surface water mercury concentrations are an order of magnitude higher than existing conditions during the operating period due to the observed West End concentrations. (SDEIS, p. 4-25)

○ Similarly, downstream of the project on the EFSFSR at node YP-SR-2 (below the confluence with Sugar Creek), mercury concentrations are expected to increase in surface water due to variability in water treatment, although remain below standards.

○ The West End pit lake water quality concentrations are predicted to exceed potentially applicable water quality standards for antimony, arsenic, and mercury throughout the operating and closure period (Figure 4.9-14 and Table 4.9-12). The SDEIS (p. 4-348) also predicts that water quality standards for these contaminants will be exceeded permanently post-closure, and that the pit lake would not be reclaimed or restored and would therefore have impacts on fish in perpetuity. The SDEIS (P. 4-243) also finds that "Where the local groundwater has not been previously impacted, the groundwater interactions with inundated backfill pore water and the West End pit lake would have the potential to increase groundwater concentrations for antimony and arsenic to levels above groundwater standards."

The Objector comments also state that the SDEIS fails to demonstrate that the proposed plan will comply with applicable water quality standards. The SDEIS also predicts uncertainty about the potential overflow of the pit lake during high flow conditions, and describes the potential for the use of either or both surface water diversions or the use of a mobile water treatment plant if water levels reach a threshold level. (SDEIS, p. 2-87) It states that lake levels will be monitored after closure, as specified in the EMMP, but no specific reference or details to this are found in the 2021 EMMP.

Objector comments also state that the plan must demonstrate that the pit lake and a potential overflow of the pit lake will comply with applicable standards, and not defer to some future options without sufficient detail to demonstrate viability. An overflow of the pit lake will most likely be in response to a storm event, in which there may be inadequate time to mobilize a water treatment plant. Further, the diversions are expected to be decommissioned after mine closure, which appears to conflict with their proposed use in the event of an overflow. The SDEIS concludes that "Formation of the West End pit lake acts to permanently raise temperatures compared to existing conditions in the stream segment immediately below that area which receives discharges of groundwater that has interacted with the pit lake." (p. 4-275) The additional pollution loading caused by the Project, including allowing discharges before the required TMDL is produced and waste load and load allocations are implemented, violates the Forest Service's duties to "minimize

adverse environmental impacts on National Forest surface resources." 36 C.F.R. § 228.8. "The operator also has a separate regulatory obligation to 'take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.' 36 C.F.R. § 228.8(e)."Rock Creek All. v. Forest Serv., 703 F. Supp. 2d 1152, 1164 (D. Mont. 2010) (mine approval violated Organic Act and 228 regulations by failing to protect water quality and fisheries). "Under the Organic Act the Forest Service must ...require [the project applicant] to take all practicable measures to maintain and protect fisheries and wildlife habitat." Id. at 1170. The CWA, Organic Act, and agency regulations preclude the Forest Service from approving aspects of a mining operation that would violate federal or state water quality standards. "Under the Clean Water Act Section 313, the Forest Service cannot authorize mining operations that do not comply with state and federal water quality regulations, including a state's antidegradation policy. 33 U.S.C. § 1323(a). Save Our Cabinets v. U.S. Dep't of Agric., 254 F. Supp. 3d 1241, 1249 (D. Mont. 2017) (Forest Service approval of mining project violated duties under CWA and Organic Act to ensure compliance with water quality standards). See also Hells Canyon Pres. Council v. Haines, 2006 WL2252554, *4-5 (D. Or. 2006) (Forest Service mine approvals violated state CWA standards)

The Organic Act mandates the same compliance, as the Part 228 regulations "further require that mining operators comply with applicable state and federal water quality standards including the Clean Water Act; [and] take all practicable measures to maintain and protect fisheries and wildlife habitat." Save Our Cabinets, 254 F. Supp. 3d at 1250. The 228 regulations require that the operator submit sufficient information to enable the agency to ensure that the Project will comply with all applicable state and federal requirements to protect water quality and fisheries. See 36 C.F.R. §§ 228.4(c)(3), 228.8(b), 228.8(e). The SDEIS does not show, or properly analyze, that all aspects of the project will fully protect "fisheries and wildlife habitat" and comply with all CWA standards and requirements.

In response to these Objector comments, the FEIS at B-237 states that "The Forest Service analysis of water quality utilizes a comparison of predicted water chemistry to observed existing conditions to identify effects of the Project on water quality. As described in SDEIS Section 3.9.3, regulatory authority regarding the Clean Water Act is the purview of IDEQ which will determine whether the Project can be permitted under its IPDES and cyanidation permits. The Forest Service analyses of Project water quality did not conclude that the Project would not comply with applicable state and federal requirements or Idaho antidegradation policy."

This response is inadequate. The Forest Service must demonstrate that the proposed project will comply with the Clean Water Act, the Organic Act and the 228 regulations. The agency cannot defer these obligations to another agency permitting process.

This response also fails to respond to numerous issues, including the West End Pit Lake, where it draws unsupported conclusions. The FEIS at 239 acknowledges that the West End Pit

Lake will exceed applicable water quality standards for antimony, mercury and arsenic: "Constituent concentrations are generally below the strictest potentially applied water quality standards except for antimony, arsenic, and mercury concentrations that exceed those values throughout the operating and closure period (Figure 4.9-14 and Table 4.9-12)." The FEIS fails to demonstrate how this will comply with the CWA, Organic and 228 regulations, and it fails to demonstrate that the mercury, arsenic and antimony pollution will be minor, permanent and localized to the lake. The impacts cannot be described as minor, given predicted water quality exceedances, nor can they be considered localized. Mercury is well recognized as a pollutant that bioaccumulates and bioconcentrates, and there are no provisions to prevent access to the pit lake from wildlife. Furthermore, the FEIS specifically identifies that groundwater from the West End Pit Lake will contribute to surface flows in West End Creek and Sugar Creek. The SDEIS (p. 4-243) states that "Twenty-five percent of groundwater outflow from the West End pit lake discharges as surface water in West End Creek with the remainder discharging as surface water in Sugar Creek." The FEIS (p. 4-266) predicts an increase in mercury concentrations 6 ng/l to 8 ng/l in Sugar Creek as a result of the arrival of groundwater outflow from the West End Pit lake and closure of the Bailey Tunnel during post-closure. These concentrations may have significant impacts on fish and other aquatic life, given the recommendation by NMFS to use 2 ng/l as the screening criteria.

According to comments from the Nez Perce Tribe, which we referenced in our comments, "Under the 2022 U.S. District Court of Colorado decision, Stone v. High Mountain Mining Company, groundwater discharges from a settling pond into a navigable water of the United States fall under the CWA § 301 and 402 and therefore require a National Discharge and Elimination System ("NPDES") permit for discharge of pollutants to surface waters via groundwater. The Project should be required to obtain an IPDES permit for the discharges of pollutants from the West End pit groundwater outflow to surface waterbody, West End Creek. The SDEIS and the SGP IPDES application does not reference obtaining an IPDES permit, monitoring requirements, or effluent limitations for this specific groundwater discharge coming from West End Pit seepage.

The FEIS responds by stating that, SDEIS Section 4.9.2.2 describes potential outflow of the West End Pit lake to groundwater and related effects on groundwater quality and surface water quality in West End Creek and Sugar Creek." This is inadequate because it fails to demonstrate how the discharge of water into West End Creek will comply with the Clean Water Act.

The FEIS/DROD fails to adequately address the Objector's comments.

16. The SDEIS fails to provide current baseline data to characterize water quality in streams adjacent to proposed access roads, utility corridors and off-site facilities that have the potential to be impacted by SGP activities.

As stated in Objectors 2023 Comment Letter (p. 109-110), the Surface Water Quality Baseline Study (HDR 2017) did not include sample locations outside of the proposed SGP.

However, streams adjacent to proposed access roads, utility corridors, and off-site facilities have the potential to be impacted by these SGP activities.

In response to Objector comments, the FEIS (P. B-239) states that, "NEPA does not require collection of new baseline data if there already is sufficient information available for the lead agency to make an informed decision. The SDEIS utilizes IDEQ's 303(d) water quality monitoring to describe the existing conditions for surface waters that would be crossed by access roads. Access roads, utility improvements, and off-site facilities would be constructed and utilized per design features and Forest Service requirements to minimize the effects on surface water quality. Potential impacts of off-site roads and utility corridors that might be used for the Project are described on page 4-262 of the SDEIS."

This response is inadequate. The SDEIS/FEIS refer to IDEQ's 303(d) water quality monitoring program, and provide general descriptions of area streams based on whether they fully support beneficial uses, don't support beneficial uses or weren't assessed. (Figure 6-14). This includes very generalized descriptions. For example, the FEIS states (p. 3-203) "In the central portion of the inventory area, waters that are not supporting beneficial uses are primarily associated with the SFSR and its tributaries, and Johnson Creek and its tributaries. Causes for listing of the SFSR and tributaries are primarily associated with temperature and sedimentation/siltation; causes for listing of Johnson Creek and tributaries are primarily associated with temperature."

This type of vague, qualitative description is inadequate. NEPA requires current and detailed baseline water quality data (e.g., turbidity, total suspended solids, metal concentrations, DOC etc.) to characterize streams and other water bodies that have the potential to be impacted by SGP activities, including access roads and utility corridors. Without this information, it is impossible to determine the potential impacts to water quality from dust, sediment, atmospheric deposition, and other mining related impacts that have the potential for significant impacts to aquatic life, including threatened species.

New data and analysis in the FEIS at 4-283 Table 4.9-25 underscores the significant potential impacts. It estimates that sediment delivery from Burntlog Road to Burntlog Creek would increase from 13,450 kg/year to 40,306 kg/year during operations. This would have significant impacts on numerous water quality parameters, which the FEIS fails to adequately assess. The FEIS (p. 4-284), asserts that, "Overall, based on identified maintenance activities, EDFs proposed by Perpetua, environmental protection measures required by the Forest Service, and permit stipulations from state and federal agencies, traffic-related dust and erosion/sedimentation would be within the normal range of properly maintained forest roads." However, the FEIS provides no data/analysis to support this conclusion. Even if it did, it must still quantify the impacts to receiving streams.

The FEIS at 4-284 also emphasizes the uncertainty of geographic impacts, "The duration for traffic-related dust and erosion/sedimentation would last throughout the entire period of use of

Burntlog Route (approximately 25 years) until it is successfully reclaimed... Due to the nature of airborne dust and sediment transport by streams, *the geographic extent of the impact could be hundreds of feet to miles*, depending on many site- and event-specific factors, but it is expected that effects would be limited to within the sub-watersheds of the analysis area."

As noted in Objector comments, baseline water quality data is needed for these streams and a quantitative analysis must be completed to better understand the potential impacts.

17. The mining plan fails to provide sufficient information on discharge methods or analyze the potential impacts associated with forced evaporation

As stated in Objector 2023 Comment Letter (p. 110) the SDEIS (p. 2-66) states that, "Contact water which exceeds regulatory discharge standards set by IDEQ and that cannot be used during operations would be disposed through a variety of methods including forced evaporation using sprayers located within the TSF *or other managed areas* or treated and discharged. Water would be treated to meet IPDES permit limits and treated water would then be discharged through IPDES permitted outfalls to the East Fork SFSR or Meadow Creek." (emphasis added)

Objector comments further state that, "The mine plan is unacceptably vague about its proposed methods for disposing of contaminated mine contact water. It must provide specific information about whether forced evaporation will be used, where it will be used, and how it will be managed and monitored. At the Kendall cyanide leach gold mine in Montana, the discharge of contact water via sprayers has been an issue with respect to elevated metal and salt concentrations in soils. The SDEIS must analyze the potential direct, indirect and cumulative impacts of spraying contaminated contact water into the air on "other managed areas."

There was no response in the FEIS to this comment, which must be addressed.

18. The SDEIS must consider surface water & groundwater quality cumulative effects

As stated in our comments (p. 110), it should be noted that both the liner and cover systems installed on the TSF and TSF buttress are engineered materials with finite life times. It is reasonably foreseeable that they will eventually degrade and fail at some point in the future. The magnitude and duration of contaminant release at that time is unknown, however it would certainly have the potential to adversely affect both surface water and groundwater. The SDEIS must take a hard look at the potential for long-term, cumulative effects to water quality, and analyze potential mitigation measures, including pumpback wells, or other mitigation options. Furthermore, the SDEIS Section 2.4.7.4 states that "A low permeability geosynthetic liner would be incorporated into the cover over the entire surface of the backfilled Yellow Pine pit, including the reconstructed channel floodplain corridor to reduce the infiltration of meteoric water into backfill material, which could dewater the restored stream channel and result in additional metal leaching from the

underlying backfill." This is not a realistic long-term mitigation measure. The SDEIS fails to provide detailed information about the liner, or examples of where this has been successfully conducted on other mine sites at this elevation and subject to flash flooding, plant roots, and other impacts that would compromise the liner integrity. Further, the SDEIS provides no detailed information about how this system would be maintained in perpetuity. The SDEIS must analyze the direct, indirect and cumulative impacts associated with the inevitable failures in the liner system over time, including the cumulative effects of climate change. For example, the 500-year storm event that occurred in Montana in 2022, which resulted in massive flooding, destruction of roads, rerouting of rivers and streams, and other substantial impacts.

In response to our comments, the FEIS (B-239) states that "The EIS has been revised to include examples of liner placement over mine facilities. An associated mitigation measure has been added to Section 4.9.3 of the Final EIS."

This is inadequate. The examples of liner placements that are provided in the FEIS (p. 2-87) fail to respond to the issue. Ramamsay et al., 2018 analyzed a recent application of HDPE on a legacy coal site. Howse and Fleming (2022) considers shear tests on liners. Neither of these articles demonstrate that geosynthetic liners won't fail over time, nor do any of these articles demonstrate that the liner can effectively serve as a mitigation measure at this elevation, subject to flash flooding, plant roots, and other impacts that would compromise liner integrity.

The proposed mitigation measures are also inadequate. There is some mention of a Water Resource Monitoring Plan (FEIS at 4-302), developed and implemented by Perpetua, which would include mined development rock and ore, surface water, groundwater, and meteorological monitoring requirements. Monitoring results would be provided to the Forest Service on a quarterly basis and summarized in an annual report. Perpetua would be responsible for continued monitoring and reporting of surface and groundwater chemistry and temperature prior to, during, and after operations in the post-reclamation period until the Forest Service accepts the reclamation has demonstrated efficacy in accomplishing the results as predicted as outlined in the EIS.

Monitoring is not mitigation. A liner failure is likely to result in immediate and potentially significant impacts to surface and groundwater quality. The monitoring plan will only serve to identify impacts after the harm has occurred. The FEIS fails to demonstrate that this is an effective long-term mitigation strategy.

D. FISHERIES

1. The Forest Service failed to address several substantive comments submitted during the SDEIS comment period

As stated in Objector's 2023 Comment Letter (p. 114), the following expert comment reports were submitted and incorporated into the submitted fisheries comments: Maest (2020, 2022), O'Neal (2020, 2024), Faurot (2020), Newberry (2020, 2022), and Gregory (2022). After reviewing

Appendix B of the FEIS, it appears that these expert comment reports were not reviewed nor were the comments included responded to.

Specifically, O'Neal, Faurot, and Gregory's reports contained numerous detailed comments specifically related to fisheries issues in the SDEIS. The Forest Service failed to respond to these comments. Some of their concerns were echoed in the main comments submitted in the body of the Objector's 2023 comments, but there remain many outstanding concerns. This is a clear violation of NEPA that must be addressed before a Record of Decision can be issued.

2. The FEIS fails to incorporate readily available climate change estimates as they relate to estimated stream temperatures and other Watershed Condition Indicators

As stated in Objector 2023 Comment Letter (p. 116-117), the FEIS fails to incorporate the impacts of climate change in future stream temperature estimates. In turn, this drastically underestimates the potential impacts the project will have on bull trout, Chinook salmon, steelhead, and cutthroat trout who all depend on cold water habitats for their continued survival.

In response, the FEIS (Appx B-383) states that "quantitative modeling of climate change is outside the scope of the water temperature analysis." This response is inadequate. NEPA requires that agencies take a hard look at the potential impacts of a proposed action, "including identifying and describing reasonably foreseeable environmental trends, including climate change effects." (CEQ-202-0005).

Throughout the FEIS, it is abundantly clear that the decision was made not to account for changes to stream temperatures caused by changing climate conditions despite readily available forecasts. The Fisheries and Aquatic Habitat Report states that "[i]n reality, water temperatures would likely be higher if climate change had been incorporated into the model." (p. 107).

The report goes on to state that by the end of mine operations, it is reasonable to assume that baseline temperatures could increase by as much as 2.0ºC and that this range of expected increases is based on a forecast period 75 years shorter than Mine Year 112. This is a clear omission of critical data that much of the analysis related to fisheries impacts is based upon. In order to present an accurate assessment of the likely impacts that the proposed project will have, this information must be factored into all modeled forecasts related to stream temperatures, flow regimes, and other related issues.

This lack of climate change data results in a pervasive underestimate of the potential impacts to the fisheries and aquatic environments within the project area and specifically for salmonid populations. Since this model is also used to inform the Biological Opinions associated with this project, this data must be incorporated and factored into all subsequent analysis before a decision can be made.

a. Additional WCI interactions

The decision not to include readily available climate change forecasts has serious implications for nearly all measurable assessments related to fisheries impacts. While direct impacts from solar radiation on stream temperatures are the most direct, climate change will impact snowfall totals, the timing of spring snowmelt, stream flows, growing seasons, and a myriad of other indicators that are relied upon throughout the FEIS to come to the conclusions presented related to the impacts to fisheries.

In order to achieve clear requirements of NEPA, all modeling and subsequent analysis must include the most up-to-date climate change estimates before a final decision can be rendered.

3. The FEIS incorrectly assumes that mitigation and restoration efforts are possible and effective

As stated in the Objector 2023 Comment Letter (p. 115), the FEIS incorrectly assumes that the proposed mitigation measures will be sufficient to mitigate negative impacts on fisheries. This assumption colors the entirety of the analysis despite the admission that high levels of uncertainty undermine much of it.

In response, the FEIS (Appx B-383) states that "limitations and uncertainties regarding these measures are described in the SDEIS. The SDEIS analysis represents the reasonably foreseeable conditions for the SGP which would be subject to monitoring verification and plan adjustment as necessary."

This response is inadequate. Numerous locations in section 4.12 of the FEIS, the Fisheries and Aquatic Habitat Specialist report, and the Draft Record of Decision present uncertainties. While we understand that there will always be variables that cannot be controlled, it is unacceptable to move forward when reasonable mitigation measures could be employed to reduce these uncertainties and present the most conservative estimates.

Specifically, there is a high level of uncertainty that "riparian vegetation planting along restored stream channels may not provide enough shade to limit temperatures at the degree and timing forecast in the site closure plan." To mitigate this uncertainty, additional measures are presented, such as placing large container plants along stream reaches, leaving low-flow diversion pipes in place, installing temporary shade structures, or covering snowpack along reaches. In addition to these concerns, the potential for growth media to contain high levels of arsenic must be analyzed in relation to the establishment of riparian vegetation. Considering the already lengthy timeline established in the FEIS, any additional impacts that may result from soil chemistry must be addressed and analyzed prior to a plan being approved.

While we appreciate these measures, additional details are required to provide any type of

assurance that these measures are either feasible or sufficient. Would there be additional impacts to consider with any of these proposed mitigations? What is the threshold to trigger these future actions?

In FEIS 4.9.3, additional mitigation measures specifically dedicated to stream temperature reduction are listed. The third bullet mentions that "achievement of design shading effects of riparian plants on stream temperatures could be reassessed prior to construction by measuring the success of establishing riparian plantings at locations outside the TSF footprint." This additional monitoring must be reassessed and not left as an optional measure.

There is additional description regarding the possibility of ditch and pipeline diversions being re-commissioned and utilized to convey surface flows in "part or in whole." Additional modeling and analysis is required to analyze potential impacts to stream flow forecasts under this scenario. Suppose the establishment of riparian shading does not meet the shade requirements to reduce stream flows, and these ditches and pipes are recommissioned with the total available flow. What impact will that have on the continued growth of the replanted riparian vegetation critical to meeting temperature reductions?

Within the Fisheries and Aquatic Habitat Specialist Report, it is mentioned that "when shade is assumed to be 40 percent of design, predicted stream temperatures remain elevated." Additional clarification is needed to fully understand the implications of this statement. At what year in the restoration plan does this occur? Is the 40 percent of designed shade static throughout the entire 112 years forecasted in relation to stream temperatures?

a. Monitoring

In order to prevent additional harm to aquatic resources impacted by the proposed project, the Forest Service must require frequent monitoring. Currently, there are no descriptions of monitoring frequency between the FEIS of the Water Resources Monitoring Plan (WRMP). Within the WRMP, some parameters are more likely to require a more frequent monitoring schedule (continuous or weekly), but there is no disclosure or description of what those may be. The Forest Service must require continuous temperature monitoring with frequent reporting. Without this requirement and a large amount of uncertainty already embedded within the modeling, it will be impossible to adequately adjust mitigation measures in a timely fashion to address any potential deviations or exceedances that will result in a greater impact to sensitive aquatic species and ecosystems.

4. Model results and underlynig data are inadequate

As discussed in Objector 2023 Comment Letter (p. 120), the validity of modeled results is highly questionable and renders conclusions that misrepresent the potential impacts of the proposed project.

In response, the FEIS (p. B-386) states that "NEPA requires the use of the best available science. Model outputs were applied to the impact assessment, but professional judgement, based on extensive knowledge of the fisheries conditions, resulted in qualifications provided alongside model results."

This response is inadequate and does not satisfy the concerns raised in the original comment. As mentioned in section 2 of these fisheries comments, the Forest Service has failed to incorporate readily available climate change forecasts into any of the modeling used within the FEIS. This omission alone has the potential to fundamentally impact the SPLNT, SHSM, Intrinsic Potential (IP), Occupancy (OM), and Physical Habitat Simulation (PHABISM) models.

As a rule, ecological models are oversimplifications of the temporal and spatial variability that comprise natural systems. The intrinsic potential (IP) models used in the analysis, for example, reduce the intricate complexities of salmon habitat to stream flow, valley constraint, and stream gradient (compare to the comment above that outlines the intricacies of salmonids interactions with conditions and habitat during the winter). While these are all driving factors combining to create "potential" salmon habitat, they entirely overlook the chemical and biological/foodweb processes which will be altered by mining activity.

Moreover, the IP model relies on model inputs (specifically stream flow), which were poorly predicted by hydrologic models that were also produced for the SDEIS (see Prucha 2020, 2022). With that said, Pg. 27 the IP models still predict a decrease in the amount and quality/"potential" of Chinook salmon habitat in the upper reaches of the EFSFSR. Given the uncertainty involved with mathematical models in general, combined with the unreliability of stream flow estimates used as model inputs, the IP predictions could be off by orders of magnitude. Additionally, the large decrease in all types of habitat for all fish species during the mining period is concerning.

5. The SDEIS does not adequately consider synergistic effects on fish

As discussed in Objector's 2023 Comment Letter (p. 118), the FEIS does not adequately consider synergistic effects on fish and renders conclusions that misrepresent the potential impacts of the proposed project.

In response, the FEIS (p. B-834-385) states that "Section 4.12 of the EIS and the Fisheries and Aquatic Habitat Specialist Report includes a summary of effects, tying the impacts together. This response is inadequate and fails to address the core concerns of the original comment.

By considering fish species, stream reaches, and limited habitat impacts (e.g., stream dewatering, temperature increases, increases of metals concentrations, migration barriers) all separately, the FEIS fails to acknowledge the broad ecological understanding that multiple stressors will amplify one another's effects on the ecosystem. This assumption ignores volumes of

peer-reviewed and other literature contradicting it, particularly that related to the so-called "death of a thousand cuts" leading to salmon population declines. It results in a serious underestimate of impacts to fish and their habitat.

6. The FEIS displays significant shortcomings of virtually every factor used to evaluate impacts on fish (particularly intrinsic potential, streamflow productivity, barrier modifications, and stream temperature models), and concludes negative impacts to Chinook salmon, bull trout, steelhead, and westslope cutthroat trout and their habitat

As discussed in Objector's 2023 Comment Letter (pp. 144-145), the FEIS relies on analysis that contains significant shortcomings for virtually all factors used to evaluate potential impacts on fisheries and aquatic resources, specifically intrinsic potential, streamflow productivity, barrier modifications, temperature models, and others.

In response, the FEIS (p. B-382) states that "SDEIS Section 4.12.2.2 describes the implications of climate change and potential spills on Project area fish species. Section 4.12.2.2 also concludes with a description of the synergistic effect of all the factors incorporated into the impact analysis." The methods and rationale for quantifying the effects are described, and those results are described in the section. This response is inadequate and largely unrelated to the original comment.

The FEIS relies on analysis without consideration of climate change, accidents and spills, and the cumulative and synergistic effects of overall habitat simplification and degradation. In general, the conclusion of negative impacts to habitat quantity and quality is oversimplified and underestimated.

Additionally, loss of habitat quantity and quality during the mining period is reported (e.g., see Figures 7-5 and 7-6 in the Fisheries and Aquatic Habitat Report) but disregarded in analysis of effects to the various species. This displays an underlying assumption that several years of reductions in habitat for endangered species is inconsequential.

The FEIS reports substantial impacts to fisheries and their habitats throughout the mining period and beyond. These impacts are of particular concern for Chinook salmon, bull trout, steelhead, and westslope cutthroat trout, where decades of mining impacts, particularly when combined with the plethora of other impacts on the populations, could adversely affect population persistence.

7. Current baseline conditions are insufficiently and inaccurately characterized, rendering predictions of impact unreliable

As discussed in Objector's 2023 Comment Letter (p. 127-128), the FEIS relies on baseline

conditions and is insufficient and inaccurately characterized, rendering unreliable and unrealistic impact decisions.

In response, the FEIS (p. B-387-388) states that "most analytical tools apply habitat characteristics such as flow and gradient to determine overall effects." This response is inadequate and ignores additional comments incorporated into the original statement as discussed earlier in this section.

Specifically related to baseline conditions, the FEIS contains the following issues:

a. Hydrologic models lack appropriate spatial and temporal resolution, fail to robustly integrate groundwater and surface water interactions, and include additional flaws and inadequacies, ultimately resulting in mischaracterization of existing hydrologic conditions (see Prucha 2020, 2022, Semmens 2020, 2022, and Zamzow 2020, 2022).

b. With the exception of descriptions of proposed mitigation methods, physical habitat characteristics—past or present—are virtually ignored in the FEIS despite their fundamental role in fish population productivity. Besides stream channel dimensions, gradient, stream flow and substrate, off-channel habitat, floodplain connectivity, and other habitat elements known to influence salmonid productivity receive little consideration in the main body of the document or the main appendix regarding fish resources and habitat.

The lateral connectivity created in floodplain and other habitats are essential for overwintering of many salmonid species, and are also essential year-round habitat for other rearing salmonids. Natural floodplain processes and floodplain complexity are essential to the maintenance of salmon habitat. The natural flood-pulse disturbance regime of floodplain habitats maintains complexes of backwater and spring channels that exhibit water velocities, temperatures, and prey sources better suited than mainstem habitats for the growth of rearing juvenile salmonids. Multiple studies describe increased growth and abundance of juvenile salmonids on off-channel floodplain habitat, due to thermal refugia and increased primary and prey productivity. Both aquatic and terrestrial inputs of prey are important aspects of salmon growth in floodplain habitats. Because excessive sedimentation ultimately decreases floodplain and riparian connectivity, as well as the quality and productivity of those floodplain habitats, juvenile salmon growth may decrease, ultimately leading to decreased salmon survival at sea. Moreover, removal of riparian vegetation is reasonably certain to increase stream temperature and decrease fish cover in floodplain habitats.

Vertical connectivity created by the exchange of surface water with groundwater (i.e., hyporheic flow) is also essential to spawning, incubating, and rearing (including overwintering) of Chinook, steelhead, bull trout, and westslope cutthroat trout. All these listed species and species of special concern use locations of major groundwater surface water exchange to locate redds for optimal rearing, and as refuge in during high flow events and over winter when many surface waters are frozen. By reducing habitat quantity "increases" to stream miles, the EIS ignores the

already voluminous and ever increasing body of best available science describing the importance of lateral and vertical connectivity.

c. While current water quality may be accurately described, many area waters are considered impaired due to high temperatures and excessive sedimentation, As, Sb, and HG. As discussed above, the current state of impaired water quality should not be measured as baseline from which to predict allowable impact.

d. Multiple models used to describe various aspects of habitat are flawed oversimplifications of salmonid ecosystems, and/or rely on model inputs generated by other flawed and inaccurate models. This renders their utility for predicting and measuring impact questionable at best. Flawed models include the Stream and Pit Lake Network Temperature (SPLNT), Intrinsic Potential (IP), Occupancy (OMs), and Physical Habitat Simulation (PHABSIM) models. See detailed comments below for specifics.

e. Salmonid distribution, abundance, and density estimates use flawed methodology and interpretation and lack the spatial and temporal resolution to characterize baseline variability. Consequently, adequate characterization of existing, listed salmon and trout populations are lacking. The SDEIS concludes that Population-level effects are not expected from construction, but after reclamation, the net effect would be: a loss of habitat quality and quality for Chinook salmon, bull trout, and cutthroat trout, a net gain of habitat quality and quantity for steelhead trout, and Water quality improvements from removal of legacy mine materials would partially, but not completely, offset geochemical impacts associated with the SGP (US Forest Service 2020).

Amongst other methods, environmental DNA (eDNA) is referred to with inconsistent interpretations to some degree in the EIS, but especially in Appendix B—response to comments. Environmental DNA is a valuable method for expanding knowledge of species distribution, and particularly for detecting organisms in low abundance even without any obvious sign of their presence. Genetic material is constantly shed by organisms through cells or tissue from skin, excrement, decomposition, and other sources. Once collected from bulk environmental samples (i.e., air, soil, and water), DNA can be filtered and extracted in order to analyze for species presence using a number of laboratory techniques. Compared to traditional capture methods, eDNA collection and analysis has higher species detection probabilities and thus is particularly useful for detecting endangered, recovering, and recently introduced species.

However, detection probabilities are affected by physical and chemical (e.g., flow, temperature, light, water chemistry), biological (e.g., species life stage, abundance), and field and lab methodology. Consequently, relying on a single (or even a few) eDNA sample/s is not "evidence of absence." In most cases (with proper quality assurance and control measures), eDNA is extremely useful for indicating species presence. But using it, for example, to determine species use at road crossings is insufficient when methodology is inadequate. In the case of eDNA studies referred to in Appendix B, the EIS sites resulting data in the favor of developers. For example,

the EIS concludes that lamprey are absent from the project area in order to justify the lack of analysis of impact to lamprey. On the other hand, it concludes that other fish species of concern are absent from proposed road crossings based on eDNA evidence to justify crossing designs that are less expensive and logistically difficult to construct. Moreover, the eDNA studies the EIS relies on are not easily accessible. Several searches for those documents were fruitless.

f. Metals concentrations of tissue from fish and other aquatic species can be a useful indicator of baseline conditions and an early indicator of low-level, chronic and/or indirectly accumulating increases of metals concentrations that may go undetected by routine monitoring. The DEIS evaluation of baseline metals concentrations in tissues are limited to a very small number of highly mobile Westslope cutthroat trout specimens, and two sculpin specimens. Because of their mobility, cutthroat trout are a poor indicator of local conditions. Sculpin tend to more closely reflect their environment, though sample size is vastly insufficient for any utility in characterizing baseline or measuring future impacts. Moreover, metals concentrations in tissues of biota inhabiting lower trophic levels is absent in the FEIS. The Fisheries and Aquatic Habitat Report indicated that "In 2015, fish tissue was collected to check for metal concentrations …" but no metal concentrations in fish tissue data was reported or referenced. More baseline metals concentration data from area biota should be required prior to any permitting decisions.

8. Impacts to all non-salmonid fishes — and other aquatic life that support them- are ignored in the FEIS

As discussed in Objectors 2023 Comment Letter (p. 118-119), the FEIS lacks adequate analysis and discussion regarding impacts to non-salmonid aquatic species and the synergistic impacts that would likely accompany the proposed actions.

In response, the FEIS (p. B-385-386), states "the analysis in the EIS covered the ESA federally protected species and the USFS sensitive species. Effects described for the four species that were analyzed in the EIS are expected to affect the non-salmonid species in a similar manner." Additional language was added specifically to address our comments on Pacific Lamprey, but the response fails to address the underlying concerns.

a. Impacts to non-salmonid fish

Mountain sucker, mottled sculpin, longnose dace, speckled dace, redside shiner, mountain whitefish, Pacific lamprey and other important fish, freshwater insects, algae, and other primary producers are all critical elements of the food webs supporting the salmonids that are not considered in the FEIS. Ignoring impacts to salmonid food webs is equivalent to ignoring impacts to salmonids at large. While these other species are typically under-studies, they are important native species that will likely experience impacts resulting from the MMP that deserve adequate analysis.

b. Failure to analyze impacts on macroinvertebrates

Macroinvertebrates are food for fish and, therefore, are critical elements of the aquatic environment that support salmon and trout life histories. Not only do these elements of the food web play an important role in ESA listed salmonids, they are susceptible to impart contaminants of concern into the foodchain through bioaccumulation.[4] The FEIS does not include any analysis or data presentation of the decades of macroinvertebrate sampling that occurred in Stibnite mine site streams from the mid-1990s through the mid-2000s (Payette National Forest files). These species were completely disregarded in the SDEIS analysis despite their roles in the aquatic ecosystem.

Additionally, there is no discussion regarding potential impacts on macroinvertebrate, amphibians, or other food sources and their availability through the aquatic environment resulting from the relocation of streams into diversion ditches or piping. Considering the number of headwater streams that will be altered in this fashion, it is critical that analysis be conducted to evaluate the potential impacts on the overall food web and availability from a fisheries perspective.

c. Failure to analyze impacts on Pacific lamprey

The FEIS adds additional language regarding the eDNA and snorkel surveys that indicated Pacific lamprey does not occur at the project site. However, regardless of baseline occupancy, the Forest Service should evaluate potential impacts to future occupancy or habitat alterations that will result from the proposed actions.

9. The SDEIS failed to evaluate the effects of winter conditions and winter survival effects on ESA-listed fish species

As discussed in Objector's 2023 Comment Letter (p. 120-121), the FEIS fails to evaluate the effects of winter conditions and survival effects on ESA-listed salmonids. Considering the reductions in flow and habitat simplifications during operations and early restoration, this is a major blind spot within the analysis.

In response, the FEIS states (p. B-836) that "[w]inter water temperatures within and adjacent to the mine site area are typically below 5°C and would not be expected to be measurably different with changes in connection to groundwater." This response is inadequate. The core of our concerns lies in the changing water balance and not over typical winter temperatures. A reduced streamflow profile will result in dramatically different over-winter conditions that must be analyzed.

[4] Dovick et al 2016 Bioaccumulation trends of arsenic and antimony in a freshwater ecosystem affected by mine drainage

It is clearly stated throughout the FEIS that the proposed action will result in stream flow impacts with low flow reductions at some locations by up to 14 percent in the EFSF and up to 40 percent in Meadow Creek. This is especially problematic given that winter temperature and flow, both affected by mining operations, have been shown to strongly correlate with winter survival and, thus, population abundance and, ultimately, persistence. The interaction of groundwater to fish habitat and fish distribution, a vitally important component of bull trout winter and spawning habitat, which also affects other salmonid species, was completely ignored, despite the best available science showing significant relationships.

These concerns were addressed in great detail within the reports that were submitted in support of the Objector's 2023 Comment Letter. It is imperative that the Forest Service fully review and consider the comments that were submitted regarding this issue (O'Neal and Gregory Comments 2022).

10. Water quality: Multiple contaminants of significant concern to salmonids and other aquatic life received little consideration

As discussed in Objector's 2023 Comment Letter on pages 120 through 124, multiple areas of concern lack sufficient analysis within the FEIS in regard to water quality and potential fisheries impacts.

a. Stream sediment chemistry

Comments regarding the lack of analysis related to stream sediment chemistry (p. 121-122) were included in the Objector's 2023 Comment Letter. In response, the FEIS (p. B-239) states that section 4.12.2.2 "describes effects of sediment on fish populations and on productivity of macroinvertebrates and other fish prey." This response is inadequate and the referenced section does not appear to directly address sediment chemistry issues.

Stream sediment chemistry is an important source of analyzing contaminant loading to fish. The food chain/dietary pathway for fish, starting with contaminated stream sediment, was not considered in the FEIS conceptual models for existing conditions or current and future modeling efforts. Excluding stream sediment from the contaminant pathway analysis is a major, fundamental flaw with the conceptual model for this site, ignoring best available science, biological opinions, and U.S. FWS and NMFS Recovery Plans for ESA-listed salmonids.

The FEIS does show limited sediment quality data from five stream locations taken in June 2016. These samples showed that at three of five locations for arsenic, and four of five locations for mercury, levels exceeded Canadian guidelines for the protection of aquatic life. Although the U.S. does not have established sediment guidelines, Canadian guidelines provide a useful reference for sediment concentration guidelines to protect aquatic life. The food chain/dietary pathway for arsenic has been shown to adversely affect salmonids in laboratory experiments and using stream

sediment from mined areas in Montana and Idaho. Yet, the SDEIS completely ignored stream sediment data.

A conceptual model showing the food chain/dietary pathway for contaminant impacts to fish from consuming macroinvertebrates residing in contaminated stream sediment is needed. More sediment sampling is needed, and the results should be included in the design of conceptual models, mitigation, and clean-up measures.

Additional comments and references were submitted by the Objectors and referenced. See Maest 2020 and Maest 2022 for additional comments.

b. Temporal variability of metal contaminants

The Objector's comments regarding the temporal availability of metal concentrations are found on page 122 of the 2023 Comment Letter. In response, the FEIS (B-241) refers back to section 3.9.4.4 which describes observed availability. However, this response is inadequate and does not address the key concerns of the original comment.

One of the most distinctive features of site surface water quality is the temporal variability in concentrations associated with stream hydrographs. Consideration of temporal variability is critical at sites affected by mine contaminants, such as streams in the Stibnite area. Although the Forest Service and plan proponent analyzed surface water samples, surface water monitoring was not frequent enough or well-timed with snowmelt to identify temporal changes and maximum concentrations. Knowing maximum concentrations of contaminants is important in understanding the potential for acute short-term toxicity to aquatic biota and for assessing the effectiveness of clean-up and mitigation measures. Without this key information, the analysis and subsequent assessment regarding fisheries' impacts are lacking and underrepresented potential harms.

Therefore, weekly, daily, or ideally hourly sampling is needed during or shortly after spring freshet and summer thunderstorms to estimate potential maximum concentrations and to use in the calibration of the inputs for water quality models.

c. Antimony speciation and food chain pathway

Comments were additionally submitted regarding antimony speciation and the impacts on food chain pathways (p. 123). In response (FIES B-241), the Forest Service describes the primary source of antimony speciation but provides no response to the analysis related to food chain pathways or related effects.

Essentially no information is available in the literature on the potential food chain/dietary pathway for antimony, which is one of the most important contaminants from legacy and proposed mining activity. Further, the FEIS provides little fundamental information on the aquatic toxicity of antimony, and arsenic cannot be used as a surrogate. In the recently published NOAA Biological

Opinion additional information is presented that appears to contradict the narrative presented in the FEIS that antimony exposure would be negligible. “one study documented low levels of mortality at concentrations similar to those predicted for the proposed action” (p. 247). This information and analysis must be incorporated into the FEIS to adequately reflect potential impacts to fisheries.

Neither the state of Idaho nor the federal government have established antimony criteria for the protection of aquatic life. A reliable evaluation of the potential effects of the mine cannot be completed without site-specific information on chemical speciation and the toxicity of antimony to resident fish populations. Site-specific toxicity testing should be conducted using clean sediment and sediment with a range of elevated antimony concentrations. Such work is especially important for understanding the effectiveness of promised legacy cleanup measures.

d. Metals concentrations in fish

As discussed in Objector’s 2023 Comment Letter (p. 123), the FEIS lacks sufficient metal concentration analysis within fish tissue to adequately inform potential impacts. In response, the FEIS (B-386) states that “Fish tissues and sediment were sampled for metal concentrations in the aquatic baseline monitoring program (MWH 2017). Sculpin were assessed; however, they were found in very low numbers.” However, this response is inadequate and does not address the underlying comment concerns.

The evaluation of baseline metals concentrations in tissues is limited to a very small number of highly mobile westslope cutthroat trout specimens and two sculpin specimens. Because of their mobility, cutthroat trout are a poor indicator of local conditions. Sculpins tend to more closely reflect their environment, though the sample size is vastly insufficient for any utility in characterizing baseline or measuring future impacts. Moreover, metals concentrations in tissues of biota inhabiting lower trophic levels are absent in the FEIS. The SDEIS indicated that “In 2015, fish tissue was collected to check for metal concentrations …” but no metal concentrations in fish tissue data was reported or referenced. More baseline metals concentration data from area biota should be required prior to any permitting decisions.

e. Water chemistry impact predictions consider unjustifiably limited parameters of concern

Within the Objector’s 2023 Comment Letter (p. 123-124), concerns were raised regarding the limited parameters of concern regarding fisheries impacts. In response, the FEIS (p. B-241) states that because these contaminants are evaluated based on federal drinking water standards and, in some cases, may remain below these standards, additional analysis is not warranted. This response is inadequate.

The FEIS qualitatively evaluates impacts to fish from potential increases in concentrations

of a few metals (mainly arsenic, copper, mercury, and antimony). The impacts described in the document are largely minimized. Copper is considered amongst the most toxic elements to all aquatic life, with increases of 2-20 parts per billion, which has deleterious indirect impacts on salmonid survival. Mercury biomagnifies with increasing trophic levels, ultimately leading to grave concerns for human health. Information regarding toxicological impacts of both arsenic and antimony are insufficient in the literature at large, and virtually non-existent for the Stibnite Gold project area.

In addition, impacts of several other existing contaminants at the site, most likely related to historic mining activities, were overlooked or not considered at all (aluminum, cadmium, iron, manganese, selenium, and zinc; see Zamzow 2020, 2022). Other metals are likely to increase as a result of Stibnite Gold Project development, but given the certainty of increases in these metals, some potential impacts of lesser-considered metals are described below. In particular, because they biomagnify, mercury and selenium should both be considered in much more depth than they are in the FEIS. Moreover, information regarding toxicity (direct, indirect, lethal, and/or sublethal) of antimony is widely lacking. Given the near certainty of increases in antimony concentrations resulting from Stibnite Mine development, laboratory toxicity testing (including laboratory tests using site-specific waters) should be required prior to permitting.

As discussed in previous comments, little information on the toxicity of antimony to aquatic biota; no site-specific information on antimony or arsenic toxicity to resident and protected fish, macroinvertebrate, and aquatic plant populations; and no information is provided on the relationship between fish life cycles and temporal variability of arsenic, antimony, mercury, or any other analytes in site surface waters. No information is provided on the exposure to fish from arsenic, antimony, mercury, or other contaminants via the dietary pathway (sediment-macroinvertebrate-fish).

11. Loss of headwater streams, and other impacts within the project area, are falsely assumed to have no downstream impacts

As discussed in Objector's 2023 Comment Letter (p. 124-125), the FEIS fails to fully account for impacts resulting from the loss of headwater streams, both within the immediate Project site and downstream.

In response, the FEIS (p. B-386) describes changes in migration barriers and states that water quality effects do not migrate far downstream. This response is inadequate and fails to fully address the scope of the original comment.

While the loss of stream miles and habitat impact are estimated for the project area itself, those estimates exclude consideration of the function of upstream, contributing water bodies, and downstream, receiving water bodies. Headwater and/or upstream habitats are fundamental drivers of physical, chemical, and biological characteristics of their downstream receiving waters. Intact

headwaters and wetlands comprise fundamental elements of thriving salmon habitat, and their fragmentation is considered a leading cause of global salmon declines. Both long-term small-scale and short-term large-scale developments fragment and simplify the complex physical habitat mosaics upon which all fish and aquatic life depend, introduce contaminants into the environment and ultimately degrade the biological interactions that support robust fish populations. Failure to incorporate those impacts in the FEIS result in a substantial underestimation of project impacts.

The SDEIS describes the fish analysis area as encompassing all areas in which fish resources and fish habitat may be affected directly or indirectly by the Stibnite Gold Project, and not merely the immediate area involved. The analysis area is located in the South Fork Salmon River hydrological subbasin and the North Fork Payette River hydrological subbasin as illustrated Figure 3.12-1, Yet, the FEIS does not analyze potential effects to subwatersheds downstream and outside of the Stibnite Gold Project mine site area within the fish analysis area illustrated in Figure 3.12-1. Effects to waters downstream of the Yellow Pine pit lake — which may be the most impacted waters — are not evaluated or assumed to be impacted despite mention that temperature, in particular, could be higher downstream of the Yellow Pine pit if riparian shading is not effective. Failure to incorporate those effects in the SDEIS results in substantial underestimation of project effects. (i.e., increases in temperature, spill risk effects, road effects, metals concentrations, and synergistic effects on fish populations).

12. The proposed Forest Plan amendments are not compliant with the Forest plans, specifically regarding the Aquatic Conservation Strategy, USFWS and NOAA Biological Opinions, Terms and Conditions, and Reasonable and Prudent Alternatives

As discussed in Objector's 2023 Comment Letter (p. 125-126), it appears that the proposed action is not compliant with Forest Plan Standards beyond those described in the Draft ROD and FEIS. In response, the FEIS (p. B-688) states that "The effects of the project-specific amendments are those of the SGP. Direct, indirect, and cumulative effects of the SGP on fish and fish habitat (Section 4.12 and 5.12) were analyzed in the SDEIS." This response is inadequate.

The timeline for mine operation is approximately 12 years with reclamation and closure of approximately 5 years. Due to the nature of proposed SGP activities, impacts to aquatic, terrestrial, and watershed resource conditions would be expected to occur for the length of the proposed SGP, and beyond. This impact time length is in excess of the Payette Forest Plan General Standard 0501, which indicates that "Management actions, including salvage harvest, may only degrade aquatic, terrestrial, and watershed resource conditions in the temporary time period (up to 3 years)." FEIS mitigations and reclamation actions will not restore or maintain aquatic resource conditions, according to adverse effects described in FEIS Chapter 4.

13. Project actions are not consistent with ESA recovery plans

The objector's 2023 Comment Letter (p. 126-127) discusses that the FEIS is inconsistent with ESA recovery plans for impacted species. In response, the FEIS describes changes in migration barriers and asserts that negative habitat conditions are only temporary or impact reaches where ESA listed species do not occur and fail to address the larger scope of the comments. This response is inadequate.

First, blockage of fish passage is not consistent with U.S. Fish and Wildlife Service bull trout recovery plan actions, which include: 1) Protect, restore, and maintain suitable habitat conditions for bull trout, and 2) Minimize demographic threats to bull trout by restoring connectivity or populations where appropriate to promote diverse life history strategies and conserve genetic diversity. While no recent surveys have concluded that bull trout do not presently occupy much of Meadow Creek, the current passage barrier at the Yellow Pine pit and possible displacement from historical mining must be considered. By simply moving a passage barrier upstream, the project fails to truly mitigate current habitat limitations impacting access for bull trout.

Decreased flows and increased temperatures resulting from mining actions are also inconsistent with the National Marine Fisheries Service Chinook salmon and steelhead recovery plans, which lists improving degraded water quality and maintaining unimpaired water quality as a strategy to address factors limiting recovery of Chinook salmon and steelhead populations. While the FEIS asserts that these negative habitat conditions, among others, will be temporary, the amount of uncertainty contained within the modeling and conclusions paints a different picture.

14. Work windows are inadequate to prevent adverse impacts to salmonid fishes

As discussed in Objector's 2023 Comment Letter (p. 127) the described work windows for instream work are inadequate to prevent adverse impacts to salmonids and sensitive species.

In response, the FESI (p. B-387) states that "The work window is intended to avoid the most sensitive life stages, i.e., eggs and alevins, when they are not able to move from the area of activity." This response is inadequate and inconsistent with the information provided in project documents.

The Draft Record of Decision states that "instream work windows avoid potential impacts to spawning adults and protect developing eggs within the gravel." Here, we see language that indicates that work windows are designed to avoid spawning adults in addition to the more sensitive life stages.

Additionally, when reviewing Tables 5-2 through 5-5 of the Fish and Aquatic Resource Mitigation Plan, when each species is considered holistically, there is a significant overlap of times

when either incubation or adult spawning is forecast to occur and reduce work window viability. Additional clarification is needed to understand what restrictions would be imposed for instream work to avoid these sensitive life stages. Additionally, the proposed work 300 feet upstream from Redds is inadequate to protect Redds from impacts of turbidity generated from that distance.

15. The SDEIS makes unjustified conclusions about spill risk

In Objector's 2023 Comment Letter, concerns were raised (p. 128) regarding potential cumulative impacts on aquatic environments from a hazardous material spill. In response, the FESI (p. B-206) states "cumulative and additive effects of multiple spills within the SGP area is an unrealistic condition" and that spills would be immediately cleaned up resulting in no cumulative or additive impacts. We find this response inadequate.

The core of the initial comment was not to assume that multiple spills would occur in the exact same location, although that is not an impossible scenario. Rather, the FEIS lacks any analysis on the cumulative impacts of multiple spills within or outside the mine site would have on the aquatic environment as well as resident and migratory species that may be present.

This unjustified conclusion overlooks the inevitable cumulative, chronic, and potentially additive effects of multiple spills over time. In general, the FEIS fails to adequately analyze the impact and likelihood of a hazardous material spill that would impact aquatic resources as a result of the proposed action.

16. Impacts to salmonids from project-related groundwater changes are inadequate

As discussed in Objector's 2023 Comment Letter (p. 128), impacts to salmonids from project-related groundwater changes are inadequate. In response, the FEIS (p. B-388) refers to section 4.8.2.2, which describes the impacts on groundwater from the MMP.

This response is inadequate and ignores the heart of the original comment. The analysis related to groundwater drawdowns, as it relates to fisheries, is purely focused on available flow. This flow productivity model and assessment are available throughout the fisheries-related sections of the FEIS. However, this focus purely on flow as a byproduct of groundwater impacts oversimplifies the potential impacts to salmonids and the aquatic environment.

Groundwater and hyporheic inputs increase salmonid incubation and emergence success and often support higher densities of fish due to their temperature and oxygen profiles relative to surface waters. Not only are groundwater flows poorly predicted in the FEIS, but their role in salmonid survival and resulting impacts from changing groundwater levels is unaddressed.

17. Effects of the East Fork Fish Tunnel inadequately characterize impacts and improvements

As discussed in the Objector's 2023 Comment Letter (p. 129), the proposed fish tunnel's impacts are inadequately characterized, and analysis of the impacts of trap and haul is lacking.

In response, the FEIS (p. B-388) agrees that the effectiveness of the fishway tunnel is uncertain and that it has been designed to follow NMFS guidelines. This response is inadequate and ignores the broader intent of the original comment.

In the FEIS, there is ample language regarding the reality that trap and haul measures will need to be implemented if the fishway tunnel fails to provide volitional passage. Despite this, there is little to no analysis of trap and haul impacts on these species. Moreover, this is not a typical trap-and-haul scenario. It is well known that trap and haul results in increased stress and mortality of individual fish. Given that fish relocated in this manner will be moved to locations with potentially severely degraded habitat conditions, additional analysis is required to fully understand the potential impacts that may result.

E. PERPETUAL WATER TREATMENT

As stated in Objector Comment Letter (p. 127), "The assumption for the SDEIS appears to be that there will be no seepage, or de minimis seepage, from the tailings after initial seepage drain down. Until an actual post- closure seepage rate can be established, for both tailings drain down and buttress seepage, it is not reasonable to assume seepage from the waste rock in the buttress will be low enough so that long-term water treatment will not be required. Given the uncertainties in the water quality modeling, the SDEIS should assume that perpetual water treatment will be required, and calculate financial assurance to cover long-term water treatment costs, until post-closure monitoring proves otherwise."

In response, the FEIS (B-61) states, "Comment noted. Statement of position."

This response is inadequate. The FEIS identifies considerable uncertainty with respect to the length of time necessary for water treatment at SGP. The FEIS (A-3) predicts water treatment for a total of approximately 40 years. At FEIS (B-14), it states "The need for operation of onsite water treatment is predicted to decrease after mine operations cease until about mine year 40 when treatment might be able to be terminated." One of the DROD's proposed environmental design features is that "Water treatment will continue until metal concentrations from each source have stabilized at levels that meet water quality standards for discharge." DROD at 74, 115. The FEIS also fails to provide financial assurance calculations. FEIS (B-89) "Reclamation cost estimates and financial assurance decisions are conducted by the Forest Service in a separate administrative process outside the NEPA scope." Without financial assurance calculations that quantify the cost of perpetual treatment, nor acknowledgement of the potential for perpetual treatment, the FEIS

fails to demonstrate that resources will be available to complete reclamation.

F. MINE ENGINEERING, DEVELOPMENT WASTE ROCK AND TAILINGS FACILITIES

In our SDEIS comments, we noted that a serious flaw in the technical analysis was failure to include reference documents, specifications and analysis of the tailings dam. We had provided a technical review by Dr. David Chambers (CSP2 Review of Comment Responses on DSEIS) which notes the Forest Service needs to disclose essential information to the public concerning the construction and structural integrity of the TSF dam, particularly with regard to seismic safety (Comment 17634-A, comments #3, 6 and 11).

In the FEIS, the Forest Service responded by citing Tierra Group (2021) which was not a reference or made available in the DSEIS (B-135). The response in the FEIS only repeats what is presented in the EIS, which is exactly the lack of detail that generated the questions. We are incorporating the October 2024 technical report by Dr. David Chambers, (CSP2 Review of Comment Responses on DSEIS) attached, for additional details regarding this objection point. Given the history of TSF failures, the fact that the TSF is going to contain over 100 million tons of mine waste in the headwaters of the EFSFS watershed, and the potentially significant impacts of any type of failure, it is critically important that the technical engineering designs of the TSF dam and buttress are available for the public to review.

For the SDEIS, we also submitted concerns compiled by Dr. David Chambers about management of seepage from the toe of the TSF and buttress (Comment letter 17634-A, Comment #5). The Forest Service did not respond directly to this comment but responded to a similar comment by stating that the TSF Buttress would be covered by a geosynthetic liner and growth media which would eliminate seepage after Mine Year 40 (B-257).

This response is inadequate. As stated in our original comments and the attached October 2024 technical report by Dr. David Chambers (CSP2 Review of Comment Responses on DSEIS), a top liner only on the waste rock is still likely to allow significant infiltration. The only way to minimize seepage/infiltration into the waste rock would be to add an underliner to the waste rock facility.

To better protect water quality, the Forest Service should do more to ensure that the seepage/infiltration into the waste rock in the Tailings Storage Facility Buttress, and the

contaminants leaching out, are minimized. Better management out could reduce the concentrations of contaminants leaching out and shorten the time period for water treatment. As an objection remedy, we recommend installing an underliner to the waste rock buttress at the start of construction of the buttress.

G. MINE CLOSURE, RECLAMATION AND FINANCIAL ASSURANCE

1. The SDEIS and FEIS lack detailed information about the reclamation and closure plans necessary to analyze impacts.

As discussed in Objector 2023 Comment Letter (p. 129), the Reclamation and Closure Plan submitted by Tetra Tech (2021(b)) on behalf of Perpetua Resources states that, "mining and reclamation plans are approximately 10-40 percent complete …" (SDEIS p 1-23), and fail to provide sufficient information about reclamation and closure to understand the potential impacts of the proposed project.

In response, the FEIS (P. B-78) states that, "Sections 3.5 and 4.5 summarize the proposed reclamation plan and its effects," and "Detailed engineering plans are not required until facilities are closer to final closure." The FEIS at 2-94 also states that "Following a Project ROD, Perpetua would prepare a Reclamation Monitoring and Maintenance Plan for regulatory agency approval."

This response is inadequate. NEPA requires that agencies take a hard look at the potential impacts of a proposed project, which requires adequately detailed reclamation and closure plans to understand the potential effects of the proposed project during the permitting process, rather than deferring this information to some later time.

For example, the FEIS at 4-87 states that "All the SGP-related disturbance at the mine site would be subject to reclamation activities, with the exception of approximately 278 acres associated with the Hangar Flats high walls, the West End pit lake and high walls, Yellow Pine pit high walls, and the Stibnite Lake feature. These areas would remain a permanent commitment of soil resources (a large portion of which would occur on private patented mining claims). For all other areas in the activity area, disturbance would be subject to the reclamation activities detailed in the Reclamation and Closure Plan (Tetra Tech 2019a, 2021a)." The Reclamation and Closure Plan (p. 3-5) also states that reclamation will not be conducted on pit highwalls, Stibnite Lake and the Midnight, West End and Plant Site Ponds.

However, according to the Idaho Regulatory Agencies (FEIS, p. B-187), "While the Forest Service may look at the 278-acre disturbances as a total soil resource commitment (TSRC), the IDL will require grading, recontouring and seeding where applicable on all disturbed land. Highwall benches can be reclaimed by hauling in quality Growth Medium and reseeding with grasses, shrubs, and conifers. Ponds and lake banks can be re-contoured, re-graded, and seeded to prevent erosion. Proper drainage systems need to be built into the lake and pond configuration to

reduce sedimentation. Please note that the Idaho Department of Lands will require an application for mining operations under Idaho Administrative Procedures Act 20.03.02 – 070: Application Procedure and Requirements For Other Mining Operations Including Hardrock, Underground and Phosphate Mining. The IDL will also require an application under IDAPA 20.03.02 - 071: Application Procedure and Requirements for Permanent Closure of Cyanidation Facilities. Reclamation activities will be subject to IDAPA 20.03.02, and not just disturbance subject to the reclamation activities detailed in the Reclamation and Closure Plan (Tetra Tech 2019a, 2021a)." (emphasis added)

This is reiterated by the Idaho Regulatory Agencies (FEIS, p. B-63), which states that "the referenced Reclamation and Closure Plan (Tetra Tech 2021a) has not been submitted to IDL for review as part of the mine plan reclamation application, and may not meet all requirements of IDAPA 20.03.02."

In addition to the failure to describe and analyze reclamation activities for these 278 acres of the mine plan as outlined in IDL's comments, these reclamation activities will require growth media and other reclamation materials that would contribute to the significant soil deficit (see below), and must be calculated and analyzed.

Additional comments from the Idaho Regulatory Agencies also emphasize the uncertainty and adequacy of existing reclamation plans (FEIS at B-186): "Without the quantity and quality of RCM to ensure vegetative success, many parts of the proposed Restoration and Reclamation will fail. One of the areas of great concern is with the predicted water temperatures to ensure fish survival. Without successful revegetation resulting in shading over the streams, temperatures will only rise. While the best seed bank material and growth media on site is to be utilized for reclamation along riparian corridors, many of the streams will not be reclaimed until the end of the project. Both the seedbank and growth media will have been stockpiled for long periods of time, greatly reducing viability (especially of the seed bank material). Revegetation on slopes will reduce erosion and sediment entering the streams, but without quality RCM to provide successful revegetation, erosion and sedimentation will continue to be a problem. Water quality, already poor, will continue to be impacted by using poor RCM which contain high amounts of metals, which will continue to leach into seeps and streams. Photos from the Perpetua website portrays extremely optimistic successful restoration and reclamation. However, Perpetua never states how long it will be for successful restoration and reclamation. Perpetua only states that they will "establish vegetation", which leads the reader to believe it may not reach what is considered "successful revegetation" as per IDAPA 20.03.02, 140.11. a. and b. In reality, it may take many decades to achieve, if it happens at all."

In response, the FEIS states that "Implementation of the Reclamation Closure Plan would include revegetation performance monitoring. Further, a reclamation bond would be established and in place prior to construction. This bond would remain in place through the satisfactory

completion of reclamation activities including revegetation."

This is inadequate. Agencies must have a detailed reclamation plan for all aspects of the mine in order to calculate an accurate reclamation bond to ensure satisfactory completion of reclamation activities.

2. The SDEIS/FEIS identifies a vast deficiency in available reclamation materials and fails to demonstrate that timely reclamation can be achieved.

As discussed in Objector 2023 Comment Letter (p. 129-130), the SDEIS identifies a major deficit in growth material available for reclamation, and identifies major challenges associated with the quality and suitability of available Reclamation Cover Materials (RCM) for the SGP: 1) the overall relatively poor existing quality of the upland soils that make up approximately 62 percent of the salvageable volume at the SGP and Burntlog Route; 2) the long-term stockpiling of material and 3) the high background concentrations of metals in the soil.

In response, the FEIS at B-78 states that "The requirements for reclamation cover materials and the sources of those reclamation cover materials are described in the Reclamation Closure Plan and summarized in Sections 3.5 and 4.5. The limitations on the soil available for salvage are identified along with the methods proposed to develop suitable cover material from other sources, namely mined till from the Yellow Pine pit, that meet suitability criteria. Effects of stockpiling on soil productivity are identified as a potential effect along with the management practices to minimize the effect. Reclamation and revegetation monitoring is described and would be used to assess reclamation performance per Forest Service reclamation requirements."

The FEIS at B-78 also states that in response that "The current Reclamation Closure Plan utilizes unconsolidated till materials mined from the Yellow Pine pit to meet the Project needs for growth material. The suitability of the Yellow Pine pit material as growth material would need to be verified and enhanced as necessary. Uncertainties regarding the sourcing of reclamation cover material would be incorporated into the reclamation cost estimate."

The FEIS (ES-13) also states that Perpetua has committed to salvage the appropriate volume of GM and to create the volume of compost necessary as an amendment to provide suitable quality and quantity of the GM to cover the areas to be reclaimed. The Forest Service would require limits on the GM for arsenic, mercury, and antimony based on baseline soil concentrations, and would require a Sampling and Analysis Plan that would include screening of soils as well as laboratory testing. Perpetua has also committed to performance criteria tied to slope and soil stability, sediment, and vegetation cover, which would need to be met prior to release of a reclamation performance bond."

This response is inadequate. These performance criteria are not tied to specific reclamation timelines, but rather to the release of the company's financial assurance, which could be delayed indefinitely.

Furthermore, as outlined here and in comments 3, 4, and 5 in this section, the proposed limits on metal concentrations in RCM (growth media and rootzone materials) fail to adequately consider the impacts of phytotoxicity on revegetation success; the limits are based on unsupported and biased information, and they fail to consider the potential ecological and human health effects of using soils with high metal concentrations as reclamation materials. Performance criteria tied to slope and soil stability, sediment and vegetation cover are also inadequate. The Forest Service has ignored the potential impacts to water quality from using soils with elevated metal levels as reclamation material, and the agency is taking a "let's figure this all out later" approach, rather than requiring a reclamation plan that adequately addresses these significant issues now. Further, the Forest Service cannot accurately calculate financial assurance to cover the cost of reclamation without taking a hard look at how much reclamation material will be necessary and where it will be obtained.

In addition, significant uncertainties associated with the availability of reclamation materials in the Reclamation and Closure Plan are outlined in FEIS and the Soils and Reclamation Cover Materials Specialist Report (USFS 2023), that have yet to be addressed including:

1) Inadequate compost. According to the specialist report (p. 66) GM salvaged from upland areas would make up approximately 62 percent of the salvageable volume at the SGP and Burntlog Route and has *poor suitability for reclamation due to generally coarse textures and high coarse fragment* content which limit water and nutrient holding capacity. Perpetua anticipates that compost (and potentially other soil amendments) would be applied to salvaged GM to improve their suitability (Specialist report, p.17). The RCP identifies 10 tons per acre of compost would be incorporated into the top 3 to 6 inches of GM; however, the volume specified is minimal, translating to less than 0.25 inch of compost to be mixed into 6 inches of GM. *This small amount of compost, corresponding to 0.25 inches of compost mixed into six inches of GM, is not expected to provide sufficient long-term benefits to the GM that would be important for revegetation.* According to the Soils Specialist Report (p. 18), the 10 tons (wet weight) /acre of compost is estimated as approximately 13,850 tons (wet weight; approximately 26,000 BCY) of compost. The FEIS fails to say where this would be acquired, nor the actual amount that would be needed, given the inadequacy of this amount.

2) Compost may not be retained by GM. The Specialist Report (p. 75) states that the "Proposed soil amendments, including small amounts of organic composts and fertilizers, *may not be retained by this GM.*" The FEIS fails to include provisions

for what will happen if the GM doesn't retain the compost/fertilizers, nor analyze the potential negative consequences to revegetation efforts, increases in erosion, and other potential negative outcomes.

3) Stockpiling will significantly degrade soils. According to the Specialist Report, "Reclamation would be performed using GM that would be stored in deep stockpiles for years, which would undergo changes to bulk density, organic matter content, nutrients, and microbial activity that would persist until soil structure and organic matter build up occurred (Thompson and Sorvig 2000; **Section 7.2.2.3**);" Due to the extended period of operations, and logistical issues, only about 51,000 BCY out of a total of 1,657,246BCY needed of GM would be live-handled. The remainder would be stored in deep stockpiles with combined holding capacities of 1.79 million BCYs. These stockpiles would be up to 200 feet tall, and the time between GM salvage and placement would vary greatly between different SGP facilities but could remain in stockpiles for as long as 1 to 24 years with the upper end of the range representing the duration from the initial construction phase until the end of the reclamation phase (Tetra Tech 2021a). Potential adverse effects associated with salvage and stockpiling activities include:

   The specialist report (p. 79) then concludes that "*despite these measures the storage of GM within deep stockpiles for years would still result in the loss of soil productivity, which would affect the overall quality of this material at the time of placement."*

4) Inadequate straw mulch: Specialist report (p. 76) indicates that on disturbed areas with greater than 30 percent slope, Perpetua also would apply mulch to aid in stabilizing the area and promote revegetation. Straw mulch would be certified as weed-free and applied over a roughened seed bed at a rate of about 2,200 pounds per acre. Yet, the Specialist report concludes that "*The straw mulch would be considered a nominal amount, and it would have a short duration of effectiveness due to its quick rate of decomposition and susceptibility to wind."*

The Idaho Regulatory Agencies also highlight inadequate quality growth material (FEIS at B-187). "The second underlined section states the consequences of having poor quality Growth Medium. For successful reclamation, vegetation success is paramount. Please also note that the West End Pit as it remains today, is a precursor to what will be left by Perpetua for other areas, if quality Growth Medium is not made available from a source other than the Project area."

Comments from the Idaho Regulatory Agencies (FEIS, p. B-187) also emphasize the uncertainty of the existing reclamation plans: "Without the quantity and quality of RCM to ensure vegetative success, many parts of the proposed Restoration and Reclamation will fail. One of the

areas of great concern is with the predicted water temperatures to ensure fish survival. Without successful revegetation resulting in shading over the streams, temperatures will only rise. While the best seed bank material and growth media on site is to be utilized for reclamation along riparian corridors, many of the streams will not be reclaimed until the end of the project. Both the seedbank and growth media will have been stockpiled for long periods of time, greatly reducing viability (especially of the seed bank material). Revegetation on slopes will reduce erosion and sediment entering the streams, but without quality RCM to provide successful revegetation, erosion and sedimentation will continue to be a problem. Water quality, already poor, will continue to be impacted by using poor RCM which contain high amounts of metals, which will continue to leach into seeps and streams. Photos from the Perpetua website portrays extremely optimistic successful restoration and reclamation. However, Perpetua never states how long it will be for successful restoration and reclamation. Perpetua only states that they will "establish vegetation", which leads the reader to believe it may not reach what is considered "successful revegetation" as per IDAPA 20.03.02, 140.11. a. and b. In reality, it may take many decades to achieve, if it happens at all."

In response to these comments (FEIS at B-187), the FEIS was changed from a reclamation period of 5 years to 40 years post-closure. However, this FEIS still fails to address the inadequacy of existing reclamation plans.

3. The FEIS fails to take a hard look at the consequences of inadequate soil covers and reclamation materials, and provides inappropriate references to support cover depths.

As stated in Objector 2023 Comment Letter (p. 133-134), the FEIS fails to demonstrate that the proposed cover depths are adequate for reclamation purposes, or analyze the consequences of reduced soil covers.

In response, the FEIS (P. B-80-81) states that the "Proposed soil cover thicknesses are described in the Reclamation Closure Plan and summarized in Section 4.5. Thicknesses are associated with proposed revegetation and are consistent with existing soil conditions in the Project area."

This response is inadequate. The proposed thicknesses are *not consistent* with existing soil conditions in the Project Area. One consequence of the shortfall in growth media (GM) and seed bank material (SBM) volume is that the reclaimed areas have much less depth of GM spread over them than the depth of native material that is salvaged.

For example, according to FEIS, p. 4-94, reclaimed wetlands and channel reaches would receive a combined six inches of GM and SBM, except for wetlands and channel reaches on the TSF, which would receive six inches of GM and six inches of SBM (Tetra Tech 2019a). However, the Reclamation and Closure Plan Figure 3-5 identifies the soil depth of existing wetlands with 2-3 feet of soils - a significant difference between existing soil depth and post-reclamation soil depth.

As stated in our comments (FEIS, p. B-81), it seems likely that the productivity and functionality of these thinly veneered wetlands would be significantly reduced from the existing areas, yet no analysis of the influence of soil depth on wetlands function is included. The FEIS fails to respond to this or provide analysis.

As noted in Objector comments (FEIS, p. B-81), the Reclamation and Closure Plan (p. 3-33) references a 2018 database of cover depths at Montana mines from the Montana Department of Environmental Quality to support potential soil depths for reclamation at SGP. However, two of the mines cited (Rock Creek and Montanore) have not been constructed, so reclamation success cannot be determined (Hecla withdrew its plan of operations for those two proposed mines). The Montana Tunnels Mine, which is also cited, has not been successfully reclaimed. The mining company filed for bankruptcy in 2022, with substantive reclamation obligations unfulfilled and extensive erosion issues. The Graymont Mine is a limestone quarry, not a hardrock mine. These cited mines should not be considered suitable references for reclamation purposes at SGP.

To the extent the FEIS relies on this reference, there is no response in the FEIS to these issues.

4. The SDEIS lacks adequate suitability criteria for growth media

As stated in Objector 2023 Comment Letter (p. 134), sustainable revegetation success depends on the quality of growth media (GM) and subjacent material that comprises the vegetation zone with regard to a number of physical, chemical and nutrient factors. According to the Soils Specialist Report (p. 13), when excavating and storing materials for growth media, "Tailings and contaminated soil and fill material from historical mining activities would be identified through testing and visual observation and separated from suitable soils prior to and during soil excavation activities. Testing for contamination would focus on the presence and leachability of metals from these materials (e.g., arsenic, antimony, and mercury) (emphasis added). When encountered during GM/SBM salvage, these materials would be excavated separately and reprocessed, repurposed for construction purposes (if suitable), and/or disposed of into the TSF." However, the suitability criteria for growth media (Soils Specialist Report, Table 2-3) doesn't specify leachability criteria. What leachability criteria will be used, and how will it be applied?

As further stated in Objector comments (p. 134), "The SDEIS also lacks phytotoxicity suitability criteria and public health criteria for growth media. The Reclamation and Closure Plan does not include trace metal concentrations as part of the growth media suitability guidelines for plant growth. According to the Soils Specialist Report (p. 76), "Metal concentrations in growth media would be screened for comparison to baseline soil concentrations pre-reclamation per Forest Service requirements." However, the specific baseline concentrations that would apply are not specified. The SDEIS must specify the baseline concentrations that would be used as suitability criteria for growth media, and whether that may affect the amount of available growth material, and not defer this information and analysis to another time.

In response, the FEIS at B-184/185 states that "Section 4.5.2.2 describes the suitability criteria for growth media. Identification of suitable material for growth media involves screening metal concentrations for comparison to baseline soil concentrations to exclude materials with metal concentrations beyond the range of baseline soil conditions from use as growth media. It is expected that growth media within the range of baseline soil conditions would have comparable leachability and phytotoxicity properties based on the site soil surveys and observations of growth media performance in historical reclamation areas. The upper bounds for soil arsenic, antimony, and mercury concentrations for materials expected to support plant growth and development are provided in the Reclamation and Closure plan and described in Section 4.5.2.2."

This response is inadequate. Section 4.5.2.2 includes a Table of Suitability Criteria for Growth Media that does not include metal concentrations, and there is no specification in Section 4.5.2.2 of the actual range of baseline metal concentrations that would apply to Growth Media. Further, the FEIS at 4-98 states that "The Reclamation and Closure Plan does not include trace metal concentrations as part of the GM suitability guidelines for plant growth. Metal concentrations in growth media would be screened for comparison to baseline soil concentrations pre-reclamation per Forest Service requirements." The RCP does include baseline data from surface soil samples from mineral exploration in the area. According to the RCP, the 10 highest baseline soil concentrations identified in area soils in the RCP (p. B-14) are:

Antimony: 49.3 ppm to 462 ppm
Arsenic: 1230 ppm to 5280 ppm
Mercury: 0.07 ppm to 252 ppm
Silver: 0.304 ppm and 1.085 ppm

If this is the range of baseline metal concentrations that would apply to growth media, which the FEIS doesn't specify, the FEIS remains flawed because it fails to demonstrate that reclamation can be successfully accomplished by using these soils as growth media for reclamation purposes.

The FEIS at 4-98 highlights the uncertainty of reclamation success associated with using these soils for reclamation that, "The potential phytotoxicity of similar soils to be used as GM and seed bank material in reclamation *is unknown*. Potential phytotoxicity would depend on the natural variability of GM, seed bank material, and rootzone material based on geology and other environmental factors, and the natural variability in plant tolerances to each metal and the various geochemical states that the metals occur in."

This is highlighted by the RCP, where Tetra Tech 2021a (p. B-27) documents *a 40% decline* in the number of plant species observed in plots where the maximum total arsenic concentration in the soil profile was 1,000–3,000 ppm compared to those plots where the maximum total arsenic concentration in the soil profile were between 450–1,000 ppm. The Tetra

Tech (2021a) describes the soils, with concentrations from 1,000-3,000 ppm arsenic as "poor," with "severe limitations that make use questionable."

This response is also inadequate because the expectation that growth media within the range of baseline soil conditions would have comparable leachability and phytotoxicity properties based on the site soil surveys and observations of growth media performance in historical reclamation areas is not supported by data or analysis. The FEIS identifies numerous historical areas where reclamation has been a challenge.

"Reclamation challenges associated with mine facilities are consistent with observations of nearby, previously reclaimed mining areas having mixed vegetative cover success (e.g., Dewey Mine/Thunder Mountain Mining District), as well as previous efforts by Perpetua and others at the SGP to establish a self-sustaining cover of vegetation on previously mined lands that were met with limited success (Greystone 1994). To conservatively address uncertainty in reclamation success, this analysis of Total Soils Resource Commitment (TSRC) assumes that all SGP- related disturbances in the PNF activity area would be considered TSRC due to the site-specific challenges and the duration and nature of soil disturbance to support the mining activities."

This response is also inadequate because it fails to consider the ecological and human health effects of using soils with elevated metals as reclamation material. The EPA also highlighted the failure to consider elevated metal concentrations in Reclamation Materials on surface and groundwater quality, stating in the FEIS (p. B-189) that, "EPA recommends the FEIS evaluate how elevated soil concentrations will impact surface water quality in the Environmental Consequences section of the FEIS."

5. The suitability criteria for root zone materials fail to demonstrate that reclamation can be successfully completed or that public and ecological health will be protected.

As stated in Objector 2023 Comment Letter, (P. 135-138), "It appears from the SDEIS (p. 87-88), that the reclamation plan proposes to use soils with up to 3,000 ppm arsenic as suitable root zone material (RTZ) for reclamation, and apply more restrictive, but not yet specified, criteria for growth media. The proposed concentrations for RTZ of up to 3,000 ppm are much higher than the existing concentrations for arsenic within the project area that will be salvaged for reclamation (442 ppm arsenic, 0.82 ppm mercury, and 137 ppm antimony) or those from the SMUs (651 ppm arsenic, 0.96 and 379). (RCP p. 3-27 to 3-28). Thus, the SDEIS appears to authorize the use of soils for reclamation materials that will increase arsenic levels in soils within the area (i.e., worsen soil conditions).

The Reclamation and Closure Plan (Tetra Tech 2021) justifies the use of much higher arsenic concentration for Perpetua's proposed suitability criteria based on Hecla reclamation effort from 1992. However, Hecla's reclamation effort, analyzed in Appendix B, should not be used as the basis for developing suitability criteria because:

- It relies on uncertain and unsubstantiated information: “Records, descriptions, or as-builts of the Hecla Reclamation *are not available*; however, based on communications with the exploration manager for Perpetua Resources, waste rock was nominally covered with one to two feet of “soil” *of unknown origin and properties*. Following this, seed was sown that included alfalfa (*Medicago sativa*), and two-to three-year old tree seedlings were planted. It is not known if amendments, fertilizers, or other cultural practices were applied to the site.” (RCP p. B-20)
- The conclusions of the HECLA Reclamation Area analysis concede that “In addition, *intervening variables that were not quantified nor analyzed during this study may strongly influence or constitute the underlying causes for the correlations presented below* and therefore the analysis should be understood as limited in these terms.” (p. B 3-5)
- It has not been peer-reviewed.
- It doesn’t provide data, or analyze potential public or ecological health issues associated with elevated arsenic concentrations.

Furthermore, the conclusions rest on the data from just three soil pits located in one of the oldest reclamation sites in the project area. Why weren't any of the other previously reclaimed sites such as the Spent Ore Disposal Area, the Garnet Pit, or any of the exploration phase test plots analyzed as well? Most of these sites are not doing very well as far as vegetation establishment (Soils and Reclamation Cover Materials Specialist Report, p. 77). Absent any rationale for site choice, this approach suggests a strong bias in site selection and sample number.

The RCP describes the soils, with concentrations from 1,000-3,000 ppm arsenic as “poor,” with “severe limitations that make use questionable,” however it indicates that these soils could still be used in reclamation efforts. (RCP p. 3-25)

Suitability criteria for reclamation cover material should be established, and identified in the SDEIS, including phytotoxicity concentrations that are based on well-established and conservative scientific analysis. These criteria should be focused on concentrations that facilitate reclamation objectives (e.g., prompt revegetation), not the upper bounds of what a plant might be able to tolerate. The suitability criteria must also take into account concentrations that are safe for public and ecological health. As stated in the EPA comments on the DEIS,

> “we are concerned that these values may not be protective of risks to surface waters and ecological receptors. The risk-based screening level (RBSL) values for mercury are 240 mg/kg. While this value was developed for soil ingestion RBSLs, impacts to proximate waterbodies at concentrations in this general range could be a significant issue. A mercury concentration of 240 mg/kg in reclamation cover material would be similar to the average concentration of mercury in tailings at the Cinnabar Mercury Mine (259 ±101 mg/kg), which is a significant source of mercury to downstream water bodies. In addition, surface emissions to the air at

concentrations in this range could become a significant source to the atmosphere that would need to be included in the emission estimates. The proposed cover material concentration of 240 mg/kg is three to four orders of magnitude above typical background soil concentrations presented in the draft EIS, which identifies a mean mercury concentration in soil samples collected from undisturbed areas surrounding the mine site of 0.94 mg/kg."

According to the SDEIS (p. 4-523), "Soils used for reclamation would be screened based on their concentrations of arsenic, antimony, and mercury to exclude materials with metal concentrations outside the range of natural baseline conditions or *with metal leaching potential*." However, it doesn't specify the concentrations that will be applied, and there doesn't appear to be any metal leaching potential included in the SDEIS to support the criteria. The SDEIS should provide the metals leaching analysis, and demonstrate how this analysis is incorporated into the screening criteria.

According to the SDEIS (P. 4-522), Idaho Department of Health and Welfare (IDHW) reviewed available information from the proposed Reclamation and Closure Plan for the SGP to consider whether potential health risks from metals in soils exist for future site users. The IDHW letter points to the suitability criteria proposed in the RCP, and finds that this range of arsenic concentrations exceeds human health screening values for metals in soils (Table 1). (IDHW, p. 2) It also finds that "Information on distribution of expected concentrations in metals or metal bioavailability across the reclaimed site is not provided."

According to the SDEIS, "The IDHW included recommendations for additional characterization to adequately assess risks to public health and recommended that potential human exposure following closure and reclamation should be considered when identifying RCM to ensure protection of recreational receptors (IDHW 2019)." However, the SDEIS doesn't indicate whether or how these recommendations will be included in the suitability assessment, or how they would be applied.

The SDEIS fails to demonstrate that reclamation can be successfully achieved. The proposed suitability criteria are not supported by scientific literature, with arsenic concentrations that far surpass other phytotoxicity criteria established by the EPA, USGS and other governmental agencies. It proposes to use soils characterized under the suitability criteria as "poor" quality, without analyzing the effects on reclamation viability, and fails to consider the potential impacts to surface water or groundwater due to metals leaching.

In response to Objector comments, the FEIS at B-81 and 82 states that, "The suitability criteria for root zone material are based on the range of existing conditions for root zone material on site. As such these criteria are not reflective of average site conditions but rather the end of the range at which root zone materials are supporting vegetation. Previous reclamation results inform the criteria through observations of root zone materials that were revegetated and root zone

materials that did not support vegetation. The Reclamation Closure Plan does propose suitability criteria for growth media in addition to root zone material. These suitability criteria for metals in growth media are based on current metal concentrations in Project area soils. A 2003 human health risk assessment concluded that existing site conditions did not represent a human health risk based on the likely exposure scenarios."

This response is inadequate. The FEIS references information from Hecla's reclamation efforts from 1992 in the Reclamation and Closure Plan (Tetra Tech 2021a) (see footnotes in RCP, p. B-27). This information is biased and unsupported as outlined in our comments.

The FEIS is also inadequate because Suitability Criteria for root zone material should not be based on metal concentrations at the "end of the range" (i.e., highest possible range of metal concentrations that vegetation may be able to tolerate over time), but on criteria that optimizes timely and successful revegetation. The problem with this is highlighted by the RCP, where Tetra Tech 2021a (p. B-27) documents *a 40% decline* in the number of plant species observed in plots where the maximum total arsenic concentration in the soil profile was 1,000–3,000 ppm compared to those plots where the maximum total arsenic concentration in the soil profile were between 450–1,000 ppm. The Tetra Tech (2021a) also describes the soils, with concentrations from 1,000-3,000 ppm arsenic as "poor," with "severe limitations that make use questionable."

The FEIS (p. 2-142) states that "Perpetua's proposed 3,000-ppm arsenic limit for suitable root zone material is high; however, the Forest Service also would require limits on the GM (that would overlay the root zone material) for arsenic, mercury, and antimony, and would require a screening of soils as well as laboratory testing." This response is also inadequate. The limits on GM are unclear, and do not address the failure to provide appropriate limits for root zone material.

As stated in Objector 2023 Comment Letter (p. 137) the SDEIS/FEIS is also flawed because it proposes to use soils characterized under the suitability criteria as "poor" quality without analyze the effects on reclamation viability and fails to consider the potential impacts to surface water or groundwater due to metal leaching.

The EPA also raised concerns about impacts to water quality (FEIS at B-189): EPA recommends the FEIS discuss how soils with elevated concentrations of antimony, arsenic and mercury will impact predicted water quality concentrations of these contaminants.

The Idaho Regulatory Agencies also raised this issue in their comments (FEIS, B-186), "While the best seed bank material and growth media on site is to be utilized for reclamation along riparian corridors, many of the streams will not be reclaimed until the end of the project. Both the seedbank and growth media will have been stockpiled for long periods of time, greatly reducing viability (especially of the seed bank material). Revegetation on slopes will reduce erosion and sediment entering the streams, but without quality RCM to provide successful revegetation, erosion and sedimentation will continue to be a problem. Water quality, already poor, will continue

to be impacted by using poor RCM which contain high amounts of metals, which will continue to leach into seeps and streams." (Emphasis added)

As stated in Objector 2023 Comment Letter, (p. 136-137), The suitability criteria must also take into account concentrations that are safe for public and ecological health. Public health risks are noted by the Idaho Department of Health and Welfare (IDHW), which reviewed available information from the proposed Reclamation and Closure Plan for the SGP to consider whether potential health risks from metals in soils exist for future site users. It also raised concerns. According to the SDEIS (P. 4-522), The IDHW letter points to the suitability criteria proposed in the RCP, and finds that this range of arsenic concentrations exceeds human health screening values for metals in soils (Table 1). (IDHW, p. 2) It also finds that "Information on distribution of expected concentrations in metals or metal bioavailability across the reclaimed site is not provided."

In response, the FEIS (p. B-81) states that "A 2003 human health risk assessment concluded that existing site conditions did not represent a human health risk based on the likely exposure scenarios."

This is inadequate because it relies on a 20 year old analysis, based on existing conditions at the time, and not current analysis that considers the potential impacts of using these metal-laden soils as reclamation material for a new operation under different conditions and different uses. Furthermore, the FEIS Water Quality specialist report, (p. 80) states that the East Fork SFSR drainage in the Stibnite Mining District has drinking water supply as a designated use.

7. The FEIS and DROD fail to demonstrate that the proposed Stibnite Gold Project will meet reclamation goals, objectives and requirements.

As stated in Objector Comment Letter #2, Objectors also raise concerns about the failure of the proposed Stibnite Gold Project to meet reclamation goals, objectives and requirements. Section 4.5.2.2 identifies that the Total Soil Resource Commitment (TSRC) guidelines in the Payette National Forest Plan to limit TSRC to 5% of the activity area will be violated with the project-related impacts leading to a TSRC loss of 17% (approximately 1,457 acres). (SDEIS Table 4.5-1 and Figure 4.5-1). Rather than requiring the project to comply with the Forest Plan, the Forest Service is proposing a Forest Plan Amendment (FPA) which would waive the TSRC guidelines. By authorizing a 17% loss of TSRC, approximately 1,457 acres of the project area will be converted from a productive site to an essentially non-productive site for more than 50 years.

According to the SDEIS (p. 4-78-79), "Reclamation challenges associated with mine facilities are consistent with observations of nearby, previously reclaimed mining areas having mixed vegetative cover success (e.g., Dewey Mine/Thunder Mountain Mining District), as well

as previous efforts by Perpetua and others at the SGP to establish a self-sustaining cover of vegetation on previously mined lands that *were met with limited success* (Greystone 1994). To conservatively address uncertainty in reclamation success, this analysis of Total Soils Resource Commitment (TSRC) assumes that *all SGP-related disturbances in the PNF activity area would be considered TSRC due to the site-specific challenges and the duration and nature of soil disturbance to support the mining activities*." (Emphasis added)

The SDEIS (p. 4-79-80) highlights the long-term and permanent loss of soil resources, stating that "this analysis assumes recovery of greater than 40 percent soil productivity of natural background within a 50-year timeframe *would not occur* (due to the nature of disturbance and the conditions at the site) and, therefore, the duration of impacts would be longer-term, well beyond the 50-year threshold." And "For the TSF and TSF Buttress, where selected development rock would serve as the rooting zone for reclamation-related planting instead of native regolith, recovery of soil productivity to 40 percent of natural background would be on a much longer timescale (e.g., *likely centuries to millennia*) such that they would be considered permanent TSRC." (Emphasis added)

Allowing an operation to begin that will not be fully reclaimed due to the conversion of 1,457 acres from productive to nonproductive use violates the Forest Service's duties to ensure the protection of public resources under the Organic Act, Minerals Policy Act of 1970, and other applicable laws.

Under the Organic Act, NFMA, the CWA, 1970 Act, and the Part 228 regulations (as well as the Part 251/261 rules), the Forest Service cannot approve a mine that does not ensure that reclamation will be completed. Under the Part 228 regulations, the agency can only approve a mine that can be reclaimed. In detailing the reclamation requirements, the regulation states that the:

> [O]perator shall, where practicable, reclaim the surface disturbed in operations by taking such measures as will prevent or control onsite and off- site damage to the environment and forest surface resources including:
>
> (1) Control of erosion and landslides;
>
> (2) Control of water runoff;
>
> (3) Isolation, removal or control of toxic materials;
>
> (4) Reshaping and revegetation of disturbed areas, where reasonably practicable; and
>
> (5) Rehabilitation of fisheries and wildlife habitat.

36 CFR § 228.8(g). By allowing the continuation/creation of a mine plan that will result in 17% loss of TSRC, the agency has violated these requirements.

As noted in the Forest Service's *Anatomy of a Mine* regulatory guidance report, reclamation is a critical and required component of a logical, complete and reasonable mining plan:

> Satisfactory reclamation should emphasize three major objectives:
>
> 1. The productivity of the reclaimed land should at least equal that of the premine surface. This does not necessarily mean that the site must be restored to an approximation of its original condition, or that surface uses after mining will be the same as those existing prior to mining. For example, an area used for marginal grazing prior to mining may be changed to a useful and attractive recreational complex, or perhaps in another case to a housing area.
>
> 2. Satisfactory reclamation should leave the mined area in a condition that will not contribute to environmental degradation either in the form of air- or water-borne materials, or from chemical pollution.
>
> 3. The reclaimed area should be aesthetically acceptable and it should be safe for the uses intended.[1]

As outlined in a technical report that evaluates reclamation success, soil biological properties and nutrient cycling, vegetation dynamics and landscape scale processes are all integral elements of reclamation success.[2]

The Mining and Minerals Policy Act also mandates successful and final reclamation of mine operations approved by the Forest Service, requiring "the reclamation of mined land, so as to lessen any adverse impact of mineral extraction and processing upon the physical environment that may result from mining or mineral activities." 30 U.S.C. § 21a. No such plan to "lessen any adverse impact" from the creation of unproductive soils has been proposed or required in this case.

The creation of a TSRC sacrifice zone, especially one which is a direct threat to wildlife, violates the federal laws and regulations noted herein. As such, the Forest Service cannot issue a record of decision (ROD) that may involve such activities and must reject any plan of operations that does not prevent such a large-scale loss of soil resources.

The Forest Service reclamation policy is found in FSM 2840 and is summarized as follows:

> **2840.2 -Objectives.**
>
> The Forest Service manages the reclamation of lands disturbed by mineral and associated activities in order to:

- Minimize the environmental impacts resulting from such activities.
- Ensure that disturbed lands are returned to a use that is consistent with long-term forest land and resource management plans.

2840.3 – Policy

Reclamation shall be an integral part of Plans of Operation that propose surface disturbance.

All lands disturbed by mineral activities shall be reclaimed to a condition that is consistent with forest land and resource management plans, including applicable State air and water quality requirements.

All reclamation requirements included in a Plan of Operations shall include measurable performance standards. Reclamation requirements shall be those reasonable, practicable, and necessary to attain standards.

Reclamation shall be undertaken in a timely fashion and occur sequentially with ongoing mineral activities.

Reclamation bonds, sureties, or other financial guarantees shall ordinarily be required for all mineral activities that require a Plan of Operations; dollar amounts of such guarantees shall be sufficient enough to cover the full cost of reclamation.

To the extent practicable, reclaimed National Forest System land shall be free of long-term maintenance requirements

Similarly, the proposed plan fails to meet these reclamation policies, which require reclamation to be undertaken in a timely fashion, and require that "all lands" disturbed by mineral activities "shall be reclaimed to a condition that is consistent with forest land and resource management plans, including applicable State air and water quality requirements."

It appears that the FEIS fails to address these comments in the Response to Comments (Appendix B). Furthermore, the FEIS (p. 4-87) continues to draw the same drastic conclusion that:

"Reclamation challenges associated with mine facilities are consistent with observations of nearby, previously reclaimed mining areas having mixed vegetative cover success (e.g., Dewey Mine/Thunder Mountain Mining District), as well as previous efforts by Perpetua and others at the SGP to establish a self-sustaining cover of vegetation on previously mined lands that were met with limited success (Greystone 1994). *To conservatively address uncertainty in reclamation success,*

this analysis of TSRC assumes that all SGP-related disturbances in the PNF activity area would be considered TSRC due to the site-specific challenges and the duration and nature of soil disturbance to support the mining activities."

The FEIS (p. 4-88) states that, "Nevertheless, this analysis assumes recovery of greater than 40 percent soil productivity of natural background within a 50-year timeframe would not occur (due to the nature of disturbance and the conditions at the site) and, therefore, the duration of impacts would be longer-term, well beyond the 50-year threshold. For the TSF and TSF Buttress, where selected development rock would serve as the rooting zone for reclamation-related planting instead of native regolith, recovery of soil productivity to 40 percent of natural background would be on a much longer timescale (*e.g., likely centuries to millennia*) such that they would be considered permanent TSRC."

9. The SDEIS/FEIS fails to provide a detailed plan for temporary closure.

As noted in Objectors 2023 Comment Letter (p. 139), "The SDEIS states that the Cyanidation Facility Permanent Closure Plan will provide details on how water will be managed during a temporary closure (RCP, P. 5-1) but that plan is not provided in the SDEIS. Without that plan, the SDEIS fails to provide adequate information to demonstrate that plans and mitigation measures are in place to prevent significant harm during a period of temporary closure."

In response, the FEIS (B-52) states, "The requirements for temporary closure or emergency shutdown are described in the Reclamation Closure Plan and the Water Management Plan and are summarized in the EIS. The incorporation of a plan fulfilling those requirements would be required as part of the Project decision."

This is inadequate. The FEIS cannot defer to another agency permitting process to address major issues, including those that involve significant risks to federal resources. The FEIS (p. 2-80) highlights these unresolved risks: "Dewatering of the open pits may continue during temporary closure due to the negative effects that pit lake formation or highwall saturation would have on highwall stability and renewed mine operations. Since ore processing may not be occurring, excess water from the various facilities would need to be managed. *The operational plans required by the Cyanidation Permit and other plans developed as part of IDEQ permits would also describe specific activities and provide details on how process water would be managed during a temporary closure.* A limited potential exists that unfinished facilities (such as haul roads, buttress, open pits, pit backfills, GMSs, etc.) would not have the same protective measures in place (e.g., stormwater collection systems or culverts) as would exist if the facility had been finished. *Therefore, Perpetua would identify interim measures that would be taken to manage stormwater, sediment, dust, and other factors while the mining is temporarily stopped.* Surface water diversion structures are all proposed to be installed prior to construction of the

TSF, open pits, and the TSF Buttress; hence, surface water would be diverted around these facilities regardless of the stage of their completion." (Emphasis added)

As stated in our objections, the failure to include the Cyanidation Facility Permanent Closure Plan and take a hard look at the potential impacts of temporary closure fail to comply with NEPA.

H. WATER RIGHTS & CONSUMPTIVE USE

Objectors (Comment Letter at 139-40) stated that the SDEIS failed to give consideration to the impact of (1) surface water rights on instream minimum flow water rights held by the State of Idaho on the EFSFSR and federally reserved Wild & Scenic water right on the main Salmon River, both of which, under State law, are subordinate to Perpetua's requested water right, and (2) diverting rain or snowmelt if captured prior to entering a natural channel or water course even if the water would otherwise flow into the EFSFSR.

In response to this comment, the FEIS states that the "predicted surface water flows following the diversion of water associated with the Project are described in SDEIS Section 4.8.2.2" and that IDWR is responsible for the administration of water rights and for mitigation requirements." FEIS at B266 -267.

This response is inadequate. The FEIS (pg. 4-155) states that IDWR would determine if Perpetua's water rights applications would impact downstream senior water rights. But as the FEIS points out, those water rights are subordinate to Perpetua's requested water right and can be diminished. Furthermore, the FEIS (pg. 4-180, 4-189) assumes the State "is performing analysis to determine" if the requested water rights would impact the existing State instream water right on the EFSFSR and the Federal Wild & Scenic water right on the Salmon River. The Forest Service cannot defer its analysis of the impacts of these water rights to a state agency's permitting process.

Moreover, the Forest Service settled its water right protest regarding the Wild & Scenic reserved right on the Salmon River. *See Stipulation and Joint Motion to Approve Settlement and Dismiss Protest* (Mar. 1, 2023); *Order Approving Settlement and Confirming Withdrawal of Protests* (Apr. 17, 2023). Therefore, even if the Forest Service could rely on the State's analysis of the impact to its water right on the Salmon River, none has occurred. There is nothing in the FEIS even acknowledging the settlement and whether or how they function to protect instream flows and the Wild & Scenic values of the Salmon River.

The FEIS (pg 4-155) states that any analysis for water rights gathered pertinent data related to existing and proposed water rights in the analysis area. Again, the analysis in the FEIS fails to consider the proposed diversion of surface (rain/snowmelt) water that Perpetua proposes to capture but for which a water right permit is not required. *See In the Matter of Application for Permit No. 77-14378 in the Name of Perpetua Resources Idaho, Inc.,*

Interlocutory Order Deciding Questions of Law at pg. 12 (Aug. 19, 2022).

Finally, Objectors noted (Comment Letter at 140) that the SDEIS failed to mention the potential impact the water diversions might have on federally protected treaty fishing rights to the Nez Perce Tribe. The FEIS (B-267) simply refers back to the inadequate discussion in the SDEIS, indicating that no change in the analysis has been made with respect to Objector's original comment. This response is inadequate.

I. WETLANDS & RIPARIAN

1. The Function and Value Assessment oversimplifies potential impacts

As discussed in Objector's 2023 Comment Letter (p. 146), the Function and Value Assessment oversimplifies interactions and potential adverse impacts to wetlands and riparian resources. In response, the FEIS (p B-373) asserts that this is a matter of opinion and disregards the comment. We find this response inadequate.

It is clear that a great deal of effort was put into this report, and it contains a lot of useful information for understanding the ecological functions provided by the wetland systems identified in the study area. The report helps view wetlands at the landscape ("30,000 feet") level, which is fine for getting "the big picture." However, reducing ecology to a collection of acreages and subjective rating numbers does not provide adequate context for understanding both landscape and ecological functions of the wetlands in question, and what types, extents, ranges, and degree of function would be lost and disturbed and how best those functions might be compensated (whether permittee responsible or mitigation bank). The mitigation rule notwithstanding, some adverse impacts to extensive and complex wetland systems can be uncompensable, which may be the case here. Additional holistic analysis must be conducted in order to fully conceptualize the range of potential impacts that will result from changes to wetland and riparian ecosystems.

2. Adverse Impacts

As described in Objector's 2023 Comment Letter (p. 150-153), the FEIS does not adequately analyze or portray adverse impacts to wetlands and riparian areas resulting from the proposed action.

In response, the FEIS (B-374) states that additional language was added to clarify the scope of analysis but fails to address the underlying intent of the comment, asking for additional analysis to be done.

Adverse impacts to wetlands and other waters are described in Section 4.11 of the FEIS. Under both NEPA and CWA Section 230.10(c) of the Guidelines, all direct, indirect (secondary), and cumulative adverse impacts must be described and accounted for. For instance, Table 7-3, Wetland and Riparian Area Function/Value and Qualitative Corresponding Potential Impacts and

Consequences, explains that for habitat for general wildlife species, there would be loss, alteration, or degradation (e.g., invasive species encroachment, loss of standing surface water, temperature, fragmentation) of wetland and riparian areas that could result in a loss of habitat suitability for wildlife. Though helpful in understanding the broad types of impacts that would occur, the narrative descriptions are only moderately helpful in understanding the extent and range of those impacts. Tables 7-4 to 7-6 provide acreage and linear feet impacts to wetlands and streams, respectively. However, the acreage amounts appear too precise for how those amounts were derived. Nevertheless, the acreage and length numbers in the three tables still give one a "ballpark" idea of the scope and range of impacts.

According to these tables, the direct loss of wetlands and riparian resources in the mine site focus area would be approximately 120 acres and more than 70,000 linear feet of perennial and nonperennial streams. For the off-site focus area, wetland and riparian loss would exceed 75 acres, while more than 38,000 linear feet of perennial and non-perennial streams would be disturbed and degraded.

Indirect (NEPA) and secondary (Guidelines) adverse impacts can be challenging to account for and quantify (as mentioned in Section 7.2.1.1 of the Stibnite Gold Project, Wetlands and Riparian Resources Specialist Report ("the Report"). Because of these challenges, indirect impacts are often underestimated. For instance, indirect effects of roads (big and small) are discussed in Road Ecology. Several types of indirect effects (e.g., noise and lights, rainfall/snow meltwater runoff, air pollution deposition, habitat fragmentation) of roads can be felt as much as several hundred feet from the edge of some roads. This extent depends, among other things, upon,

- the volume of traffic;
- time of day when road is commonly used;
- types of vehicles using the road; and,
- terrain and adjacent habitat.

Further analysis must be conducted in order to fully incorporate the potential cumulative impacts that will result from the proposed action. Without this, the FEIS fails to adequately describe the magnitude of environmental effects that could be expected nor provide adequate mitigation measures.

As discussed in Objector's 2023 Comment Letter (p. 152), groundwater drawdown is another indirect adverse impact that must be accounted for and described. According to the FEIS, approximately an additional 45 acres of wetlands could be altered and degraded from the maximum drawdown area under the 2021 MMP. (FEIS 4-334). The narrative continues, stating that "It is possible that this acreage represents an overestimate of actual potential indirect effects as dewatering drawdown would not affect these wetlands unless they are hydraulically connected to the groundwater experiencing drawdown." However, given the uncertainties and lack of climate

change data incorporated into all models used to evaluate the project, we strongly disagree with how this is presented and believe that additional analysis and refinement is clearly warranted.

As discussed within the Objector's 2023 Comment Letter (p. 152-153), section 5.0 of the FEIS and Section 7.0 of the Wetland and Riparian Resources Specialist Report address cumulative adverse impacts in a very general fashion. There is little actual detail regarding anticipated cumulative adverse impacts. Section 7.4 of the Specialist Report provides a brief summary of cumulative impacts. However, there is no real discussion of those anticipated impacts other than general types (e.g., "loss, alteration, or degradation"). Overall, most of the sections dealing with adverse impacts to wetlands are focused upon acreage numbers. As with other sections dealing with impacts, there is a lack of narrative discussion that describes indirect and cumulative impacts in a meaningful way.

In response, the FEIS (p. B-149) states that additional analysis was added relative to dust and mercury deposition. This response fails to address the underlying concerns of the original comment.

The Wetlands Specialist Report (p. 74) states that "For the SGP, the potential for indirect impacts to wetlands and riparian functions from dust deposition, soil erosion and hydrology alternation is likely to be higher in the immediate areas of roads and other surface-disturbance actions, but would diminish with distance from these actions. However, implementation of regulatory and Forest Plan Requirements plus project engineering design features would avoid and/or minimize these potential indirect impacts." Yet, the report provides no data or analysis to support this assertion. Similarly, the Report states that "Although the impact of dust deposition has not been quantified, effect magnitude would most likely be minor (small but measurable change) and long-term, limited to the life of the SGP." Yet, once again, there is no data or analysis to demonstrate that the effects of dust deposition on wetlands would be minor.

The FEIS must take a hard look at the potential direct, indirect and cumulative effects to wetlands.

J. TRANSPORTATION AND HAZARDOUS MATERIAL SPILL

As previously stated (Lubetkin 2023, pp. 169-170), the SGP spill impact assessment must

- Include an explicit, complete, and quantitative reagents list, as well as other chemicals for blasting, water treatment, spill mitigation, and materials associated with the mining machinery, such as hydraulic oil and antifreeze, and all hazardous wastes that would be considered hazardous materials being transported to or from the mine or used on-site.

- Include complete descriptions of the transportation methods (trucks, pipelines,

etc.), load sizes, and frequency for the hazardous materials listed above, as well as tailings and other hazardous wastes.

- When assessing hazardous material spill risk, consider that the transportation corridor to model is not just defined by the length of any of the newly built roads associated with the mine, but instead extends to the origin(s) and destination(s) of the hazardous materials.

- Include quantitative transportation spill risk estimates for the aggregated total of trips.

- The peer-reviewed literature for risk analysis of hazardous materials transportation is robust. Consider more detailed transportation spill risk models, with up-to-date risk rates and location-specific descriptions of the transportation corridor that allow for modification from national or regional average estimates of *R*.

- Acknowledge that accident modeling only describes one potential way hazardous materials are released from vehicles, and that transportation-related releases can have a multitude of causes, many of which are not modeled. Modeling transportation accidents is a necessary step, but not sufficient to model all transportation spills or all the unintentional releases that occur at mines.

- Be explicit about the numbers of expected spills. The two goals of the EIS production process are to clearly state potential consequences of projects and to inform stakeholders and decision makers of those impacts. The current treatment of spill risks in mining EISs does neither.

As they currently stand, the spill-risk predictions in the SGP FEIS (USFS 2024) only satisfy the first two bullet points listed; the remaining five are incomplete, inaccurate, or nonexistent. They do not measure up to the main objectives of an informed EIS, which are to: (1) estimate potential consequences of project impacts, and (2) inform stakeholders and decision makers how to mitigate those consequences.

1. Spill incidents are often modeled using the $N = RT$ model, where T is exposure variable, such as the number of truck-miles for trucks carrying hazardous materials, R is the spill rate per unit of exposure, such as spills per truck mile for trucks with hazardous materials, and N is the estimated number of incidents or spills involving trucks with hazardous materials. T and N were not explicitly shown in any version of the SGP EIS.

The expected number of spills and their probability of occurrence have been modeled quantitatively for mines and other industries, particularly oil and gas extraction, in their EISs. The most prevalent mode is $N = RT$, where N is the number of spills due to some known exposure amount, R is the spill rate per unit of exposure, and T is the amount of exposure. Both Lubetkin (2020, pp. 10-19) and Lubetkin (2023, pp. 11-26) detail examples. More recently, BLM (2023, pp. 3-19 to 3-21) used the $N = RT$ model to estimate the number of spills for Ambler Road.

More sophisticated transportation risk models are available in peer reviewed literature, again as detailed in Lubetkin (2020, pp. 54-62) and Lubetkin (2023, pp. 127-138). No calculations of expected numbers of spills or their probabilities were made in the SGP DEIS, SDEIS, or FEIS, so it is impossible to evaluate the expected numbers of spills, the spill probability, or the spill risk (*risk = probability x consequences* (Lubetkin 2020, 2023)).

USFS (2024) had no additions or changes that added a quantitative risk assessment about spills related to the transportation corridor or any other spill mechanism related to the Stibnite Gold Project.

2. The FEIS (USFS 2024) incorrectly calculates an estimate of R that is roughly 100 times lower than used elsewhere.

The per truck mile accident and spill rates estimated have remained the same since the DEIS (DEIS, p. 4.7-3; SDEIS, p. 4-135; FSEIS, p. 4-148):

> To evaluate the potential impact of the transport of hazardous materials to and from the mine site, the risk of a transportation accident resulting in the release of hazardous materials was estimated. Accident and incident rates were derived from national statistics for truck accidents that involve hazardous materials as published by the Federal Motor Carrier Safety Administration (2018). Records show that the number of large trucks (gross vehicle weight of more than 10,000 pounds) on national highways from 2013 to 2016 ranged from over 10.59 million to 11.49 million; with large trucks traveling between 275.01 billion miles to 287.89 billion miles annually. Over that same time frame, large truck crashes involving hazardous materials cargo (with no release) ranged from 2,420 to 2,475, while large truck accidents with release of hazardous materials cargo ranged from 385 to 552. The statistical rate of large-truck accidents involving hazardous cargo for miles traveled ranged from approximately 1 accident for every 714 million miles traveled in 2013 to approximately 1 accident for every 522 million miles traveled in 2016. Therefore, statistically, the rate of accidents on the nation's highways involving crashes or spills of hazardous material cargo by large trucks is very low (Federal Motor Carrier Safety Administration 2018).
>
> The rates listed above ranged from 1.4×10^{-9} hazardous material spills per large truck mile

to 1.9 x 10^{-9} hazardous material spills per large truck mile. These values are two orders of magnitude smaller than $R = 1.87 \times 10^{-7}$ accidents/truck-mile (Harwood and Russell 1990) that had been used in previous mining EISs (Lubetkin 2020, 2023). The issues with the per truck-mile rate stated in the DEIS and SDEIS were raised in Lubetkin (2020, pp. 74-85) and Lubetkin (2023, pp. 95-107), respectively. Again, BLM (2023, pp. 3-19 to 3-21) recently used the $N = RT$ model to estimate the number of spills for Ambler Road. BLM (2023) used a value of $R = 4.95 \times 10^{-6}$ ore concentrate spills per truck-mile based on the number of spills observed along the transportation corridors of five large hardrock mines in Alaska.

There was no response in Appendix B or the main body of the FEIS (USFS 2024). See remaining details on the flaws in these calculations in Lubetkin (2024).

3. The impact area for transportation corridor hazardous material spills is underrepresented. While Perpetua may only have direct control and responsibility over the mine site area, the impacts to the community extend along the full transportation corridor. Thus, T is often unstated and underestimated. The transportation corridor associated with the proposed SGP will have both direct and indirect effects that extend well beyond the area considered in the access and transportation studies cited in SGP DEIS (USFS 2020), SDEIS (USFS 2022), and FEIS (USFS 2024). Both Lubetkin (2020, pp. 63-68) and Lubetkin (2023, pp. 85-90) examine the road lengths that hazardous materials will have to travel beyond the area considered in the traffic baseline and impact studies (HDR, Inc, 2017 a, b).

The FEIS (USFS 2024, p. 3-415) stated that (text in italics differs from the corresponding section of USFS 2022):

> **3.16.2 Access and Transportation Area of Analysis**
>
> The analysis area for access and transportation encompasses the overall road system, which is dominated by unpaved roads, one state highway (SH 55), and county roads. *Although **Figure 3.16-1** displays the majority of the analysis area, it does not show the portion of SH 55 that continues both north and south, intersecting with I-84 in Boise to the south and US 95 at New Meadows to the north. The extent of the analysis area was confirmed by the results of the Traffic Impact Analysis on SH 55 (HDR 2017l).*

and in the FEIS (USFS 2024, p. 3-418)

> **3.16.4.1 Existing Road Transportation Network**
>
> The transportation network in the analysis area includes SH 55 *(between Cascade to the south and McCall to the north),* Valley County roads, and NFS roads.

Additionally, USFS (2024, Appendix B, p. B-867) states

> The SDEIS included a revised analysis of hazardous material spill risk and the Final EIS

expanded the area of that analysis to include State Highway 55 between Boise and Grangeville.

Thus, the FEIS (USFS 2024) acknowledges that the length of the full transportation corridor where mine-related impacts may be felt extends past the area delineated by the traffic studies. However, at no point were explicit transportation corridor lengths specified for the various hazardous materials, nor the cumulative number of truck-miles with hazardous materials loads calculated for the proposed projects' lifetime.

Measuring traffic and safety impacts by estimating where the proportional increase due to mine transportation falls below a certain threshold is not sufficient to state that there will be no impacts due to transportation or to define the length of the transportation corridor where safety is a concern. The geographic area over which there may be significantly increased traffic due the potential addition of mining-related transport is a subset of the overall transportation corridor for the mine. While the transportation baseline and impact studies (HDR 2017a, b) may have extended from "SH 55 at Cascade south to I-84 and SH 55 to New Meadows and US 95 from New Meadows north to Grangeville", "the long-distance transport of minerals, namely antimony concentrate, from the mine site to locations for processing" were not identified or analyzed in the FEIS as stated in Appendix B (p. B-54). It is not sufficient that the "transportation of hazardous materials should be taken in context of the existing traffic pattern in the analysis area" (USFS 2024 Appendix B, p. B-205) because that ignores that the transport of hazardous materials poses a risk over the entire length those materials are moved. The addition of two inquiries to the Idaho Department of Transportation (Grange 2023 and Rich 2023) that confirm the 2020 traffic projections made in the 2017 Traffic Impact Study (HDR Inc. 2017) (USFS 2024, Table 4.16-3 on p. 4-521) does not address the fundamental issue of how safe it is to move thousands of loads of hazardous materials over hundreds of miles through Idaho's (and neighboring states') communities every year.

The addition of the new text Crash Projections and Offsite Transportation of Hazardous Materials (pp. 4-527 and 4-528 of USFS 2024) acknowledges that 23 trips per day would travel north toward McCall, Idaho, and that 45 trips per day would travel south. However, the ASHTO Highway Safety Manual predictive method was for characterizing "intersections, traffic volumes, controls and lane configurations". This only focuses on incidents that occur at intersections, not the long stretches of narrow, steep, winding highway that are typical of SH 55. A transportation risk study must include the lengths of the roads used, not just the intersections. That is, the N = RT model (or other road length-based model) should also be applied, and the T must be accurate and complete. Note that although the per truck mile accident and spill rates were estimated in Section 4.7.2.2 (USFS 2024, p. 4-148), they were never used to find quantitative estimates. While Appendix B claims that "A discussion of quantitative risk of spills has been added to Section 4.7.2 of the Final EIS" (USFS 2024, Appendix B, p. B-213 and B-214), no quantitative risks are presented in Section 4.7.2 and the language changes in that section between the SDEIS (USFS 2022) and the FEIS (USFS 2024) are scattered and minimal.

L. AVALANCHE HAZARD AND MITIGATION

In the 2023 Comment Letter (P. 168), Objectors stated: "several assumptions made for the Burntlog Route may increase the AHI. This makes that route equally or even more hazardous than the Johnson Creek Route. Because the Burntlog Route travels for 30 miles between 7000- and 8600-feet elevation, it 'will be subject to more wind effects and wind-drift potential,' DAC (2021), at 41, and higher snowfall amounts than the Johnson Creek Route, which travels mostly between 4800- and 6500-feet elevation. DAC (2021), at 13. The SDEIS fails to consider adverse road conditions that will result from managing a resource road above 7000 feet in this area. The significant elevation and steepness differences between the routes must be assessed because claiming the Johnson Creek Route has "higher potential for increased trucking accidents and greater spill risk," from avalanches fails to account for known terrain and weather characteristics adversely affecting driving conditions along a significant portion of the Burntlog Route. See SDEIS, at ES-13.

Putting aside Warm Lake Summit, which is common to both routes, the Burntlog Route includes at least three steep climbs (or descents depending on travel direction). In particular, the section that switchbacks into the Black Lake cirque and then climbs toward the Old Thunder Mountain Road is not only above 8000 feet but also the section of road most exposed to avalanche hazard. Decreased traffic speed in this area, which is where 13 one-to-three-year D2 and D3 avalanche paths are located, due to adverse winter travel conditions would increase Burntlog Route's AHI because traffic speed would necessarily decrease below the assumed 25 mph in DAC (2021). It is also worth noting that an Environmental Design Feature proposed by the Forest Service to protect water resources, wetlands, and fish is to maintain an adequate snow floor over the gravel road surface. The effect on vehicle speed of this EDF must be evaluated with respect to the AHI to ensure that appropriate vehicle speed input variables are used in assessing AHI." FEIS, B-133 to B-144.

The Forest Service's limited response to this comment was to include a "[d]escription of the AHI information that is included in the DAC (2021) technical report has been added to the Avalanche subsection of Section 4.2.2.2 in the Final EIS," and state that "[t]he conclusions of the relative avalanche risk along the two access road alternatives described by DAC (2021) and used in the SDEIS have been edited to include the AHI information." SFEIS at B-132. Moreover, the DROD explains that the decision to choose the Burntlog Route alternative is because it "[r]educes the risks of geotechnical instability, hazardous materials transport, and public health and safety transportation during operations (26 landslides and rockfalls and 38 avalanche paths versus the Johnson Creek Route Alternative: 45 landslides and rockfalls and 94 avalanche paths). This reduction in exposure to landslide and avalanche paths was given preference over effects of new road ground disturbance because of the potential intensity of those impacts on hazardous materials, access and transportation, and public health and safety, compared to the effects of ground disturbance on other resources." DROD at 32 (emphasis added).

This does not address Objectors' comment, which identified several significant differences

between the two proposed access routes that DAC (2021) either did not consider, acknowledged it lacked the information to consider, or assumed but did not analyze for the effect on AHI because of inherent topographic, terrain, and climatic differences between two alternative access routes.

Critically, the DROD is not based on AHI. Rather, it expressly states the decision is based on the number of avalanche paths—a distinction the FEIS identifies as irrelevant. FEIS at 4-15. Indeed, "[t]he estimated AHI values could be reduced by avalanche forecasting and control during the timeframes considered." Id. at 4-16. As Objectors noted and the FEIS acknowledged, this is not the correct framework upon which to make the decision.

Furthermore, despite including a "description of AHI that is included in DAC (2021)," the Forest Service's response ignores Objectors' comment that DAC (2021) significantly underestimated AHI for the Burntlog Route by ignoring decreased vehicle speeds given the steepness and elevation of the topography of the Burntlog Route in the locations where avalanche paths are identified. FEIS B-132 to B-134. To be sure, DAC (2021) analyzed AHI using an assumed vehicle speed of 25-mph, as well as a comparison where vehicle speed increased to 35-mph. See DAC (2021) at 41. Notably, however, the FEIS points out that "[t]he slow speed limits on the Burntlog Route" would "prevent potential mortality or injury for individual wolverines by giving drivers more time to react to wildlife occurrences and avoid them," and further states that "[a]ppropriate speed limits (i.e., generally 20 mph or less) would be established for the Burntlog Route, mine site haul roads, and light vehicle access roads for the 2021 MMP to prevent vehicle-wildlife collisions." FEIS at 4-430. The Forest Service offers no explanation for why or how its AHI analysis, which is based on 25-mph or greater vehicle speeds for the Burntlog Route, accurately quantified AHI for the Burntlog Route, when in fact the FEIS assumes "slow speed limits on the Burntlog Route . . . (generally 20 mph or less)" that would increase the AHI for the Burntlog Route, as stated in DAC (2021), at page 41.

Further noted in Objectors 2023 Comment Letter (pp. 175-176), "[r]esults from the PRISM model used in DAC (2021) seem to conflict with the parameters used in the MODFLOW6 groundwater model" because inputs to that model assumed 33 inches of annual precipitation in Meadow Creek at 7762 feet, while DAC (2021) assumed areas adjacent to Meadow Creek between 7500 and 8600 feet would receive less than 8 inches of winter precipitation annually. Objectors stated that this discrepancy "in assumed annual winter precipitation may affect frequency of avalanches estimated by DAC (2021) and should be verified to ensure that erroneously low precipitation estimates have not erroneously reduced the extent of avalanche control work anticipated for the Burntlog Route."

The Forest Service failed to provide a response to this comment. This is troubling because the wide discrepancy in assumed precipitation, especially wintertime precipitation will affect AHI as well as the extent that avalanche control is assumed to be needed to maintain safe passage along the Burntlog Route.

M. UTILITIES, RIGHTS-OF-WAY, ROADS, AND ROUTES

In the Objector 2023 Comment Letter (p. 176), we detailed our concerns regarding the potential impacts of construction and operation activities associated with utilities, rights-of-ways, roads and routes.

The construction and long-term operation associated with transmission line upgrades causes serious impacts, including direct damage to wildlands, wildlife habitat and cultural resources, interference with scenic vistas, habitat fragmentation, the introduction of invasive and noxious weeds through ground disturbing activities, and others. Much of the landscape in Idaho, even near streams, has been visually impacted by human features such as roads, structures, transmission lines, and other infrastructure. The SGP would require Idaho Power to build four new electrical substations (Scott Valley, Thunderbolt Tap, Johnson Creek, and Stibnite), remove the existing Scott Valley Substation, and provide upgrades to the Cascade Switching Station (FEIS, p. 2-23-2-25). Direct and indirect impacts to the SGP-related transmission lines, related access roads, utilities and their infrastructures are represented as equitable between the 2021 MMP alternative and the Johnson Creek alternative, with 1012 acres of disturbed lands under the former and 1011 acres under the later alternative (FEIS, Table ES-2).

Additional electrical changes include rerouting power to the village of Yellow Pine from the Warm Lake substation to the Johnson Creek substation, upgrading nearly 64 miles of existing transmission lines with higher towers, transformers and line, and constructing an additional 8.5 miles of new transmission line from the Johnson Creek substation to the mine site. Further, Perpetua Resources proposes to upgrade microwave relay towers and install radio repeaters and cell phone towers at existing and new communication sites on public and private lands. Transmission line right-of-way (ROW) widths would range from 50 to 100 feet, requiring significant additional initial vegetation removal, with continual vegetation removal as part of long-term maintenance of these clearings. Both the 2021 MMP alternative and the Johnson Creek Route alternative will result in 422 acres of impacts within the identified ROWs in previously undisturbed areas (FEIS, Table ES-3, p. ES-24).

Approximately one-third of the transmission line ROW is found within forested areas, and the Forest Service estimates that, "SGP-related vegetation clearing could initially result in (Detrimental Disturbance) as high as 16 percent of the ROW," and would likely impact somewhere between 8 and 15 percent (FEIS, p. 4-92-4-93). These impacts, consisting primarily of vegetation clearing, but also including soil disturbance for access roads, line upgrades, and construction of new line pole foundations, will take place on an estimated 500 acres. The duration of these impacts are considered, "moderate, localized and long-term," (FEIS, p. 4-93), with disturbance beginning the first year of construction and continuing at least through Year 15. Furthermore, clearing activities would continue indefinitely on upgraded line corridors by Idaho Power Company after mining activities cease. The loss of these vegetation communities and impacts associated with access roads for construction and subsequent maintenance represent irreplaceable and irretrievable

impacts to natural resources found on public lands, and therefore neither the 2021 MMP, nor the Johnson Creek Route alternative are appropriate selections for the SGP.

On December 14, 2022, the US Fish and Wildlife Service announced its decision to list whitebark pine as a threatened species under the Endangered Species Act. This rule became effective January 17, 2023. The Forest Service will have to consult on expanding and constructing Rights-of-Way. Our specific comments pertaining to whitebark pine are found in Section R, Botanical Resources.

The most significant impact the transmission lines, associated ROWs, access roads, and additional utility infrastructure will have on the natural resources within the SGP physical Area of Potential Effect (APE) is the permanent loss and/or fragmentation of wildlife habitats and ecosystems. The upgrades to existing transmission lines and the construction of the additional proposed lines will disrupt migratory corridors, displace resident ungulates and potentially other species of conservation concern such as wolves, wolverines, lynx and their potential habitats, white-headed woodpeckers, and a variety of owl species, to name a few. Our specific objection points and proposed remedies regarding utility impacts to wildlife are found in our Wildlife comments section.

1. ROW impacts within Inventoried Roadless Areas

Regarding ROW impacts within Inventoried Roadless Areas, we wrote (Objector Comment Letter, p 177):

Several of these utilities upgrades will pass through and either directly or indirectly impact inventoried roadless areas (IRAs), diminishing the outstanding values and qualities associated with pristine wild lands including, but not limited to: visual resources; big game security; water quality; quiet/solitude; and intact habitat with limited fragmentation.

There are numerous impacts to fish and wildlife within the IRAs that are associated with ROWs, utilities, and facilities. The diversion of Meadow Creek into a channel and the construction of the TSF embankment will result in, "reduced aquatic habitat complexity and connectivity within Horse Heaven and Meadow Creek IRAs," (Special Designations Specialists Report, p. 104). The bull trout, westslope cutthroat, steelhead, and Chinook salmon habitat that currently exists in Meadow Creek will be permanently lost and the Forest Service must classify these losses as irreversible and irretrievable.

Furthermore, wildlife habitat within proposed ROWs, utility, and facility locations will also be reduced within five IRAs in the APE. This is most significantly observed through direct loss of habitat due to construction activities and habitat fragmentation attributed to transmission lines and access roads. The FEIS does little to reduce further habitat fragmentation. Further, the impacts to IRAs in the APE diminish the outstanding remarkable values of these generally intact

ecosystems, the Forest Service does not adequately protect or enhance values associated with inventoried roadless areas, nor describe how Perpetua will restore the fragmented landscape post mine closure.

2. Impacts to water quality from ROW infrastructure

Numerous components compose the ROW infrastructure, including line towers, access roads and associated gates, and concrete tower support pads. While much of the transmission line construction will take place using helicopters to set the towers and string line, a significant amount of "on-the-ground" work is still required to update or construct the proposed transmission lines associated with the SGP. Further, the modification or construction of either proposed access route will require the use of heavy equipment. Many of the proposed construction activities will take place near surface water bodies (SDEIS Comments, p. 178).

Construction of the transmission lines will also contribute significant amounts of sediment to the waters of the United States, which will further impact fisheries habitat and directly impact sensitive fish eggs and reproductive success. This is particularly evident along the proposed new transmission line at the bottom of Riordan Creek where, based on our geologic analysis, there is a recent history of slope instability and sediment movement following wildfires. These potential impacts exponentially increase when one takes into consideration locations where transmission line rights-of-way intersect with access roads or routes associated with the SGP. Please see our Specialists comments on sedimentation and the impacts to the environment, which are included as an appendix to our SDEIS comments (Newberry 2022, Item #13, pp. 45-53).

Of the 37 streams within the APE, 11 are listed by the Idaho Department of Environmental Quality as impaired, primarily for phosphorus contamination, sedimentation, and water temperature. While the transmission towers themselves will not contribute to sedimentation and the transmission lines and associated activities will not likely affect phosphorus levels, the proposed activities will likely affect stream temperatures through vegetation removal and management at the crossing locations. Further, construction or line installation/upgrade equipment will likely cross streams at line access roads, between towers along the transmission line ROW, but the impacts remain unaddressed in the SDEIS. We are particularly concerned about impacts to Burntlog Creek and Johnson Creek, which are eligible Wild and Scenic Rivers. The SDEIS provides no mitigation measures designed to limit these potential impacts.

The Forest Service should minimize negative impacts of transmission line construction and maintenance by avoiding areas of important habitat for species of concern, establishing siting criteria to minimize soil disturbance and erosion on steep slopes, utilizing visual resource management guidelines, avoiding significant historic properties, and minimizing conflicts with other uses of the public lands. See our comments on Sacajawea's bitterroot and transmission line

impacts in Botanical Resources. Additional comments were summarized in our SDEIS Executive Summary and included as appendices to the comments document (Maest 2022, Newberry 2022, Gregory 2022, Schlinger 2022, Egnew and Mack 2022, Lubetkin 2022, Chamber 2022, and Semmens 2022).

3. The FEIS fails to sufficiently consider impacts from increased unauthorized motor vehicle use

In our SDEIS comments regarding the impacts from increased unauthorized motor vehicle use (p. 179) we point out that the SDEIS failed to adequately consider those impacts. The FEIS continues to inadequately mitigate or resolve issues we brought forward.

New roads for construction and maintenance of transmission lines will provide more access for motorized recreation in areas without a current road system and more opportunities for illegal off-road riding. For example, Forest Trail (FT 233) will be upgraded for use as a transmission line route. The FEIS states that trail improvements would make the trail passable for a wider range of vehicles and potentially new recreation opportunities. The problem is that FT 233 dead ends at the top of the ridge. With additional use and more capable vehicles in that location, there is a concern that drivers are going to travel cross-country along the Powerline ROW to the Stibnite site or along the ridgeline to the Meadow Creek lookout (the same route mentioned above).

The negative impacts of irresponsible use of off-road vehicles (ORV) on terrestrial ecosystems are well established.5 Irresponsible ORV use degrades water quality, spreads noxious weeds, fragments habitat, disturbs wildlife, increases fire starts, and displaces non-motorized recreationists. The IRAs affected by the SGP were purposely set aside and are managed to fulfill goals and objectives in the Forest Plan that directly tie to each of these potentially affected resources. The FEIS fails to analyze the impacts of ORV use within transmission corridors and neglects to describe the ability for the Forest Service to monitor and control ORV use as permitted by land management agencies. The creation of the transmission line ROW is also likely to lead to the establishment of an unofficial over-snow vehicle (OSV) route along this ROW with potential impacts to wildlife. Please see our related comments on OSVs. We recommend the Forest Service/Perpetua complete an analysis of OHV potential impacts and the measures needed to effectively manage them.

While the Forest Service/Perpetua are not designing the transmission line or other utility ROWs as trails for public motorized use, recreational motorized vehicle use will likely dramatically increase compared to the current administrative access. We are concerned that additional, unregulated motorized use could further impact wildlife such as elk, wolverines, deer,

[5] Arp, C.D., and T. Simmons. 2012. Analyzing the Impacts of Off-Road Vehicle (ORV) Trails on Watershed Processes in Wrangell-St. Elias National Park and Preserve, Alaska. In *Environmental Management* (2012) 49:751-766. DOI 10.1007/s00267-012-9811-z

and migratory bird species, to name a few, and significantly degrade the experience and opportunities for hunters and outfitters in the area. We are also concerned about increased sedimentation to streams, increased litter, loss of snags from firewood collectors, and the spread of additional noxious weeds. We point out that while Idaho Power has an enforceable requirement to clean vehicles of noxious weeds and seeds, the general public does not. Further, the increased unauthorized use of the ROW by the public following transmission line upgrades or new construction is directly related to the SGP. Therefore, Perpetua needs to incorporate a more thorough analysis of potential incidental impacts to wildlife and plant habitats and habitat fragmentation that results from increased ROW use. In addition, we are concerned about the proliferation of illegal motorized trails in inappropriate areas as a result of this conversion.

Encouraging public motorized use along these routes may also reduce the opportunities for non-motorized recreation in the area. As such, we recommend that these routes remain closed to public motorized vehicle access, and that Perpetua and the Forest Service provide a more thorough description of measures to prevent unauthorized use, with Perpetua committing to compensate Idaho Power for additional gates and outreach, education and enforcement costs related to restricting access to these routes.

The upgraded and newly constructed transmission lines may dramatically increase the amount of unauthorized motorized vehicle use and associated negative impacts, including human-caused wildfire ignitions. Additional outreach and education regarding travel management plans will help keep OHVs on designated routes and slow weed expansion. As part of this effort, we recommend partnering with user groups to help educate users on open routes. Signs and informational kiosks with maps should be placed at all trailheads and staging areas that communicate the Forest Service's policies and regulations regarding the use of motor vehicles on public lands. Printed materials in maps and at kiosks should include the following points: taking a map and knowing the trail system, keeping vehicles clean, using spark arrestors to avoid wildfires, staying on designated trails, and staying off muddy trails. Photos in outreach materials should display recreationists using proper trail etiquette. These resources should also be available online, and perhaps be accessible using a QR code incorporated into all signs and information kiosks.

The agency should indicate it reserves the right to close an area to motorized travel if recreationists do not follow the policies and regulations, or if recreationists participate in destructive riding practices on public lands. Outreach materials should include phone numbers for the relevant Forest Service or utility offices so that members of the public can report violations in a timely manner, thus increasing the capacity of user groups to encourage responsible use of the land.

We also recommend that all signs and trail markers should include an emblem of an American flag and the logo of local OHV groups that support the designated trail system in order

to discourage theft and vandalism to help ensure that information remains readable and available. The Forest Service and Perpetua need to commit to additional trail rangers in the area for outreach, education, and enforcement actions.

Unauthorized trails and routes created by OHV use contributes to reduced wildlife security, increased erosion, the introduction of invasive grasses and noxious weeds (see below). The FEIS offers no mitigation or monitoring measures that discourage unauthorized route creation and use. One potential remedy is for the Forest Service and Perpetua Resources to work with Idaho Power to ensure ROWs are inaccessible for unauthorized use and establish a monitoring program that identifies problem areas, such as newly created trails/routes or use of transmission line ROWs, then implement additional preventative measures to discourage continued or additional use and trail/route creation.

4. Invasive grasses and noxious weeds

In 2023 we submitted the following (recently revised for the FEIS) comments regarding invasive grasses and noxious weeds (p. 181):

According to the Special Designations Specialists Report (SDSR) there will be 673.5 acres of direct effects within six IRAs to construct transmission lines, access roads, SGP facilities, and to construct the proposed Burntlog Route (Table 7-3, p. 100). This represents a significant opportunity for non-native plant species, particularly invasive plants and noxious weeds, to establish and create or expand unwanted vegetation populations. The SDSR supports this statement on pages 103-104 where it states that, "Areas within IRAs where non-native plant species become established would alter vegetation composition and change the natural ecological processes." Mitigation includes BMPs for invasive plants and noxious weeds, with monitoring for 3 years following the reseeding and planting of disturbed areas. However, we do not believe this is sufficient considering the decades worth of continued maintenance and use these ROWs and facility locations would require to establish and maintain protections against wildfire and access. In fact, the SDSR reinforces our concerns where it states that, "Maintaining the new transmission line, SGP facilities, and Burntlog Route during the 15 years of mine operation would increase the opportunities for non-native plant species distribution," (Special Designations Specialists Report, p. 103). We recommend that the Forest Service reexamine existing BMPs and Design Features and extend monitoring for noxious and invasive plant species throughout the life of the project and for ten years following in all areas of disturbed soils and vegetation, including closure and reclamation.

One of the most significant threats to any ecosystem remains the introduction of invasive grasses and noxious weeds associated with ground disturbing activities. We encourage the Forest Service/Perpetua to use integrated weed treatment methods. To the extent practical, herbicides

should only be used as a last resort and avoided in sensitive areas such as riparian areas or areas with rare plant populations. Lands treated for noxious weeds should be restored to native plant species when possible. Preserving and restoring intact soil layers represents the best way to avoid invasive plant and noxious weed introduction. Therefore, we recommend disturbing as little soil as possible. This becomes especially poignant when the Forest Service takes into consideration the fact that very little topsoil, or growth media, is available within the project area and it is unlikely that enough can be preserved and stored to sufficiently facilitate the establishment of riparian areas during the reclamation period (FEIS, Executive Summary, pp. 13-14).

We are concerned that soil disturbance can lead to the establishment of rush skeleton weed, spotted knapweed, dalmatian toadflax, and other noxious weeds. Newly constructed or modified rights-of-way associated with anthropogenic infrastructure also contribute to the spread of non-native plants.[6] The disturbance needed to upgrade existing transmission lines, construct new transmission line segments, to upgrade existing roads and to build new road segments like the proposed Burntlog Route provides an ideal vector for noxious weed expansion. The Forest Service/Perpetua needs to take far greater care to ensure that weed spread is minimized, particularly to special designations such as IRAs, the Chilcoot Peak Research Natural Area and the FCRNRW.

The FEIS offers a single mitigation strategy to prevent the introduction or spread of noxious weeds and invasive grasses (FEIS, p. 4-329), consisting of an equipment inspection prior to entering the SGP site at the SGLF. However, Perpetua and the Forest Service offer no concrete measures to reduce or prevent the spread of noxious weeds or invasive grasses in the project area. As a potential remedy, we suggest Perpetua establish a noxious/invasive plant control program with a staff of 2 to 4 individuals that proactively works within the project area and along access routes to identify established populations and apply appropriate herbicides or employ manual removal techniques to remove existing plants.

5. Transmission lines and wildfires

On page 182 of our SDEIS comments, we point out that numerous fires have started from transmission lines and the Forest Service needs to disclose those potential risks and ways to avoid, minimize, and mitigate these risks. Methods to minimize the risk of fires often involve establishing a wider ROW corridor, removing vegetation from a wider area, and conducting more frequent vegetation clearing. These fuel reduction measures will exacerbate the habitat fragmentation from ROW establishment and expansion. The Forest Service needs to evaluate the effects of both the transmission lines and maintenance activities and develop mitigation strategies.

[6] Gelbard, J.L., and J. Belnap. 2003. Roads as conduits for exotic plant invasions in a semiarid landscape. Conserv Biol 17:420-32

Transmission lines can also be burned over in wildfires, leading to power failures. Because of the long distance of this transmission line, there will be numerous ways for power to be interrupted. In addition to wildfires, other mechanisms include vehicle crashes, avalanches, landslides, and wind storms. The Forest Service/Perpetua should also anticipate and have contingency plans at the mine site and at the water treatment facility if power is interrupted for long periods of time.

The Forest Service responded with, "No text revisions made. Section 4.21.2.2 (Socioeconomics) discusses the potential increase in human-caused fire associated with the Project. Additionally, Perpetua proposes tree clearing along the transmission line ROW as a way to reduce the potential for trees to fall on the transmission line and thus creating a fire hazard," (FEIS Appendix B, p. B-337). Recent wildfires in the general vicinity during the summer of 2024 resulted in power outages to Yellow Pine, Warm Lake, and other nearby communities, businesses, and homes, highlighting the impacts wildfire has on utilities and power distribution systems. While the 2024 power outages were intentional to prevent more significant impacts, lightning or human caused fires pose a significant and real threat. The FEIS fails to account for the impacts climate change may have on wildfires and how power distribution infrastructure can contribute to wildfires in a warming and dryer ecosystem. We recommend that the Forest Service and Perpetua Resources work with Idaho Power to establish bi-annual inspections of all transmission lines (minimally once in the spring and again in the fall) to identify potential sagging wires, nearby trees that pose a hazard of falling across power lines or hitting transformers associated with power poles.

6. Increased traffic along the Burntlog Route will impact wildlife, roadless, and wilderness values

As stated in Objector's 2023 comments (p. 189), the SDEIS analysis of traffic patterns and impacts indicate that traffic volumes along a reconstructed and newly constructed Burntlog Route will increase traffic volumes by over 71 percent under the 2021 MMP, "with 27.5 percent of the traffic comprised of heavy vehicles," (SDEIS, p. ES-23). This increase will result in significant impacts to wildlife through habitat fragmentation, interrupted wildlife migratory corridors, and loss of animal security. The SDEIS fails to analyze or report the potential impacts associated with the most common vehicle/wildlife collisions, which consists of vehicle strikes of ungulate species. The Wildlife Specialists Report does define "incidental take" as it relates to ESA-listed, proposed, or candidate species (p. 102), and rightfully attributes traffic collisions as a factor contributing to "incidental take." Furthermore, without defining migratory corridors within the SGP, the Forest Service cannot ascertain the true impacts the proposed Burntlog Route would have on wildlife, and specifically migratory ungulates.

The Wildlife Specialist Report does acknowledge that, "An increase in big or small game collision mortality along roadways would be likely as the Burntlog Route segment would be new

to the area and would be plowed throughout the winter," (p. 114). However, this statement directly relates to the potential impacts and impacts regarding wolverine. The document fails to determine or report how much of an increase is expected, how those increases would affect populations, nor offer mitigation or Design Features beyond, "All staff and contractors would be trained to reduce wildlife collisions," (p. 114). Please see our wildlife comments section for more information on the impacts of the Burntlog Route on wolverine.

The Forest Service responds by stating, "No text revisions made as it has been determined that the level of analysis regarding potential impacts is adequate for wildlife species that may occur in the wildlife analysis area as discussed in Section 4.13.2," (FEIS Appendix B p. B-432). This response is inadequate as it does not address our concerns regarding incidental take, fails to identify migratory corridors within the SGP, and fails to identify the true impacts of the proposed Burntlog Route on wildlife.

The FEIS analysis of traffic patterns and impacts indicate that traffic volumes along a reconstructed and newly constructed Burntlog Route will increase traffic volumes by over 71 percent under the 2021 MMP, "with 27.5 percent of the traffic comprised of heavy vehicles," (FEIS, p. ES-25). This increase will result in significant impacts to wildlife through habitat fragmentation, interrupted wildlife migratory corridors, and loss of animal security. The FEIS fails to analyze or report the potential impacts associated with the most common vehicle/wildlife collisions, which consists of vehicle strikes of ungulate species. The Wildlife Specialists Report does define "incidental take" as it relates to ESA-listed, proposed, or candidate species, and rightfully attributes traffic collisions as a factor contributing to "incidental take." Furthermore, without defining migratory corridors within the SGP, the Forest Service cannot ascertain the true impacts the proposed Burntlog Route would have on wildlife, and specifically migratory ungulates. The singular mention of migratory corridors in the Wildlife Specialists Report is Table 2-3, Perpetua Proposed Design Features, starting on page 24 that:

> Perpetua would establish and post speed limits for the Burntlog Route, mine site haul roads, and light vehicle access roads on the SGP site. Slower speed limits would be posted at known wildlife crossings and along defined migratory corridors during migration season.

However, neither the FEIS nor the Wildlife Specialists Report contains figures, tables, or written descriptions of migration corridors within the SGP. Therefore, this design feature represents a meaningless platitude. In addition, the Forest Service notes that "recreation traffic may not follow posted speed limits and speeds could be higher," further reducing the effectiveness of this design feature. Special Designations report at 77.

The Wildlife Specialist Report does acknowledge that, "An increase in big or small game collision mortality along roadways would be likely as the Burntlog Route segment would be new to the area and would be plowed throughout the winter," (p. 114). However, this statement directly relates to the potential impacts and impacts regarding wolverine. The document fails to determine or report how much of an increase is expected, how those increases would affect populations, nor offer mitigation or Design Features beyond, "All staff and contractors would be trained to reduce wildlife collisions," (p. 114). Please see our wildlife comments section for more information on the impacts of the Burntlog Route on wolverine.

The Burntlog Route will alter the character and nature of roadless areas and wilderness values associated with the Black Lake, Burnt Log, and the FCRNRW. Increased traffic volumes will significantly increase noise levels and light pollution along the route and detract from the primitive and solitude values associated with the designated areas.

Regarding the Johnson Creek Road, the FEIS claims in numerous locations (see Table 4.16-2, p. 4-520 of the FEIS as an example) that once the Burntlog Route is complete, no mine traffic, and particularly heavy vehicles, will use the Johnson Creek route. We believe it is unreasonable to expect that zero mine traffic will use this route given the FEIS fails to offer mitigation or Design Features that will ensure all mine traffic will adhere to the Burntlog Route. Further, Perpetua has stated the value of having redundant routes available in case of an emergency (DAC, 2021 at 1). Construction of the SGP under the Johnson Creek Road alternative is anticipated to extend the life of the project by two years. However, by not having to completely reclaim the Burntlog Route and the additional associated access roads/routes following closure, Perpetua may be faced with a null benefits/loss statement that in effect balances itself regarding fiscal output and total commitment. We recommend that the Forest Service complete a thorough cost/benefit analysis of these two alternatives to determine the true worth and value of each regarding potential impacts and adverse effects.

We also believe it is unreasonable to assume that traffic along the Burnt Log Road would not increase due to the newly created access attributed to Perpetua's winter maintenance and have adverse effects to wildlife, roadless, and wilderness values. The West Central Idaho mountains are a destination location for local snowmobile enthusiasts, as well as visitors from across the state and Pacific Northwest. Further, backcountry non-motorized recreationists will also take advantage of the newly created "access" and available terrain. Perpetua and the Forest Service offer no mitigation plans to handle this increased traffic volume or to mitigate the potential impacts.

7. The FEIS does not describe what specific substrate monitoring will be done to protect fisheries habitats

In our Objector Comment Letter (p. 191) regarding substrate monitoring:

> In the DEIS, Perpetua Resources designated two aquatic monitoring methods — nephelometry and total suspended solids — as their monitoring tools. The Payette and Boise National Forests have for the past 35-50 years used, and are now required under ESA to use, 190 stream substrate monitoring methods — modified McNeil core samples, cobble embeddedness, and free matrix. There are no known correlations between nephelometry, total suspended solids and the three stream substrate measurements. We pointed these discrepancies out in our comments on the DEIS. However, the SDEIS again fails to answer our questions regarding how the two proposed monitoring methods correlate with methodologies required by the Payette and Boise National Forests. Further, the SDEIS fails to describe which monitoring methodologies will be used in the replacement/new construction of culverts and bridge abutments on the Burnt Log and Johnson Creek/Stibnite roads. We question why these methods are not brought forward in the analysis or monitoring portions of the SDEIS.

The Forest Service responds with, ““As shown in MWH 2017 and Stantec 2018, 2019, and 2020, substrate monitoring was conducted (McNeil core samples, cobble embeddedness and free matrix), following the guidelines established by the Forest Service. **As described in Section 2.4.8 of the SDEIS, environmental monitoring would be conducted through an adaptive management process. It is expected that monitoring programs established for baseline data collection would be continued** (emphasis added),” (FEIS Response #199 , Appendix B, p. B-400).

The USFWS conclude that as embeddedness levels increase, rearing capacity of salmonid habit decreases (Biological Opinion, pp. 128-129), and states, “Generally high embeddedness relative to reference conditions could indicate degraded conditions in a watershed, while low embeddedness indicate favorable conditions in a watershed.” The Biological Opinion goes further:

> Aquatic baseline studies in Burntlog and Trapper creeks show over 5-year average embeddedness levels at 8 and 4% (FA). Free matrix and surface fines measurements in Burntlog, and Trapper creeks have WCIs that are FA. Free matrix in Riordan Creek are FA, however, surface fines are FUR (Stantec 2020, p. 16, Table 2). **The Sediment WCI is expected to be FUR due to impacts from the Cascade Complex wildfire in the temporary to short-term timeframes. In comparison to the pre-fire condition, soil erosion will increase due to the loss of vegetation consumed by the Cascade Complex wildfire and, to a much lesser degree, the fire-induced hydrophobic soil conditions (emphasis added).** Sediment delivery to streams increased as a result of increased surface erosion, decreased surface roughness, and increased water runoff. **Much of this sediment is stored in the**

> **tributary channels and delivered to main channels over time.** The total volume of sediment stored behind obstructions will vary between subwatersheds and years in response to changes in bankfull channel width and annual peak flow rates (Megahan 1982, entire)."

In the Forest Service's Biological Assessment (Section 4.1.3.1, p. 312), the agency states:

> **The Geomorphic Roads Analysis and Inventory Package Lite (GRAIP Lite) model was used to simulate sediment generation and sediment delivery to streams by travel activities associated with the SGP (TetraTech 2024). Based on these model results, sediment accumulation in streams is also modeled. The GRAIP Lite model used terrain data and selected parameter values representing road materials, maintenance level, and usage to calculate sediment quantities** (emphasis added*)* For the SGP, the model simulated three scenarios:
>
> • Existing conditions involving public use of the Johnson Creek Road (CR 10-413), Stibnite Road (CR 50-412), existing portions of the Burnt Log Road (FR 447), Thunder Mountain Road (FR 50375), Meadow Creek Lookout Road (FR 51290), and existing on-site roads,
>
> • Construction conditions with public use of Johnson Creek Road, Stibnite Road, existing portions of the Burnt Log Road, Thunder Mountain Road, Meadow Creek Lookout Road, and existing on-site roads and SGP construction use of the Johnson Creek Road, Stibnite Road, and on-site roads.
>
> • Operational conditions with public use of Johnson Creek Road, Stibnite Road, existing portions of the Burnt Log Road, Thunder Mountain Road, Meadow Creek Lookout Road, and a relocated on-site road and SGP operational usage of the new Burntlog Route and on-site roads.

Annual monitoring of Embeddedness and Surface Fines is accomplished at the initial downstream data collection sites **(see: FEIS Response #199 p. B-400)**. These data have not been incorporated into the DEIS, SDEIS or FEIS documents as requested except for the written designation of the habitat Current conditions (FS FEIS Biological Assessment Appendix C, Table C-1). No substrate monitoring sites have been proposed upstream of the initial data collection sites to monitor changed conditions from road construction or reconstruction on any of the roads/RoW stream crossings proposed because, " ***Much of this sediment is stored in the tributary channels and delivered to main channels over time.*** *(Megahan 1982, entire)."*

Use of the GRAIP Lite existing road sediment data and subsequent road sediment modeling (Tetra Tech 2024) efforts shows increased sediment production and delivery **(see: concern #11 below) during the Operations phase (15 years) of the project.**

The substitution of the Nephelometric monitoring method for actual substrate measurements has not been **demonstrated (see concern #6 below)**. Re: "Adaptive Management Process" and "***It is expected that monitoring programs established for baseline data collection would be continued***." The assumption that monitoring **might** continue is not acceptable in streams with ESA listed fish where substrate sampling protocols have already been established. Monitoring must demonstrate existing fish habitat conditions and be correlated to fisheries WCIs in compliance with Forest Plans.

8. Use of an "upper slope" road is better than a "lower slope" road 191

The gist of the argument in the DEIS (2020) and SDEIS is that the Johnson Creek/Stibnite road access ("lower road") will be worse that the Burntlog Route ("upper "or "mid-slope "road) access primarily from the number of landslides/rockslides, the extra two years of construction required if the Stibnite road is to be the primary haul route during construction, and the longer lengths of roads parallel to a stream. Literature shows that the lower roads "receive" the slides/rockfalls, but the upper/mid-slope roads generally "create" them.

The Forest Service addressed this SDEIS comment by stating, "The specific comments included in this comment letter are responded to in other comments/responses for this and other comment categories. No further response is required here. General in nature or position statement," (FEIS Appendix B, Response to Comments, p. B-111).

This response is insufficient. Many sediment creating and delivering functions exist in the literature on upper/midslope roads. The Forest Service needs to conduct additional analyses to consider these two routes in proper context and allow objective comparisons between these alternatives.

9. Burntlog Route and associated roads and ROWs will contribute significant sediment to waterways

As is documented in the Fisheries, Recreation, Soils and Reclamation, and Water Quality Specialist Reports associated with the SGP and SDEIS, and further supported by our own analysis and comments (Newberry 2022), the Burntlog Route and the associated Thunder Mountain Connector Road will contribute a significant amount of sediment to Burntlog, Trapper, Trout, Cabin, and Riordan creeks. During the Burntlog Route construction, including bridge and culvert installations, the potential exists for increased runoff, erosion, and sedimentation resulting from localized vegetation removal and soil excavation which could result in increased sediment load in streams. Construction of and upgrades to access roads creates a potential for increased runoff, erosion, and sedimentation as a result of localized vegetation removal and excavation of soil, rock, and sediment, which could result in increased sediment load in streams. Expected permit

stipulations from IDWR and IDEQ would ensure streambank vegetation would be protected except where its removal is necessary. New cut or fill slopes not protected with some form of stabilization measures would be seeded and planted with native vegetation to prevent erosion. Use of temporary erosion and sediment control BMPs also would be employed. We are concerned that Perpetua has not proposed any fish habitat or sediment monitoring stations near the Burntlog Route extension. Further, there are no erosion monitoring sites for the proposed Trapper Creek and Riordan Creek headwater stream crossings, nor for for the Cabin/Trout (FR 467) road in Cabin Creek and Trout Creek when 1.6 miles of avalanche hazards were recognized (Fig. 3.2-6; p. 3-29) in the transmission line and OSV reconstruction with bull trout and Chinook salmon and steelhead habitat downstream of this road. We believe that without these critical monitoring site locations, neither the Forest Service nor Perpetua will be able to accurately assess the impacts to water quality and fisheries from sediment delivery. This becomes even more critical from the point the existing Burnt Log Road ends, and increases from that point towards the mine site. This is directly attributable to the region's erosive geology, which becomes more erosive nearer the SGP mine site. Further, the highly erosive local granite has yet to be tested and quantified for hardness, and is likely inappropriate for use during Burntlog or other road/route construction as it would contribute to sediment rather than contribute to sediment or dust control when placed on roadbeds. Further, a bull trout assessment was completed for the streams in the physical APE of the mine site. However, the Forest Service/Perpetua have yet to complete a bull trout habitat assessment for the streams crossed by the existing and proposed Burnt Log (FR 447) road, which crosses many perennial and perennial fish bearing streams listed as critical habitat for bull trout. This represents a significant gap in baseline data and we recommend that the Forest Service reopen consultation with the USFWS and NOAA Fisheries to determine the existing assessment of bull trout critical habitat within the entire physical SGP APE and the impacts increased sediment delivery could have on these streams and the native fish they support. 193 The full extent of our comments regarding sediment and water quality along the proposed roads/routes, ROWs, and utility locations are attached to this report: Newberry (2022).

The FEIS reports that sediment modeling was performed using the Geomorphic Roads Analysis and Inventory Package Lite (GRAIP Lite) system to, "simulate sediment generation and sediment delivery to screams by travel activities associated with the SGP," (FEIS , p. 4-281). While modeling suggests that sediment delivery falls during the SGP's construction phase, the modeling produced numerous results (depicted in Tables 4.1-22, 4.1-23, 4.1-24, 4.1-26, and 4.1-27) that clearly demonstrate that sediment production and delivery will increase from existing baseline conditions during the operation phase of the SGP. These tables demonstrate that our comments were then, and remain today, sound. Sediment is projected from not only the construction phase but is heavy during the 15-year operations phase. The tables show that during construction an lower sediment delivery occurs. However, during operations, higher sediment delivery occurs. During the construction phase, culverts are projected to contribute the highest amounts of modeled sediment. The FEIS relies on the application of BMPs, and EDFs to reduce sediment (as described

in the USFWS Biological Opinion, pp. 158-167). However, the modeled amounts of sediment delivery during operations far outweigh the reductions projected during the construction phase. Further, these forecasts are for a 15-20 year mine life and do not account for increased sediment delivery resulting from forest management projects, unchecked motorized recreation on unauthorized user-created routes, or the effects of climate change on erosion, snow retention/loss, or from the possibility that the SGP mine life may extend beyond the currently projected 15-20 years.

10. SDEIS contains two locations for the proposed Burntlog Maintenance Facility

Two sites appear in various SDEIS, DEIS and Specialist documents to be the location of the proposed Burntlog Maintenance Facility site. One is adjacent to Peanut Creek, and the other at "...approximately 4.4 miles east of the junction of Johnson Creek Road (CR 10-413) and Warm Lake Road (CR 10-579)." These two sites are 0.5 miles away from each other and are physically different locations. If the two locations are presented as a form of "alternative," it is not clear which location is preferred, nor is it clear why the Forest Service/Perpetua would propose alternative locations for the same facility. In any event, we recommend that the Forest Service determine which location is accurate and remove all references to the second locale and complete data analysis, particularly those associated with sediment deposition, impacts to IRAs and wilderness, fisheries, and wildlife. We pose numerous questions and make recommendations regarding this specific topic in Newberry 2022 (Section 11.a.1, p. 19).

In the FEIS, the Forest Service responds that the location of the maintenance facility is associated with the selection of the access route. Under the 2021 MMP, the Burntlog route would serve as the access route and the Burntlog Maintenance Facility, white the Landmark Maintenance Facility would be the location under the Johnson Creek Route alternative, sited (FEIS, Appendix B, p. B-111).

The FEIS states that, "Off-site facilities associated with the 2021 MMP include the SGLF on Warm Lake Road and the Burntlog Maintenance Facility located along the Burntlog Route, approximately 4.4 miles east of the junction of Johnson Creek Road and Warm Lake Road (midway between Sites 4 and 5)," (FEIS, p. 4-110, Off-Site Facilities). We recommend that the Forest Service reevaluate and relocate the Burntlog Maintenance Facility about 1 mile beyond the proposed site described above as adjacent to the Peanut Creek. Peanut Creek is listed as a bull trout critical habitat and has bull trout in the lower reaches. From personal observation and using Google Earth, this site is near or on a bend in the FDR 447 road that overlooks a wide vista. The proposed site is on a high bench with the Peanut Creek riparian area several hundred yards below this site.

11. SDEIS uses outdated population growth data to assess impacts to access and transportation

We submitted the following comments (p. 258) regarding population growth and impacts to access and transportation:

> The SDEIS states that the Forest Service/Perpetua used a static growth population rate to analyze the alternative impacts to access and transportation (SDEIS, p. 4-484), with Valley County assuming a four percent population growth throughout the county in the Master Transportation plan. Admitting that the area's population has grown rapidly and is predicted to continue at a "substantial rate," the agency and Perpetua refute these conclusions by saying that, "in general, rural areas have been static, and populations are predicted to remain the same or increase at a slower rate," (SDEIS, p. 4-484). All of Idaho's public lands have experienced exponential use increases throughout the past three years, in part due to the COVID-19 pandemic.

The pandemic ushered in a new era of public land recreation with people visiting public lands more often than in years past and with new recreationists discovering and then "loving to death" many of our iconic recreation areas. Further, remote working became more common during the pandemic and many rural towns were severely impacted by sudden growth bursts which have yet to significantly slow. The SDEIS fails to take these considerations into account, resulting in an undervalued analysis of population growth and traffic patterns. The Forest Service needs to update these data, apply more realistic population growth estimates, including data available from the 2020 census, to determine a realistic value, and therefore realistic impacts to access and transportation throughout the region.

The Forest Service responds by stating, "The quantitative analysis using a static population growth rate per Forest Service rural area population growth predictions, which are most closely relevant to the area of analysis, provides a the most appropriate data for analysis of the 2021 MMP and Johnson Creek Route Alternative direct contribution in relation to existing traffic and the transportation system," FEIS, Appendix B, p. B-504).

We argue that the Forest Service is required to use the most up-to-date data and modeling techniques available and using a static population growth rate in an area experiencing above average growth misrepresents the actual conditions found in the region. The Forest Service must respond with current data and associated statistics to address growth, infrastructure, access, and transportation impacts.

12. SDEIS fails to analyze impacts and risks associated with the transportation system beyond the Warm Lake Road/SH-55 intersection

On pages 195-196 of the Objector Comment Letter, we submitted the following point:

> Transportation analysis for the SGP effectively ends at the intersection of Warm Lake Road and SH-55. Because this project represents a federal undertaking, the Forest Service and Perpetua are mandated to complete a transportation analysis of the full transportation route. This should include routes for fuel transportation, hazardous chemicals and reagents used in ore processing, and dynamite and ammonium nitrate used for breaking the bedrock matrix and ore deposit matrix. We understand that this could include several routes along SH-55, SH-95 and roads that connect these two primary transportation arteries in West Central Idaho. 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.

The Forest Service Responds by repeatedly referencing the Warm Lake Road SGP primary transportation system (FEIS Appendix B, p. B-505), falling outside the scope of this comment that specifically focuses on the transportation system *beyond* the SGP primary system, which begins at the intersection of Warm Lake Road and SH-55. Further, neither the Forest Service nor Perpetua Resources have adequately addressed safeguarding communities and roadways outside the immediately impacted project area/region, as demonstrated by Table 3.16-1 in the FEIS (pp. 3-420-3-421). The comment response also states that Perpetua, "would also commit to all of the proposed design features listed in Table 2.4-13 of the SDEIS to minimize SGP impacts to the human and natural environment," (FEIS Appendix B, p. B-505). None of the proposed design features directly address the concerns expressed in our SDEIS comments.

N. NEW MOTORIZED VEHICLE ROUTES

1. OSV Routes - The FEIS and draft Decision fail to analyze or minimize impacts from designating new over-snow vehicle routes, as required by the Travel Management Rule

In our comments on the SEIS (pp 196-201), we discussed the need for the Forest Service to comply with the Travel Management Rule if it chooses to designate any new over-snow vehicle (OSV) routes as part of this project. The Forest Service responded to all of our comments concerning designation of new OSV routes with the following response:

> The reroute of Stibnite Road and the designation of a temporary OSV route to replace an existing OSV route are actions that fall under the Travel Management

> Rule (36 CFR 212), Subparts B and C respectively (FSM7715.03(5)). These actions require consideration under the Travel Management Rule Minimization Criteria (36 CFR 212.55(b)). The Travel Management Rule analysis was added to Section 4.19 of the Final EIS.

The Travel Management Rule analysis referenced above primarily consists of Table 4.19-3, Criteria for Designation of Roads, Trails, and Areas Review. As the minimization criteria are the heart of the Travel Management Rule, it appears that this table is intended to guide the reader towards understanding how the Forest Service has applied the minimization criteria to the new OSV routes that would be designated as part of this project. However, nothing in this table clearly explains how the various elements specifically minimize impacts from OSV (or other motorized) route designations. Instead, the table refers back to sections of the EIS where each resource issue is discussed. But, upon review of each of these sections, there is no discussion of impacts from the proposed OSV route designations on these resources, or how impacts from the proposed OSV route designations are minimized. The majority of referenced sections do not even mention the proposed OSV routes and those that do (4.9, 4.13, 4.16, 4.19, and Table 2.4-13) do not discuss the impacts or minimization of impacts from the OSV routes. Instead, these sections simply describe the details of the new OSV routes proposed for each alternative (what would be designated or closed, and for how long). For example, 4.9 (Surface Water and Groundwater Quality) indicates that under the 2021 MMP, the Cabin Creek OSV route would cross 7 streams, 6 of which provide spawning habitat for salmonids. However, there is no discussion of how this may impact these streams (or the fish), much less how any impacts are minimized in the project design. Table 4.9-22 states that OSV crossings would be over snow in winter only, but there is no discussion of timing restrictions, snow depth requirements, or other management to ensure these crossings are actually snow-covered when OSVs are on the landscape.

In our SEIS comments we noted that our organizations are particularly concerned about the impact that each new OSV route will have on wildlife populations and on roadless characteristics. Section 4.13 of the FEIS addresses wildlife. Aside from stating that the new 10.4 mile groomed OSV routes along the Cabin Creek Road, 1.5 mile groomed trail from the Warm Lake Project Camp, and new 2-acre parking area will all intersect with habitat for various wildlife species and that this may cause an impact, the FEIS does not provide any information on what these potential impacts are. Likewise, the FEIS does not discuss actions the Forest Service is taking to minimize these impacts. The closest the FEIS comes to actually discussing potential impacts from designating new OSV routes is on Page 4-285 (Section 4-9), which states that OSV usage has the potential to release fuel and lubricants to the snowpack. This section goes on to state that the overall environmental impacts from the reasonably foreseeable releases of hazardous materials under the 2021 MMP are considered to be localized, temporary, and minor to moderate depending on the type of material releases and the location of the spill, yet the FEIS gives no support for this assumption. Simply acknowledging an impact may exist is not sufficient to meet the Travel

Management Rule's requirement to identify and minimize impacts.

B:629 FEIS: The analysis to IRAs in Section 3.23 includes land contiguous to unroaded areas. The requirements listed in Table 2.4-12 and the EDFs listed in Table 2.4-13 would be implemented to avoid, minimize, and mitigate impacts to IRAs and un-roaded areas.

The other referenced sections that supposedly inform the reader of how the Forest Service has complied with the Travel Management Rule in designating new OSV routes contain no information pertaining to the proposed OSV routes. Instead, they broadly discuss impacts from the larger project, especially from mining activities and infrastructure. The referenced Transportation Management Plan is not included in the FEIS documents, so we are unable to review this plan.

In our SEIS comments we discussed numerous ways in which the proposed new OSV routes will impact wildlife, natural resources, and other uses and provided several ideas for how the Forest Service could potentially minimize these impacts. For example, in reference to impacts on water quality, we suggested that the Forest Service could minimize OSV impacts at these stream crossings by installing bridges or culverts, to reduce direct contact between OSVs and surface water (including when streams are frozen). In fact, there is a standard in the Payette and Boise Forest Plans obligating the Forest Service to first avoid and then mitigate degrading effects to RCAs:

> When new recreation facilities and trails must be located in RCAs, they **shall** be developed such that degrading effects to RCAs are **mitigated**. Where reasonable and practical location alternatives exist, new recreation facilities and trails should be located outside of RCAs. Listed in the Forest Plans: BNF: REST02; PNF: REST02. FEIS 2-98 (emphasis added).

This standard not only applies to groomed snowmobile trails, but also any designated OSV trails which entail some level of development such as clearing and marking trees. OSV use is higher on designated trails than areas that are simply open but off of the designated trail system, so there are impacts associated with increased uses in RCAs in ungroomed but designated trails as well.

None of these, or our other suggestions, were addressed in the FEIS. It is especially important that the Forest Service fully analyze potential impacts associated with the new Cabin Creek Road OSV route, as this route would increase use into an area that currently does not see much, if any, recreation use in winter due to lack of access. Elsewhere in these objections we discuss in detail our concerns over how increased public access will harm wildlife and objections to how this issue has been addressed in the FEIS. Suffice to say, the "analysis" in the FEIS is woefully insufficient.

On page 199 of our SEIS comments we raised concerns about the increased avalanche hazard, and associated public safety risk, along the proposed Cabin Creek OSV route. The proposed Cabin Creek OSV route from Warm Lake to Trout Creek has a 40% higher avalanche potential than the Warm Lake to Landmark OSV route. The clear public safety risk posed by re-routing recreational traffic to a more hazardous route is a form of use conflict that must be discussed and minimized in the FEIS. However, while the FEIS provides some information on potential design features Perpetua may utilize to reduce avalanche risk, these mitigation actions do not appear to be intended for the Cabin Creek OSV route. Aside from noting that this route is exposed to greater avalanche risk, the FEIS does not address this public safety conflict. Indeed, the FEIS appears to be more concerned with the risk avalanches pose to mining operations than the risk posed to the recreating public, despite the clear connection between elevated public risk and the proposed mine. Adequately analyzing avalanche hazard in respect to public use of proposed new designated OSV routes is yet another reason these designations must be subject to thorough analysis per the Travel Management Rule.

The Payette National Forest has not conducted Subpart C travel management planning, and thus has not gone through a process to determine where OSV use is appropriate. Committing to a 20-year groomed OSV trail in the absence of any travel management decisions contravenes agency policies and prejudices the future Subpart C process.

To resolve this objection the Payette National Forest must conduct forest-wide Subpart C travel management planning. This would allow the Forest Service, and the public, to examine the need for, and best location of, groomed OSV routes in the project area in the context of OSV use across the entire forest. It would also ensure that all recreational OSV use on the Payette National Forest is consistent with agency regulations.

Alternatively, if the Forest Service wishes to move forward with this project prior to completing winter travel planning, it must adequately apply the Travel Management Rule's minimization criteria to any routes designated as part of this project and commit to completing a forest-wide OSV plan within 5 years of signing the Stibnite Record of Decision. In the interim, OSV use off of the Burntlog Route must be prohibited. While the Burntlog Route may serve as an access point to Thunder Mountain, there should be no vehicle parking or cross-country OSV use allowed along this route in order to prevent public access into this currently remote area. Preventing an increase in public use along the Burntlog Route will help to preserve undisturbed habitat for wolverines. And, if the Stibnite ROD authorizes grooming of any OSV routes, the Forest Service should also cease grooming an equivalent number of miles elsewhere in the Krassel Ranger District.

O. SPECIAL DESIGNATIONS: WILDERNESS, INVENTORIED ROADLESS AREAS AND RESEARCH NATURAL AREAS

Stibnite Objection on Special Designations: Wilderness, Idaho Roadless Areas and Research Natural Areas

Wilderness

Impacts to the FCRNRW, Inventoried Roadless Areas and Research Natural Areas will likely be significant and long term. As we pointed out in comment #230, the SDEIS described several ways in which mining activities could impact Wilderness characteristics, including, but not limited to, the following effects:

- Clouds of dust, plume blight, plume visibility from mining operations,
- Noise from blasting and other operations,
- Light pollution from mining activities,
- Displaced wildlife due to mining activities in the larger area,
- Additional motorized incursions facilitated by the Burntlog Route,
- Increases in wilderness visitation in some areas and decreases in other areas
- Noxious weed introduction and expansion from mine related traffic and disturbance.

We previously asked the Forest Service to adequately consider multiple impacts to the wilderness characteristics of the FCRNRW and pursue additional measures to avoid, minimize and mitigate impacts.

In the FEIS response to our comments, the Forest Service affirmed that some wilderness characters would be impacted:

> Wildlife impacts to the FCRNRW were disclosed under the Untrammeled and Natural wilderness character qualities subsections for each alternative in Section 4.23. The Untrammeled quality of wilderness character would be impacted when noise and lights change wildlife species distribution and behaviors. Noise from mine activities, vehicles on Burntlog Route, and changes to natural dark skies during proposed construction, operation, and closure and reclamation activities could result in a long-term change in wildlife species natural distribution. The duration could be short-term as some individuals of wildlife populations become habituated to noise, lights, and human activity. B-629 FEIS.

However, the FEIS only developed one mitigation measure to partially restrict public access on the new segments of the Burntlog Route. FEIS at B-625 and 628.

> Since the SDEIS was published, a mitigation measure to restrict public access on the new segments of the Burntlog Route has been added to the Final EIS. This

> measure would have several benefits such as it would limit vehicle traffic on the Burntlog Route reducing dust emissions and sedimentation, would reduce potential for unauthorized route creation leading to possible wilderness intrusions, and minimize impacts to solitude. FEIS at B-628.

This response is wholly inadequate to address impacts to wilderness characteristics from this project.

In comment #231, we expressed concerns that potential effects on wilderness character (untrammeled, undeveloped, natural, opportunities for solitude or primitive and unconfined recreation, and other features of value) and that these could occur during all phases (construction, operations, closure and reclamation) of the SGP. We noted that the Wilderness Act and the Central Idaho Wilderness Act require the Forest Service to consider impacts to the FCRNRW from activities outside the Wilderness area boundary and must still comply with the Wilderness Act's requirement to preserve the wilderness character of the FCRNRW. We recommended that the Forest Service further analyze these impacts and take additional measures to avoid, minimize and mitigate these impacts in a supplement to the SDEIS.

In response to this, the Forest Service simply replied that the FEIS had adequately discussed these impacts:

> The EIS has disclosed potential impacts from the Project on Wilderness and the FCRNRW and recommended wilderness areas. FEIS at B-626.

We contend, and will demonstrate below, that the impacts have not been adequately analyzed and that additional work is needed to avoid, minimize and mitigate impacts.

In comment #246, we noted that the SDEIS did not adequately address the potential impacts that the Stibnite Gold Project will have on the FCRNRW, IRAs, Recommended Wilderness Areas, and the Chilcoot Peak RNA.

The FEIS responded that the analysis of impacts to the FCRNRW, IRAs, Recommended Wilderness Areas, and the Chilcoot Peak RNA were presented in Section 4.23 of the SDEIS as well as the Special Designations Specialist Report. FEIS at B-53 and B-779.

This response is insufficient and fails to address our concerns.

We also raised concerns that the SDEIS failed to properly evaluate impacts to Middle Fork Salmon River users, as much of the recreational use in this area of the FCRNRW is concentrated along the Middle Fork Salmon River corridor (Comment # 232). While most river runners travel in outfitted or private groups, there is still the expectation of a primitive wilderness experience with no lights, sounds, or impacts of civilization imposed on the groups.

The SDEIS failed to describe how recreational/commercial river trips and guiding services may be impacted by the Stibnite Gold Project. For example, we requested that the FEIS analyze which camps along the Middle Fork Salmon are most likely to be affected by noise, light pollution

and by plumes of pollution (also known as plume blight). Section 4.20.2 of the FEIS examined where potential components of the Project could be directly visible from within the wilderness areas (FEIS at B-525). Regarding our concerns about the Middle Fork Salmon, the FEIS responded that the Middle Fork Salmon is more than 20 miles east of the SGP and that it is unlikely that any light or plume would be visible from the Middle Fork Salmon River camps because the river is in a deeper canyon (FEIS at B-53 and B-548).

This response is inaccurate and insufficient. Both the SGP site and Burntlog Route would just be 13 miles west of portions of the Middle Fork Salmon River, with the 1.3 miles of the Burntlog within the Indian Creek watershed. The FEIS fails to note that the plume may rise in elevation and be visible over the ridgetop. The FEIS also fails to take into account the phenomenon known as sky glow, whereby a light source such as lights from a city may not be directly visible, there can still be a glow thousands of feet above the light source - especially if there are particulates or emissions above the light source.

> Sky Glow: The brightening of the night sky that results from the scattering and reflection of light from the constituents of the atmosphere (gaseous molecules and aerosols), in the direction of the observer. It has two separate components: natural sky glow and artificial sky glow. DarkSky International, https://darksky.org/resources/glossary/

Sky glow is why the light pollution from Boise is noticeable from Redfish Lake in the Sawtooth National Recreation Area even though the Sawtooth Mountains stand in between the Boise Valley and Sawtooth Valley.

The text of the FEIS is still inconsistent and unclear regarding the level of public access on the Burntlog Route. On one paragraph, the FEIS states that the "potential public use of Burntlog Route could increase the number of people recreating and hunting in wildife habitats adjacent to or in the FCRNRW" (FEIS 4-668), on the next page the FEIS states that the Burntlog Route would be open to public use during the 15 years of mine operation and 5 years of mine closure and reclamation (Rew et al. 2018)(FEIS at 4-669), and on p. 4-675 the FEIS states that "...once constructed, the public could use the Burntlog Route for approximately 20 years." The Forest Service then describes a design feature whereby public access would be restricted on the new segments of the Burtlog Route for all years except one (Year -1) (B-625). Even with this minor mitigation measure, the Forest Service has created an assumption that whenever the route through the SGP is closed, the Burtlog Route will be available. The Special Designations report goes on to say that during the 15 years of mine operations, public access roads could be closed for **periods** of days to one month (emphasis added). Our interpretation of this statement is that the Burntlog Route could again be reopened during these times, with continued, significant and long-term adverse effects to FCRNRW and Inventoried Roadless Area character. The proposed management of public access through the Burntlog Route fails to respond to our requests to disclosed, avoid, minimize and mitigate these impacts.

The FEIS also states that the Johnson Creek Route, which would have avoided or minimized some impacts to FCRNRW, was considered in the SDEIS. However, the FEIS fails to acknowledge that this alternative was ultimately rejected, so mentioning this alternative does nothing to avoid, minimize or mitigate the impacts.

We and other commenters had recommended that the Forest Service expand the project analysis area to include portions of the FCRNRW potentially affected by the Burntlog Route, including Big Chief Creek, a tributary of Indian Creek and the Middle Fork Salmon River. We were particularly concerned about the potential to degrade watershed conditions and fish habitat:

> The SDEIS fails to analyze the spill risk for the Middle Fork Salmon River watershed. The proposed Burntlog Route crosses over a ridge that separates the SFSR and the upper Middle Fork Salmon River watersheds.490 In fact, the Burntlog Route reaches within 0.25 miles from an unnamed tributary of Big Chief Creek, which leads into Indian Creek and eventually the Middle Fork Salmon River. Spill risk to the Middle Fork Salmon River watershed needs to be analyzed. This Middle Fork subwatershed needs to be added to the analysis area along with impacts to fisheries and other aquatic organisms. (Comment #293).

The FEIS disclosures about spill risk and containment elevate our concerns instead of alleviating them. First, two sections in the FEIS fail to mention that the Burntlog Route is in the Big Chief drainage at all:

> Burntlog Route access road would be contained within the Johnson Creek and Upper East Fork SFSR watersheds. FEIS at B-652.

and

> The road would cross through the drainage areas of Burntlog Creek, Trapper Creek, and upper Riordan Creek, all tributaries to Johnson Creek. It would then descend across the upper Meadow Creek and East Fork SFSR drainages entering the Operations Area Boundary from the southeast. The main watersheds that could be affected by releases of fuels or hazardous materials along this route are Burntlog Creek, Trapper Creek, and the upper portions of Riordan Creek, Meadow Creek, and East Fork SFSR. FEIS 4-138.

Eventually, we found sections of the FEIS noting that the Forest Service did expand the project area to encompass the Indian Creek drainage in an attempt to respond to the comments we raised about impacts to the Middle Fork Salmon River and FCRNRW:

> The Final EIS has been revised to mention the potential effects of the segment of the Burntlog Route located along the divide between the Headwaters of the East Fork SFSR and the Upper Indian Creek watershed that drains to the Middle Fork Salmon River. FEIS at B-633.

> In response to concerns about Big Chief Creek and Middle Fork Salmon, the Final EIS was been revised to mention the potential effects of the segment of the Burntlog Route located along the divide between the Headwaters of the East Fork SFSR and the Upper Indian Creek watershed that drains to the Middle Fork Salmon River. FEIS at B-220.
>
> Construction and maintenance of approximately 1.3 miles of the Burntlog Route between 170 and 300 feet of the FCRNRW boundary could result in sediment deposited in the headwater tributaries to Big Chief Creek. FEIS 2-171.

The FEIS provided an overview of the potential impacts and design features but these were generic in nature and insufficient:

> During construction, operation, and closure and reclamation of the Burntlog Route, vegetation removal and excavation of soil and rock could increase sediment load into Big Chief Creek tributaries and affect fish and aquatic habitat. Erosion control measures, such as sediment fencing, ditch checks, and other measures, would reduce erosion from the road into the tributaries. There could be a long-term risk to fish and aquatic habitats from the accidental spill of material, such as fuel or mine processing chemicals, where Burntlog Route crosses a Big Chief drainage tributary. The extent of impacts to aquatic habitat would be from the site of the spill downstream to the point of dilution. The measures included in the SPCC Plan would reduce the potential for a spill to reach downstream waters. FEIS Chapter 4-670.

The FEIS still does not provide sufficient information about the risk to the Middle Fork Salmon River watershed or how these risks will be avoided, minimized and mitigated:

While vehicles transporting diesel fuel regularly travel within the Middle Fork Salmon River headwaters on State Highway 21 between Banner Summit and Blind Summit, this is an established state highway. Perpetua plans to construct a new backcountry road on an 8,000' ridgeline overlooking the Middle Fork Salmon River and transport 5,800,000 gallons of diesel fuel in 580 trips per year, 7,300 tons of ammonium nitrate in 304 trips per year, and 4,000 tons of sodium cyanide in 167 trips per year, among other hazardous materials. As noted elsewhere in this objection, the FEIS fails to fully disclose these risks or provide sufficient measures to avoid, minimize, or mitigate them.

We note that the design features such as the SPCC Plan for preventing and managing spills are generic in nature and do not specifically address the difficulties in spill management at over

8,000 feet in elevation over frozen soil conditions, low visibility, and steep terrain with no secondary access below.

A spill into the Middle Fork Salmon River watershed could be catastrophic. Even if the hazardous materials were quickly contained and cleaned up, the stigma of a spill could deter recreationists and commercial rafters from floating the Middle Fork Salmon. For example, the 2015 Gold King mine spill into Colorado's Animas River heightened concerns about recreation in that watershed for many years following spill cleanup.

In order to assess if and how Burntlog Route and transportation activities are affecting the FCRNRW, Big Chief drainage and the Middle Fork Salmon River watershed and fisheries values, the Forest Service must first establish a baseline of existing watershed conditions in the Indian Creek watershed to see if the effects are within the range evaluated and covered by the FEIS.

As part of the FEIS, the Special Designations Specialist report points out that the Fisheries Specialist Report (Forest Service 2023i) provides additional information about how the risks to fisheries in the FCRNRW will be properly managed.

However, when we examined the Fisheries Specialist Report to look for baseline monitoring of watershed condition indicators, fisheries data, and FCRNRW specific design features, we discovered that the section referring to Indian Creek (which Big Chief Creek flows into) did not have any of the required data except for presence/absence for bull trout:

> Table 6-2 Baseline Watershed Condition Indicators for Potentially Impacted Subwatersheds in the Analysis Area for the Johnson Creek, Lower East Fork South Fork Salmon River, and Upper East Fork South Fork Salmon
>
> River Watersheds
> Watershed Condition
> Indicator
>
> **Bull trout local population characteristics:**
> Bull trout: present
> All the other fields:: No data
> Local population size: No data
> Growth and survival: No data
> Life history diversity and isolation: No data
> **Water quality**
> Temperature : No data
> Sediment/turbidity: No data

Chemical contaminants/nutrients: No data

Habitat access

Physical barriers: No data

Habitat elements

Substrate embeddedness: No data

Large woody debris: No data

Watershed Condition Indicator

Pool frequency and quality: No data

Large pools/pool quality: No data

Off-channel habitat: No data

Refugia: No data

Channel conditions and dynamics

Average wetted width/maximum depth ratio: No data

Streambank condition: No data

Floodplain connectivity: No data

Flow/hydrology

Change in peak/base flows: No data

Change in drainage network: No data

Watershed conditions

Road density/location: No data

Disturbance history: No data

Riparian Conservation Areas: No data

Disturbance regime: No data

Failure to provide baseline data for the portion of the FCRNRW most likely to be directly impacted by the Burntlog Route is a clear violation of NEPA. Sedimentation or pollution from the Burntlog Route could affect the wilderness values of the FCRNRW including untrammeled, natural and features of interest such as the native fishery.

The FEIS even notes that sediment could increase relative to baseline:

> Widening approximately 1.3 miles of Meadow Creek Lookout Road (FR 51290) for construction of the Burntlog Route would remove vegetation and disturb soils within 170 300 feet from the FCRNRW boundary. Where vegetation would be removed, and surface disturbance is upgradient to the FCRNRW boundary, sediment could be deposited into headwater tributaries to Big Chief Creek. Sediment deposition in streams within 300 feet of Burntlog Route could increase relative to existing conditions (Watson 2000). FEIS Chapter 4-672.

Baseline information is the only way to detect if an issue like sedimentation from the Burntlog Route is or is not affecting these wilderness values, implement corrective measures for road management, and assess if the company is complying with the terms of its permit. The Forest Service needs to collect this information as part of the NEPA process and not simply after the ROD is issued.

As a partial remedy to address these and other FCRNRW issues, we recommend that the Forest Service and Perpetua reexamine the alignment of the Burntlog Route and consider keeping the entire route outside of the Middle Fork Salmon River watershed. This would involve adjusting the route a few hundred feet farther west.

If the route stays the same, additional engineering details regarding road engineering drainage are needed to disclose how the risks of sedimentation or a spill are being managed in the Middle Fork Salmon River drainage.

There are a number of design features to consider for the 1.3 mile long section of Burntlog Route in the Middle Fork Salmon River drainage. This road segment should be specifically engineered to prevent sediment and potential spills into the Middle Fork Salmon River watershed and to minimize the drainage of sediment or potential spills off the roadway. These measures could include snow markers along each side of the road to guide snowplowing, chain requirements, staging areas along the Burnt Log Road or at the SGP site for vehicles to wait before driving across the ridge, triggers for closing the road, cameras to inform drivers about road conditions, cameras to report snow drifting, a weather station, electric signs posted at either end to describe conditions, road template design (inslope, outslope), drainage designs, frequency of water bars, placement of spill cleanup kits along the ridgeline, and a comprehensive maintenance and monitoring schedule.

From what little information the FEIS provides about this section of the Burntlog Route, it appears that the accessibility and quality of the recreation experience hiking along the Summit Trail will be significantly degraded. While the FEIS provides estimates on noise and light impacts from various locations, the FEIS fails to provide any details on how use and the experience of the Summit Trail will be affected. For example, the Forest Service needs to describe if the Burntlog Route will require relocating any sections of the Summit Trail, how mine traffic parallel with the trail will affect the quality of the recreation experience, how Perpetua will manage mining vehicle traffic, how parking areas will be affected, how will additional user groups utilizing Burntlog Route affect parking and trail use, and what offsets are needed for displaced recreationists.

As mentioned in our previous comments on the SDEIS, public access through Inventoried Roadless Areas on the newly constructed Burntlog Route cannot be authorized under the CFR 228 regulations and would exacerbate many of the environmental impacts instead of minimizing them:

> The existing Burnt Log Road and numerous other roads and motorized trails on theBoise National Forest are open to dispersed camping in which the public can drive 300'off the trail to camp. The nearby Payette National Forest does not allow the same off trail motorized use due to fisheries and other resource concerns and members of the public are instead allowed to drive one vehicle length off the road to camp. Should the new section of the Burntlog Route be constructed, there would be strong interest in driving a motor vehicle away from the route to camp away from mine traffic. However, there are several desirable but sensitive camping areas within 300'of this route including Black Lake, Burnt Log Creek and the Chilcoot Peak Research Natural Area which could be severely degraded by Motorized vehicles. See Special Designations below. If the Burntlog Route is selected and public access is permitted, the Forest Service should utilize the protocols of the Payette National Forest and not allow cross-country motorized travel for dispersed camping along the newly constructed route. As recounted elsewhere, this violates the Idaho Roadless Rule and the Forest Plan. The added recreational pressures on this area are in no way related to mining activities and would make the mining impacts on ecological integrity even worse instead of mitigating them.As such, the Forest Service should make as few changes in existing recreational access as possible and not expand motorized use unless necessary. SDEIS comments, p. 203.

The Forest Service failed to adequately respond to this recommendation. The one mitigation measure the FEIS mentioned was the Burntlog Route Access Plan:

> As a mitigation measure, the Forest Service would require Perpetua, as the Project owner, to develop and implement a Burntlog Route Access Plan to restrict public access. While public access restrictions would not eliminate potential impacts of mine traffic associated with wildlife interactions and wilderness solitude, the enforcement of the Transportation Management Plan, the Burntlog Route Access Plan, and project design features would be effective as a means to minimize impacts. Public access restrictions would also reduce the potential for unauthorized route creation leading to possible wilderness intrusions. B-691.

This response does not address our concerns as the Burntlog Route Access Plan is not included in the FEIS and should be available for public review in a Supplemental DEIS. Furthermore, the access plan still allows public access on the Burntlog Route for Mine Year -1 and for other indeterminate times when public access through the SGP is closed for mine operations, which is inconsistent with the Idaho Roadless Rule.

We support the design feature to close the Burntlog Route to firewood cutting and gathering (FEIS 2-104) and recommend that this safeguard be expanded to other activities. We

had specifically raised concerns about the Boise National Forest's allowance for motorized travel up to 300' off roads for dispersed camping and how that would lead to unacceptable impacts to the FCRNRW, Burnt Log Creek, Black Lake and the Chilcoot Peaks Research Natural Area (SDEIS comments p. 203). We recommended rescinding that provision for the Burntlog Route, but the Forest Service FEIS failed to respond, simply deferring to the still-unfinished Burntlog Route Public Access Plan.

For periods of time when the Burntlog Route is closed to public motorized access, we recommend that public motorized access for both summer and winter be limited to the present end of the Burnt Log Road to reduce the spread of noxious weeds, sedimentation issues and displacement of wildlife. While Perpetua and its contractors may have permit conditions related to removing noxious weed seeds from vehicles, members of the general public do not.

Should the Forest Service find ways to legally justify construction of the Burntlog Route and allow public access on it, the Burntlog Route Access Plan should adopt the following measures at a minimum:

- The Burntlog Route is a travel corridor to access Meadow Peak Lookout, Thunder Mountain and wilderness trailheads. Parking or prolonged stopping on the sides of the road is prohibited, other than to allow other vehicles to safely pass.
- Members of the public must abide by the posted speed limit.
- Slower vehicles with three or more vehicles behind them will pull over at the next designated passing area.
- The areas on either side of the Burntlog Route remain open to activities such as hiking, fishing, hunting, berry picking, winter recreation, etc. as long as motorized access and parking are on authorized routes and not along the Burntlog Route.
- The Burntlog Route is closed to firewood cutting and gathering (already included as a new design feature, FEIS at 2-104).

In our comments on the SDEIS, we recommended additional signage on the Burntlog Route to address issues of increased recreational access and potential impacts to wilderness character. We also recommended that Perpetua create a fund for a wilderness ranger program (Comment #187 and #240). A year-round ranger patrol program could conduct outreach, education and enforcement activities along the Wilderness boundary and any other sensitive areas with increased recreational or mine staff pressure as one of several mitigation efforts.

The Forest Service response was inadequate on a number of levels and inferred that they did not have the authority to manage signage or manage employees, contractors, or volunteers, nor did they propose any other alternatives:

The development of Forest Service recreational signage is outside the scope of this EIS.

Neither the 2021 MMP nor the Johnson Creek Route Alternative propose agency employment within the proposed employee descriptions for construction, operations, and closure and reclamation. FEIS at B-503.

Signage and other means to manage public access to minimize environmental effects is well within the Forest Service's purview. The Boise Forest Plan already calls out for improved signing regarding the wilderness boundary: Objective 2035 Enhance interpretive signing and information regarding the wilderness boundaries. We note that there will be signage and fencing needed regarding closures around active mining operations, at the entrances of the Burntlog Route, regarding speed limits and wildlife corridors along the transportation route. The Forest Service is also proposing to close the Burntlog Route to firewood cutting and gathering (FEIS 2-104), a design feature we support. Presumably this will require signage or public notification that was not originally proposed in the Mine Plan of Operations. Just because the impacts are indirect and not purposely intended by the Mine Plan of Operations does not mean they won't occur. The Mine Plan of Operations should not be the be all and end all for what the Forest Service can and cannot do. The Mine Plan has repeatedly failed to consider and respond to many issues, which is in part what the NEPA process is for. The Forest Service has a responsibility to require additional measures to avoid, minimize and mitigate impacts and as needed as part of terms and conditions.

There are any number of ways to better avoid, minimize and mitigate impacts to wilderness characteristics than those proposed in the FEIS and draft ROD.

Clouds of dust, plume blight, plume visibility from mining operations

In our SDEIS comments, we had recommended scheduling emission-generating activities so that emissions would be limited during late afternoons and evenings when emissions might be most visible and when recreationists are particularly observant of atmospheric conditions such as the sunset. SDEIS comments p. 213. The FEIS failed to respond, simply citing that these events would be relatively infrequent, that the Middle Fork of the Salmon River is more than 20 miles east of the SGP and is within a canyon so it is unlikely that any light or plume would be visible from the SGP. FEIS at B-548. This response is inaccurate and insufficient and we believe that our recommendation for time restrictions are reasonable and should be considered.

Light pollution from mining activities

One of the values in Central Idaho is access to Dark Sky experiences, the sense of awe, and a deep connection to something much grander than ourselves. While we appreciate the design features to reduce light pollution as well as Perpetua's own Dark Sky policy, the SGP is still going to be a massive source of light pollution:

> Given the closeness of the SGP to the FCRNRW boundary, portions of the FCRNRW would have unobstructed views of the SGP, including nighttime lighting, at superior viewing locations such as mountain tops or ridgelines. FEIS 4-568.

This will impact animals relying on dark skies as well as experiences of recreationists in the FCRNRW and in the surrounding area. Pre-construction, construction, operational, and post-reclamation monitoring of light pollution is clearly needed but insufficient in and of itself. While it will be impossible to offset light pollution in the immediate project area, there are numerous opportunities to assist communities on the perimeter of the existing Central Idaho Dark Sky Reserve and other places with dark sky values to decrease light pollution in their own communities. In essence, we are proposing a "light pollution cap and trade" mitigation measure in which Perpetua creates and funds a program to help willing individuals and communities adopt Dark Sky principles so that there is a net decrease in light pollution within and around West Central Idaho. This agreement can also extend to facilities and developed recreation sites under Forest Service or state management.

Increases in wilderness visitation in some areas and decreases in other areas

The FEIS admits that the potential changes in recreation use from the Burntlog Route, through the SGP or in other areas of the FCRNRW or to Recommended Wilderness from displaced recreationists is unknown, but acknowledges that these changes could impact ecological processes in the FCRNRW:

> The increase in recreation use could result in areas where human influence impedes the free play of natural forces or interferes with the natural processes in localized areas of the FCRNRW and recommended wilderness areas. Depending upon the magnitude there could be long-term local changes in ecological processes withi nthe FCRNRW and recommended wilderness areas. The natural quality of wilderness character could be impacted where there are changes in ecological processes. FEIS at 4-673.

The Forest Service has a responsibility to analyze and disclose these potential impacts, develop a monitoring plan to track these effects, and manage access issues to protect wilderness character.

The Forest Service plans to mitigate and offset impacts to snowmobile use by providing replacement trails and a new parking area so there is no net loss and continued levels of use can be accommodated. The Forest Service should take a hard look to see if similar measures should apply for non-motorized recreationists. Instead of new trail construction which has its own issues, this mitigation could apply to existing trails with maintenance issues. There are hundreds of miles of non-motorized trails in and around the FCRNRW which are not fully accessible due to lack of funds for trail clearing and maintenance which could be addressed as part of a broader mitigation program.

Noxious weed introduction and expansion from mine related traffic and disturbance.

Instead of simply implementing design features to reduce the spread of noxious weeds, a proactive mitigation program would result in a net decrease in noxious weeds in the surrounding area. A broader noxious weed management program could be combined with the trail maintenance program.

Displaced wildlife due to mining activities in the larger area, Noise from blasting and other operations and Additional motorized incursions facilitated by the Burntlog Route

The FEIS admits that wildlife impacts in the FRCRNW are unknown: "The extent within the FCRNRW where wildlife could be disturbed or areas where wildlife would avoid is unknown." FEIS at 4-671. Proceeding without an analysis does not meet the "hard look" requirements under NEPA. The first remedy is to conduct an analysis of these potential effects.

In addition, there are a series of additional remedies the Forest Service should adopt to avoid, minimize and mitigate impacts. In our comments on the SDEIS (comment #230 and 231), we raised concerns about the adverse effects on noise, mining activities and motorized incursions on wildlife and wildlife-focused recreationists in the FCRNRW and surrounding areas. Recent studies have also highlighted the harm that noise from vehicles can pose to wildlife, particularly migratory birds.[7] This particular study from the mountains of Idaho notes that traffic noise can have significant negative effects on the health of migratory birds. We are concerned that the extensive road network for the SGP will have significant negative impacts on migratory birds, particularly given the long duration of this project.

The FEIS focuses solely on best management practices to reduce effects from these impacts and fails to examine opportunities for effective offsets. The mitigation features proposed amount to design features to reduce impacts but do not truly mitigate or offset them such that there is no net loss for recreationists or wildlife (see our separate sections on wildlife). There is still an issue addressing the dispersal of wildlife due to project activities and loss of wildlife directly due to collisions, habitat loss, noise disruption and degradation.

We offer the Forest Service these potential wildlife habitat improvement projects to consider in the surrounding areas to help remedy these issues.

- Supporting a whitebark pine restoration program adjacent to the FCRNRW to benefit Clark's nutcrackers and other wildlife. These could include seed-collecting in the broader area, propagation of seedlings, and replanting efforts on the perimeter of the FCRNRW.

- Support for a wildlife habitat improvement program. For example, improving wildlife habitat in the surrounding areas would help offset the negative impacts and displacement

[7] McClure, C. J. W.; Ware, H. E.; Carlisle, J. D.; and Barber, J. R.. (2017). "Noise from a Phantom Road Experiment Alters the Age Structure of a Community of Migrating Birds". *Animal Conservation, 20*(2), 164-172.

from both mining operations operational noise. Opportunities to do so in the FCRNRW are limited, but there is potential for mitigation work on the perimeter of the FCRNRW and nearby Roadless Areas.

- Support for the PNF and BNF's travel management program with an emphasis on education and enforcement. This could also include decommissioning of illegal user-created routes and non-system roads near the FCRNRW. We note that part of mitigation for the Kilgore Exploration Project on the Caribou-Targhee National Forest included decommissioning of five miles of abandoned non-system logging roads in the nearby area to benefit grizzly bears and other wildlife. With regard to the SGP and the construction of dozens of miles of new access roads and vegetation clearing in the ROW that will have negative effects on wildlife, we propose the restoration of a similar amount of user-created roads or other human-caused disturbances along with travel plan enforcement. This would be similar to providing replacement trails for snowmobilers.

We recommend that the Forest Service prepare a supplemental SDEIS to re-assess the potential impacts the Stibnite Gold Project will have on these special designations and develop additional measures to avoid, minimize and mitigate the remaining impacts.

Inventoried Roadless Areas

There are nine Roadless Characteristics listed in 36 CFR § 294.22 that need to be considered for Inventoried Roadless Area analysis. As cited in the FEIS Special Designations Report (p. 42-43), these include:

(1) High quality or undisturbed soil, water, and air;
(2) Sources of public drinking water;
(3) Diversity of plant and animal communities;
(4) Habitat for threatened, endangered, proposed, candidate, and sensitive species, and for those
species dependent on large, undisturbed areas of land;
(5) Primitive, semi-primitive non-motorized, and semi-primitive motorized classes of dispersed
recreation;
(6) Reference landscapes;
(7) Natural appearing landscapes with high scenic quality;
(8) Traditional cultural properties and sacred sites; and
(9) Other locally identified unique characteristics.

In comments #23, we raised concerns that the SDEIS failed to fully disclose impacts and develop sufficient measures to avoid, minimize and mitigate impacts to Inventoried Roadless Areas. The FEIS responded that each of these special designations was considered and impacts analyzed in Section 4.23 of the EIS as well as in the Special Designations Specialist Report (FEIS at B-626). However, the FEIS fails to respond to our requests to sufficiently analyze the impacts

and develop additional design features to avoid, minimize and mitigate impacts.

In comment #243, we detailed the importance of specific roadless characters and how the SGP will impair these:

> The ability of the Forest Service to manage inventoried roadless areas in a manner that maintains roadless characteristics and the outstanding remarkable values associated with them is a critical consideration for the SGP project. As documented in the Special Designations Specialists Report, "The new mining facilities, access routes, and the transmission line would create substantially noticeable human development and structures (emphasis added) within IRAs and would create isolated parcels that may be difficult to manage during construction and operation of the SGP," (p. 83). Further, the location of the Burntlog Route and the new transmission line segment and access roads would create isolated parcels within the Horse Heaven, Black Lake, Burnt Log, and Meadow Creek IRAs for the long term and could permanently alter wildlife corridors and habitats, as well as degrade the experience for hunters and outfitters in the area. These impacts would severely affect the quiet and solitude ORVs associated with IRAs and in essence would represent a form of breaking up the IRAs, rendering them obsolete. These actions could represent a failure to adhere to the Forest Plan and the Idaho Roadless Rule, opening the door for additional unauthorized trails, roads, or routes into the IRAs and the FCRNRW.
>
> According to the above referenced Specialists Report, the SGP OAB includes roughly 15% of the total acres found in the Sugar Mountain, Horse Heaven, and Meadow Creek IRAs. The SGP would reduce the area available within these IRAs for outstanding opportunities for solitude and primitive recreation. The diversion of Meadow Creek into a channel and the construction of the TSF embankment will result in, "reduced aquatic habitat complexity and connectivity within Horse Heaven and Meadow Creek IRAs," (Special Designations Specialists Report, p. 79). The bull trout, westslope cutthroat, steelhead, and Chinook salmon habitat that currently exists in Meadow Creek will be permanently lost and the Forest Service must classify these losses as irreversible and irretrievable.

In response in the FEIS, the Forest Service confirmed that fisheries losses were likely to be irreversible and wildlife impacts were likely to occur but failed to respond to the other issues we raised regarding long-term conservation values and manageability of these Inventoried Roadless Areas:

> As noted in Section 4.12.5 of the SDEIS, the direct mortality of fish would be an irreversible impact that could occur under the Action Alternatives. Although fish exclusion barriers and trap and transfer activities would be incorporated to minimize fish mortality, incidental injury or mortality is expected to occur. These

> "takes" of fish in the mine site would be considered irreversible. Species subject to potential irreversible losses include Chinook salmon, steelhead trout, bull trout, and cutthroat trout. Portions of Meadow Creek upstream of the southern extent of the TSF would be irretrievable and unavailable to downstream fish within Meadow Creek during construction, operations, and post-closure. The presence of the TSF and TSF Buttress would essentially isolate any populations of bull trout and westslope cutthroat trout which are known to inhabit the upper reaches of Meadow Creek. After closure and reclamation, restoration of Meadow Creek over the TSF/TSF Buttress would restore habitat, but a fish barrier would remain in place and keep the upstream populations isolated. The loss of existing aquatic habitat in the Yellow Pine pit lake may constitute an irretrievable commitment of resources.
>
> Wildlife impacts to the FCRNRW were disclosed under the Untrammeled and Natural wilderness character qualities subsections for each alternative in Section 4.23. The Untrammeled quality of wilderness character would be impacted when noise and lights change wildlife species distribution and behaviors. Noise from mine activities, vehicles on Burntlog Route, and changes to natural dark skies during proposed construction, operation, and closure and reclamation activities could result in a long-term change in wildlife species natural distribution. The duration could be short-term as some individuals of wildlife populations become habituated to noise, lights, and human activity. FEIS at B-629.

As stated in our SDEIS comments (#231), IRAs also provide an important ecological buffer to be managed under the Forest Service mandate and have intrinsic value unto themselves. We recommend that the Forest Service further analyze these impacts and take additional measures to avoid, minimize, and mitigate these impacts in a supplement to the SDEIS.

In the response to comments, the FEIS noted that, "The requirements listed in Table 2.4-12 and the EDFs listed in Table 2.4-13 would be implemented to avoid, minimize, and mitigate impacts to IRAs and unroaded areas," (FEIS at B-629).

However, we reviewed the requirements listed in Table 2.4-12 and the EDFs listed in Table 2.4-13 and found them unresponsive to our concerns. These measures were generic in nature, not tailored to the effects recounted in the Specialist Report, and were at most designed to minimize impacts rather than avoid or mitigate them.

The FEIS disclosed that construction of the Burntlog Route also entails reclaiming and decommissioning a 2.4-mile section of Burnt Log Road that is currently within 700-800 feet of the Chilcoot Peak Research Natural Area Boundary. The FEIS is unclear if this newly aligned road segment will be a permanent feature or will be decommissioned along with the other newly built sections of the Burntlog Route:

> The Burntlog Route would be needed until the TSF is fully reclaimed, after which

> the **newly constructed** portions of the road would be decommissioned and reclaimed, and the currently existing portions of the road would be returned to their prior use. 2-82. (emphasis added).

There is a currently existing portion of the Burnt Log Road just north of the newly aligned segment by Chilcoot Peak RNA. It is unclear if this portion will be decommissioned or left on the transportation atlas. If the Burntlog Route is ultimately approved, we recommend decommissioning the route within 700-800 feet of the Chilcoot Peak Research Natural Area Boundary, the newly aligned route, and the existing segment to the north as a way to mitigate long term impacts to the Chilcoot Peak RNA. Before decommissioning any segments, these portions need to be treated for noxious weeds.

In response to comments #231 and #243 about the legality of the Burntlog Route in Inventoried Roadless Areas and impacts, the FEIS responded with the following statement:

> The Idaho Roadless Commission has approved of the Project, and the Project would be in compliance with the applicable Roadless rule/laws. Impacts to other resources were disclosed in their respective SDEIS sections, regardless of IRA boundaries. Since the SDEIS, a mitigation measure to restrict public access on the new segments of the Burntlog Route has been added to the Final EIS. FEIS at B-626.

The statement that the Idaho Roadless Commission has approved the project is factually incorrect. A representative of the Idaho Conservation League has served on the Idaho Roadless Commission since its inception following the creation of the Idaho Roadless Rule.

The Roadless Commission has considered the project and offered input, but has never taken a vote or "supported" the project in any way. In fact, that is not the role of the Roadless Commission> Instead, the Roadless Commission is advisory to the governor, can pose questions to the Forest Service, and encourage compliance with the rule, but does not formally vote in support or opposition to any projects.

In fact, Jonathan Oppenheimer with the Idaho Conservation League has consistently raised concerns that the Burntlog Route will entail the permanent installation of nail walls which will not be temporary features as required under the Idaho Roadless Rule (per discussion above). In addition, when Mr. Oppenheimer posed questions about the consistency of the project and public use of the Burntlog route with Definition of Temporary Road (at 36 CFR 212.1 - Subpart A), the Forest Service was unable to answer the question.

Though the FEIS characterizes the 20+ year life and permanent features of Burntlog Route as “temporary” in an effort to fit the exceptions of the Idaho Roadless Rule. The definition of a temporary road or trail is "A road or trail necessary for emergency operations or authorized by

contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas." We note that Appendix B of the Forest Plan defines the term "temporary" as 0-3 years in terms of hydrological impacts, and not 20+ years. Furthermore, the definition for duration at FSH 1909.15, 152b and provided in Table 7-1 at p. 73 describes temporary as “impacts that are anticipated to last no longer than 1 year. It is also reasonably foreseeable that the additional exploration drilling and potential operational and reclamation delays will extend the operations of the Burntlog Route for many more years.

36 CFR 212.2 provides further clarification: "A forest transportation atlas does not contain inventories of temporary roads, which are tracked by the project or activity authorizing the temporary road. The content and maintenance requirements for a forest transportation atlas are identified in the Forest Service directives system."

While the Forest Service states that the Burntlog Route will be decommissioned and restored, the Forest Service also proposes to remove unknown quantities of growth media during construction of the Burntlog Route to be used for reclamation efforts at the TSF and other on-site structures. There has been no discussion of how the permanent removal of the topsoil from the Burntlog Route will affect the ability for this route to ecologically recover if the route has been essentially scraped to bedrock. Failure to return the growth media will have permanent effects on the hydrology, soil development, vegetation, wildlife use, recreation value and ecological health for this route and the integrity of the affected Inventoried Roadless Areas.

Even if all of the sections and components of the Burntlog Route were indeed temporary (which they are not), the use of the temporary road (Burntlog) can only be via administrative or permitted/contracted use. As a result, the draft decision is not consistent with all other rules and regulations (as required by the roadless rule) and therefore runs afoul.

As mentioned elsewhere in this objection, the Mining Law and by extension the roadless rule, preclude road construction unless necessary for access. Because there is already access to Stibnite, new road construction in a roadless area is not needed and is thus not allowed.

In particular, it's important to note the language at 36 cfr 292.23 (b)(iii) that states road construction or reconstruction is allowed in Backcountry Restoration Theme if "(iii) A road is **needed** pursuant to statute, treaty, reserved or outstanding rights, or other legal duty of the United States; " (emphasis added).

As mentioned earlier, the Forest Service analysis has not demonstrated the need under the Mining Law of 1872 to construct the Burntlog Route and thus the prohibitions of the Idaho Roadless Rule still apply. Even if there were a justifiable need, the route would still need to meet

the minimization criteria which it has not. As a remedy for this, the Forest Service needs to drop the Burntlog Route alternative as proposed.

Research Natural Areas

Similar to our concerns about the FCRNRW and Inventoried Roadless Areas, we raised issues about failure of the SDEIS to disclose, avoid, minimize or mitigate impacts to Research Natural Areas.

In comment #245, we raised concerns about how the Burntlog Route construction and operations would spread noxious weeds, transport pathogens, alter hydrology, spread dust, increase the risk of human-cause wildfires, increase recreational pressure, and affect the ecological integrity and research value of the Chilcoot Peak Research Natural Area and Black Lake area. Under General Standard 2105, authorized activities must maintain the values for which the Research Natural area was established.

In the Response to Comments, Appendix B listed a series of Requirements in Table 2.4-12 and Environmental Design Features in 2.4-13 that would be implemented to avoid, minimize, and mitigate impact to the RNA and noted that public access would be restricted on the new segments,(FEIS at B-630).

However, the very first design feature listed, a dust mitigation plan, is not included as part of the Mine Plan or FEIS, even though dust is listed as a concern to native plants in the RNA. There is no information about methods, monitoring, or triggers, just a statement about an average 93.3% level of control and a deference to IDEQ. It is unclear if this still-to-be-determined plan from IDEQ is adequate to protect National Forest surface resources such as Wilderness, Roadless Areas, and Research Natural Areas and as such this EDF is currently insufficient to meet NEPA requirements.

The FEIS provides a to-do list for noxious weed treatments, but no specifics:

> Specific measures to reduce the potential for spread and establishment of noxious weed infestations could include, but are not limited to, determining the presence, location, and amount of noxious weed infestations in the Operations Area, developing management strategies such as, methods and frequency for treating infestations, treatment procedures and restrictions, reporting requirements, and follow-up or monitoring requirements. FEIS 2-104.

As with the FCRNRW and Inventoried Roadless Areas, an accurate baseline inventory is critical for assessing noxious weed spread and determining responsibility for initial treatment and follow up treatments as well as monitoring the effectiveness of these treatments. Proceeding without first conducting these baselines is in violation of NEPA.

While Perpetua states they will improve fish passage along the Burntlog Route (FEIS 2-109) by identifying and replacing culverts that may be impeding fish passage, there is no

information provided about the current status of these culverts, which is a requirement under NEPA if fixing them is being presented as a mitigation measure.

While we appreciate that public firewood cutting and gathering will not be allowed along the new Burntlog Route, which will help address some impacts to the Research Natural Areas, the Forest Service plans to allow at least one year of motorized public access on the Burntlog Route which will still exacerbate anticipated stressors from mining operations such as already displaced wildlife, noxious weed spread, dust, noise.

Because of the unresolved issues related to the Chilcoot Peak Research Natural Area, we recommend that the Forest Service revisit these in a Supplemental EIS. In terms of suggested remedies, we recommend the completion of a baseline survey of the Chilcook Peak Research Natural Area as well as the creation of a dedicated management and research fund for this area.

Public tour

Monitoring is an incredibly important aspect of the Stibnite Gold Project. The FEIS notes that Perpetua would lead annual site visits for USACE, EPA, IDFG, and other interested agency personnel as needed. In the Forest Service and BLM Record of Decision and FEIS for the Thompson Creek Mine, there is a provision that the mining company will host one public tour a year. Building on this precedent, and given the tremendous public interest in the Stibnite Gold Project, and the Forest Service and Perpetua's willingness to date to host tours of the project area, we request that the Forest Service allow for a minimum of four public tours per year. We recognize that certain days and locations may not be suitable for tours because of mining activities and staffing limitations. However, we believe that such a provision, with sufficient advance notice to Perpetua and the Forest Service, is an important component of transparency and accountability.

We also recommend that the Forest Service and Perpetua maintain an implementation website to report on mine development, completed, ongoing, and anticipated work at the site, including reclamation work, site inspections, monitoring and compliance reports, violations, remedies, etc. We are also open to other measures to better involve the public in implementation and effectiveness monitoring.

P. WILD AND SCENIC RIVERS

Specific Objections

1. **Impacts to eligible, suitable, and congressionally designated Wild & Scenic Rivers warrant additional analysis.**

As detailed by Objectors' 2023 comment letter (pg 231), the Final Environmental Impact Statement (FEIS) and Draft Record of Decision (DROD) for the Stibnite Gold Project (SGP) fails

to sufficiently analyze potential impacts on rivers that are eligible, suitable, or congressionally designated as Wild & Scenic under the Wild and Scenic Rivers Act (WSRA).

These rivers, including Burntlog Creek, Johnson Creek, and the South Fork Salmon River, possess Outstandingly Remarkable Values (ORVs) and are integral to Idaho's natural, recreational, and ecological integrity. Their free-flowing character and water quality must be protected. The lack of adequate analysis violates the WSRA, which mandates a rigorous assessment of potential impacts on these rivers to preserve their ORVs and ensure their protection for future generations.

Furthermore, Burntlog Creek, Johnson Creek, and the South Fork of the Salmon River are major tributaries for the congressionally designated Wild and Scenic Main Salmon River. As our comments pointed out previously in the DEIS, SDEIS, the FEIS fails to acknowledge or adequately consider how impacts resulting from the SGP may significantly impact and impair congressionally designated Wild and Scenic Rivers outside of the immediate project area, including impacts to these rivers that may result from degradation of other rivers and streams near the project are that are not deemed suitable or eligible for inclusion in the NWSRS. While the Forest Service has direct legal responsibilities to protect eligible and suitable rivers within the immediate vicinity of the project area, the agency must also adequately consider impacts to rivers and streams that are not suitable or eligible for inclusion in the NWSRS if the degradation of those waters may result in impairment to congressionally designated WSR outside of the project area.

In response to this comment, the FEIS (B-630) cites section 1.10.3.4 of the FEIS (pg 33, FEIS Special Designations Specialist Report): “Comments received stated that if the SGP might jeopardize the eligibility for WSRs designation for a certain river, and the WSR evaluation was not already completed as part of land use planning, a site-specific analysis is required. The Forest Plan standard WSST-01 states "When management actions are proposed that may compromise the outstandingly remarkable value, classification, or free-flowing character of an eligible Wild and Scenic River segment, a suitability study must be completed for that eligible river segment prior to initiating the actions." Eligibility studies have already been conducted. In 1997, the need for a WSR eligibility study on forest lands based on new information and changed conditions was identified and then conducted.”

We find this response inadequate because it fails to address the underlying concern of the original comment. Within section 1.10.3.4, no analysis is presented related to the potential impacts that may result from the proposed action on eligible, suitable, or designated sections within or beyond the immediate project area. This violates the following laws and regulations:

- The Wild and Scenic Rivers Act (16 U.S.C. § 1283):
  The Secretary of the Interior, the Secretary of Agriculture, and the head of any other Federal department or agency having jurisdiction over any lands which include, border upon, or are adjacent to, any river included within the National Wild and

Scenic Rivers System or under consideration for such inclusion, in accordance with section 1273(a)(ii), 1274(a), or 1276(a) of this title, shall take such action respecting management policies, regulations, contracts, plans, affecting such lands, following November 10, 1978, as may be necessary to protect such rivers in accordance with the purposes of this chapter.

- Planning rule 36 CFR 219.10:
  "(b) The plan must provide plan components, including standards and guidelines, to provide for: … (v) Protection of designated wild and scenic rivers as well as management of rivers found eligible or determined suitable for the National Wild and Scenic River system to protect the values that provide the basis for their suitability for inclusion in the system. (36 CFR 219.10)"
- U.S. Forest Service Land Management Planning Handbook (FSH 190.12 Chapter 80, section 84.2):
  "A Responsible Official may authorize site-specific projects and activities on National Forest System lands within eligible or suitable river corridors only where the project and activities are consistent with all of the following: 1. The free-flowing character of the identified river is not adversely modified by the construction or development of stream impoundments, diversions, or other water resources projects. 2. Outstandingly remarkable values of the identified river area are protected. 3. For all Forest Service-identified study rivers, classification of an eligible river must be maintained as inventoried unless a suitability study is completed that recommends management at a less restrictive classification (such as from wild to scenic or scenic to recreational)"

2. Overview of impacts and insufficient analysis related to specific WSRA-protected rivers and streams

As stated in our comments on the SDEIS p. 232, both proposed action alternatives (Johnson Creek Alternative & the 2021 MMP Alternative) in the FEIS will negatively impact rivers and streams deemed to be eligible or suitable for inclusion in the NWSRS in the immediate vicinity of the project area including Burntlog Creek, Johnson Creek, and the South Fork Salmon River. Action alternatives may also result in negative impacts to eligible rivers outside of the immediate vicinity of the project area, including the North Fork Payette and the Main Payette River. Furthermore, the SGP may also harm congressionally designated Wild and Scenic Rivers including the Main Salmon and Middle Fork Salmon rivers, which are located outside of the immediate SGP area. These proposed actions violate the National Wild and Scenic Rivers Act (WSRA) and Forest Service regulations regarding the protection of eligible and designated rivers and their Outstandingly Remarkable Values (ORVs).

Unfortunately, the FEIS fails to adequately consider impacts and mitigation measures for eligible and suitable streams directly within the vicinity of the SGP area. In many instances, the FEIS fails entirely to address potential impacts to other eligible streams and congressionally designated WSRs outside of the immediate project. This failure to take a "hard look" at the potential impacts to these resources warrants additional analysis

In response to this comment, the FEIS Appendix B states, "As noted in Section 3.23.4.2 of the SDEIS, there are three WSR segments within the area of analysis: Burntlog Creek (eligible), Johnson Creek (eligible), and South Fork Salmon River (suitable). All of these segments have a classification of recreational. Under planned operating and closure conditions, water quality of surface flow departing from the Project site would be the same or better than baseline conditions; therefore, there would not be impacts to waterways outside the area of analysis (Section 4.9), including South Fork Salmon River, Middle Fork Salmon River, Main Salmon River, North Fork Payette River, or Main Payette River. The area of analysis is appropriate as it encompasses potential impacts. (FEIS, Appendix B, B-632)

We find this response inadequate because no analysis is presented related to the potential impacts that would result from the proposed action on eligible, suitable, or designated sections within or beyond the immediate project area. In fact, in many instances, the FEIS suggests potentially serious impacts to WSRA-protected waters, as detailed below:

Burntlog Creek

As stated in Objectors' 2023 Comment Letter, road, bridge, and other project activities may negatively impact water quality and consequently harm Burntlog Creek's ORV for fish or protect Burntlog Creek's Wild Classification.

The FEIS provides several references to negative impacts that could result from project activities: Table 7-8 in the Special Designations Report states that there are likely to be "impacts to Wild classification of Burntlog Creek, possible impacts to recreation access to Burntlog Creek." The proposed year-round heavy vehicle use and winter plowing/sanding along the Burntlog Route, as well as the risk of hazardous material spills, pose serious risks to this designated Wild and Scenic-eligible waterway (Special Designations Report, Stibnite Gold Project FEIS, p. 95).

In response to this comment, the FEIS states "Through application of design features and Forest Service requirements, the Project is not predicted to affect water quality conditions in Burntlog Creek" (B-635); And that "Impacts to ORVs for which Eligible, Suitable, and Designated WSRs are Recognized: Burntlog Creek has an ORV for fish. Spawning habitat is adversely affected by increased sedimentation in creek beds. Use of temporary erosion and sediment control BMPs associated with the implementation of a SWPPP would reduce the potential for erosion and

sedimentation. If the re-contoured slopes are successfully stabilized, this effect would be short term, negligible, and localized (FEIS Special Designations Specialist Report, pg 97)."

This response is inadequate because it fails to detail how Burntlog Creek's ORVs or Wild Classification will be protected or establish water quality baselines to ensure degradation does not occur. Additionally, the FEIS provides no criteria regarding what will be considered "successful stabilization" or provides details on measures that might be taken if impacts are not temporary and minor.

In the case of Burntlog Creek, the ORV for fish is at risk from increased sedimentation and hazardous material spills caused by mining operations along the Burntlog Route. The FEIS acknowledges that sedimentation could "adversely affect fish spawning habitat" downstream, and any hazardous spills could further degrade the water quality and harm fish populations (Special Designations Report, p. 95). Table 7-8 in the Special Designations Report states that there are likely to be "impacts to Wild classification of Burntlog Creek, possible impacts to recreation access to Burntlog Creek." These potential impacts are incompatible with the requirements of the WSRA, which prioritizes the protection of the free-flowing nature of rivers and their ecological integrity. The Special Designations Report acknowledges that sedimentation due to road use and plowing may impact fish spawning habitat, and the risk of hazardous material spills adds further threats to water quality (p. 95). These are clear violations of the Forest Service's obligation to protect and enhance ORVs, as directed in FSH 1909.12.

As readily acknowledged in the FEIS, road construction and project developments associated with the SGP may negatively impact water quality and consequently harm Burntlog Creek's ORV for fish. Burntlog Creek would be crossed by all project-related traffic that travels the Burntlog Route in the Preferred Alternative. The FEIS states that the Preferred Alternative may impact water quality and adversely affect ORVs. Yet the FEIS does not adequately quantify impacts or explain how these impacts will be mitigated so that Burtlog Creek's eligibility for inclusion in the NWSRS is not impaired.

The FEIS plans to place a borrow pit within the WSR corridor of Burntlog Creek. Therefore, any construction in the WSR corridor and impacts to the free-flowing for any amount of time would violate the management requirements for eligible rivers under the Wild and Scenic Rivers Act and the Boise National Forest Management Plan. These actions could destroy the opportunity for this river segment to be designated.

Additionally, the FEIS notes that "detailed baseline information on existing water quality in Burntlog Creek has not been compiled for the SGP" (p.3-500). Absent water quality baselines being established, it will not be possible for the Forest Service to know whether potential impacts

from project development may violate the Forest Service's responsibility to protect Burtlog Creek's eligibility status.

In response to this comment, the FEIS states, "The Project is not predicted to affect water quality conditions in Burntlog Creek: "Through the application of design features and Forest Service requirements, the Project is not predicted to affect water quality conditions in Burntlog Creek. The existence of minor structures, such as bridges, does not bar a stream's consideration for inclusion as a WSR. The replacement of existing bridges along Burnt Log Road would not constitute the construction of a new structure impeding its free-flowing condition (Appendix B-635).

This response is inadequate because, throughout the Special Designations Specialist Report, construction of Burntlog Road and increased traffic are said to likely adversely impact to water quality in Burntlog Creek. This response contradicts the findings in the FEIS. At a minimum, more analysis must be conducted to demonstrate potential impacts are incompatible with the requirements of the WSRA, which prioritizes the protection of the free-flowing nature of rivers and their ecological integrity. This violates the Wild and Scenic Rivers Act 16 U.S.C. § 1283, planning rule 36 CFR 219.10, and the FSH 190.12 Chapter 80, section 82.5, 82.52, and 84.2.

Johnson Creek

As stated in Objectors' 2023 Comment Letter (p241), construction activities could negatively impact to the free-flowing condition and water quality of Johnson Creek (pg 241).

The Stibnite Gold Project's proposed expansion of the transmission line right-of-way (ROW) along Johnson Creek, an eligible segment for inclusion in the National Wild and Scenic Rivers System. The expansion from 70 to 100 feet within Johnson Creek's eligible Wild and Scenic corridor would result in adverse impacts to water quality and potentially affect the ecological and cultural resources within this corridor. Additionally, the Special Designations Report for the Stibnite Gold Project acknowledges that the expansion of the ROW could result in adverse impacts to water quality, specifically through vegetation clearance and its associated effects on water temperature and sedimentation (Special Designations Report, p. 91).

The clearing of vegetation along Johnson Creek to expand the ROW threatens the free-flowing nature of the creek and its water quality by potentially increasing water temperatures and sedimentation. Both are critical factors affecting aquatic life, particularly fish, which depend on cooler water temperatures and clean, sediment-free spawning grounds.

In response to concerns over impacts to Johnson Creek, the FEIS stated, "Under planned operating and closure conditions, water quality of surface flow departing from the Project site would be the same or better than baseline conditions (B-632), but yet again fails to establish any

baseline conditions through which impacts would be measured or outline thresholds for implementing additional mitigation measures to protect the values for which Johnson Creek was found eligible for inclusion in the National Wild and Scenic Rivers System.

The assertion that these impacts would be “negligible to minor” (p. 91) fails to adequately address the long-term degradation to water quality and fish habitat that may occur as a result of this project. The Forest Service is legally obligated to take a precautionary approach that enhances, rather than diminishes, the ORVs of Johnson Creek.

Johnson Creek was determined to have an ORV for cultural heritage. The Special Designations Report notes that construction and maintenance along the transmission line upgrade route could affect National Register-eligible heritage resources, though it claims there would be "No Adverse Effect" through avoidance or mitigation for three of the eight historic properties within the Johnson Creek corridor (p. 92). However, the Special Designations Report also states that “[a]ccessing the existing transmission line for upgrades and maintenance would require truck traffic that could damage historic properties along the transmission line upgrade route,” (p. 92). Even with mitigation, the disruption caused by subsurface excavation and increased vehicle traffic has the potential to harm the Outstandingly Remarkable Values (ORVs) related to the historical and cultural significance of this corridor.

According to the Wild and Scenic Rivers Act (16 U.S.C. § 1276(d)), the protection of cultural and historic ORVs is integral to maintaining the river's character. Even minor impacts, when aggregated over time, could diminish the integrity of these heritage resources and their historical significance, contrary to the WSRA’s intent.

In response to this comment, the FEIS Special Designations Specialist Report states, “Since the publication of the SDEIS, IPCo archaeologists reevaluated Line 328 and recommended the site as not eligible for the NRHP. Idaho SHPO concurred with this recommendation; therefore Line 328 no longer contributes to an ORV of heritage for Johnson Creek. Historic properties along the eligible segment of Johnson Creek would be avoided during the transmission line” (pg 97).”

This response is inadequate because impacts to the heritage ORV may exist regardless of whether Line 238 is considered to contribute or not.

3. The FEIS failed to adequately characterize the designated, eligible, and suitable Wild and Scenic Rivers that would be affected by the Stibnite Gold Project.

As stated in the Objectors' 2023 comments (p 234), the FEIS does not encompass all of the designated, eligible, and suitable Wild and Scenic Rivers that would be impacted by the Stibnite

Gold Project. Nor does the Forest Service provide evidence to show that the project will not impact these rivers.

Instead, the FEIS only provides this response on page B-632:

> "As noted in Section 3.23.4.2 of the SDEIS, there are three WSR segments within the area of analysis: Burntlog Creek (eligible), Johnson Creek (eligible), and South Fork Salmon River (suitable). Under planned operating and closure conditions, water quality of surface flow departing from the Project site would be the same or better than baseline conditions; therefore, there would not be impacts to waterways outside the area of analysis (Section 4.9), including South Fork Salmon River, Middle Fork Salmon River, Main Salmon River, North Fork Payette River, or Main Payette River. The area of analysis is appropriate as it encompasses potential impacts."

This response ignores the impacts of road construction, increased spill risk, increased traffic, and increased recreation, may along these waterways. The analysis area should have expanded to encompass all of the following rivers.

South Fork of the Salmon River

The Payette National Forest has rightly found 63 miles of the South Fork Salmon River (SFSR) suitable for Wild and Scenic designation.

As stated in the Objectors' 2023 comments, the scope of analysis on the SFSR is too narrow and should include the effects of its tributaries on the main waterway.

The FEIS admits at 3.23.4.2 that "detailed baseline data for existing water quality where the SGP components intersect the SFSR at Warm Lake Road have not been compiled." But, the FEIS makes a premature conclusion that the water quality in the South Fork of the Salmon River would "be short term, negligible to minor, and localized during construction and long term, negligible to minor, and localized during operations and closure and reclamation. " (p. 4-680). In order to provide an accurate assessment of water quality, baseline conditions need to be obtained.

The East Fork South Fork of the Salmon River (EFSFSR) is a major tributary of the SFSR. In both action alternatives, the EFSFSR would be negatively impacted by the proposed Plan of Operations. The FEIS does not analyze how sedimentation, pollution, and increased water temperatures in the EFSFSR would impact the SFSR. The FEIS states especially how the 2021 MMP would have "direct permanent impacts on water quality, as it would contribute new sources of mine waste material to the East Fork SFSR drainage," (p. ES-17).

In response to this critique over the inadequate scope and lack of baseline information, the FEIS repeats the assertion that "the area of analysis is appropriate as it encompasses potential impacts" (FEIS, Appendix B, B-632).

This response is inadequate because it does not even address the conceptual reality that impacts on waters that feed the SF Salmon River could potentially impact the values for which the SF Salmon River was deemed suitable.

The scope of analysis on the SFSR is too narrow and should include the effects of its tributaries on the main waterway. All action alternatives in the FEIS would impact and risk the Wild and Scenic values of the South Fork Salmon River that the Forest Service is required to protect based in large part on the Forest Plan. The proposed mine threatens to severely impact the recreational[8] and fisheries[9] outstanding remarkable values of the river.

Middle Fork Salmon River

The Middle Fork Salmon River is world-renowned for its wilderness character, scenery, wildlife, fisheries, whitewater and has ORVs for Scenery, Recreation, Geology, Fish, Water Quality, Wildlife, Vegetation/Botany, Prehistory, History, and Traditional Use/Cultural.

As stated in the Objectors' 2023 comments, the immense scale of the Stibnite Gold Project, including access roads, will likely cause far-reaching impacts to Wild and Scenic values beyond the area of analysis provided in the FEIS (pg 236). Given the Preferred Alternative will rely on the newly developed Burntlog Road for access to the mine site, with significant portions of the road on the high divide that separates the South Fork Salmon and Middle Fork Salmon River watersheds, potential impacts include light, visual, water, and dust pollution that could harm ORVs on the Middle Fork Salmon. Portions of the Burntlog Route lie within the watershed of the Middle Fork Salmon River, so any potential spill of hazardous materials could potentially enter a tributary stream.10

In addition, wildlife is an ORV that could be affected by the mine project's activities along Burntlog Route, as many of the animals that characterize this ORV are migratory and populations are likely to travel near or across Burntlog Road.

In response to this comment, the FEIS states on page B-633: "The Middle Fork Salmon River is more than 20 miles east of the SGP, is separated by mountainous topography, and is within

[8] See Recreation Resources comments in this document
[9] See O'Neal (2020) and Gregory (2022) fisheries report
[10] See Lubetkin (2022) report on transportation spill risks

a different hydrologic basin; it would not be affected by light, visual, water, or dust impacts. The Burntlog Route would be in proximity to the eligible segment of Burntlog Creek. Design features, best management practices, and mitigation measures required for the Project would minimize the potential for hazardous materials spills to waterways. Potential impacts to wildlife along the Burntlog Route would not extend to the quarter-mile protected buffer along the Middle Fork Salmon River. The Final EIS has been revised to mention the potential effects of the segment of the Burntlog Route located along the divide between the Headwaters of the East Fork SFSR and the Upper Indian Creek watershed that drains to the Middle Fork Salmon River."

This response is inadequate because it does not provide sufficient analysis to indicate that potential impacts will be minor, temporary, or localized to the immediate project area.

Main Salmon River

As stated in Objectors' 2023 Comment Letter, the SGP will directly affect multiple tributaries to the SF Salmon River, which feeds into the WSR Main Salmon River, yet the SDEIS failed to recognize the Wild and Scenic Main Salmon River as a potentially affected waterway (pg 236-238).

The South Fork of the Salmon, a major tributary, joins the Wild and Scenic Main Salmon River near Mackay Bar, and contributes to the hydrologic regime for the remaining 20 miles to the boundary of the designated segment of wild river. Several migratory fish species utilize both the Main Salmon and South Fork Salmon Rivers as migration corridors and habitat, including Pacific lamprey, white sturgeon, Chinook salmon, steelhead, and bull trout. These rivers are ecologically and hydrologically connected. To protect and enhance the Fish ORV on the Main Salmon River, considering the migratory nature of these species, headwaters streams such as the South Fork Salmon River watershed must be considered.

The Stibnite Gold Project will directly affect multiple tributaries to the South Fork Salmon River, which feeds into the WSR Main Salmon. The DEIS had previously stated at 3.23-14 that a WSRA Section 7 study is required to analyze impacts to the designated WSR Salmon River. Still, the DEIS, SDEIS, and FEIS failed to recognize the Wild and Scenic Main Salmon as a potentially affected resource by the Stibnite Gold Project. The Johnson Creek Route and the mine site occur on the East Fork South Fork Salmon River, which feeds into the South Fork Salmon and the Main Salmon River at the confluence at Mackay Bar. Any spill of contaminants and other impacts to water quality have the potential to adversely affect Wild and Scenic values of the Main Salmon River.

The Main Salmon has an ORV for fish because of the four ESA-listed species that rely on the Main for habitat and migration. The FEIS recognizes in the Fisheries Specialist Report that

ESA-listed Chinook salmon, steelhead, and bull trout will be adversely affected by the project. These are migratory fish species that utilize the Main Salmon River corridor as a migration route and contribute to this identified ORV. Any negative impacts to water quality, habitat, and fish passage have the potential to negatively impact the fish ORV for the WSR Salmon River.

As pointed out in previous comments on the DEIS and SDEIS, the FEIS should have analyzed the impacts that the Stibnite Gold Project's alternatives will have upon Wild and Scenic values on the Main Salmon River, specifically from the confluence with the South Fork Salmon and downstream to Long Tom Bar.

In response to this comment, the FEIS states, "Under planned operating and closure conditions, water quality of surface flow departing from the Project site would be the same or better than baseline conditions; therefore, there would not be impacts to waterways outside the area of analysis (Section 4.9), including South Fork Salmon River or the Main Salmon River. The Project is not expected to affect fish and fish habitat in the Main Salmon River. Project effects are contained within the analysis area as described in SDEIS Section 4.12.2.2. The area of analysis is appropriate as it encompasses potential impacts" (Appendix B, B-634).

This response is inadequate because it does not provide analysis to indicate that potential impacts will be minor, temporary, or localized to the immediate project area.

North Fork Payette River and Main Payette River

The North Fork Payette River and Main Payette River were found eligible for Wild and Scenic designation. Both river segments have a preliminary classification as Recreational rivers and are managed to protect recreation ORVs. The Boise National Forest Plan describes the North Fork Payette's ORV classification.

The FEIS failed to provide any analysis that assesses the impacts of mining-related traffic adjacent to the North Fork Payette River. Without this analysis, the Forest Service fails to show how it would uphold the Payette National Forest Management Standards for the North Fork Payette River:

> 1. General Standard 0901 Manage the North Fork Payette River and Payette eligible corridors to their assigned Recreational classification standards and preserve their ORVs (outstandingly remarkable values) and free-flowing status until the rivers undergo a suitability study and the study finds them suitable for designation by Congress or releases them from further consideration as Wild and Scenic Rivers.

2. Emphasize the following in managing eligible and suitable Wild and Scenic Rivers:

a) Maintaining or enhancing the outstandingly remarkable values,
b) Maintaining the free-flowing character,
c) Maintaining or enhancing values compatible with the assigned classification,
d) Accommodating public use and enjoyment consistent with retaining the river's natural values. (Objective WSOB01).

In response, the FEIS stated, "See Section 1.10.3.4. In addition, under planned operating and closure conditions, the water quality of surface flow departing from the Project site would be the same or better than baseline conditions; therefore, there would not be impacts to waterways outside the area of analysis (SDEIS Section 4.9), including North Fork Payette River and Main Payette River. Design features, best management practices, and mitigation measures required for the Project would minimize the potential for hazardous materials spills to waterways. The area of analysis is appropriate as it encompasses potential impacts." (Appendix B-636)

This response is inadequate because it does not provide analysis to indicate that potential impacts will be minor, temporary, or localized to the immediate project area.

i. Forest Planning Inconsistencies

In addition to the above comments regarding the impact that the proposed 2021 MMP will have on Burntlog Creek in regards to the WSRA, this action is contradictory to the amended 2010 Boise National Forest Plan specific to Management Area 20. As described in the 2021 MMP, "the Lower Burntlog Creek and Upper Burntlog Creek sub-watersheds have been identified as important to the recovery of listed fish species, and as high-priority areas for restoration."[11]

While being identified as priority areas for restoration, new road construction and associated impacts fall woefully short of this goal. Based on the MMP, the following General Standards and Objectives will not be followed:

- General Standard 2001: Manage the Burntlog Creek eligible river corridor to its assigned classification standards, and preserve its outstandingly remarkable values and free-flowing status until the river undergoes a suitability study and the study finds it suitable for designation by Congress, or releases it from further consideration as a Wild and Scenic River.
- Objective 2014: Improve water quality by reducing road-related accelerated sediment delivery to upper Johnson Creek and its tributaries.

[11] Boise Forest Plan - Management Area 20 III-372

- Objective 2015: Assist in de-listing South Fork of Salmon River drainage, including upper Johnson Creek, from the State of Idaho's impaired water bodies list by applying appropriate and active watershed restoration to reduce sediment, which is the identified pollutant of concern.
- Objective 2016: Improve stream bank stability by reducing sediment delivery to Johnson Creek, and by revegetating banks with native plant species as needed.
- Objective 2017: Restore aquatic and riparian habitats in Johnson Creek and its tributaries by reducing bank instability and accelerated sediment from existing roads and other disturbances.
- Objective 2018: Prioritize restoration to improve or maintain Chinook salmon, steelhead, and bull trout spawning and rearing habitats. Allow some temporary impacts in order to achieve short-term and long-term benefits to water quality and fish habitat as long as those impacts do not threaten the viability of local fish populations.
- Objective 2019: Restore instream fish habitat in the Upper Burntlog and Lower Burntlog subwatersheds so that it is not a limiting factor in listed fish species and native cutthroat population recovery.
- Objective 2020: Identify fish passage barriers and sediment delivery sources in the Burntlog drainage, and design and implement corrective actions to reduce impacts to native fish and their habitat.

With even a cursory review of the above objections and general standards, it becomes clear that road building and the associated increased likely sedimentation of Burntlog Creek are contradictory to the BNF Forest Plan.

In response, the Forest Service states, “Appendix A provides the applicable Forest Plan Consistency Review and Amendments” (Appendix B-635).

This response does not demonstrate where or how the FEIS has been revised to meaningfully address the aforementioned inconsistencies with forest planning objectives.

8. The FEIS failed to include an action alternative that minimizes impacts on eligible, suitable, and designated WSR values

This concern was brought up in our comments on the SDEIS and is still applicable to the FEIS. The FEIS confirms that all action alternatives may harm WSR values besides the No Action Alternative.

In response to our comment, the Forest Service states, “As described in Section 3.23.4.2 of the SDEIS, the SGP would intersect with eligible or suitable WSR corridors at the proposed access roads and utility corridors, specifically, SFSR, Burntlog Creek, and Johnson Creek. Effects to the

WSR values of these streams from the SGP are described in Section 4.23.2.2 of the EIS. As stated in Sections 1.10.3.4 and 4.23.2 there would not be any adverse effects that would affect the eligible segment and there would be no impairment to the free-flowing characteristics of the segment. Therefore, the Project would comply with FSH 1909.12, Chapter 84.3." (FEIS, Appendix B, B-111).

This response is inadequate because the claim is inaccurate. Table 7-8 in the Special Designations clearly indicates that the 2021 MMP Alternative could negatively impact Burntlog Creek's water quality, fish habitat, and recreational access, and in turn, negatively harm its ORVs and preliminary Wild classification for designation. The Johnson Creek Alternative is likely to have adverse impacts on Johnson Creek's water quality.

9. The FEIS lacks mitigation measures to address potential impacts to water quality, ORVs, and classification of eligible, suitable, and designated Wild and Scenic Rivers

As stated in our comments on the SDEIS, the Specialist Report for Special Designations included in the FEIS does not target specific courses of action for mitigation measures. The Mitigation and Monitoring Section of the report is too vague and does not properly discuss the steps the SGP would take to mitigate harm to eligible, suitable, and designated Wild and Scenic Rivers. No opportunities are listed for the negative impacts to be avoided or lessened to these protected waterways. The Forest Service needs to address mitigation measures that are available to protect water quality, ORVs, and the classification of eligible, suitable and designated Wild and Scenic Rivers.

Q. BOTANICAL RESOURCES

1. Sensitive and Forest Watch Plant Species

In our collective 2023 SDEIS comments (p. 244), we noted that some of the botanical surveys were out of date and did not represent an accurate baseline survey. In addition, the SDEIS fell short in describing both the direct and indirect impacts to these botanical resources and does not take the requisite "hard look" at impacts to these species. Further, there are a large number of habitat disturbing, degrading, and destroying activities proposed as part of this project, including road construction, drainage construction, ROW expansion, additional exploration activities, dust generation, and extensive earth moving within the mine footprint. Roads and other habitat clearing activities can cause a direct loss of individual plants. Roads and ditches can alter groundwater and surface water flows and affect surrounding vegetation communities accordingly.

We also referenced the impacts of vegetation removal from winds and drying effects, the threats of wildfire from introduced or established invasive plants or noxious weeds, and the impacts roads and potential hazardous materials spills could have on vegetation communities. The

Forest Service responded by stating, "No text revisions made. Occurrence data for sensitive and watch species has been provided and are still accurate for the analysis. Additionally, details regarding potential impacts to sensitive and watch species is provided in Section 4.10.2 and measures proposed by Perpetua and required by the Forest Service, primarily the requirement of preconstruction surveys to identify occurrences of sensitive and watch species and then establish protection measures, would reduce Project-related impacts to these species," (FEIS Appendix B, p. B-337).

This represents an inadequate response, particularly in relation to occurrence data for sensitive and watch species. Preconstruction surveys not directly associated with the environmental analysis tied to this objection skews the effects and impacts analysis by not providing an accurate and up-to-date inventory of sensitive and Forest Watch plant species populations, directly violating the Forest Plan and NEPA. Further, the FEIS fails to adequately address the impacts of introduced or the spread of invasive plants and noxious weeds. The FEIS offers a single mitigation strategy to prevent the introduction or spread of noxious weeds and invasive grasses (FEIS, p. 4-329), consisting of an equipment inspection prior to entering the SGP site at the SGLF. However, Perpetua and the Forest Service offer no concrete measures to reduce or prevent the spread of noxious weeds or invasive grasses in the project area. As a potential remedy, we suggest Perpetua establish a noxious/invasive plant control program with a staff of 2 to 4 individuals that proactively works within the project area and along access routes to identify established populations and apply appropriate herbicides or employ manual removal techniques to remove existing plants.

On page 245 of our comments we submitted the following:

> In addition to impacts related directly to the Stibnite Gold Project, additional exploration activities in the project area will also have impacts. From the SDEIS: "These approved activities include construction of several temporary roads (approximately 0.32 mile of temporary roads) to access drill sites (total of 28 drill sites), drill pad construction (total of 182 drill pads) and drilling on both NFS and private lands at and in the vicinity of the SGP," (SDEIS p. 433). These temporary roads do not appear to be accounted for in the acres of disturbance. These exploration roads are part of the cumulative effect to this project and should be included in the Supplemental SDEIS. Backfilling sites with disturbed soils and recontouring are likely to result in these areas turning into weed patches. The Forest Service should create plans and funding sources to replant disturbed areas with native plants and have contingency plans and funds until native vegetation has recovered. The Forest Service should also establish a long term monitoring program for the twenty years following mine closure along with funding to replant areas as needed.

Again, the Forest Service responded with, "no text revisions," (FEIS Appendix B, p. B-338). We refer you to our objection point regarding the impacts of invasive plants

and noxious weeds above. The FEIS fails to adequately address temporary roads and disturbed soils. Further, the FEIS feely admits that topsoil (growth media) set aside during mine construction *will not* be sufficient for realistic rehabilitation and restoration efforts during mine closure (see our objection points related to growth media and restoration).

On pages 245-246 of our comments we emphasize the regional scale the SGP will impact natural resources, including botanical species, highlighting several local and regionally-sensitive species:

> The 2021 MMP would impact known occurrences of bent-flowered milkvetch, least moonwort, Sacajawea's bitterroot, Blandow's helodium, sweetgrass, and Rannoch-rush, while the Johnson Creek Route Alternative would impact known occurrences of bent-flowered milkvetch, least moonwort, and Sacajawea's bitterroot. Additionally, the 2021 MMP would impact a greater amount of modeled potential habitat (3,991 acres) for sensitive and forest watch plant species than the Johnson Creek Route Alternative (3,204 acres). (SDEIS, ES-16).

The Forest Service deemed to leave these concerns unaddressed by writing, "No text revisions made. Details regarding potential impacts to sensitive and watch species is provided in Section 4.10.2 and measures proposed by Perpetua and required by the Forest Service, primarily the requirement of preconstruction surveys to identify occurrences of sensitive and watch species and then establish protection measures, would reduce Project-related impacts to these species," (FEIS Appendix B-338). We reiterate our objection statement that preconstruction surveys not directly associated with the environmental analysis tied to this objection skews the effects and impacts analysis by not providing an accurate and up-to-date inventory of sensitive and Forest Watch plant species populations, directly violating the Forest Plan and NEPA.

a. Sacajawea's bitterroot

In our extensive SDEIS comments regarding Sacajawea's bitterroot (p. 246-250) we made several observations and points, including:

- Sacajawea's bitterroot is the highest priority rare plant managed by the Boise National Forest
- An isolated occurrence of the rare plant is located along Warm Lake Road
- The SDEIS estimated population of 157,023 individuals is a gross overestimation
- The largest population of Sacajawea's bitterroot is found 50 miles south of the Warm Lake population and represents the "stronghold" for the rare and endemic species
- Most of the habitat area is "highly susceptible" to invasion by noxious weeds
- The Boise National Forest acknowledges that Sacajawea's bitterroot is highly vulnerable to impacts related to climate change and the Forest Service must analyze

these potential impacts

- No recent surveys have been conducted for the "SGP" population of Sacajawea's bitterroot
- This lack of analysis is inconsistent with Boise National Forest Plan Objectives BTOB01 and BTOB02:

> Objective BTOB01: Continue to map locations of suitable occupied habitat for Region 4 Sensitive plant species, Forest Watch plants, and globally rare plant communities. Incorporate information into a GIS database and coordinate with the Idaho Conservation Data Center.
>
> Objective BTOB02: During fine-scale analyses in areas containing sensitive species habitat, identify and prioritize opportunities for restoring degraded Sensitive species habitat.

- The discretionary degradation of habitat is inconsistent with the Forest Plan Standards and Goals:

> Standard BTST01 Management actions that occur within occupied sensitive plant species habitat must incorporate measures to ensure habitat is maintained where it is within desired conditions, or restored where degraded.
>
> Goal BTGO03 Maintain or restore globally rare plants identified as the Natural Heritage Program G1, G2, and G3 and/or S1 and S2 species, and provide for their continued compositional and functional integrity for those species for which we have habitat (see Appendix C).

- The Forest Service needs to consider an alternate alignment of the transmission line in this location as well as location of the spur roads to make sure that Sacajawea's bitterroot and its habitat is made more secure; no mitigation measures were offered to offset the potential impacts of the transmission line on Sacajawea's bitterroot
- We recommend that the Forest Service resurvey Sacajawea's bitterroot during the appropriate time of the next field season, reestablish the baseline, and adopt additional design features to avoid, minimize and mitigate impacts to this species

Despite the presentation of these facts and recommendations, the Forest Service once again responded with, "no text revisions made," (FEIS Appendix B, p. B-339) and continued the reliance on preconstruction surveys to identify and then avoid existing Sacajawea's bitterroot populations and individuals.

b. Bent-flowered milkvetch, Least moonwort, Blandow's helodium, Sweetgrass, and Rannoch rush

In our SDEIS comments regarding Bent-flowered milkvetch (pp. 250-252), Least

moonwort (pp. 252-253), Blandow's helodium (p. 253), Sweetgrass (p. 253-254), and Rannoch rush (p. 254), we raised concerns that:

- The largest population of Bent-flowered milkvetch in the entire state of Idaho is located approximately 300-1,500 feet west of the West End Creek diversion, and that 122 acres of potential habitat has been modeled near the Operations Area Boundary, transmission line and Meadow Creek Lookout Road. It is unclear if these areas have been surveyed.
- The SDEIS (p. 4-292) highlighted the potential adverse effects fugitive dust would have on Bent-flowered milkvetch, and incorrectly focused on the impacts to individual plants rather than the entire subpopulation
- We called attention to two Payette Forest Plan Objectives (BTOB01, MIOB08) and one goal (BTG003) calling for additional baseline surveys, the need to restore and maintain globally rare plants, and additional fine-scale analysis for mining related projects
- The most recent surveys for Least moonwort was conducted in 2005 and no inventories are complete for the SGP
- Construction of the Burntlog Route could impact the hydrology of a wetland that supports a nearby population of Least moonwort
- Construction of the Burntlog Route threatens two subpopulations of Sweetgrass
- A population of Rannoch rush is located within 300 feet of an existing section of the Burnt Log Road (see additional comments below: Wetlands and Riparian)
- The primary impacts to these Sensitive and Forest Watch plant species are fugitive dust and construction related activities and without adequate baseline population inventories the Forest Service cannot adequately determine the potential impacts to individual plants or subpopulations.

The Forest Service responded (FEIS Appendix B, pp. B-342 and B-343) with the apparently standard statement for botanical resources that no text revisions were made, current population data is adequate for the SDEIS analysis, and preconstruction surveys proposed as a Design Feature by Perpetua Resources is sufficient to safeguard individual plants and subpopulations. Failing to collect adequate baseline data to determine the full potential impacts of the SGP represents a violation of NEPA and the Forest Plan.

c. Section XI I. Wetlands and Riparian

As described in Objector 2023 Comment Letter (Newberry Final Tech, 2022) (page 56-59), **"**There are concerns that road traffic along the Burntlog Route will have indirect impacts on fens in the vicinity of Mud Lake."

In response, FEIS (Appendix B, p. B-940; # 802.0105C.7) states that "Fens in the vicinity of Mud Creek are described in Section 3.11.3.2.4 in the DEIS and potential impacts are addressed in Section 4.11.2.2.1.2 of the DEIS."

FEIS p. 4-315 states that "One occurrence of Rannoch-rush, a forest watch species on the BNF, is located in a wetland in the Mud Lake area in the BNF (IDFG 2004; IFWIS 2017). This

occurrence is within 300 feet of an existing portion of Burnt Log Road (FR 447). This occurrence is likely to be impacted by dust associated with road widening and vehicle travel on the Burntlog Route in this location. This occurrence also could be subject to other potential indirect effects described, under Indirect Impacts. The most likely impact of the SGP on this occurrence is dust associated with construction of the road and vehicle travel in this area. Increased dust deposition could result in impacts ranging from metabolic inhibition or mortality of individuals (Farmer 1993). However, based on the implementation of required and proposed EDFs presented in **Section 2.4.9**, particularly those related to sensitive plant species and dust control as well as topsoil and vegetation management, impacts to Rannoch-rush and its habitat would be reduced. This potential impact would result primarily in localized, long-term and permanent, minor impacts to the Rannoch-rush. Therefore, the 2021 MMP may indirectly impact Rannoch-rush individuals (one) and habitat but would not likely contribute to loss of viability to the species within the planning area (i.e., BNF-administered land). Emphasis added."

This response is inadequate. The FEIS p. 4-315 states that a take of one plant is estimated because of dust as mitigated by BMPs, EDF's etc. The FEIS fails to provide analysis to support the assertion that mitigation measures outlined in the FEIS will be adequate to prevent impacts. Further, the FEIS fails to consider the effects of hydraulic alteration by widening the road, nor does it provide evidence of sufficient baseline surveys on the Rannoch-rush, associated species, fen characteristics, or information on monitoring of this site for sediment, dust or loss of plant life.

2. Whitebark pine

As described in Objector 2023 comment letter (pp. 255-269), on December 14, 2022, the US Fish and Wildlife Service announced its decision to list whitebark pine as a threatened species under the Endangered Species Act. This rule became effective January 17, 2023. If the USFWS determines that a project will result in incidental take, the USFWS must issue an incidental take permit with specific terms and conditions that are non-discretionary. The Forest Service must comply with the reasonable and prudent measures and agree to implement the terms and conditions in the USFWS's incidental take statement to avoid potential liability.

According to the SDEIS, the analysis area contains approximately 2,069 acres occupied by whitebark pine. Even though the Forest Service has preliminarily determined that neither alternative would jeopardize the species, the SDEIS notes that activities related to the Stibnite Gold Project would negatively affect both whitebark pine habitat and individuals:

> The SGP would remove whitebark pine individuals, and habitat conversion associated with the SGP would impact seed production, dispersal, and establishment of this species. SDEIS 2-144.

The Vegetation Communities, Botanical Resources, and Non-Native Plants Specialist Report highlights the potential impacts to known locations of whitebark pine".

7.2.1.6 Issue: Impacts to Known Locations of Whitebark Pine

> Construction would require removal of known whitebark pine individuals. Direct impacts to whitebark pine individuals would occur during the construction and operation phases. Removal of whitebark pine individuals, particularly mature, cone-bearing individuals, would reduce the population size of this species in the Forests and potentially have long-term consequences for this species in the analysis area.
>
> Loss of whitebark pine individuals would result in reductions in seed production and dispersal, which would result in reduced establishment of this species in and adjacent to the analysis area.
>
> Transport of whitebark pine individuals that are cut down for SGP construction outside the SGP area also has the potential to spread bark beetle species (e.g., mountain pine beetle [Dendroctonus ponderosae]), which are a main cause of tree mortality in the coniferous forests of the western U.S. in recent years (Hinke et al. 2016). White pine blister rust disease, which is caused by the introduced pathogen Cronartium ribicola, is a conifer pathogen (Keane et al. 2017) that has the potential to spread if infected trees are transported outside the SGP area. This pathogen and bark beetles are a threat to whitebark pine in the PNF and BNF, and their potential spread as a result of SGP actions could detrimentally impact whitebark pine and other conifers within and outside the analysis area. SDEIS Botanical Specialists Report, p. 56

We are also concerned about the physical and chemical effects of fugitive dust to botanical resources along the transportation route. IDEQ itself states on page 22 of the final SOB that "it may prove challenging to consistently and continuously achieve the targeted level of fugitive dust control for emissions from traffic on unpaved roadways, with over 55 miles of haul truck routes within the mining operations boundary, a fleet of 32 haul trucks weighing between 37 and 357 tons, and a targeted dust control efficiency of 93.3% accomplished by application of both dust suppressant and water controls." The Forest Service needs to take a closer look at these potential impacts.

The Forest Service responded to these comments (SDEIS Appendix B, p. B-343) with revised text to update species status, with analysis, required protective measures, and mitigation measures in appropriate sections (3.10, 4.10, and 5.10).

a. The SDEIS failed to analyze the potential impacts of soil contamination on whitebark pine

On page 259 of our SDEIS comments, we expressed concern that fugitive dust within and adjacent to the operations area and along transportation routes would inhibit photosynthesis, and that dust containing heavy metals could affect soils and harm plant physiology.

The Forest Service analysis (FEIS, p. 4-312) reports that:

> Based on the results of the species-specific field surveys conducted for the SGP in 2019 (Tetra Tech 2020b), the 2021 MMP would impact an estimated 259.5 acres of occupied whitebark pine habitat, 78 acres of assumed occupied habitat, and would remove an estimated 1,278 individual trees, 27 of which were individuals observed with cones during 2019 field surveys. The 2021 MMP would also impact an estimated 287.4 acres of modeled suitable habitat, which may impact existing seedbanks. The mine site and access roads would remove the majority of whitebark pine individuals and habitat, while impacts as a result of the utilities and off-site facilities would be minimal. In relation to indirect impacts, these impacts would occur near all Project components but especially along the access roads and utilities as this species has been documented over a large area in the analysis area and surveyed occupied habitat totals approximately 2,069 acres. However, based on the implementation of required and proposed EDFs presented in Section 2.4.9, particularly those related to TEPC plant species and dust control as well as topsoil and vegetation management, impacts to whitebark pine and their habitat would be reduced. This would result primarily in localized, long-term and permanent, moderate impacts to the whitebark pine.

The FEIS again fails to analyze the potential impacts of soil contamination on whitebark pine within and adjacent to the operations area and along transportation and utility corridors.

b. The SDEIS failed to analyze the impacts of dust suppressants on whitebark pine

As described in Objector 2023 comments (p. 259), the SDEIS failed to analyze the potential impacts of dust suppressing agents, such as magnesium chloride and other salt-based compounds on whitebark pine, noting that numerous studies demonstrate that the use of magnesium chloride on road surfaces results in adverse conditions affecting the health of roadside vegetation, including aspen, Engelmann spruce, and lodgepole and ponderosa pine. The adverse impacts associated with the use of magnesium chloride are not restricted to vegetation immediately adjacent to the roadside. Researchers have documented foliage loss and mortality and high sodium concentrations up to 93 meters downslope of the application area. While none of the cited studies document

whitebark pine impacts, it is worth noting that few, if any, studies on the effects of magnesium chloride incorporate alpine or subalpine environs.

Despite the clear connection between the application of magnesium chloride to roads and other areas as a dust suppressant and adverse effects to vegetation, the FEIS fails to broach or directly address our concerns, responding with the standard, " Text has been revised per the comment to update the status of the whitebark pine per the listing on December 15, 2022. Additionally, the analysis and required protection measures as well as mitigation measures required by the Forest Service have been added to the Final EIS, specifically in Sections 3.10, 4.10, and 5.10, as appropriate," (FEIS Appendix B, p. B-346. The FEIS does not contain or reference studies to determine the impacts of dust suppressants on Whitebark pine, representing a violation of NEPA, the ESA, and the Forest Plan.

c. The SDEIS fails to consider long-term impacts of climate change

On page 260 of our SDEIS comments, we state, "Known effects of climate change include rising temperatures, decreased snowpack, and increased rain-associated precipitation. These factors could affect the resilience of whitebark pine over the next two decades, and the SDEIS fails to consider the potential impacts to the long-term success of whitebark pine should the analysis area population suffer additional losses. As recounted elsewhere in these comments, we recommend the Forest Service analyze the findings of climate change cumulative impacts in a supplemental SDEIS."

The Forest Service is fully aware that climate change will likely impact whitebark pine resilience, as is demonstrated in recent Purpose and Need statements associated with recent forest restoration projects on the Payette and Boise National Forests (See Granite-Goose Restoration project as an example). Yet, the agency failed to incorporate climate change into its analysis of the impacts to whitebark pine (FEIS Appendix B, p. B-350). As we point out in our objection point below, failure to adequately consider the impacts of climate change on a project or ESA-listed species is a violation of NEPA and Forest Plans.

d. Indicators used to assess impacts to whitebark pine are incomplete

On pages 261-263 of our SDEIS comments, we point out that the SDEIS used two indicators (acres impacted and the estimated number of mature whitebark pine trees to be cut during construction activities) to assess impacts to whitebark pine. We provide the estimated impacts to habitat and individual trees above under Point a, soil contamination. We also noted that consideration of mature trees is important and appropriate as it may take 40-80 years for a whitebark pine to reach reproductive age. We suggested that the impacts to the total number of whitebark pine should be included as an equally important third indicator.

The Forest Service partially responded to this comment (FEIS, p. 4-312) when it states:

> Based on the results of the species-specific field surveys conducted for the SGP in 2019 (Tetra Tech 2020b), the 2021 MMP would impact an estimated 259.5 acres of occupied whitebark pine habitat, 78 acres of assumed occupied habitat, and would remove an estimated 1,278 individual trees, 27 of which were individuals observed with cones during 2019 field surveys.

However, five years have elapsed since the 2019 observation of 27 individual whitebark pine trees with cones, and this number may have increased or decreased in the intervening years. We remain skeptical that of the over 1,200 trees predicted to be removed, only 27 are sexually mature and reproductive specimens. Failure to adequately assess the number of mature trees potentially impacted by SGP construction and/or operations does not meet metrics provided for in the Forest Plan, nor does it provide an adequate response to our request for additional indicator consideration.

e. Baseline surveys on whitebark pine are insufficient

As described in Objector 2023 SDEIS comments (p. 263-265), we expressed concern about the methodologies used to complete some baseline surveys. Regarding the acreage of occupied habitat, Forest Service is appropriately basing this information on modeled suitable habitat and field surveys for whitebark pine. However, we noted that surveys for whitebark pine did not go into sufficient detail to establish the needed baseline information or to provide the public with sufficient information to make meaningful comments. We commented (pp. 263-264) that:

> As shown in Table F-1, the Forest Service estimated the number of whitebark pine trees in occupied habitat polygons #15, 71, 84 and 85 ranged anywhere between 150 to 500 334 (2019 Whitebark Pine Survey Report [Tetra Tech 2020b] 263 individuals and came up with a midpoint amount that was entered into the formula.335 The Forest Service then estimated that 67, 11, 35 and 33 trees would be removed respectively from each polygon. However, if the input ranges from 150-500 individuals, this could lead to a 300% or greater discrepancy in the results. No sorts of error bars or degree of certainty accompanies the estimate of trees to be removed, which makes it difficult for the public and decision makers to understand the potential impacts.

While some passages of the SDEIS make it clear that the SDEIS relied on estimated numbers of affected trees, others provide specific numbers, as demonstrated by the estimated 27 mature trees referenced above. The level of specificity used implies that this is an exact count

with a high degree of accuracy instead of the output of a formula that may be off by several hundred percent in some polygons.

We commented further on page 264:

> Another example is occupied habitat polygon #105 which appears to be in the proposed footprint of the West End pit. The Forest Service estimated that this polygon has anywhere between 500-1000 trees, out of which the Forest Service used the formula based on a midpoint to estimate that there were 17 mature whitebark pine trees that would be removed. The margin for error for this important calculation is undisclosed and unacceptable.
>
> With this margin of error, it is difficult to make an informed decision about the impacts of Stibnite Gold Project, real differences regarding the Burntlog Route and the Johnson Creek Route Alternatives and how to develop design features to avoid, minimize and mitigate impacts. This is a significant problem regarding a listed species. We note that the lack of a sufficient baseline study for Sacajawea's bitterroot for the CuMo Mine Exploration Project was sufficient for the court to remand the decision.
>
> While the formula used may be appropriate for coarse surveys for relative abundance of whitebark pine and in areas with numerous seedlings and saplings, the Forest Service should follow up with additional field surveys for accurate counts of mature trees where they occur. This should not be an undue burden as the area directly affected by mine operations in polygon #105 is less than 5 acres and is warranted as whitebark pine is a listed species.

We recommended that Perpetua Resources and the Forest Service update the whitebark pine survey so the actual proposed layer of disturbance appears along with the verified mature trees in the polygons. The Forest Service responds with the standard, "Text has been revised per the comment to update the status of the whitebark pine per the listing on December 15, 2022. Additionally, the analysis and required protection measures as well as mitigation measures required by the Forest Service have been added to the Final EIS, specifically in Sections 3.10, 4.10, and 5.10, as appropriate," (FEIS Appendix B, p. B-348). However, a review of these sections demonstrates that no additional survey work or individual tree status inventory has been completed. A paucity of adequate baseline data represents a violation of NEPA by not providing a complete understanding of existing conditions to inform modeling and analysis of potential impacts.

f. Avalanche control on whitebark pine not properly assessed

As stated in our SDEIS comments (p. 265), avalanche control work has the potential to artificially trigger avalanches that would not otherwise have occurred and therefore destroy or damage whitebark pine. It is not clear that whitebark pine surveys conducted by Perpetua included individuals living within avalanche starting zones, tracks, or runouts. The FEIS fails to respond to this comment, providing the standard response quoted above (FEIS Appendix B, p. B-349). A review of the impacts to whitebark pine (FEIS p. 4-312 reveals that neither avalanche control nor natural avalanche were considered as a potential source of whitebark pine loss.

g. The 2021 MMP/Burntlog Route appears to have significantly greater impacts on whitebark pine than the Johnson Creek alternative

As described in Objector's 2023 comments (p. 265-266), the Burntlog Route appears to be the worst alternative for whitebark pine for both direct and cumulative effects:

> The preferred alternative would remove approximately 12.5% of occupied whitebark pine habitat in the project's analysis area covering 259.4 acres and remove a (greatly) estimated 1,236 trees, 24 of which would be conebearing trees. The Johnson Creek alternative would remove whitebark pine from 5.2% of occupied habitat in the same area covering 108.4 acres and remove a (greatly) estimated 767 trees, 23 of which would be cone-bearing trees.
>
> For whitebark pine, the potential for cumulative impacts would be lowest under the Johnson Creek Route Alternative and highest under the 2021 MMP based on disturbance acreage and estimated number of trees removed. The Stibnite Gold Project, Vegetation Communities, Botanical Resources, and Non-Native Plants Specialist Report, p. 82.

Further, these impacts are irretrievable. We also commented that the Burntlog Route could also spread pathogens to the greater density of whitebark pine along this corridor and to the Chilcoot Peak RNA, where whitebark pine are one of the distinguishing features of the RNA.

The FEIS provides no response (FEIS Appendix B, p. B-349) to this comment beyond the standard language associated with many of the whitebark pine comments. The Forest Service fails to address the significant differences between the two route alternatives and provides no meaningful mitigation to lessen the impacts associated with the Burntlog Route.

h. The Environmental Design Features for whitebark pine proposed thus far are inadequate

In our 2023 SDEIS comments (pp. 266-268), we highlighted the Environmental Design Feature requiring flagging of individual trees or populations within 300 feet of the SGP area prior to construction disturbance. Rather than having the proponent identify all known populations of whitebark pine and reporting anticipated impacts to the Forest Service prior to construction, the Forest Service needs to conduct proper baseline surveys and disclose the anticipated effects as part of the NEPA process in a Supplemental SDEIS.

We also pointed out that the whitebark pine survey indicates several locations where a slight realignment of a road or transmission corridor would appear to avoid impacting a large number of whitebark pine trees, and we provided several examples where this alignment could be applied:

> The whitebark pine survey shows several locations where a slight realignment of the road or transmission corridor would appear to avoid impacting a large number of whitebark pine trees. For example, polygon number 97 in map 11 shows the new proposed mine road branching off to the northeast from the Meadow Creek lookout road and down to the mine site. This intersection contains 1,000+ whitebark pine, which highlights the problems of the Burntlog Route. Just a few hundred feet north of this intersection, there are no identified whitebark pine within the surveyed polygon. At one point, Midas Gold/Perpetua had considered an alternate route going due north of this intersection which is marked as suitable but unsurveyed habitat. If the Burntlog Route is selected, one way to reduce impacts on whitebark pine is to move the intersection slightly to the north to use the first part of the original proposed route.
>
> Similarly, polygon number 18 in map 3 shows that whitebark pine occurs in the northern half of the proposed transmission line corridor and not in the southern half. A slight adjustment to the south of this corridor could reduce impacts.

While most of the whitebark pines were in the seedling and sapling stages, the Whitebark Pine Survey made note of particular polygons where live mature trees were seen. We recommended prioritizing the mature trees in these polygons for retention and adjusting the footprint of disturbance accordingly:

> Many large snags were observed, but fewer live mature trees were seen. Some notable exceptions are polygon 87 (Appendix A, Map 13) near Meadow Creek Lookout, polygon 84 (Appendix A, Map 14, Figure 3-5) along Meadow Ridge, and

> in polygon 106 (Appendix A, Map 1) in the upper north facing reaches of West End Creek. These ridgetop locations have mature live trees, and large old snags…Additional polygons where mature whitebark pines were noted included polygon 34 (Appendix A, Map 25), polygon 54 (Appendix A, Map 18), polygon 66 Appendix A, Maps 18-19), polygon 96 (Appendix A, Map 10), polygon 98 (Appendix A, Map 10), polygon 105 (Appendix A, Map 1), polygon 107 (Appendix A, Map 1). Tetra Tech 202b whitebark pine survey.

Based on our comments, we recommended an engineering adjustment to the West End pit to avoid the vast majority of the whitebark pine located within this polygon.

Our review of the Forest Service-imposed Environmental Design Features (FEIS pp. 2-95 - 2-107) and the Proponent Proposed Design Features (FEIS pp. 2-107 - 2-119) reveals that even the insufficient Environmental Design Features requiring flagging of individual trees or populations within 300 feet of the SGP area prior to construction disturbance is not included in the FEIS. The singular Environmental Design Feature that could apply to whitebark pine is the last in an extensive list (FEIS p. 2-107):

> Design and implement projects within occupied habitats of Sensitive species to help prevent them from becoming listed. Use Forest Service-approved portions of Conservation Strategies and Agreements, as appropriate, in the management of Sensitive species habitat to keep management actions from contributing to a trend toward listing for these species.

The FEIS fails to address these insufficiencies and recommendations (FEIS Appendix B, p. B-350) and Perpetua Resources did not choose to redesign and realign elements of the SGP in order to avoid an ESA-listed species.

i. Mitigation measures are inadequate

As described in Objector's 2023 comments (p. 268), we noted that the sole mention of whitebark pine mitigation/reclamation we found was in Chapter 2 of the 2020 DEIS (Section 2.8.10, p. 146), which called for collecting whitebark pine cones along transmission line upgrades and extensions, and planting two-year-old seedlings during mine and infrastructure reclamation. The paucity of reclamation proposals and the complete absence of an integrated mitigation strategy for whitebark pine is wholly unacceptable considering the anticipated mine life and the shifting habitat requirements that may be affected by climate change. In addition, the Boise Forest Plan specifically calls for whitebark pine restoration:

> Objective 2021 - Restore whitebark pine in PVG11 (High Elevation Subalpine Fir)

vegetation group as described in Appendix A in all watersheds in the management area. Boise Forest Plan, p. III-377.

We recommend the Forest Service and Perpetua reexamine reclamation opportunities, and implement a proactive mitigation strategy throughout the life of the project. First, the mature, cone-producing trees proposed to be removed should be assessed to see if they are "plus" trees that demonstrate resistance to white pine blister rust and could be of special importance to research and reproductive efforts in nurseries. If so, efforts should be made to collect seeds from cones. While surveys found few trees with cones, between 25-50% of the trees in Polygon 112 in Map 1 had female cones with an average of 26-50 cones per tree.

Fewer than 5% of the trees in this stand showed evidence of white pine blister rust or mountain pine beetles. Over 90% of this stand would be consumed by the development of the West End pit. Other efforts should include cone collection from whitebark pine in and around the project area, planting seedlings in nearby suitable areas, supporting other efforts to improve whitebark pine habitat restoration projects on the Boise and Payette National Forests and funding white pine blister rust research.

The Forest Service response (FEIS Appendix B, p. B-667) states that, "Forest Service requirements for whitebark pine have been added to the Final EIS." The Forest Service did add an FEIS section dedicated to whitebark pine mitigation (FEIS, p. 4-326) that identifies the issue, describes the mitigation measure (VEG-1 through VEG-12), and provides an Effectiveness narrative. However, the mitigation measures more accurately reflect Environmental Design Features that should be required to reduce impacts to whitebark pine. None of the described measures provide for the complete avoidance, replacement, or future protection and preservation of whitebark pine. We provided several examples of potential whitebark pine mitigation measures, such as re-design or alteration of transmission line routes and West End pit footprint, establishing a Natural Research Area centered around populations of "plus" trees and dedicated to the preservation of whitebark pine, to name a few.

It remains unclear which whitebark pine surveys were conducted on the ground with ocular verification and quantifying the number of trees in a stand or population and which surveys were based on modeling of "course scale units" with population estimates based on suitable habitat modeling. Whitebark pine are a threatened species and, per NEPA, the USFS must collect accurate baseline data.

Because of the extensive disturbance and habitat loss from pit excavation, road construction, and waste rock piles, soil stockpiles, and other disturbances, having an accurate map of whitebark pine is critical to inform potential boundary adjustments for the mine features (where possible) to avoid removing whitebark pine. This is especially true of "plus" trees. The Forest

Service and Perpetua Resources could also adjust the analysis polygons as we suggested in our SDEIS comments, which we reiterate above.

Regarding future restoration efforts, the FEIS notes that Perpetua and the Forest Service will focus on replanting efforts in areas currently affected by whitebark pine blister rust, but the FEIS does not disclose the locations of these proposed efforts, the goal for the number of trees per acre, the metrics for successful restoration, nor does the FEIS factor in the time lag of 20+ years between initial construction and the start of restoration efforts. The analysis also fails to calculate or consider the likelihood of restoration failure due to a future wildfire or other catastrophic event and the durability of these restoration efforts so that any failures will be addressed through additional replanting efforts. The FEIS needed to provide a full mitigation program that includes metrics, which the current version lacks. This plan is insufficient in terms of avoiding effects, such as through a polygon adjustment, and mitigating impacts so that there is no net loss of whitebark pine.

The terms and conditions in the USFWS Biological Opinion are standard design features for minimizing impacts, but the Forest Service has an obligation to do more to avoid impacts and mitigate them so that there is no net loss of whitebark pine and increased certainty about no net loss of whitebark pine moving forward.

R. TERRESTRIAL WILDLIFE

1. **The SGP would have impacts on many wildlife species. The Forest Service provided only cursory and inadequate responses to our wildlife comments on the SDEIS. Substantive effects to wildlife continue to be minimized or ignored.**

Despite our comments detailed in Objectors' 2023 comment letter (#17634), the Final Environmental Impact Statement (FEIS) and Draft Record of Decision (DROD) for the Stibnite Gold Project (SGP) fails to sufficiently analyze effects to wildlife.

We provided thoughtful and thorough comments on the SDEIS wildlife analysis (Objectors' 2023 comment letter, pp. 277-309). These comments were purportedly addressed in the FEIS, Appendix B, Comments #308 through #340. After close review, we found the Forest Service provided only cursory and inadequate responses to wildlife concerns; mostly asserting "the level of analysis regarding potential impacts is adequate."

The FEIS continues to fail to address substantive effects to important wildlife species, as we identified in our SDEIS comment letter; some of which we summarize below:

- Impacts to wildlife species may include direct mortality (i.e., wildlife-vehicle collisions,

removal of nest or roost trees, etc.) or loss of habitat due to land clearing activities and land use changes. Direct effects also would include the encroachments into wildlife migration or travel areas. Indirect impacts could include movement barriers, fragmented habitat, reduced use of foraging or breeding habitat or reduced prey resources in the analysis area, light, noise, and fugitive dust impacts.

- Habitat loss could be temporary, short-term, long-term, or permanent for land use changes (i.e., pit lakes, TSF, TSF buttress, transmission line upgrades).
- The analysis of potential effects on ESA-listed wildlife species includes fragmentation of habitat; increased competition for resources or habitat due to displacement of individuals from the affected area into the territory of other animals; or other effects, such as increased human presence in the species-specific analysis areas (e.g., hunters, trappers, and recreationists) that can cause mortality (i.e., illegal hunting or trapping) or reduced breeding and recruitment in the future population.

As stated in Objector's 2023 comment letter (p. 278-279) and summarized in Comment #309 (FEIS p. B-435), the SDEIS acknowledged effects to many wildlife species will be "localized, long-term and permanent." The SDEIS also noted effects to some wildlife species will be "Irreversible and Irretrievable Commitments" (FEIS, p. B-437, Comment #317.) The FEIS continues to acknowledge such effects to many species, without adequate mitigation.

2. The NEPA requires that an EIS describes the environmental baseline of the areas to be analyzed (40 C.F.R.§ 1502.15). An accurate baselines is "essential" to an informed analysis (40 C.F.R.§ 1502.22).

As stated in our comment on the SDEIS (pp. 286-287) we noted areas where wildlife data should be updated. For example, the habitat layer for lynx was not updated to reflect changes from recent fires. The Environmental Design Features (EDFs) for the project include EDFs that commit to future survey work, hence important wildlife data would not be obtained or available to inform the current analysis in the SDEIS.

In response to our concerns about lack of baseline environmental data collection for wolverines and other wildlife (FEIS, App. B., Comments #316 and #318), the Forest Service stated:

> "Where appropriate (e.g., change in protection status, significant update in available data or understanding of the species' known range/habitat requirements), additional data has been added to the Final EIS. However, for most species a data cutoff date for the EIS was 2017/2018.''

We found few situations in the FEIS where the FS deemed it "appropriate" to update information and subsequent analysis. In almost all cases where this type of statement was made, the FS failed to provide a section number so that we could find any changes that were made.

The Forest Service (FEIS, p. B-438) stated that "The requirements for wildlife surveys have been added to the Forest Service requirements described in Chapter 2 of the EIS," but future surveys are not a substitute for existing baseline.

Despite the direction of the NEPA that an environmental baseline is "essential" to an informed analysis, the FS admitted that for most species the baseline data had not been updated since 2017 or 2018 – more than 6 years ago (FEIS, p. B-438).

The Forest Service did address the wolverine's changed status from candidate to threatened species in the BA, and updated the wolverine occurrence narrative in the BA based on information we provided in our comment letter to the SDEIS. However, there is little context provided as to why these occurrences and habitat were important.

3. The analysis of effects to wolverine, recently listed as threatened under ESA, continues to be inadequate. An adequate analysis and conservation of the wolverine is of key importance because the project area supports wolverines and high-quality wolverine habitat.

Effects to wolverine were one of our primary concerns as stated in our SDEIS comment letter (pp. 291-300) and summarized in Comments #323 through #340 (FEIS, pp. B-441-B-449.)

Wolverine habitat in the project area is part of an interconnected landscape across south-central Idaho, which is near the southern extent of wolverine occurrence in the continental United States. Wolverines at the southern extent of their range exist as small and semi-isolated subpopulations within a larger metapopulation, and wolverine persistence at this southern extent of its range depends on regular dispersal of individuals among blocks of habitat. Habitat in the project area provides a stepping stone between important breeding concentrations of wolverine to the north (Salmon River Mountains north and east of McCall) and to the south (Sawtooth Mountains), and these two areas are known to be demographically connected through genetic data.

The attached Terrestrial Wildlife Technical Report (October 2024) outlines our continued concerns regarding the effects analysis for wolverine. Specifically, the Forest Service failed to adequately analyze, discuss and disclose potential impacts to wolverine in many ways, and thereby provided the FWS with insufficient information for a defensible effects determination. We note that the Forest Service had 4 months between the wolverine listing decision (30 November 2023; Federal Register Vol. 88, No. 229, pp. 83726–83772) and submission of their BA to the FWS (26 March 2024) yet failed to update their analysis in any significant way to address threats identified

in the listing decision. A summary of concerns that highlight continued inadequacies in the analysis of effects, as detailed in that report, is below:

- The high-quality wolverine habitat in and around the Project area helps to connect semi-isolated subpopulations of wolverine across central Idaho; this connectivity is critical to maintain the metapopulation.

- It has been demonstrated that wolverines are sensitive to winter recreation; yet, new over-snow travel routes are proposed, despite the fact that the Payette and Boise National Forests have not conducted winter travel management planning in accordance with Subpart C of the Travel Management Rule. In the BA, the Forest Service failed to recognize research that demonstrated how wolverines experienced habitat degradation across all intensities of winter recreation, and that functional loss of habitat ranging from 12% to as high as 70% within individual home ranges could be anticipated from the new Cabin Creek OSV trail.

- 4(d) rules for impacts from trapping are still being reviewed by FWS.

- There was no analysis of indirect effects, which contribute to habitat loss due to reduced wolverine movement and constrained access to critical resources. There was inadequate accounting for a decrease in habitat connectivity among wolverine populations.

- Protection measures and mitigation strategies for impacts to wolverines are not meaningful or effective.

- Combined effects of SGP are not adequately described and are inconsistent with the listing decision for wolverines.

- New motorized vehicle routes and facilities in winter will adversely affect many wildlife species, particularly the wolverine.

- The proposed Burntlog Route is of particular concern for wolverines because it is adjacent to, and occasionally directly crosses, some of the highest-quality habitat in the analysis area based on the number of years with persistent snow cover (SDEIS Figure 3.13-4).

The Forest Service's patent response to the above list of concerns as stated in our SDEIS objector comments was: "no text revisions made as it was determined that a cutoff date for data for the EIS was 2017/2018 and that the analysis in the EIS is sufficient for the species; however, the wolverine is a federally proposed (as threatened) species and therefore included in the Project's BA as part of the consultation process with the USFWS."

However, this response, as well as actual language in the BA (and associated BO), failed to adequately address these concerns for the following reasons:

- The FS did not address loss of quality of habitat within home ranges.

- We found no language that emphasizes how or why threats to wolverine are magnified due to the combination of their spatial separation, low fecundity, and specialized habitat requirements (persistent snow cover, cool temperatures).

- The FS did not address high-quality habitat as a stepping stone within the interconnected landscape across Central Idaho, nor the importance of demographic connectivity to small, isolated populations of wolverines.

- The BA simply accounts for acres affected, rather than analyzing the alternatives with respect to the SGP's effects on connectivity and contiguous areas of wolverine travel corridors.

- There is no discussion or enumeration of non-target trapping occurrences or impacts on wolverines in the BA, as recommended in our SDEIS comments, and no new information was presented.

- We found public travel restrictions to be unclear and insufficient as proposed. In addition, no mitigation actions were associated with the proposed new OSV trail.

- The Forest Service failed to adequately describe the combined effects of new roads, higher traffic volumes, human disturbance from operations and increased public access, and winter recreation in a manner consistent with the wolverine listing decision.

- The BO displayed an insufficient understanding of wolverine ecology, in general. For example, it often arrived at the overly simplistic solution that wolverines could "flee" from impacts (Biological Opinion pp. 300, 305, 306, 308, 309) or "move freely" to other habitats (Biological Opinion p. 314). This is not supported by current scientific knowledge about wolverine life history characteristics, which indicated the animals have high fidelity to their territories and ventures out of this home range can be highly risky.

- No indirect effects were included in the calculation of effects in the BO, despite the fact that the FS's BA assigned indirect effects to all 340,000+ acres of modeled habitat.

- The BO failed to recognize, in any meaningful way, the combined effects of all the impacts identified. These include habitat loss, habitat fragmentation, potential injury or mortality

from vehicle collisions, changes to habitat use from noise or light, contamination of water or food, new roads in habitat, higher traffic volumes, human disturbance from operations and from increased access allowed to the public, increased competition for resources, displacement, increased human presence causing a decline in breeding and recruitment, and new over-snow recreation on and off designated trails (Biological Opinion p. 298 and elsewhere). The listing decision stated that the ongoing and increasing impacts of climate change and associated habitat degradation and fragmentation was the primary threat to wolverine populations (Federal Register Vol 88, No. 229, p. 83726). The SGP simultaneously increases winter recreation, human development and roads; thus, these recognized threats are no longer "in isolation" but rather are a combined impact.

- Of the 9 Conservation Recommendations listed in the BO (P. 317), not a single measure pertains to minimizing or avoiding adverse effects of SGP to wolverines.

a. Our comments on the SDEIS emphasized that neither cumulative impacts nor the individual effects of climate change were considered as part of the Forest Service's analysis of wolverines.

The climate change analysis in the SDEIS and climate specialist report fail to consider long-term impacts of climate change in relation to wildlife. Known effects of climate change include rising temperatures, decreased snowpack, and increased rain-associated precipitation. These factors could affect many species including wolverine, lynx, and whitebark pine. Wildlife and wildlife habitat in the SGP area would be lost and fragmentation may occur in the region and analysis area due to the increased potential for wildfire that is anticipated from changing climatic conditions. We stated that the SDEIS also failed to account for declining snowpack, winter recreation, and the addition of an OSV route in previously unpressured habitat. The combined and individual effects presented by these threats to wolverines were not sufficiently analyzed, despite the Forest Service's response that "it has been determined that the analysis in the EIS is sufficient for the species". Additionally, while the SDEIS concludes that SGP would result in "localized and long-term impacts to the wolverine," the Forest Service minimized identified impacts in making a "no jeopardy" determination. Taken together, the minimization of identified effects and their omission of many direct and indirect threats that were not acknowledged, leads the Objectors to conclude that the effects analysis conducted by the Forest Service was extremely flawed.

b. Wolverine mitigation and monitoring is insufficient. We reiterate some recommended mitigation for wolverine.

Additionally, even considering the relatively few acknowledged impacts, the only Environmental Design Feature (EDF) included in the SDEIS pertaining directly to wolverine is to monitor high elevation habitats "where practicable" (SDEIS, p. 2-105). Of the seven

recommendations we made in our SDEIS comment letter (pp. 298-299) (see also, FEIS, App. B, Comment #331), only a revision to public use of the Burntlog Route was included in the FEIS, and even that addition provided confusing guidance.

We provided, and continue to recommend, the following measures for wolverine to minimize significant negative impacts from the proposed project:

1) If the Burntlog Route is approved and built, only mine traffic should be allowed for its entirety in winter. In summer, public use should occur only on the existing Burnt Log Road (FR #447). No public use should be allowed on the Burnt Log Road in winter.

2) While the Burntlog Route may serve as an access point to Thunder Mountain, there should be no vehicle parking or cross-country OSV use allowed along this route in order to prevent public access into this currently remote area. Preventing an increase in public use along the Burntlog Route will help to preserve undisturbed habitat for wolverines. And, if the Stibnite ROD authorizes grooming of any OSV routes, the Forest Service should also cease grooming an equivalent amount of miles elsewhere in the Krassel Ranger District.

3) No new OSV route in Cabin Creek. Any changes to OSV grooming and routes must be informed by an analysis consistent with the Travel Management Rule, Subpart C. This analysis must fully consider the recent research on the effects of winter winter recreation and travel on wolverine. The FS should commit to completion of a winter recreation travel plan that includes, but is not limited to, the entire area affected by the SGP.

4) Remove roadkill as encountered. Report any ESA-listed or sensitive species to the FS.

5) Fund development of a model of winter recreation, such as was completed in Colorado (Olson et al. 2017), based on terrain selection of motorized and non-motorized winter recreationists. This will enable predictions of areas of potential conflict or disturbance to wildlife. For expediency and economy, coordinate and/or contract with the researchers who maintain an extensive recreation dataset collected during the wolverine–winter recreation study (Heinemeyer et al. 2019a).

6) Fund development of a fine-scale denning habitat model (e.g., talus layer) for wolverine for the two Tier 1 Wolverine Priority Conservation Areas that include the project area. Framework and methods were established during the wolverine–winter recreation study (Heinemeyer et al. 2019a).

7) Fund a program to conduct annual recreation monitoring of winter recreation for the first 5 years of the SGP, beginning with the construction phase, then on an adjusted schedule thereafter. A survey grid and methods were developed for the wolverine–winter recreation

study that uses fixed wing aerial surveys and infra-red trail counters (Heinemeyer et al. 2017, Heinemeyer et al. 2019b). A baseline of recreation intensity and footprint was established for the SGP area from surveys in 2018 (Heinemeyer et al. 2019b), hence data analysis should be coordinated and/or contracted with those researchers.

8) Fund a project to monitor wolverine activity with remote cameras in winter on an established schedule (every 2 or 3 years) using a method that incorporates collecting genetic material (hair snagging with gun brushes) to identify and track individuals. The Western Association of Fish and Wildlife Agency (WAFWA) multi-state camera survey provides a blueprint (Lukacs et al. 2020).

4. The analysis of effects to the threatened Canada Lynx continues to be inadequate.

Our comments on the SDEIS (pp. 289-291) (see also FEIS, App. B, Comment #321) indicated that the analysis of effects to Canada lynx was insufficient and included suggestions to map recently impaired habitat as a result of fire activity on the PNF:

> The SDEIS further states that, "wildfires account for the majority of unsuitable habitat in these LAUs." We recommend the Forest Service provide a current (2022) map of fire activity in the SGP area that includes an overlay of suitable lynx habitat. This is necessary for the Forest Service to disclose the most likely areas for transient lynx movements to help avoid unintentional and indirect impacts to this threatened species. As some habitats are made temporarily unsuitable for lynx, the importance of remaining habitat increases. While a broad swath of marginal habitat for lynx may see lynx utilizing any portion of it as transitional habitat, if this habitat is reduced, lynx may restrict their travels to the remaining corridor of functional habitat, such as the ridgeline that would be impacted by construction and use of the Burntlog Route.

Unfortunately, the Forest Service responded, as it had in many other cases, with "no text revisions made as it was determined that a cutoff date for data for the EIS was 2017/2018 and that the analysis in the EIS is sufficient for the species." This boilerplate language is not only generally insufficient, it also fails to acknowledge the occurrence of the Buck, Kiwah, Prospect, Boundary, Shady and Scarface fires in the 2018-2021 period (located on the east side of the Johnson Creek drainage) and their associated effects on habitat for Canada lynx and other wildlife species that will be impacted by the SGP.

5. Effects of non-target trapping on listed species

Comments from the Objectors stated that SDEIS did not adequately address the potential

impacts to wolverines, Canada lynx, and other wildlife from increased non-target trapping events (pp. 294-295, see also FEIS, App. B., Comment #327). We indicated that the potential for those incidents could likely be expected to increase, compared to baseline impacts, from the anticipated increase in year-round access. Baseline data were not disclosed in the SDEIS and submission of that information by trappers is voluntary. This could result in significant underestimation of non-target trapping effects.

The Forest Service responded by saying "no text revisions made and it has been determined that the analysis in the EIS is sufficient for these species; however, the Canada lynx and the wolverine are listed species and therefore included in the BA as part of the consultation process with the USFWS." This response is insufficient, as even the removal of a single animal, particularly a breeding-age female could have an effect on a small, semi-isolated population near the Project area. We suggested that the Forest Service conduct a more thorough analysis for the FEIS of potential effects from non-target trapping. Unfortunately, that did not occur.

6. New motorized vehicle routes and facilities will adversely affect many wildlife species, particularly wolverine.

As we previously commented on the SDEIS (pp. 295-297, 300-303), new vehicle routes will greatly affect wildlife, particularly wolverine. This includes the newly constructed Burntlog Route to be used for mine traffic, as well as the proposed creation and grooming of the Cabin Creek OSV trail. This OSV trail is not integral to the mine plan. It is also hazardous to human health and safety.

The Forest Service included the OSV route in the project decision to benefit oversnow recreation, but then admitted that this would require a "Cabin Creek Over-Snow Vehicle Route Avalanche Hazard Communication Plan." because the new route would present a public safety hazard due to the potential for avalanches along the route.

The FS made some attempt to address our comment that they must adhere to the requirements of Subpart C of Travel Management Rule when proposing to designate new Over-Snow Vehicle (OSV) routes for the SGP, but this attempt was, not only inadequate, but deceptive (see also Objectiors' comments under Section N.)

In response to our wildlife concerns with this issue in the SDEIS, the FEIS acknowledges in a few sections (i.e., the Executive Summary (ES-29), p. 2-22, Section 4.19 Recreation Resources, Section 7.19) that:

> "The reroute of Stibnite Road and the designation of a temporary over-snow vehicle route to replace an existing over-snow vehicle route are actions that fall under the Travel Management Rule (36 CFR 212), Subparts B and C, respectively (FSM7715.03(5)). These actions require consideration under the Travel Management Rule Minimization Criteria (36 CFR 212.55(b)),"

Ostensibly, "environmental design features (see Parts 9.2, 9.3.2, 9.3.3, 9.3.4, 9.3.6, 9.3.7, 9.3.12, and 9.3.14 below) and mitigation measures (see Parts 2.3.2, 2.3.5, 2.3.6, 2.3.8, and 2.3.10) were developed with the objective of minimizing…Harassment of wildlife and significant disruption of wildlife habitats."

The FEIS asserts harassment of wildlife and significant disruption of wildlife habitats will be lessened because:

> "The route uses the existing Cabin Creek Road (FR 50467) to minimize effects on wildlife. Best management practices and environmental design features protective of wildlife are described in Table 5, Table 6, and Parts 9.3.3, 9.3.4, and 9.3.6 of this ROD below;"

The analysis is inadequate and deceptive because it:

- fails to fully address the required minimization criteria (see our comments on the SDEIS regarding this topic)
- fails to include any meaningful environmental design features and mitigation measures (despite purporting to include them by listing a number of sections in the FEIS), and
- fails to disclose that the existing Cabin Creek Road (FR 50467), is impassible to vehicles in winter. During winter months, there is little to no "harassment of wildlife and significant disruption of wildlife habitats."

The Forest Service cannot argue that adding a groomed OSV trail to a road that is not currently traveled in winter will minimize effects on wildlife. In fact, the FS is increasing impacts to wildlife during the critical winter time period.

Almost as an afterthought and without any analysis, the FEIS admits (p. 2-21) that in order for the Cabin Creek Road to be used as a Groomed OSV Route the following additional impacts must occur:

> "Near Warm Lake, an approximately 2-acre parking area would be established west of South Fork Road on FR 474B. A new 3.2-mile groomer access trail would be established from the parking area to the Forest Service Warm Lake Project Camp south of Paradise Valley Road (FR 488) where the groomer would be stored. An approximate 0.1-mile segment would be groomed from the intersection of Paradise Valley Road and FR 488A to Warm Lake Road. The Cabin Creek Road (FR 467) groomed OSV route would extend approximately 11 miles to the Trout Creek Campground on Johnson Creek Road. Portions of Cabin Creek Road would require stream crossing improvements, road widening, and surface grading to support the OSV route grooming equipment. "

In our comments on the SDEIS (pp. 298-299), we discussed the potential impacts of the proposed new OSV trail and suggested a number of potential mitigation measures. In the scope

and scale of the SGP, these measures would not be onerous or costly to implement, particularly since Perpetua is advertising how environmentally friendly this project will be.

Instead, this is the only mitigation measure that was included (FEIS section 9.3.6):

> "Winter recreation use in high-elevation habitats characteristic of wolverine denning habitat will be monitored periodically. Where practicable, monitoring will be done in cooperation with State fish and game agencies."

The FS and SGP appear willing to incur the cost (i.e., grooming and avalanche hazard forecasting) for the OSV trail for a small number of OSV users, while being unwilling to include any meaningful EDFs or mitigation measures to protect the threatened wolverine and Canada lynx (along with other wildlife species).

In addition, the FS must complete a FP amendment for the effects of the increase in groomed routes on Canada lynx. The justification for the FP amendment is also inadequate and deceptive (see FEIS, Appendix A).

7. Road and route construction and use are highly likely to affect wildlife species.

The Forest Service DROD purports to address our concerns with the addition of a closure of the Burntlog Route (to be built for mine access) to public access. The direction for this closure is not consistently described between the FEIS and DROD, and pertains only to the segment of the road described as a "route", resulting in greater impacts to wildlife and non-adherence to the requirements of the Travel Management Rule.

For additional comments on the Burnt Log Road and Burntlog Route, see Issue #3 above.

8. Utilities and right-of-ways contribute to the effects on wildlife.

Large portions of the proposed transmission corridors associated with the SGP are located in lands with few roads. Ignoring our comments on the SDEIS, the FEIS does not adequately analyze the effects of these facilities on wildlife habitat; including habitat fragmentation and migration corridors.

Other concerns we expressed about unauthorized motor vehicle use were ignored. For example, we stated (FEIS, App. B., Comment #175)

> "The SDEIS failed to sufficiently consider impacts from increased unauthorized motor vehicle use. New roads for construction and maintenance of transmission lines will provide more access for motorized recreation in areas without a current road system and more opportunities for illegal off-road riding....."

The poor response from the FS stated:

> "No text revisions made as it has been determined that the level of analysis regarding potential impacts is adequate for wildlife species that may occur in the wildlife analysis area as discussed in Section 4.13.2"

9. As noted in our comments on the SDEIS (pp. 283) the project does not meet the requirements of the Migratory Bird Treaty Act.

The analysis of effects to migratory bird species in the FEIS continues to admit the project could include direct mortality of migratory birds, despite a purported environmental design feature (EDF) to search for and protect nests.

The FS responded to our comments (FEIS, App. B., Comment #316): "Project impacts on migratory birds would be minimized through the application of Forest Service requirements to conduct migratory bird surveys prior to engaging in ground disturbing activities. Activities would not proceed in areas with identified nests. Further, Project infrastructure would follow design criteria for bird species."

We could find no definitive requirements for this EDF in the FEIS, although the draft Decision (Section 2.4.9) states:

> Perpetua has committed to conducting pre-construction migratory bird nest surveys during the breeding season in areas prior to ground disturbing activities. Active nests would then have a protection buffer established based on the habitat type present and species utilizing the nest. No ground disturbance or other human activity would be allowed until the young have fledged or the adults abandon the nest on their own accord. This would reduce the potential loss of a nest or young (i.e., violation of the MBTA and Bald and Golden Eagle Protection Act) as a result of the SGP.....Cutting of trees for 2021 MMP activities would avoid avian tree nests and a Forest Service wildlife biologist would be notified of any occupied sensitive species nests encountered. Although design features would reduce direct impacts, there would still be a decrease in habitat...."

Finding active nests, particularly small bird nests, is an extremely difficult and resource intensive endeavor. Thus, we anticipate that Perpetua's "commitment" to conducting surveys would be ineffective. In fact, most of the EDFs and Mitigation Measures for Migratory Birds and other wildlife species are so vague and unsubstantial as to be largely meaningless - see discussion under Issue #10 below.

The draft decision also states:

> Mitigate, through avoidance or minimization, management actions within known winter roosting sites of TEPC species if those actions would adversely affect the survival of wintering or roosting populations. During project planning, determine

sites, periods, and appropriate mitigation measures to avoid or minimize effects (2-104).

This mitigation tactic does not sufficiently address the winter roosting as it does not describe if and how surveys would identify and monitor those roost sites.

10. The Wildlife Environmental Design Features (EDFs) continue to be inconsistent and ineffective. Mitigation measures are vague and inadequate.

We commented on the SDEIS (pp. 286-287) (see also FEIS, App. B, Comments #315, #316) that EDFs were inconsistent between the wildlife specialist report and the SDEIS. For example, the analysis is predicated on certain surveys to be conducted; but these surveys are not included in the EDF. In addition, we noted: "Some measures would be designed during project implementation…..this is a violation of the NEPA: an agency cannot rely on post-approval surveys, studies, or mitigation as a substitute for suitable baseline information."

Unfortunately, in the FEIS and draft Decision, the Forest Service continued "to kick the can down the road" by failing to identify any meaningful EDFs (see FEIS section 2.4.9).

For example: the FEIS states:

> "For Sensitive species, land clearing activities in areas where complete vegetation removal is necessary greater than 0.5 acres would not occur, to the extent possible, until after the bird breeding season (April 1 through July 30th) for migratory and resident birds. This design feature does not apply to the mine site, road construction or maintenance, hazard tree felling, or the power line upgrades and construction." The last sentence of the text absolves most project activities from this EDF, making it essentially useless.

Another example: "Where practicable, monitoring of high elevation habitats characteristic of wolverine denning habitat would be done in cooperation with State fish and game agencies." The use of the qualifier "practicable," also makes this EDF highly discretionary.

The Proponent Proposed Design Features (Table 2.4-13.) are also often vague, or conflicting. For example:

> "The Forest Service wildlife biologist would be notified of any occupied wolverine dens encountered during construction and operation."

This is so unlikely as to be meaningless. A far better measure would be to support additional wolverine surveys and monitoring.

We also noted that surveys for modeled Northern Idaho Ground Squirrel (NIDGS) habitat were not listed as an Environmental Design Feature. The response to that comment was that "text has been revised per the comment; 'Long-term and permanent' inserted in place of "short-term

and permanent". That response was inadequate, as the FEIS and DROD did not include any EDF's in relation to evaluating NIDGS habitat.

We previously discussed (Issue #3 above) on the effectiveness of the Burntlog Route Public Access Restriction mitigation for protecting wildlife, particularly wolverine.

We also commented (Issue #4 above) on the proposal ostensibly to benefit recreation: "approximately 11 miles of groomed OSV route would be maintained along Cabin Creek Road (FR 467)." We noted that any potential "benefits" to ORV users are offset by public health and safety concerns from avalanche hazards, and potential impacts to wolverine.

Additional discussion of mitigation measures for wolverine occurs under Issue #3 above.

11. The FEIS continued to fail to adequately address effects to Species of Greatest Conservation Need (SGCN).

In our comments on the SDEIS (pp. 282), we noted that the summary of effects to SGCN due to loss and fragmentation of habitat and disturbance from light, noise, fugitive dust, and increased human activity from the Burntlog Route is inconsistent with the "long-term and permanent" effects from roads described for other wildlife species. The comment response in Appendix B of the FEIS changed the wording of the road effects determination from "long-term" to "short-term." We don't believe that improvement and expansion of roadways on the Burntlog Route constitutes a "short-term" impact to SGCN species in the area, therefore the response regarding the analysis and determinations made by the Forest Service was inadequate.

12. The FEIS did not adequately address effects to mountain goats.

Objectors indicated that IDFG's State Wildlife Action Plan (SWAP) notes that "conservation of existing quality mountain goat habitat should be one of the highest priorities for managers," yet the SDEIS did not analyze the species (Objectors' comment letter pp. 282-283). IDFG's management plan for mountain goat identifies a number of considerations for proposed activities, including avoidance of activities that can pose direct or indirect threats affecting the use of habitat such as "road construction, timber harvest, mining, power infrastructure, oil and gas extraction, climate change, wildfires, and fire suppression".

In response to our comments on the lack of analysis for mountain goats, the Forest Service justified the omission saying the species doesn't have TEPC or other special status (FEIS, App. B, Comment #315). Nevertheless, they also concluded that "no impacts are anticipated…as a result of the project." Section 3.14 was referenced as providing additional language relating to mountain goats, yet, the presence of that passage did not appear in that part of the FEIS. The justification that mountain goats are not a TEPC species or PNF Forest Plan sensitive species is an inadequate response to the Objectors concerns or concerns listed in the SWAP for conservation needs of

mountain goats. Additionally, the Forest Service failed to cite any research that could be used to conclude their "no impacts" determination of Project activities on mountain goats.

S. CLIMATE CHANGE

The SFEIS violates NEPA by failing to adequately consider the ways in which impacts of the SGP will be even greater due to climate change.

1. The SDEIS must take a hard look at the potential impacts to mine infrastructure related to the effects of climate change, and the potential environmental consequences.

As stated in Objector 2023 comment letter (p. 301-302), there are an increasing number of reports from industry, regulatory agencies, and academia that identify the increased risks of climate change to the mining industry and the need to incorporate climate change predictions into mine plans and practices.[1] Recent experience shows that abnormally high levels of precipitation can destroy waste dumps, seepage capture systems, and mine access roads; cause impoundments to overflow and dams to be breached; and push water treatment costs over budget or cause releases of untreated water.[2] A recent report from the World Meteorological Organization has found that climate and weather related disasters have surged five-fold over the last 50 years.[3]

According to a technical presentation by a BLM geologist, who points to the failure of a seepage capture system that was designed for a 100-year, 24-hour storm event at the Zortman Landusky cyanide leach gold mine in Montana: "The reality is the industry is making closure, reclamation and drainage treatment predictions based on a historic climate that no longer exists."[4] These impacts underscore the need to analyze and plan for climate change throughout a project's design, construction, operation and closure. For example, a 500-year storm event at the Stillwater Mine in Montana in June 2022, resulted in severe damage to the access road, preventing access to the site for a number of weeks and causing severe erosion along the road. (See photo from Billings Gazette of mine and access road).[5]

The SDEIS should also include an emergency plan in the event of evacuation or damage from wildfires, as recently occurred at the Donlin Gold Mine in Alaska.[6] The SDEIS must analyze the potential impacts of climate change, including more frequent and severe storm events, including those that exceed the design parameters for mine infrastructure, such as stormwater management infrastructure, resulting in more frequent untreated releases and potentially degrading water quality. The SDEIS must also take a hard look at the potential impacts of climate change on revegetation efforts associated with proposed reclamation, and increased erosion from all mine facilities.

In response, the FEIS at p. B-178 states that "The effect of climate change on proposed revegetation efforts and how this relates to soil quality is discussed in the SDEIS primarily on

pages 4-68 – 4-69 and in the Climate Change Specialist Report on pages 33-35. The SDEIS notes that activities in the 2021 MMP would involve revegetating areas disturbed by historic mining, construction, and operation activities in the Operations Area Boundary. It notes that activities to improve and revegetate existing poor-quality soils could reduce climate-induced impacts to soils in the short-term by allowing the soil to retain more moisture during the summer; it also acknowledges that climate changes could potentially diminish soil quality over time and affect revegetation efforts in the long-term (SDEIS 4-68; Climate Change Specialist Report). The need to consider climate changes in revegetation is discussed in the SDEIS, which states that climate changes including changes in future weather patterns, precipitation amounts and seasonality, and resilience of species to fire and drought would be considered when identifying reclamation methods and goals (SDEIS 4-69). Potential climate change effects on erosion and on soil/reclamation cover materials are discussed in the SDEIS on pages 3-66 and 3-67, and erosion control best management practices are referenced throughout the document."

The FEIS at (4-76) acknowledges that "changes in soil moisture and temperature due to climate change could lead to changes in soil properties and functions, potentially diminishing the soil quality over time (Halofsky et al. 2018). Consequently, diminished soil quality could hinder reclamation efforts involving revegetation of disturbed areas in the Operations Area Boundary." However it fails to take a hard look at the effects of climate change on revegetation success, particularly in light of the reclamation challenges associated with using soils with high metal concentrations.

The FEIS (4-75) further acknowledges that "Changes in landcover and slope stability (e.g., pit slopes or slopes adjacent to roadways) due to changing climate conditions and SGP activities could exacerbate certain geologic hazards in the analysis area under the 2021 MMP. Changes in landcover and slope stability due to climate change could create conditions that cause more frequent landslides, damaging vegetation and other forest resources. Landslides also could potentially impact surface water resources through increased sedimentation and runoff." However, once again, it fails to take a hard look at the range of potential consequences and identify mitigation measures to address the potential impacts.

2. The SFEIS Fails to Take a Hard Look at the SGP's Impacts on Numerous Resources Together with Climate Change

As stated in Objector's 2023 Comment Letter, when the SDEIS and FEIS considered impacts of SGP to numerous resources, the Forest Service failed to incorporate the overlapping impacts of climate change. There is no way the Forest Service can take a hard look at the effects of a long-term project like the SGP, which will have even longer lasting impacts, without factoring climate change into its analyses. Climate change will exacerbate many of the adverse environmental impacts of the SGP, including by increasing water temperatures, altering water

flows and water quality, increasing fire risk, and altering habitat of numerous species, among other effects.

Among other instances, the Forest Service failed to use climate data and forecasting, failed to account for climate change in modeling, or otherwise failed to take a hard look at climate impacts when it considered:

- The MWB and SWWB models. *See* SSFS Jan. 9, 2023 Comments at 98.
- The SWWC. *See* SSFS Jan. 9, 2023 Comments at 102.
- Water temperature for CWA compliance and fisheries impacts. *See* SSFS Jan. 9, 2023 Comments at 105, 112-116.
- Whitebark pine. *See* ISSFS Jan. 9, 2023 Comments at 260.
- Sediment modeling (the GRAIP model).

Climate change data, information, modeling, and forecasts are readily available and commonly used.

For example, the USFS's long-established **WEPP model** is designed specifically to allow predicting effects of changing climate variables on erosion and sediment generation.[12] Yet, this model, or any other model that incorporates climate change, was applied in the analysis of sediment modeling at the SGP.

MIKE SHE is an integrated climate-groundwater-surface water code that is routinely used to incorporate climate change.[13] It enables users to assess the impact of various factors like land use changes, climate variability, and water management interventions on water resources and ecosystems. It also provides robust simulations of climate change impacts on hydrology.

T. AIR POLLUTION AND AIR QUALITY

1. Improper Reliance on Idaho DEQ Analysis

As stated in Objector's 2023 Comment Letter (p. 302-303), we have repeatedly raised concerns throughout the permitting of the SGP at both federal and state levels regarding the SGP's significant potential air quality impacts. At the state level, the Idaho Conservation League, Save the South Fork Salmon, and the Nez Perce Tribe are currently engaged in an administrative appeal of the IDEQ PTC (IDEQ Case Docket No. 0101-22-02383)[14]. The state PTC process informs the EIS process, but it does not replace the Forest Service's obligation to analyze and mitigate impacts to air quality in the NEPA process. We note that the Forest Service's mandate under NEPA when

[12] https://research.fs.usda.gov/rmrs/products/dataandtools/tools/water-erosion-prediction-project-wepp
[13] https://www.dhigroup.com/technologies/mikepoweredbydhi/mike-she
[14] The administrative record is being submitted herewith. https://www.deq.idaho.gov/public-information/laws-guidance-and-orders/petitions-for-review-andprecedential-orders/

evaluating impacts to air quality is much broader than IDEQ's mandate in the PTC process under the Idaho Air Quality Rules. Importantly, the Forest Service retains the authority to require certain conditions for the SGP that help minimize and/or mitigate the project's impacts to air quality. Thus, even if IDEQ did not or could not add certain conditions in their PTC for this project, the Forest Service can (and should) include appropriate conditions as part of the FEIS and ROD for the SGP in order to fulfill the agency's obligations under NEPA.

Within the FEIS, the Forest Service responded to these comments by stating, "Noted. Multiple mitigation measures have been added to the Final EIS, see Section 4.3.5 and 7.3 of the Air Quality Specialist Report" (FEIS at B-156).

However, a review of section 7.3 of the Air Quality Specialist Report will show that these "mitigation measures" are almost all IDEQ permitting requirements. Instead of conducting more appropriate independent air quality impacts analysis and adding significant mitigation measures or other operational conditions, the FEIS has simply doubled down on its reliance on the IDEQ air permitting analysis and defers to IDEQ mitigation measures that have significant flaws themselves (see comments below). One notable exception where the Forest Service has implemented a mitigation method that goes beyond IDEQ measures is the proposed fence-line dust control monitoring. While in theory this measure might provide quantitative assurance that air quality impacts do not exceed expected levels, in practice, the planned monitoring program lacks sufficient detail as well as actionable levels to be an effective mitigation measure (see Ambient Air Monitoring Section below).

The following comments details ways in which the Forest Service must update its air quality impacts analysis and resulting mitigation measures and operational conditions.

2. 2021 MMP vs PTC NSR Emission Inventories

As stated in Objector's 2023 Comment Letter (p. 308), due to different operating scenarios used to calculate emissions, modeled SGP arsenic emission concentrations between the IDEQ PTC process and FEIS/SDEIS differ. For this same reason, modeled SGP $PM_{10}/PM_{2.5}$ emissions between the IDEQ PTC and FEIS/SDEIS also differ. Section 5.3.3 of the FEIS Air Quality Specialist report further details the differences in the 2021 MMP emission inventory used by the Forest Service and the PTC NSR emission inventory used by IDEQ.

Most significantly, while both emission inventories assume a daily ore production (i.e. ore processing) rate of 25,000 tons per day, the 2021 MMP inventory assumes a maximum ore mining rate 99,500 of tons per day where the PTC NSR inventory assumes a maximum ore mining rate of 180,000 tons per day while also assuming ore mining from specified allegations (i.e. pits). The FEIS Air Quality Specialist Report states the use of a 180,000 tons per day maximum rate "was performed to ensure ease of permitting and are not representative of real-world operations" (FEIS Air Quality Specialist Report at p. 29).

Considering ore mining activities (including drilling, blasting, and ore hauling) are the more significant sources of $PM_{10}/PM_{2.5}$ and arsenic modeling results from the two different emission inventories produced drastically different results. Table 7-6 and 7-12 of the FEIS Air Quality Specialist Report list the modeled Criteria Pollutant and Idaho HAPS fence-line concentrations compared to the applicable NAAQS and AACC standard based on the 2021 MMP emission inventory. Table 24 and Table 31 of the IDEQ PTC Statement of Basis, Appendix B - Ambient Air Quality Impact Analyses Review Memorandum and Table 6 of the IDEQ PTC Statement of Basis TAPs Addendum Modeling Review Attachment do the same for the PTC NSR emission inventory. Table aa below summarizes those results for $PM_{10}/PM_{2.5}$ and arsenic.

Pollutant	Applicable Standard	Applicable Standard Concentration (ug/m3)	Emission Inventory Basis	Modeled Concentration (ug/m3)	Percent of Modeled Concentration vs Applicable Standard
PM10	24-hour NAAQS	150	2021 MMP	51.9	34.6
			PTC NSR	148.5	99.0
PM2.5	24-hour NAAQS	35	2021 MMP	17.7	50.6
			PTC NSR	33.6	96.0
	Annual NAAQS	12	2021 MMP	4.6	38.3
			PTC NSR	11.2	93.3
Arsenic	Annual AACC	0.00023	2021 MMP	0.00015	65.2
	Annual AACC (T-RACT)	0.0023	PTC NSR	0.00095	41.3

Table aa: 2021 MMP vs PTC NSR Impacts

As the table shows, assuming the 180,000 tons per day ore mining rating of the PTC NSR emission inventory creates significantly greater air quality impacts. While the assumption of the 95,500 tons per day mining rate of the 2021 MMP might be more "representative of real-world operations" there are no mitigation measures or operations conditions within the DROD that limit ore mining to the 95,000 tons per day rate. Instead, given Perpetua has invested the resources to go through a lengthy IDEQ PTC process to allow a mining rate up to 180,000 tons per day, it would seem Perpetua has reasonably likely intentions of conducting mining rates significantly above 95,500 tons per day while nothing in the DROD would prevent them from doing so.

Analyzing air quality impacts using the 2021 MMP emission inventory and the 95,500 tons per day mining rate dramatically underestimates $PM_{10}/PM_{2.5}$ and arsenic impacts jeopardizing human health and environmental quality. **The Forest Service must either include a DROP**

mitigation measure or operational condition limiting ore mining rates to no greater than 95,500 tons per day or re-analyzing air quality impacts using the PTC NSR emission inventory ore mining rate of 180,000 tons per day.

3. Ambient Air Monitoring

As stated in Objector's 2023 Comment Letter (p. 303-304), in order to ensure the SGP does not violate the NAAQS for PM_{10} and $PM_{2.5}$ and the Idaho AACC for arsenic the Forest Service should require Perpetua to install an arsenic and PM_{10}/ $PM_{2.5}$ monitoring system at the SGP's ambient air boundary to ensure that the arsenic AACC and the PM_{10}/ $PM_{2.5}$ NAAQS are not violated.

In response to these comments, the Forest Service has proposed the implementation of a fence-line dust control monitoring program (FESI at B-156). However, the proposed monitoring program contains several deficiencies that prevent it from being an effective mitigation measure.

The provisions of the monitoring program laid out within Section 7.3 of the Air Quality Specialist Report only specify that "dust" will be monitored. Opacity, total PM, condensable PM, non-condensable PM, $PM_{10,}$ and $PM_{2.5}$ could all be considered sub-classifications of "dust". Furthermore, individual pollutants such as arsenic, lead, and mercury could also be considered important sub-constituents of "dust". Proposing an air monitoring program that only monitors for "dust" is akin to proposing a water quality monitoring program at a wastewater treatment operation that only monitors for "cloudiness" within their effluent. Cloudiness could reflect the concentrations of any number of pollutants or parameters including turbidity, total dissolved solids, total suspended solids, biological oxygen, nutrients, and others. While "dusty" air and "cloudy" water might be reflective of contamination and pollution in general, a number of sub-constituents could be present that pose specific human health and environmental threats.

For any environmental monitoring plan to be informative and successful its data must reflect the applicable environmental standards for which a facility/operation must comply with. Proposing a monitoring plan for "dust" when the SGP must specifically demonstrate compliance with standards like the NAAQS standard for PM_{10}, $PM_{2.5}$ and the Idaho AACC for arsenic is arbitrary and ineffective. **Given the SGP presents a reasonable and likely threat to the NAAQS standard for PM_{10}, $PM_{2.5}$ and the Idaho AACC for arsenic, any fence-line monitoring program must be required to speciate between these constituents.**

Beyond issues regarding a lack of specificity for monitoring pollutants, the proposed monitoring program includes quarterly reporting requirements but goes no further. First, a quarterly reporting requirement is wholly inadequate given both PM_{10} and $PM_{2.5}$ have 24-hour NAAQS. Under quarterly reporting, the SGP could be producing PM_{10}/$PM_{2.5}$ fenceline concentration above the 24-hour NAAQS for months before the Forest Service or public would know and could respond with appropriate action. Second, this problem is further compounded by the lack of actionable levels. By requiring mitigation action when certain PM_{10}/$PM_{2.5}$ or arsenic

concentrations are reached the exact scenario presented above can effectively be avoided. Allowing only quarterly monitoring with no actionable levels presents a dangerous scenario in the SGP could harm human health and the environment on a daily basis for months before anything is done.

While real-time air quality monitoring for PM is a well-known and implemented CAA requirement for federal and state environmental programs, a simple web search will also show industrial real-time air quality monitoring is a well developed and feasible practice. **In order to evaluate compliance and correct non-compliant operation on a schedule that matches the applicable air quality standard, the Forest Service must require the project proponent to develop a publicly facing air quality monitoring database that reports results on a daily basis for PM_{10} and $PM_{2.5}$. In addition, the Forest Service must set actionable $PM_{10}/PM_{2.5}$ concentration levels to prevent a scenario in which the SGP can harm human health and the environment on a daily basis for extended periods.**

Compounding the issues above, the proposed monitoring program would allow for the discontinuance of monitoring after five (5) years of monitoring and every three (3) years thereafter "if sufficient information was acquired." This sunsetting provision is entirely inappropriate given the operational variability of SGP. As Table 7-5 of the Air Quality Specialist Report notes, the highest annual emissions of both PM_{10} and $PM_{2.5}$ occur during Life of Mine (LOM) year 10. The problematic nature of potentially discontinuing the air monitoring program during LOM year 5 before the highest levels of $PM_{10}/PM_{2.5}$ occur is glaringly obvious. Furthermore, as the IDEQ PTC analysis showed, the location of ore generation and waste rock depositing is a crucial variable in demonstrating $PM_{10}/PM_{2.5}$ and arsenic AACC compliance (in general, mining scenarios with ore generation and waste rock depositing closest to the SGP operational boundary pose the most significant threat). Since any given year at the SGP might see different operational scenarios, any year may pose a threat to the $PM_{10}/PM_{2.5}$ NAAQS and the arsenic AACC.

In order to ensure compliance with the $PM_{10}/PM_{2.5}$ NAAQS and arsenic AACC during the entire operational life of the SGP, the discontinuation provision of the proposed monitoring program must be removed.

4. Dust Control Efficiency

As stated in Objector's 2023 Comment Letter (p. 305-307), both the Forest Service's and IDEQ's fugitive dust analyses in the FEIS/SDEIS and PTC, respectively, heavily rely on the assumption that Perpetua can achieve a dust control efficiency of at least 93.3% on the SGP haul roads in order to minimize PM_{10} emissions and achieve NAAQS compliance. However, neither the Forest Service nor IDEQ have provided sufficient evidence that such a high target is attainable or practically enforceable. Furthermore, neither the DROD or IDEQ PTC include any monitoring provisions to specifically verify that a control efficiency of 93.3% will actually be achieved during SGP operations.

Within the FEIS, the Forest Service responded to these comments by stating, "Perpetua provided a technical memorandum to the USFS on March 18, 2021 outlining the rationale for the 93.3% control through use of suppressants. This document discussed several studies whereby the PM10 control of 93.3% plus was attainable. Regardless of that, the Final EIS will agree with the IDEQ PTC that requires records of applicable use of suppressant every 12 hours (PC 2.2) and they must abide by the approved FDCP. Additionally, dust monitoring will be part of the mitigation measures in the Final EIS (Section 4.3.5) and the Forest Service has adopted the 93.3% efficiency for assessment of emissions. The FDCP would be developed and approved prior to commencement of construction" (FEIS at B-157-158).

The Forest Service's response is still inadequate and contains several faults. First, the shortcomings of relying on to-be-developed operational plans, such as the FDCP, are discussed in further detail below. Second, neither the DROD or IDEQ PTC contain any monitoring or testing provisions to ensure a 93.3% dust control efficiency is being achieved during SGP operation. Instead, the Forest Service and IDEQ conclude that since past studies have shown a 93.3% dust control efficiency *is technically possible* the SGP *will practically* achieve the same. This is despite the cautions from EPA's AP-42 Chapter 13.2.22 (the source of emission factors in which the 93.3% control efficiency is based on). AP-42 Chapter 13.2.2 discusses the critically important variables surrounding control efficiencies (in particular to chemical suppressants, some of which can reasonably be assumed to apply to water too):

> "The control effectiveness of chemical dust suppressants appears to depend on (a) the dilution rate used in the mixture; (b) the application rate (volume of solution per unit road surface area); (c) the time between applications; (d) the size, speed and amount of traffic during the period between applications; and (e) meteorological conditions (rainfall, freeze/thaw cycles, etc.) during the period. Other factors that affect the performance of dust suppressants include other traffic characteristics (e.g., cornering, trackon from unpaved areas) and road characteristics (e.g., bearing strength, grade). The variabilities in the above factors and differences between individual dust control products make the control efficiencies of chemical dust suppressants difficult to estimate. Past field testing of emissions from controlled unpaved roads has shown that chemical dust suppressants provide a PM-10 control efficiency of about 80 percent when applied at regular intervals of 2 weeks to 1 month (emphasis added)."

Both the Forest Service and DEQ assume the SGP will successfully account for and control these variables with no qualitative check to make sure that is actually the case. **In order to ensure the SGPs actually achieves a 93.3% control efficiency the Forest Service should impose a period dust control efficiency monitoring test.**

5. Haul Road Emissions Calculations

As stated in Objector's 2023 Comment Letter (p. 307), in the process of calculating fugitive dust emissions from ore road hauling, Perpetua has again relied on the EPA's AP-42 Chapter 13.2.2. Equation 1a of AP-42 Chapter 13.2.2 provides an equation that Perptua used to calculate a particulate matter size-specific emission factor (in pounds per vehicle mile traveled) that is in turn used to calculate total $PM_{2.5}$ and PM_{10} emissions that were evaluated in both the SDEIS and IDEQ PTC process. Equation 1a uses three empirical constants (with values provided by AP-42 Chapter 13.2.2) and two variables. These two variables are the silt content of the road traveled and the mean weight of the vehicles traveling the road. IDEQ final PTC permit condition 3.13 requires the SGP to use haul road capping material with a maximum silt content of 4%, thereby constraining the first of the two key variables used in Equation 1a. However, no such permit condition exists in the PTC or the SDEIS to constrain the second variable, mean vehicle weight. In calculating fugitive haul road emissions evaluated in both the SDEIS and IDEQ PTC process, Perpetua assumed an operating scenario using twenty larger CAT 789D and twelve smaller CAT 740D trucks for all ore hauling (see final SOB, Appendix A, Page 5 of 20 Mine sheet) each with a listed hauling capacity and empty weight that are used as inputs to equation 1a. However, if the ratio of larger to smaller CAT trucks is shifted in favor of additional smaller CAT 740D trucks, then calculations will show the particulate matter size-specific emission factor can dramatically increase thereby increasing overall $PM_{2.5}$ and PM_{10} emissions.

Within the FEIS, the Forest Service responded to these comments by stating, "The emission estimates for the SDEIS/Final EIS are based on the use of the CAT 785D and CAT745C. The current haul truck is based on the weight average of 180 tons (CAT 785D and CAT 745C) based on expected annual operating hours per year for each type of trucks (similar to the PTC weight of 182.6). The calculated total of emissions is based on approximately 5.55x more hours with the CAT785D. If that ratio is increased, emissions increase incrementally; conversely, the lower it becomes the lower the emissions. Current PM2.5 emissions are calculated at 20.13 tpy. If 15,000 hrs were added to the 785D (decreased from the 745C), emissions would be ~21.04 tpy. If 15,000 are removed from the 785D and added to the 745C, emissions reduce to 19.17 tpy. Similarly, with an increased weighted average tonnage, the emissions are increased. The Forest Service decision on the proposed mining project includes the proposed mine rate and its associated mobile equipment emissions. An increased mining rate above the proposed tonnages would require additional permitting" (FEIS at B-158).

The Forest Service's response is still inadequate for obvious reasons. First, the Forest Service's response attempts to show how variation in the use of CAT 785D vs CAT 745C trucks would result in a trivial amount of extra $PM_{2.5}$ emission. By the Forest Services calculations this is plus or minus roughly 1 ton per year of $PM_{2.5}$ or 5% of annual $PM_{2.5}$ emissions. Compounded with the conclusion above discussing 2021 MMP vs PTC NSR emission inventories, this potentially extra one ton per year or more of $PM_{2.5}$ is not a trivial amount and represents a real threat to PM_{10}/$PM_{2.5}$ NAAQS and arsenic AACC compliance.

Second, a review of the DROD shows no environmental design features, protection measures, or monitoring requirements that effectively constrain the number and size of ore hauling trucks to air emission scenarios analyzed within the FEIS. The SGP therefore could utilize any number and size of trucks for which emission inventories have not been calculated and that threaten $PM_{10}/PM_{2.5}$ NAAQS and arsenic AACC compliance. **The Forest Service must include requirements within a final ROD stipulating the number and weight of ore haul trucks that may be used in SGP operations such that ore hauling emissions are consistent with the FEIS assumptions and calculated emissions.**

6. Operational Plans

As stated in Objector's 2023 Comment Letter (p. 308,) operational plans like the FDCP, HRCP, and the Operation and Maintenance manual (O&M) are a particular point of concern. IDEQ has required Perpatua to complete these plans as a condition of the IDEQ PTC for which the FEIS bases its air quality impacts analysis on. However, despite the FDCP, HRCP and O&M clearly being central to the SGP's mitigation of air quality impacts, the public will not have the opportunity to review and comment on these plans. Without developing the FDCP, HRCP and O&M before issuance of the FEIS, and without constraining all important variables as enforceable IDEQ PTC permit conditions or FEIS requirements, there is no assurance the SGP will comply with the $PM_{10}/PM_{2.5}$ NAAQS and the arsenic AACC.

Within the FEIS, the Forest Service responded to these comments by simply stating, "The FDCP and other operating plans such as the Haul Road Control Plan and O&M Manual would be reviewed by USFS with concurrence prior to commencement of construction" (FEIS at B-158).

This response simply does not even attempt to address our concerns. While the Forest Service indicates they will require the approval of the FDCP and other plans before SGP operations commence, the important assumptions and individual requirements stipulated within such plans will not carry the same force of law unless they are specifically incorporated as mitigation measures or other operational conditions within the final ROD. Currently the DROD only notes in general terms what plans like the FDCP must include. For example, the DROD includes the requirement that "The proponent will prepare a dust mitigation plan with appropriate schedule or triggers for control deemed adequate by Idaho Department of Environmental Quality to achieve the level of control of 93.3 percent of dust (as required in conditions 2.12.8 of the Permit to Construct from Idaho Department of Environmental Quality) (DROD at p. 53) but includes no specifics on what exact "schedule" or "triggers for control" will actually be required. As proposed within the DROD, the SGP must simply prepare a FDCP and that it.

As another example of deficiency, the DROD states, "Proper dust control will be employed along transportation corridors and active mining areas using aquatic safe dust suppression chemicals and methods" (DROD at p.65) but says nothing as to the application frequency or these dust suppression chemicals and methods. Including the general DROD requirements and

conditions may be appropriate if compliance with the 93.3% dust control efficiency standard was confirmed through periodic qualitative testing, but as discussed above, it is not.

In addition, it does not appear a public review and comment of these documents will be provided. As the permit development process for the IDEQ PTC shows, public comment was instrumental in identifying previous shortcomings of draft permits. Without the public review process major elements like fugitive emission and PSD permitting consideration would not have been properly analyzed. The public has a proven track record in assuring the air quality analysis process for the SGP has appropriately addressed all applicable regulations.

The Forest Service must provide the public a copy of the FDCP, HRCP, and O&M before finalization of a final ROD and must include detailed mitigation measures and operational conditions specific to these plans.

7. Modeled Arsenic Emission Rate

As stated in Objector's 2023 Comment Letter (p. 308-310,), since there are no NAAQS-like equivalent concentrations for Hazardous Air Pollutants (HAPs), the FEIS analysis of arsenic relies on IDEQ state regulations governing arsenic and their comparison to Idaho state carcinogen TAPs AACC. However, due to different operating scenarios used to calculate emissions, modeled SGP arsenic emission concentrations between the IDEQ PTC process and FEIS differ.

Page 74 of the Air Quality Specialist Report provides arsenic emissions analysis and strives to show that the estimated arsenic concentrations at the SGP site boundary will be below the applicable DEQ AACC. The following equation is presented in the Air Quality Specialist Report and was used to calculate this SGP arsenic site boundary concentration ("FEIS Equation").

$$70\ yr\ exposure\ \frac{\mu g}{m^3} = \frac{\sum LOM\ Yrs\ 3\ to\ 16\ annual\ conc\ \frac{\mu g}{m^3}}{70(yrs, exposure)}$$

However, IDEQ's PTC arsenic analysis approach, while similar in that it strives to show estimated arsenic concentrations at the SGP site boundary will be below the AACC, employs a *different* equation ("IDEQ Equation"). The IDEQ Equation, presented in the IDEQ PTC Statement of Basis, TAPs Addendum Modeling Review Attachment, Section 5.7, is the following:

$$Lifetime\ exposure\ \left(\frac{\mu g}{m^3}\right) = \frac{Highest\ annual\ concentration\ \left(\frac{\mu g}{m^3}\right) \times 16\ (mine\ operation\ years)}{70\ (years, lifetime\ exposure)}$$

Critically, there is a slight, but *significant* variation between these equations used in the FEIS and in IDEQ's PTC. Specifically, the FEIS Equation sums the estimated annual concentration of arsenic from Life of Mine years three through sixteen in the numerator while the IDEQ Equation takes the highest annual estimated arsenic concentration and multiplies that value

for sixteen Life of Mine years. In this way, the FEIS Equation is *less conservative* than the IDEQ Equation. In combination with different arsenic emissions resulting from the use of different emission inventories (2021 MMP vs PTC NSR) described above, the FEIS analysis produces a SGP site boundary arsenic concentration that is more than *six times lower* than what DEQ calculated (0.00015 ug/m3 compared to 0.00095 ug/m3).

However, both the FEIS and IDEQ PTC analyses average out their respective calculated arsenic emission concentrations over 70 years. As stated in Objector's 2023 Comment Letter (p. 308-310,) nothing in the Idaho Air Rules allows for ambient air concentration averaging over 70 years. Rather, the Idaho AACCs are deliberately set as annual year-over-year averages. IDAPA 58.01.01.586 specifically states, "the screening emissions levels (EL) and acceptable ambient concentrations (AACC) for carcinogens are as provided in the following table. The AACC in this section are annual averages" (emphasis added). The AACC are not noted as being "lifetime" or 70-year averages. Furthermore, the Idaho rules addressed the question of short term sources in a specific but limited nature allowing sources who will operate for no more than five years to increase applicable AACCs by 10 fold (IDAPA 58.01.01.210.15).

Within the FEIS, the Forest Service responded to these comments by stating, "As discussed in the SDEIS and the PTC SOB, the AACCs are derived from a 70-year exposure. IDAPA 58.01.01.005.125 states 'Those ambient air quality increments based on the probability of developing excess cancers over a seventy (70) year lifetime exposure to one (1) microgram per cubic meter (1 µg/m3 of a given carcinogen and expressed in terms of a screening emission level or an acceptable ambient concentration for a carcinogenic toxic air pollutant.' This is consistent with IDEQ's stance and because the SDEIS modeling utilized IDEQ standards for comparison purposes, use of the 70-yr exposure is appropriate " (FEIS at B-159).

Overall, this response is wholly inadequate by doubling down on the diluting of SGP arsenic emissions over 70 years through the use of a 16/70 year Project-specific adjustment factor while providing no additional support or justification. Since the development of the Objector's 2023 Comment Letter, the issue of arsenic emissions averaging (that is IDEQ's use of a 16/70 Project-specific adjustment factor and the Forest Service's acceptance of such a factor) has been extensively analyzed under IDEQ Case Docket No. 0101-22-02390. In this case, the Idaho Conservation League, Save the South Fork Salmon, and the Nez Perce Tribe have administratively appealed the IDEQ PTC. This appeal process has included several phases including briefing and oral arguments before a hearing office, briefing and oral argument before the Idaho Board of Environmental Quality ("BEQ") on appeal, and is currently now working through briefing and oral arguments before the hearing officer on remand. A record of briefing and oral arguments from the appeal before the BEQ through the present is being submitted herewith and is incorporated by reference herein.

In the May 9, 2024 Final Order, BEQ did not find "sufficient evidence in the record to convince it that the 16/70 analysis performed by DEQ was equally or more protective of human

and animal life and vegetation as what is provided for by the Air Rules." Ultimately, the BEQ found that arsenic analysis in the current PTC has no basis in Idaho air permitting regulations and creates an increased risk of cancer exposure to the public. Ultimately the Order remanded the PTC back to the case hearing office to develop further evidence regarding the ambient air concentrations of arsenic that will be produced by the SGP and whether those levels comply with the Air Rules.

As part of the remand process, the Expert Declaration of William Tiedemann (October 3, 2024) and Ian von Lindern, P.E., Ph.D (October 4, 2024) were recently submitted on behalf of the Idaho Conservation League, Save the South Fork Salmon, and the Nez Perce Tribe and provide the most developed and comprehensive analysis of the use of the 16/70 Project-specific adjustment factor within the IDEQ PTC.

The Tiedemann Declaration was informed by a Mr. Tiedemann's comprehensive review of historical IDEQ TAPs air rulemaking records. This IDEQ written record generally covers the 1990 to 1995 time period during which the IDEQ process for analyzing TAPs was taken from department guidance and formally incorporated as state rules. Within the written record are hundreds of documents including draft TAPs rules, response to draft rule comments, and policy and analysis memos, letters, and notes.

The Tiedemann Declaration concludes:

- "During the TAPs rulemaking process, DEQ specifically considered the use of exposure duration adjustments and use of calculations akin to the 16/70 Project-specific adjustment factor, but ultimately did not incorporate their use within the TAPs rules."
- "DEQ intended the AACCs to be annual, year-over-year concentration limits and included only a single short-term adjustment factor within the original TAPs rule for sources operating for 5-years or less."
- "DEQ's application of the 16/70 Project-specific adjustment factor to demonstrate compliance with TAPs is not supported by the intent or language of the TAPs rule, and results in a degradation of the protection of human health and the environment that is otherwise the purpose of the TAPs rule" (Expert Declaration of William Tiedemann at p. 13).

The von Linder Declaration was informed by Dr. von Linder's extensive expertise in toxics and risk assessment analysis. The von Linder Declaration concludes:

- "That DEQs use of the ad hoc SGP Project-specific adjustment factors undermines the health protectiveness of the TAPs rule. The TAPs rule was specifically developed to avoid requiring risk assessment analyses by providing an inherent margin of safety (MOS). These SGP Project-specific adjustment factors facilitate cancer dose-averaging risk calculations that allow the SGP to significantly increase arsenic emissions based on short-term Life of Mine (LOM) assumptions, but to nevertheless average the risk associated with those increased emission over 70-years."

- "This transfer of risk from the mine to the receptor's lifetime significantly reduces the MOS and negates the health protectiveness of the TAPs rule. The TAPs rule simply offers 10-fold increases in allowable risk, or emissions, for either 1) short-term projects of less than 5 years, or 2) T-RACT based relief based on available technology.
- "There is neither a provision, nor a need, for risk assessment if the TAPs Rules are properly implemented based on annual compliance with maximum one-year annual average ambient air carcinogen concentration. This application of the TAPs rule has served Idaho well for three decades. This policy change allowing risk averaging through the SGP Project-specific adjustment factors not only undermines the health protectiveness of the individual applicant source, but also the Statewide strategy that keeps all Idahoans safe with minimal regulatory burden (Expert Declaration of Ian von Linder P.E., Ph. D. at 39-40)"

Ultimately, the Forest Service's acceptance and implementation of an arsenic adjustment factor has no basis in actual IDEQ air quality rules, neglects the responsibility to provide its own analysis under NEPA, and jeopardizes human health and the environment. **The IDEQ AACC must be treated as annual year-over-year compliance limits and the Forest Service must re-analyze airborne arsenic impacts from the SGP without the use of a 16/70 Project-specific adjustment factor (or any other similar 70-year averaging factor)**

7. Ambient Air Boundary Determination

As stated in Objector's 2023 Comment Letter (p. 310-312), we are concerned that the exclusion of the public access road between Stibnite Road at Sugar Creek and Thunder Mountain Road at Meadow Creek from the regulatory definition of ambient air is inconsistent with Clean Air Act's definition of ambient air[15], EPA's longstanding policy that allows excluding certain areas of a source's property from ambient air[16], and EPA's most recent revised policy for ambient air[17] (Revised Policy). Providing public access to this road, even under the conditions of the Stibnite Transportation Management Plan (FEIS Air Quality Specialist Report, Appendix D), may result in acute exposure of the public to hazardous air conditions. For full context of our arguments, please refer to Objector's 2023 Comment Letter.

Within the FEIS, the Forest Service responded to these comments by simply stating, "The USFS is accepting of the IDEQ interpretation of the ambient air boundary. Additionally, the EPA, while not explicitly endorsing this stance, has suggested language changes within the Final EIS to accurately portray the ambient air boundary definition" (FEIS at B-160). This response is inadequate to address our concerns. Furthermore, proposed conditions with the DROD now wholly undermine IDEQ and the Forest Service exclusion of the public access road from Ambient Air.

[15] 40 C.F.R. 50.1(e).
[16] Letter from EPA Administrator Douglas Costle to Hon. Jennings Randolph (Dec. 19, 1980), available at: https://19january2021snapshot.epa.gov/sites/static/files/201911/documents/1980_costle_letter_ambient_air.pdf.
[17] EPA, Revised Policy on Exclusions from "Ambient Air" (Dec. 2, 2019) ("Revised Policy"), available at: http://www.epa.gov/sites/default/files/2019-12/documents/revised_policy_on_exclusions_from_ambient_air.pdf

Section 9.2 Regulatory and Forest Service Requirements of DROD, states, "Regulatory and Forest Service requirements and requirements associated with environmental design features are listed in Tables 5 and 6, **and made conditions of this decision**. These tables are also contained in the FEIS as Tables 2.4-12 and 2.4-13 (emphasis added). Within these Tables, the following condition is listed, "A new 12-foot-wide gravel road **will be constructed to provide public access from Stibnite Road (FR 50412) to Thunder Mountain Road (FR 50375) through the Stibnite Gold Project.** During operations, **the public access road will be used to travel through the Stibnite Gold Project and will provide seasonal use, open to all vehicles**. Vehicles passing through the Stibnite Gold Project will be required to check-in with mine personnel at the North or South Stibnite Gold Project entry points (emphasis added)" (DROD at p. 72).

The specific use of the word "will" within this condition is significant. As a proposed legal requirement of the DROD, a public road **will** be constructed that **will** be used to travel through the Stibnite Gold Project and **will** provide seasonal use, open to all vehicles. Under this proposed condition, Perpetua will be legally obligated to provide public access through the SGP.

EPA's 2019 Revised Policy, notes, "Consistent with past practice and the discussion above, the EPA continues to interpret the term 'access' to encompass two key concepts; legal access and physical or practical access." In expounding on the concept of legal access the further EPA states, "The first aspect of access element (i.e. legal access) concerns whether the general public has the right or permission to enter a specific property. Under the ambient air policy as described in the 1980 letter, an exclusion from ambient air is available only for areas owned or controlled by the source (i.e. the source has legal authority, via ownership or control, to preclude access by the public)."[18]

As noted above, the DROD proposes a condition that a public access route through the SGP "will" be constructed and provided. This condition directly provides the general public "the right to enter a specific property" and prohibits Perpetua's "legal authority, via ownership or control, to preclude access by the public". While this public access is conditioned, it is only conditioned due to safety concerns and Perpetua will not be able to preclude public access simply because they no longer wish to. If Perpetua did have such a right, there would be no need to include the above DROD condition. Perpetua could simply provide public access when and how they want (although potentially subject to Mine Safety and Health Administration regulations).

Within the Objector's 2023 Comment Letter, and two letters sent to the Forest Service, dated September 18, 2023 and March 11, 2024, we noted several uncertainties surrounding the FEIS and ROD, including the status of an administrative appeal of the air quality permit issued by Idaho Department of Environmental Quality (DEQ) to Perpetua Resources for the Stibnite Gold Project (SGP). As a brief summary, since July 2022, the Stibnite Gold Project's Final Air Quality Permit to Construct (PTC) has been under administrative appeal by a coalition group including

[18] Memorandum to Revised Policy; Revised Policy at 5.

The Nez Perce Tribe, Save the South Fork Salmon, and the Idaho Conservation League. The coalition group appealed the PTC citing several permitting errors including the use of improper emissions control factors, failure to provide ambient air protections for public air space, deferment of emission control operations to unspecified and not yet existing "plans," and improper calculation of arsenic emission at the point of compliance (or operations boundary).

As the Forest Service is likely aware, the appeal was heard before BEQ on March 14, 2024. On May 9, 2024, BEQ issued a written order on the appeal as follows:

1. DEQ Acted Reasonably and in Accordance with Law when it Found Perpetua has Legal and Practical Control of the Stibnite Access Route such that it Could be Excluded from the Ambient Air Boundary.

2. DEQ Acted Reasonably and in Accordance with Law When it Allowed Perpetua Submit Some Plans After the PTC was Issued.

3. The PTC Contains Enforceable Conditions that Will Achieve 93.3% Dust Control.

4. DEQ Did Not Act Reasonably and in Accordance with Law When it Analyzed the Ambient Arsenic Air Concentrations for the SGP.

A copy of the BEQ's Order is being submitted herewith and is incorporated by reference herein. In short, the Order remanded the PTC to develop further evidence regarding the ambient air concentrations of arsenic that will be produced by the SGP and whether those levels comply with the Air Rules.

On June 12, 2024, BEQ ruled on motions for reconsideration from both parties in the appeal—which are attached hereto and incorporated by reference herein—reaffirming its prior Order while clarifying that the PTC is still considered in effect while issues of ambient arsenic air concentrations are reconsidered. While the appeal process before the BEQ continues to unfold, these findings in the Order have implications for the consideration of the SGP's ambient air boundary.

In addressing item one above, the written Order states:

> *During the NEPA process, the USFS will evaluate continuing access to the SGP by the general public. The record demonstrates that "[o]ne of the alternatives currently being evaluated in the Draft environmental impact statement (EIS), Alternative 2, would provide continuing access through the SGP site on a realigned Stibnite Road during mine operations." REC 893. However, it is noted that the "implementation of this Plan [Alternative 2 with continuing public access through the site] is contingent upon the selection of the applicable alternative by the USFS as the preferred alternative for the SGP and inclusion of the proposed Stibnite Road access route as a component of the approved SGP." The NEPA process is not yet*

complete, and no final EIS has been issued by the USFS. Transcript p. 38, ln. 12. Thus, the record does not contain any evidence that the USFS will require continuing public access through the SGP. DEQ recognized at oral argument that, should the USFS ultimately require public access through the SGP, the ambient air boundary analysis will have to be reevaluated. Transcript p. 88 ln. 19–p.89 ln. 17. The Board of Environmental Quality will not speculate as to the outcome of the USFS NEPA process and finds there is not sufficient evidence to support a conclusion that Perpetua will not have legal authority to control access to the federal lands within the project boundaries.

Expanding on their rationale above, the BEQ reaffirmed that the PTC was reasonable to exclude the Stibnite Access Road from ambient air simply because Perpetua Resources stated such in their PTC application and Idaho air permitting rules require applicants to submit applications that they certify to be "true, accurate, and complete".

Simply, BEQ determined that the Forest Service's analysis and any potential public access conditions within the FEIS/ROD decision determines whether the Stibnite Access Road must be analyzed as ambient air for air permitting purposes. As noted above, *a proposed DROD condition now grants the public the right to traverse the SGP*. As a result of the DROD's condition, the Forest Service tacitly admits its assumption that IDEQ's and BEQ's interpretation of the ambient air boundary was correct is based on nothing more than blind acceptance of a state agency's acknowledged deference to the Forest Service itself. This is far from the hard look required by NEPA. Rather it is an assumption about the interpretation of the ambient air boundary that the Forest Service has blindly accepted.

Furthermore, since the issuance of the SDEIS, EPA Region X has expressed doubts about DEQ's ambient air determination. In a March 14, 2024 letter, EPA Region X administrator Casey Sixkiller sent a response letter to DEQ summarizing EPA's concerns with the PTC after significant deliberation between the parties in the fall of 2023.

EPA's letter states, "With respect to the ambient air boundary designation, the EPA continues to have concerns with IDEQ's acceptance of Perpetua's assertion that members of the general public do not have a legal right of access to areas within the operations area boundary."

We also incorporate the attached Expert Report on Air Quality by Ian von Lindern which goes into additional detail on the inadequacies of the FEIS responses regarding air quality issues. Dr. von Lindern.

Given the proposed DROD condition providing public access across the SGP as a right, the Forest Service must reassess air quality impacts within the SGP public access road including the effects of all Criteria Pollutants, HAPs and other toxic air pollutants such as arsenic, mercury, and lead.

U. SOCIO-ECONOMICS

1. **The SDEIS must take a hard look at the potential socio-economic impacts from the proposed SGP, including potential adverse impacts to housing prices, housing availability, public services, community culture, long-term economic health, etc.**

As stated in Objector 2023 Comment Letter (p. 316-317), **"**While the SDEIS clearly took a hard look at the benefits, it failed to take the same *hard look* at the potential socioeconomic impacts, or costs. Significantly overlooked were cost increases to schools when miners' children move to Valley County, cost increases associated with the heavy truck traffic on roads, and the cost increases in housing associated with 200 highly paid miners moving to Valley County. A whole host of other things also include increased cost of EMS services (police, fire, hospital), strain on the cellular networks, and sewer system, and more. We find it particularly troubling that issues of SH-55 transportation and spill risk, emergency services, and affordable housing where adverse impacts are expected but were not quantified and were not adequately examined in either the DEIS or the SDEIS."

In response to Objector comments (FEIS B-607 to B-610), the FEIS at B-607, states "Refer to responses to the Power Consulting Incorporated comments #1 through #42". The Power Consulting Incorporated comments #1 through #42 (and the agency's inadequate responses) are found in 26 pages of the FEIS at B-581 to B-607.

This response is inadequate. Agency did not fully look at our comments, in fact did not even respond to our comments but only to Power Consulting Inc.'s comments. Agency responses were cursory and incomplete. Overall, the comments related to socioeconomic issues that we submitted in response to the SDEIS, (summarized in Appendix B of the FEIS), were not addressed. The stock responses by the Forest Service were "impacts will be minor to major," and "impacts will be positive and negative." The FS ignored and failed to address the entirety and specifics of our comments, for example:

As stated in the Objector 2023 Comment Letter (p. 319), There will be a dramatic increase in truck traffic as thousands of loads of materials are hauled from around the U.S. to the proposed mine which will dramatically alter traffic patterns in the local area and all but assure there will be spills. The SDEIS (Sections 4.2.2.2, 4.7.2.2, 4.16.2.2, and 4.21.2.2).

In response to Objector comments (FEIS B-607 to B-610) and (B-581-607 and B-607-610), the agency significantly overlooked and failed to quantify impacts to increased traffic and spill risks and consequences.

This response is inadequate. The comment responses are cursory and incomplete, and only vaguely, non-transparently, non-quantitatively, and inconsistently respond to our comments.

Nothing has been changed between the SDEIS and the FEIS regarding a “Hard Look” at potential impacts from heavy traffic and spill risk/consequence. The FEIS references from agency comment responses reiterate the same inadequate information originally presented in the SDEIS. Comments were not resolved, nor responded to adequately. Responses to Power Consulting Inc.’s comments were inadequate.

Without this information, it is impossible to determine the extent of fiscal impacts for locals as well as the state and nation. The direct and secondary jobs (local, state, and national), and the incredible wealth that Stibnite is projected to create, must, under NEPA, be balanced by a "hard look" at the potential costs, in particular, of increased traffic and risk and consequence of spills. See Lubetkin’s SDEIS comments on spill analysis and Objections to agency responses where risks are actually quantified.

The agency responses to Power Consulting Inc.’s Comments #2, 8, 9, 12, 13, 16, 25, 35, and 36, which pertain to traffic, spills, and hazardous waste transport are in the FEIS p. B-581-607.

These responses are inadequate.

The SDEIS says on Page 4-130:

> Since 2019 and according to a Community Partnership Agreement, Perpetua has discussed its development plans with the Stibnite Advisory Council, representing eight local communities. The Council has met regularly to inform the communities, identify potential impacts from the SGP development, and discuss opportunities to mitigate these impacts. Some of these discussions have included how Perpetua can provide resources to the local first responder agencies to support their training and preparedness for responding to potential spills or accidents involving SGP-related traffic. So far, Perpetua has reached out to all Valley County fire department to provide HAZWOPER training specific to the hazardous materials currently used on site. Perpetua has committed to continue to work closely with local fire, EMS, and law enforcement departments to offer joint safety/emergency training and share information on Perpetua's safety protocols and emergency preparedness plans. Perpetua would also enter into an agreement with Valley County to lessen impacts to county service providers and infrastructure, such as EMS, Sheriff, solid waste, etc.

The SDEIS says on Page 4-136:

> While national highways would be used to transport materials to the SGP as far as Cascade, Idaho, secondary roads would be used to make delivery into, or transport

materials out of, the Operations Area Boundary and to the off-site facilities. Statistics for haul truck accidents on county roads and/or in mountainous terrain are very limited. Transportation of fuels and hazardous materials on the SGP access roads would be controlled with pilot vehicles and at lower speeds and with less traffic than highways and would likely be less prone to vehicle crashes than on the public highways.

However, the use of the SGP access roads do present additional hazards to vehicles such as: mountainous terrain, curves, rockfalls, reduced road widths, reduced sight distances, presence of wildlife, snow accumulations, avalanches, rock falls, falling trees, etc. These conditions could result in accidents related to vehicles encountering these other hazards. Perpetua would monitor conditions along the access roads and control transport of fuels and hazardous materials beyond the SGLF to reduce the effects of these other potential hazards.

The SDEIS says on Page 4-139:

The combination of the proposed monitoring, planning, and control practices described in the preceding narrative for transport and handling of fuels and hazardous materials and committed design measures would minimize the risk of accidental releases during the transportation, storage, management, and use of hazardous materials. Nevertheless, the proximity of the access roads to surface water resources increases the potential for a release to enter water which could result in major consequences. The overall environmental impacts from potential releases of hazardous materials under the 2021 MMP would be localized, temporary, and minor to major depending on the type of material released and the location of the spill.

THE FEIS says on pages 4-527:

Crash Projections and Offsite Transportation of Hazardous Materials

Movement of hazardous materials used or produced on the SGP are addressed in **Section 4.7**. There are numerous measures discussed for preventing and mitigating the localized impacts associated with an accidental release of compounds such as diesel fuel, gasoline, propane, ammonium nitrate, and sodium cyanide, to name a few. When occurring onsite, accidental release of hazardous materials would be controlled based on the procedures in the Emergency Response Plan, the Spill Prevention Control and Countermeasures Plan, and the Transportation Management Plan.

As a result of transportation of hazardous materials, there would be localized and regional impacts to transportation and access. Hazardous Material Transport

Regulations are issued by the USDOT (49 CFR) under the authority of the Hazardous Materials Transportation Act. All shipments to the SGP would be regulated and compliance would be monitored. With the additional traffic on SH 55 and in the surrounding communities anticipated as a result of the SGP, there would be a corresponding increase in the probability of accidents or emergency involving hazardous materials. Total traffic anticipated to be generated by the SGP would amount to 23 daily trips north of Warm Lake Road (toward McCall) and 45 trips south of Warm Lake Road (through Cascade) during operations (HDR 2017m). To estimate the probability of a crash for all vehicles, the ASHTO Highway Safety Manual predictive method was used, which considers the characteristics of the intersections, traffic volumes, controls, and lane configurations.

The Traffic Impact Study, using the available data from 2011-2015, included a detailed analysis and projection of future crashes on SR 55 (HDR 2017m). The years predicted in the study included 2017, 2020, 2030, and 2040. These crash projections are calculated on traffic volume (AADT) and any increase in traffic would increase the projection. More current data was requested from ITD, which aligned with the AADT estimates in the Traffic Impact Study (Rich 2023). All intersections analyzed have crash rates less than the predicted crash rates under the existing conditions. The predicted crash rates increase every decade based on the projected growth of the volume of traffic.

The FEIS says on page 4-527:

Traffic increases would be anticipated to lead to an increase in the predicted number of crashes on SH 55 overall. The Transportation Impact Study (HDR 2017m) counted no existing crashes at the intersection of Warm Lake Road and three at the intersection of SH 55 with Deinhard Lane in McCall based on the five years of crash data available. For the year 2030, the traffic study resulted in 2.32 predicted crashes at the intersection of Warm Lake Road and SH 55, and 1.14 predicted crashes at the intersection of Deinhard Lane and SH 55. These increases would occur under both existing conditions and with the construction, operation, reclamation, and closure of the SGP (under all action alternatives analyzed). Increases as a result of the SGP would be predicted to match the increase in the AADT on SH 55, which equates to an increase of 0.6 percent per year. This increase represents a very small potential for an accident; however, the uncertainty of predicted accident conditions could lead to negligible to major impacts.

Improvement to the key intersection at SH 55 (e.g., connection to Warm Lake Road via Cascade, the main SGP access route) and a plan for routing of all hazardous

> shipments would further reduce the potential for accidents involving hazardous materials. The SGP main access route for both the 2021 MMP and the Johnson Creek Route Alternative utilize Warm Lake Road via SH 55; therefore, the SGP is not anticipated to greatly contribute to predicted traffic increases and/or crashes at other intersections along SH 55, as those routes would not be used for access to and from the Operations Area Boundary. Perpetua would follow all State and Federal regulations for transporting hazardous materials and has committed to numerous design features, restrictions, and safety measures within the Transportation Management Plan (Perpetua 2021b) to minimize risks and impacts from transportation of hazardous materials.
>
> Safety and emergency access impacts from the SGP would be localized, long-term, and negligible to major. Major impacts would be associated with the roads with largest increases in usage compared to existing conditions, primarily the mine access route upon departing the Warm Lake Road.

Here, the invocation of "The Community Partnership Agreement" to show that Perpetua has made the needed communications or protective mitigations with local communities about spill risks, emergency services, needed infrastructure is an insult and vague, unreliable and non-binding. The Agreement created the Stibnite Advisory Council and made the communities they represented business partners with Perpetua. The FS did not take a "Hard Look" at the unethical implications of this arrangement. The communities have received money from Perpetua and will only receive more money if the mine goes through. Any communication between Perpetua and the Stibnite Advisory Council to mitigate impacts to our communities is suspect, and certainly nothing communities would want to rely on as an assurance that they will not be picking up the tab for the mine's significant impacts. And the biggest city in Valley County- McCall - never signed the agreement precisely because it did not want to compromise its objective analysis and negotiations with the mine concerning Perpetua's very real impacts. The county also did not sign as they were told by the state it would be a conflict of interests. This is the pattern that Perpetua has pursued in its so-called communications with entities about its impacts. "Discussions" about "opportunities to mitigate", are duplicitous, vague, uncertain, and lack any teeth. And cannot honestly and concretely deal with the real dangers , of which spills are just one of many, of this proposed mine. Nor can they be considered a real analysis of potential problems or a mitigation.

Spills. The response shows a flagrant disregard for locals' and general public's concerns about spills. While it may indeed be true that Perpetua states it can control spills on its site or at least control the media coverage of those spills, the local and general public is more concerned with the possible spills on our county roads, through our communities, and on our state highways. Neither the SDEIS, FEIS, nor the agency's response to comments state who will be responsible for cleaning up and paying for cleaning up and damages for spills on Highway 55 to I-84 and Highway 55 and Highway 95 to Lewiston. This is a connected action under NEPA, and a violation

of the "Hard Look" clause of NEPA. The Traffic Impact study uses data that is over a decade old (2011-2015). This is a violation of NEPA in using the "Best Available Science" . Traffic patterns have significantly changed with the population growth in Valley County since 2011-2015 and must be updated to reflect current traffic patterns.

Traffic. Traffic data is old (2011-2015).

The agency response does not clarify who will be responsible for maintenance and road repair from the increased traffic and increased traffic of heavy huge trucks. This has been neglected in your analysis. This is a connected action under NEPA, and a violation of the "Hard Look" clause of NEPA. But for the mine, these heavy loads of hazardous materials would not be going down our roads, and traffic would not be increased at that level. But for mine there would not be the need to reengineer sections of highway 55. Neither the SDEIS, the FEIS, nor the agency's response to comments state who is responsible for paying for this work. If the FS had not truncated their analysis of connected actions at the intersection of Warm Lake Road and Highway 55, the ensuing analysis would most likely make Perpetua responsible for more road maintenance and more spills.

Offsite Transportation of Hazardous Materials: The SDEIS called State Highway 55 a national highway. The SDEIS quoted above says the use of SGP access roads presents additional hazards because of "mountainous terrain, curves, rockfalls, reduced road widths, reduced sight distances, presence of wildlife, snow accumulations, avalanches, rock falls, falling trees, etc. That description is just as true of Highway 55 and many sections of Highway 95. The agency response does not explain How Perpetua will monitor those "additional Hazards to vehicles" along those roads, so truck traffic doesn't result in accidents and spills. This responsibility is unexplained in agency responses; responsibility includes routes from mine until their vehicles reach the Interstate highways. On the interstate their huge trucks will be in proportion to the number of other huge trucks and the highways are engineered accordingly. But on our state highways and county roads those huge trucks coming and going to the mine are a much larger proportion of normal traffic and that should be accounted for in the FEIS analysis, and not be left as an unfair burden on the Idaho and Valley County taxpayers. This violates the NEPA "Hard Look" clause.

As stated in Objector 2023 Comment Letter (p.609): The 100 in-migrants that are projected to work at the mine will have a hard time finding housing. That is because Valley County does not have a lot of idle houses that are available to rent or purchase. The Stibnite Supplemental DEIS specifically notes that the local rental market is becoming less affordable and the data that we have collected from the American Community Survey indicates that there are not enough vacant houses for sale for all the "local miners" to purchase one. What this adds up to is a housing market that is more expensive than the national average, more expensive than nearby Boise, and a market that will become increasingly less affordable for the locals if the mine is built and operated.

When we look at the potential fiscal impacts of the proposed mine on the local area, much of the same pattern holds. For the operations phase of the proposed mine, there will be $300,000 annually paid in property taxes which will go to Valley County during the operations phase, but all the other taxes are paid to state and federal governments. The $300,000 must then cover the cost increases that the mine puts on Valley County which include schools, roads, infrastructure, and emergency medical services. If we use the DEIS's methodology, then this increase in property taxes will not even cover the full costs of the miners' children attending school, while leaving no tax revenues for the other increases in demand for public services that the miners may put on Valley County. Valley County may be the source of a lot of wealth being created, and the physical location of the mine, but it will not retain much of the wealth that is created.

In response to Objector comments, the FEIS at B-608 states "Refer to responses to the Power Consulting Incorporated comments #1 through #42 " The Power Consulting Incorporated comments #1 through #42 are found in 26 pages of the FEIS at B-581 to B-607. The 42 responses, 32 of which include actual responses, respond to Power's comments, not ours.

The agency's response to Power's Consulting Inc., Comment s #10, #17, #19, #20, #22, #23, #24, #25, #27, #28, are from FEIS page B-593 through B-591. These responses refer to the mine's impacts on communities' schools, emergency services, hospitals, housing, and infrastructure. The FS responses consider these "residual impacts" because they are without mitigation measures enforceable by the FS, so they can only "analyze" them but that is all they can do. And they didn't even do a great job at that.

From FEIS p.3-474, 475:

> During the 1990s and early 2000s, Valley County experienced considerable growth in new housing units. However, since the 2008 recession, new housing construction has been relatively limited. In 2010, Valley County had an estimated total of 11,789 housing units, which increased by only 439 additional housing units by 2018 (3.7 percent increase). Similarly, from 2010 to 2018, Adams County added only 47 additional housing units (1.8 percent increase) (Census 2010, 2020).
>
> The majority of Valley County's housing inventory consists of vacation/seasonal second homes for out- of-county residents (Census 2010, 2018). Of Valley County's 12,228 housing units in 2018, nearly 72 percent (8,767 units) were occasionally vacant. A total of 8,423 vacant units were reported for seasonal, recreational, or occasional use (i.e., generally second homes) with 225 non-seasonal vacant units for sale, rent, or otherwise vacant (Census 2018). Adams County reports a much lower vacancy rate of 38 percent; however, like Valley County, most vacant units are reported for seasonal, recreational, or occasional use (897 units), with 96 units available for sale, rent, or otherwise vacant.

Residential communities within the analysis area are well-established and stable. Most residents own their homes, with approximately 26 percent and 33 percent having lived in their current place of residence for 20 years or more in Valley and Adams counties, respectively (Census 2018).

The data suggest that much of the housing formerly available to permanent residents has been sold to second home buyers, increasing the number of occasional housing units and decreasing the availability of housing to local residents (Highland Economics 2018). Census data on housing prices in Valley and Adams counties do not show an increase in sale price resulting from a relatively low availability of housing, as median owner-occupied housing prices for both counties have fluctuated but generally not risen since 2010 (Census 2010, 2018; Highland Economics 2018), as shown in **Table 3.21-2**. However, more recent 2021 real estate data for Valley and Adams counties shows a 41 percent increase in median home prices over a twelve-month period. Conversely, median rental rates increased in Valley County by 4.5 percent ($727 in 2010 to $760 in 2018) and in Adams County by 22.8 percent ($504 in 2010 to $619 in 2018; Census 2010, 2018). Between 2010 and 2018, the percentage of Valley County households paying more than 30 percent of their household income on rent grew from 33.5 percent to 59.1 percent (Census 2010, 2018b). This increase indicates that the local rental market is becoming less affordable. However, the percentage of households paying more than 30 percent of their household income on rent decreased from approximately 50 percent to 39.9 percent in Adams County indicating that its local rental market has become slightly more affordable (Census 2010, 2018b)

Development of a City of McCall Housing Strategy (City of McCall 2018a) led to the McCall Area Local Housing Plan (City of McCall 2022) to address housing needs with regard to an estimated need for 730 additional units. The plan also included measures to reconcile affordability of new housing compared to current market prices.

This response is inadequate. Residual impacts were not thoroughly analyzed with a Hard Look at the impacts of the mine on communities' schools, emergency services, hospitals, housing, and infrastructure. This violates the NEPA requirement for a "Hard Look" at these issues.

As stated in Objectors' comments and Power's comments on the SDEIS, there are many places where the effects to socioeconomic issues were not sufficiently analyzed. The Forest Service admits that the analysis was limited to the 2018 Highlands Economic Report (2018), traffic data from 2011-2015, and Census data for Valley County from 2010-2018. This data is 6-14 years old, and therefore outdated.

There is only one sentence in the FEIS that references more current data on housing: "However, more recent 2021 real estate data for Valley and Adams counties shows a 41 percent increase in median home prices over a twelve-month period." But that is not followed by any conclusions or changes in analysis.

The Forest Service fails to consider easily available local data on housing and provides baseless assumptions to draw conclusions that, for example, there will be little or no adverse impacts to housing. The FS does graciously admit that there are" uncertainties regarding public service" but stops there. We agree: uncertainties about whether public emergency services can accommodate the mine's influx of population; uncertainties about whether the schools can accommodate miners' children; whether the hospital can handle the rise in needs; whether the workforce will be so depleted that local businesses will suffer; whether the mining culture will meld with the present culture of Valley county; whether there will be any homes at all available for local people with well-paid miners competing. And the fact that all these issues are already stressing the Valley to the breaking point is hardly mentioned in the SDEIS or FEIS and certainly not analyzed in any way that could facilitate deliberate or helpful planning. AND OF COURSE, there is no mention of Who Will Pay for all of this. Just a casual reference to the paltry $300,000 a year that the mine will pay in property taxes. So, we guess we can draw our own conclusions. The local taxpayer will pay and pay for this "great boon to our economy". Local businesses will be incapable of realizing potential economic gain because of worker shortages. And residents will have to accept less but more expensive public services, changes in the character of our communities, traffic congestion, and hazardous wastes daily going through our towns and along our precious rivers, because we are just part of "residual impacts"- leftovers.

V. RECREATION RESOURCES

1. The FEIS failed to provide an adequate analysis of the project's impact on recreation resources.

As discussed in Objector's 2023 Comment Letter (p. 331-332), the FEIS fails to adequately analyze the impacts on recreational resources resulting from the proposed action. In response, the FEIS (p. B-536) directs attention to Sections 4.19.2.2 and 4.19.2.3 which discuss recreational impacts resulting from the MMP and Johnson Creek Alternative.

This response is inadequate as the FEIS fails to sufficiently analyze the impacts of the Stibnite Gold Project on recreational activities in and around the project area. While the referenced sections do contain summaries of potential impacts, the overall analysis is incredibly narrow and does not adequately represent the true scope of likely outcomes.

The public lands within the Payette and Boise National Forests provide critical year-round recreational opportunities, including hunting, fishing, whitewater paddling, hiking, and camping.

The project threatens to significantly impact these resources, particularly the South Fork of the Salmon River, which is a renowned destination for whitewater paddling and fishing. The FEIS does not address potential impacts on paddling, angling, and hunting in a meaningful way. This omission leads to underestimating the project's overall effects on recreation.

The Forest Service's failure to adequately assess and address the impacts to river-based recreation, specifically whitewater paddling and fishing, violates the NEPA requirement for a detailed and thorough analysis of environmental impacts. The analysis does not reflect the significance of these activities in the area and does not provide a sufficient comparison between alternatives.

2. The geographic scope in the FEIS of the recreation analysis is too limited, excluding important recreational resources and access points that are essential to the area

As discussed within Objector's 2023 Comment Letter (p. 332-333), the geographic scope of analysis as it pertains to recreational impacts is too limited and excludes important recreational resources. In response, the FEIS (p. B-536) refers back to section 4.16 (Access and Transportation) and fails to address the underlying comment.

The FEIS limits the analysis of direct and indirect impacts to a 5-mile radius from major project components. This scope is inadequate and excludes key recreational areas, access points, and trailheads beyond the immediate area, such as the East Fork of the South Fork Salmon River and South Fork Salmon River Road. This analysis also omits the city of McCall which will likely see increased recreational travel and impacts as visitors utilize alternative routes to access areas that the proposed project may impact. These areas will experience significant impacts due to increased traffic, delays, and potential road closures resulting from the project.

The geographic scope of the recreation analysis is too limited, excluding important recreational resources and access points that are essential to the public's use and enjoyment of the area. The failure to expand the analysis area beyond a 5-mile radius and to include these locations misrepresents the full extent of the project's impacts on recreational users and violates NEPA's requirement to consider indirect effects.

3. The FEIS lacks adequate characterization of river-related recreational use

As discussed in Objector's 2023 Comment Letter (p. 333-336), the FEIS fails to adequately address or characterize river-related impacts as a result of the proposed action. In response, the FEIS (p. B-536-537) states that "recreational impacts were put in the context of the access road (Stibnite Road, Johnson Creek Road) rather than the stream itself. Clarifications and additional narrative were added in the Final EIS to rectify this." This response is inadequate and continues to minimize the amount of river-based recreation that occurs within the analysis area as well as outside that will be impacted by the proposed action.

As mentioned in our comments on the SDEIS, the FEIS fails to recognize the significant amount of whitewater paddling and recreational angling use on rivers within the project area vicinity that both of the proposed action alternatives would impact. The document lacks both qualitative and quantitative data on the current use of these rivers for recreation and does not analyze the impacts of the project alternatives on river recreation. The South Fork Salmon River, a designated Wild and Scenic River, is internationally recognized for its whitewater and fishing opportunities, and the analysis completely overlooks these vital resources.

Within the Recreation Specialist report, it is stated that "water quality of surface flow departing from SGP would be the same or better than existing baseline conditions; therefore, there would not be impacts to the quality of downstream waterways." This statement completely disregards the high uncertainty underlying the ground and surface water quality modeling and is misleading. While the FEIS presents this outcome as unlikely, this statement should be updated to reflect the reality and uncertainty of water quality analysis. As such, the analysis related to recreational angling is also lacking. If there is a decline in water quality downstream of the immediate project area, it is reasonable to expect additional impacts on the recreational anglers.

W. MITIGATION AND MONITORING MEASURES

As discussed in Objector's 2023 comments (p. 327), we state:

> NEPA requires the Forest Service to fully analyze mitigation measures, their effectiveness, and any impacts that might result from their implementation. An EIS must: (1) "include appropriate mitigation measures not already included in the proposed action or alternatives," 40 C.F.R.§1502.14(f); and (2) "include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f))," 40 C.F.R. §1502.16(h). NEPA thus requires that the Forest Service review mitigation measures as part of the NEPA process — not in some future decision shielded from public review.

In the FEIS response (FEIS Appendix B, p. B-669), the Forest service lists the locations of past activities, proposed project effects, and reasonably foreseeable effects. The comment also states that the Effectiveness analyses are included in the description of each mitigation measure required by the Forest Service in Chapter 4. Regarding monitoring, the FEIS fails to outline monitoring plans for numerous issues, such as surface and groundwater quality, air quality, ESA-listed species (including whitebark pine, Chinook salmon, steelhead, and bull trout), and wildlife, to name a few. This absence of clearly defined monitoring plans represents a violation of NEPA.

From an environmental standpoint, "mitigation" has a two-pronged definition: reducing the severity, seriousness, or painfulness of an action or threat, and the amelioration of an impact through the resource replacement of an equal or greater value. The FEIS primarily focuses the

Forest Service's efforts on the former definition and does little to address the latter through replaced value or resource.

As we detail above in our objection points related to whitebark pine mitigation, many of the mitigation measures presented in the FEIS (p. 4-325) more closely represent Environmental Design Features. For example, the mitigation measure for Clark's Nutcracker Habitat (FEIS, p. 4-329) is cited as VEG-13:

> Where possible, Perpetua would avoid or limit cutting of mature whitebark pine trees in stands that are of sufficient size to support Clark's nutcracker use of the area (30,888 to 61,776 acres of cone bearing whitebark pine habitat within a 20.3-mile radius).

VEG-13 does little to actually reduce the impacts to Clark's Nutcracker habitat and does nothing to actually mitigate or offset these impacts so there would be no net loss of these resources. As we point out in our whitebark pine objection statement, the most significant stand of mature whitebark pine with mature and "plus" trees lies within the upper reaches of the West Pit footprint. Perpetua Resources and the Forest Service have failed to reexamine the polygon associated with that region of the SGP and have refused any fine-scale modifications or adjustments regarding the highwall outline or configuration for the West End pit.

The Effectiveness analysis the FEIS provides is also scant with few to no metrics that actually measure success or failure. Holding with the Clark's Nutcracker example (FEIS, p. 4-329):

> **Effectiveness:** This measure would reduce the extent of disturbance to occupied whitebark pine habitat as a result of the SGP, especially stands with mature trees, and would provide habitat for the whitebark pine's primary seed disperser, the Clark's nutcracker. Maintaining large stands of mature whitebark pine suitable for Clark's nutcracker would help ensure an important seed source as well as seed disperser in this region of central Idaho.

As we state, the Effectiveness "analysis" does little to demonstrate how well the mitigation measure, when properly applied, will influence the lessening of effects, let alone ameliorate or eliminate the potential impact and loss of whitebark pine and Clark's Nutcracker habitat. Neither the Forest Service nor Perpetua Resources and its contractors have provided meaningful mitigation measures backed by an effectiveness analysis with measurable and repeatable metrics. The same is true for noxious weed control among other resource issues.

The agency has also failed to address the many impacted resources affected by the SGP as *whitebark pine, Clark's* Nutcracker *habitat, and noxious weed control are the only resources directly addressed in the FEIS*. The failure to provide mitigation measures to address fisheries

impacts, additional ESA-listed species impacts, wilderness, wild and scenic rivers, inventoried roadless areas, air quality, wetlands, and water quality (ground and surface), to name a few, represents a clear violation of NEPA.

The singular resource Perpetua Resources and the Forest Service provides value loss mitigation for is represented by the proposal to create two new groomed snowmobile routes to replace impacts and loss associated with the existing Warm Springs to Landmark route. If Perpetua Resources can replace or mitigate the impacts of the SGP on OSV and winter motorized recreation, the same qualitative and quantitative mitigation is certainly warranted, and possible, for natural resources. Examples of such are wetland replacement or enhancement in other areas of the forest within the watersheds adversely impacted by the SGP, the creation of a NRA to ensure the survival and productivity of whitebark pine and Clark's Nutcracker habitat, wolverine denning habitat, or the creation of a long-term fully staffed and funded noxious weed program.

The FEIS contains numerous references to monitoring and monitoring plans, yet fails to provide an outline, let alone the detailed plans, for any of the monitoring efforts necessary for the implementation of this project. The purpose of monitoring is to observe and check the progress or quality of a given attribute or action over a period of time. NEPA requires that projects with significant impacts and adverse effects to critical resources include monitoring plans with detailed protocols, timing restrictions and/or guidelines, and established limits that then trigger further action(s) if exceedances occur. Resources within the SGP that necessitate a strong monitoring program include, but are not limited to: ground and surface water quality, ESA-listed species (Chinook salmon, bull trout, steelhead, wolverine, and whitebark pine), sensitive and Forest Watch species (Westslope cutthroat trout, Sacajawea's bitterroot, and goshawks provide a few examples), noxious weeds and invasive plants, air quality, access points, fugitive dust, and closure/reclamation of the impacted areas. We have provided several examples of how the Forest Service has failed to adequately address air quality monitoring in this objection (see Air Quality, above).

Not only does the FEIS fail to provide monitoring plans for critical resources, but the document, and thus the Forest Service and Perpetua Resources fails to provide a timeline for when the public and oversight agencies can expect to review those plans to ensure competency and adequacy. These monitoring plans must be robust, thorough, and durable, and able to withstand the rigors of potential mine ownership changes throughout the lifespan of the mine and beyond until reclamation and true restoration is complete. As the FEIS points out, the paucity of topsoil/growth media and the challenges associated with riparian restoration indicate that full restoration (which includes the lowering of stream temperatures and the reestablishment of adequate and functioning riparian areas) may not occur for 100 years.

There is several established water quality monitoring locations related to exploration

phases of the SGP that provide Perpetua Resources and the Forest Service with a solid start for completing water quality monitoring plans. However, we could not identify any proposed locations in the FEIS for additional monitoring sites or the protocols associated with individual resources. These must be established prior to the release of the Final ROD and the omission from the FEIS represents a violation of NEPA.

As part of the mitigation and monitoring program, we recommend that the Forest Service and Perpetua maintain an implementation website to report on mine development, completed, ongoing, and anticipated work at the site, including reclamation work, site inspections, monitoring and compliance reports, violations, remedies, etc. We are also open to other measures to better involve the public in implementation and effectiveness monitoring. An additional aspect of this website could be the creation of a monitoring/mitigation "story map" that visually displays monitoring locations with links to monitoring reports and layers that a website visitor could toggle on or off with mitigation measures and locations, percentage of completion, etc. The Forest Service could develop a more comprehensive public notice and involvement process for the SGP.

Monitoring is an incredibly important aspect of the Stibnite Gold Project. The FEIS notes that Perpetua would lead annual site visits for USACE, EPA, IDFG, and other interested agency personnel as needed. In the Forest Service and BLM Record of Decision and FEIS for the Thompson Creek Mine, there is a provision that the mining company will host one public tour a year. Building on this precedent, and given the tremendous public interest in the Stibnite Gold Project, and the Forest Service and Perpetua's willingness to date to host tours of the project area, we request that the Forest Service allow for a minimum of four public tours per year. We recognize that certain days and locations may not be suitable for tours because of mining activities and staffing limitations. However, we believe that such a provision, with sufficient advance notice to Perpetua and the Forest Service, is an important component of transparency and accountability.

X. ENVIRONMENTAL JUSTICE

As stated in the Objector Comment Letter, (p. 330-331): The SDEIS (P. ES-32) predicts "Adverse impacts to tribal rights and interests under either alternative, including preventing access to traditional lands, harming traditional fishing and hunting rights, impacting endangered salmon and concerns that it would harm the tribe's salmon restoration efforts."

On December 1, 2022, the Biden administration announced new best practices for Tribal Treaty and Reserved Rights to integrate Tribal treaty and reserved rights into agency decision-making processes, including decisions by DOI, DOD, DOA, and other agencies.433 As recognized by the Biden-Harris administration, indigenous people have been disproportionately harmed by mining.

In a December 2022, press release, Agriculture Secretary Tom Vilsack, stated that the "USDA is committed to addressing deeply embedded rules and policies that disadvantage Tribal nations and communities." In response to the notice of new best practices, Secretary Vilsack stated that "These regulations and policies will protect Indigenous interests and resources from mining impacts and give them a voice in mining activities before they begin."

In addition, on November 15, 2021, the Department of the Interior and the Department of Agriculture issued Joint Secretarial Order No. 3403: "Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters." The order's purpose is to ensure that the Departments manage "Federal lands and waters in a manner that seeks to protect the treaty, religious, subsistence, and cultural interests of federally recognized Indian Tribes," including "areas where Indian Tribes have reserved the right to hunt, fish, gather, and pray pursuant to ratified treaties and agreements with the United States." Notably, the Department of the Interior and the Department of Agriculture "recognize and affirm that the United States' trust and treaty obligations are an integral part of each Department's responsibilities in managing Federal lands," and that "the Departments will benefit by incorporating Tribal expertise and Indigenous knowledge into Federal land and resources management."

Treaty rights must be respected. We support and incorporate by reference the comments from the Nez Perce Tribe on these issues. The SDEIS must describe how these issues are addressed in the NEPA process related to the proposed mine plan and associated FEIS and ROD issued by the Forest Service and BLM, along with recent decisions by the Department of Defense to authorize funding from the DPA Investments Program for SGP.

In response, the FEIS (B-614) states that, "Adverse impacts to tribal rights and interest are described in Section 4.24 (Tribal Rights and Interests). Mitigation measures developed for those impacts are also described in the section and will be incorporated into the ROD for the Project. Information on the government-to-government consultation process used to develop the impact analysis and mitigation measures appear in Chapter 6 of the EIS."

This FEIS fails to adequately respond to these issues because it fails to demonstrate that treaty rights will be upheld.

CONCLUSION

As detailed above and in previous comments submitted by the Objectors, the FEIS and Draft ROD fail to fully comply with numerous federal and state laws, regulations, policies, and other requirements. As such, the Regional Office must withdraw the FEIS and DROD and vacate and remand both documents and order the correction of all errors noted herein.

The Forest Service cannot approve any of the action alternatives described in the FEIS and DROD, or any action alternative at all that the applicant may propose, unless and until all laws,

etc., noted herein are satisfied. Please direct all communications regarding this Objection to the Lead Objector, Save the South Fork Salmon, Inc., P.O. Box 1808 McCall, Idaho 83638, savethesouthforksalmon@gmail.com and jthrower@mtntoplaw.com, 208-315-3630.

END NOTE: Appendix B describes the Objectors' comments as being submitted by "Bonnie Gestring (Northwest Program Director, Earthworks) and seven others."