



Nez Perce

TRIBAL EXECUTIVE COMMITTEE

P.O. BOX 305 • LAPWAI, IDAHO 83540 • (208) 843-2253

January 5, 2023

Sent via FedEx, Overnight Delivery

Ms. Linda Jackson, Forest Supervisor
Stibnite Gold Project
Payette National Forest
500 North Mission Street, Building 2
McCall, ID 83638

Re: Nez Perce Tribe's Comments on the Stibnite Gold Project Supplemental Draft Environmental Impact Statement

Dear Forest Supervisor Jackson:

The Nez Perce Tribe ("Tribe") thanks you for the opportunity to comment on the Payette and Boise National Forests' ("Forest" or "Agency") Stibnite Gold Project ("Project") Supplemental Draft Environmental Impact Statement ("SDEIS"). The Tribe's comments are captured in this transmittal letter, its accompanying technical comments, its prior submitted comments, and any information generated between the Tribe and United States pursuant to government-to-government interactions prior to the United States rendering a final decision on the Project.

The Project is located entirely within the homeland of the Nez Perce people, the *Nimiipuu*, and within the Tribe's area of exclusive use and occupancy, as adjudicated by the Indian Claims Commission.¹ On June 11, 1855, the Tribe entered into a treaty with the United States ("1855 Treaty").² In the 1855 Treaty, the Tribe reserved and the United States secured to the Tribe sovereign rights that the *Nimiipuu* have exercised since time immemorial, including the right to take fish at all usual and accustomed places, and the rights to hunt, gather, pasture, and travel. These rights do not simply impose responsibilities on the United States. For the *Nimiipuu*, these rights were and are inextricably linked to, and a guarantee of, our ability to preserve our culture and identity.

¹ *Nez Perce Tribe v. United States*, Docket # 175, 18 Ind. Cl. Comm. 1.

² Treaty with the Nez Percés, June 11, 1855, 12 Stat. 957.

The Tribe's legally reserved rights flow from its status as the original inhabitants and stewards of this land and facilitate the Tribe's extensive and widely-recognized contemporary work as a co-manager and partner restoring salmon, steelhead, lamprey, wolves, and bighorn sheep. This work includes the Tribe's active implementation of fish habitat restoration and hatchery actions in the Snake and Salmon river basins. Honoring our relationship to the fish and all animals and plants inhabiting the Tribe's cherished lands and waters of our homeland is fundamental to our identity and survival as *Nimiipuu*—and will always remain our sacred and privileged duty.

The Tribe's reserved rights are also the “supreme Law of the Land.”³ As an agency of the United States, the Forest Service has a legal duty, enshrined in the Supremacy Clause of the U.S. Constitution and supported by numerous U.S. Supreme Court decisions, to ensure that its actions, including the Project, do not result in harm to the rights the Tribe reserved, and the United States secured, over 160 years ago.

The Tribe has committed thousands of hours and substantial resources evaluating the Project. In 2017, the Tribe reviewed Midas Gold's (now Perpetua Resources or “Perpetua”) Plan of Restoration and Operations and submitted scoping comments on July 20, 2017. Based on this review and subsequent information, the Tribe, in October 2018, adopted a resolution opposing the Project. The Tribe concluded that the Project posed an existential threat to its treaty-reserved rights and resources, cultural resources, and other interests. On October 27, 2020, the Tribe submitted over 120 pages of substantive comments on the Draft Environmental Impact Statement (“DEIS”). The Forest did not provide the Tribe with a comprehensive review of the Tribe's DEIS comments, only a cursory response that the Tribe received in anticipation of government-to-government consultation three days before the Forest's public release of the SDEIS. Since then, the Tribe has continued to closely monitor the Project through government-to-government consultation and staff-to-staff interactions with the Forest, emphasizing at every opportunity the Agency's obligations, as the Tribe's federal trustee, to protect the Tribe's treaty rights and resources.

Insufficient SDEIS Comment Period and New Information

While the Tribe appreciates the Forest's exchanges with the Tribe regarding development of the SDEIS—including making available to the Tribe a copy of the SDEIS for internal review prior to release for public comment—the review period has been insufficient in light of the volume of information the Tribe and public must review.

The Tribe sent a letter to the Forest on June 14, 2022, requesting a full, 120-day comment period for the SDEIS in anticipation of the thousands of pages of accompanying documentation, including technical reports, memoranda, and numerous other references that the Tribe and public would need to review. Not only does the National Environmental Policy Act allow for such a comment period, but the Project is highly complex, controversial, and requires the utmost scrutiny by the Tribe and public. The Forest has offered no explanation justifying its insistence on maintaining a shorter public comment period or why it elected to overlap the comment period with the busy holiday

³ U.S. CONST. art. VI, cl. 2.

season. Moreover, following publication of the SDEIS on October 28, 2022, the Tribe observed that the Project' story map⁴ leaves out essential information about the affected environment and environmental consequences, including but not limited to impacts to wildlife and wildlife habitat, vegetation (e.g., Endangered Species Act-threatened whitebark pine), and soils. These omissions, as well as over 30 other technical documents integral to the Forest's analysis in the SDEIS, were not provided to the Tribe or public until weeks into the comment period. This delay has hampered the Tribe's review during the already short review period. The delay warranted an extension of the review period.

The Tribe is also concerned with the U.S. Department of Defense's ("DOD") recent decision giving Perpetua \$24.8 million, through a "critical minerals award," for the Project.⁵ According to the DOD, the money to Perpetua will be used to "complete environmental and engineering studies necessary to obtain a Final Environmental Impact Statement, a Final Record of Decision, and other ancillary permits."⁶ DOD's decision, which was made without any consultation with the Tribe regarding the effects of the Project on the Tribe's treaty-reserved rights, appears focused on facilitating authorization of the Project while the Forest's and Corps' review is underway and during the Tribal and public comment period. The Tribe expects that, under NEPA and other applicable federal law, any additional environmental or engineering review of the Project must undergo Tribal and public review through an additional SDEIS prior to a final decision.

Forest's Legal Duty to Protect the Tribe's Treaty

The Tribe is outraged that the Forest chose to proceed with the Modified Mine Plan as its Preferred Alternative. The Forest remains stubbornly resistant to embracing its legal duty to the Tribe because it will require denying Perpetua authorization to proceed with its Project. The Forest lacks authority to violate the Tribe's treaty rights and must deny the Project.

On November 30, 2022, the White House issued a Presidential Memorandum on Uniform Standards for Tribal Consultation.⁷ That Presidential Memorandum builds on President Biden's January 26, 2021, Presidential Memorandum acknowledging foundational principles underlying the Nation-to-Nation relationship with tribes and reaffirming the United States' commitment to uphold treaty and trust responsibilities.⁸ The White House, in coordination with 17 federal agencies, including the United States Department of Agriculture ("USDA"), also released a new best practices report to integrate tribal treaty and reserved rights into agency decision-making processes.⁹ This report was developed in consultation with Tribal Nations and implements the

⁴ <https://storymaps.arcgis.com/stories/6b13451c9abb4f8090fab579f982aec>.

⁵ See Department of Defense, *DOD Issues \$24.8M Critical Minerals Award to Perpetua Resources*, Press Release, December 19, 2022, <https://www.defense.gov/News/Releases/Release/Article/3249350/dod-issues-248m-critical-minerals-award-to-perpetua-resources/>.

⁶ *Id.*

⁷ Uniform Standards for Tribal Consultation, 87 Fed. Reg. 74,479 (Nov. 30, 2022).

⁸ Tribal Consultation and Strengthening Nation-to-Nation Relationships, 86 Fed. Reg. 7,491 (Jan. 26, 2021).

⁹ Working Group of the Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights, *Best Practices for Identifying and Protecting Tribal Treaty*

agencies' Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty Rights and Reserved Rights. An essential point raised by tribes in this report is that “[f]ederal agencies must give effect to treaty rights and should seek to safeguard them as agencies contemplate action,” and “ensure that agency actions do not impair Tribes’ ability to exercise those rights.”¹⁰ The report complements Secretarial Order 3403: Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters issued by USDA and the Department of Interior (“DOI”) on November 15, 2021.¹¹ The Joint Secretarial Order commits to ensuring that USDA and DOI and their component bureaus and offices are managing federal lands and waters in a manner that seeks to protect the treaty, religious, subsistence, and cultural interests of tribes.

Flouting President Biden’s directives and the Tribe’s repeated emphasis on the protection of treaty rights throughout the Project review, the Forest chose Perpetua’s Modified Mine Plan as its Preferred Alternative. During government-to-government consultation on October 25, 2022, the Forest assured the Tribe that the SDEIS is only a draft and its Preferred Alternative is not a final decision. If memorialized as a final decision, however, the Forest’s Preferred Alternative will substantially and irreparably harm the Tribe’s treaty-reserved resources and the exercise of its treaty-reserved rights in the Project area for over a generation to come.

As documented by the Forest in the SDEIS, and the Tribe’s comments, the Project will prevent Tribal member access to usual and accustomed fishing places, hunting and gathering areas, and culturally significant places for twenty years or longer. It will also irreparably harm salmon, other treaty-reserved aquatic species, and essential fish and wildlife habitat as well as impact the Tribe’s fish management restoration efforts in the East Fork South Fork Salmon River.

The Tribe requests government-to-government consultation with the Forest to review the foundational changes the Forest must make to the Project or deny its authorization. Please contact Marsan Lawyer, Executive Assistant to the Nez Perce Tribal Executive Committee, at (208) 843-2253 to schedule a consultation.

Sincerely,



Samuel N. Penney
Chairman

Rights, Reserved Rights, and Other Similar Rights in Federal Regulatory Actions and Federal Decision-Making, Nov. 30, 2022, https://www.bia.gov/sites/default/files/dup/inline-files/best_practices_guide.pdf.

¹⁰ *Id.* at 8.

¹¹ <https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3403-joint-secretarial-order-on-fulfilling-the-trust-responsibility-to-indian-tribes-in-the-stewardship-of-federal-lands-and-waters.pdf>.

**NEZ PERCE TRIBE COMMENTS
STIBNITE GOLD PROJECT
SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT
(January 5, 2023)**

NEZ PERCE TRIBE’S INTERESTS

Since time immemorial, the Nez Perce Tribe (“Tribe”) has occupied and used over 13 million acres of lands, including what are now north-central Idaho, southeast Washington, northeast Oregon, and parts of western Montana. Tribal members engaged in fishing, hunting, gathering, pasturing, and travel across their vast homeland, and these activities still play a major role in the culture, religion, subsistence, and commerce of the Tribe.

In 1855, the Tribe negotiated a treaty with the United States (“1855 Treaty”).¹² In its 1855 Treaty, the Tribe explicitly reserved, and the United States secured, among other guarantees, an exclusive reservation within its homeland as well as “the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.”¹³ The lands and waters of the Payette and Boise National Forests (“Forest” or “Agency”) are part of the vast territory ceded by the Tribe and over which the Tribe has treaty-reserved rights. The Stibnite Gold Project (“Project”) is located on federal, state, and private land subject to the Tribe’s treaty-reserved rights. The Project is also within the area determined by the Indian Claims Commission to have been exclusively used and occupied by the Tribe.¹⁴

The Tribe’s treaty-reserved rights to fish, hunt, and gather presumes access to, and the continued existence of, those resources.¹⁵ Thus, the 1855 Treaty secures to the Tribe the continued existence of those biological conditions necessary for the resources that are the subject matter of the treaty.¹⁶ Harm to habitat for treaty-reserved resources directly harms the Nez Perce people. The Tribe is concerned that the Project will further degrade habitat and treaty-reserved resources in the Forest. Additionally, the Tribe is concerned that the Project will undo some of the Tribe’s work to protect, manage, and restore its resources.

Tribe’s Restoration Work on the Forest

Fish

Forest lands and waters provide irreplaceable habitat for tribal resources, including imperiled stocks of spring/summer Chinook salmon (*Oncorhynchus tshawytscha, nacòx*), steelhead (*Oncorhynchus mykiss, hey-ey*), bull trout (*Salvelinus confluentus, islam*), westslope cutthroat

¹² Treaty with the Nez Percés, June 11, 1855, 12 Stat. 957.

¹³ *Id.* at art. 3.

¹⁴ *Nez Perce Tribe v. United States*, Docket #175, 18 Ind. Cl. Comm. 1.

¹⁵ See *Washington v. Washington State Commercial Passenger Fishing Vessel Ass’n*, 443 U.S. 658, 678-79 (1979).

¹⁶ See *Kittitas Reclamation Dist. v. Sunnyside Valley Irr. Dist.*, 763 F.2d 1032 (9th Cir. 1985), cert. denied, *Sunnyside Valley Irr. Dist. v. United States*, 474 U.S. 1032 (1985); *United States v. Washington*, 853 F.3d 946 (9th Cir. 2017).

trout (*Oncorhynchus clarkii lewisi*, *wawa lam*) and Pacific lamprey (*Entosphenus tridentatus*, *he-su*). Unfortunately, many of the resources sacred to the Tribe are at risk of disappearing on, and downstream of, the Forest. The Project has the potential to further negatively affect these already imperiled treaty-reserved resources.

The Tribe is a co-manager of its treaty-reserved resources. As co-manager, the Tribe has devoted substantial time, effort, and resources to the recovery and management of culturally-significant and threatened resources within its treaty territory, including on the Forest. The mission of the Tribe's Department of Fisheries Resources Management (“DFRM”) is to protect and restore aquatic resources and habitats. DFRM’s mission will be accomplished consistent with the *Nimiipuu* way of life and beliefs, which have the utmost respect for the Creator, for all species, and for past, present, and future generations to come. DFRM assists the Tribe’s leadership in protecting the rights and resources the Tribe reserved in the 1855 Treaty by conducting research and informing the development of federal, state, and tribal projects and policies. Importantly, these departments also preserve, restore, expand, and manage wildlife populations and their habitat and have completed the following work on the Forest and in the Project area.

The Project is located just downstream of the headwaters of the East Fork South Fork Salmon River (“EFSFSR”). The EFSFSR and its tributaries (including Meadow Creek and Johnson Creek) flow through the Project area and across much of the Forest, eventually joining the South Fork Salmon River (“SFSR”). The SFSR eventually joins the Salmon River, which merges with the Snake River at the Idaho-Oregon border on the Wallowa-Whitman National Forest. The Snake River, in turn, flows into the Columbia River just downstream of Pasco, Washington. The Columbia River reaches the Pacific Ocean near Astoria, Oregon.

In the 1940s, spring/summer Chinook salmon in the upper EFSFSR were extirpated by mining operations. Populations of Chinook salmon, steelhead, and bull trout in the EFSFSR are threatened; Snake River spring/summer Chinook were listed as threatened under the Endangered Species Act (“ESA”) in 1992, Snake River basin steelhead were listed as threatened under the ESA in 1997, and Columbia River bull trout were listed as threatened under the ESA in 1998. Westslope cutthroat trout are listed by the U.S. Forest Service as a Intermountain Region Sensitive Species. Pacific lamprey are critically imperiled in the Snake River Basin and considered endangered by the state of Idaho and an Intermountain Region Sensitive Species by the U.S. Forest Service.

The designated critical habitat for Snake River spring/summer Chinook salmon consists of river reaches in the Salmon River and all tributaries presently or historically accessible, including the EFSFSR up to the Stibnite Glory Hole within the Project area. Steelhead critical habitat also occurs throughout the EFSFSR, including up to the Stibnite Glory Hole and in tributaries to the EFSFSR such as Sugar Creek. Historically, fish could volitionally return to areas upstream of the Stibnite Glory Hole. The current exclusion from a critical habitat designation is due to a barrier created by previous mining activities. Streams proposed as critical habitat within the Project area for Columbia River bull trout include the EFSFSR downstream and upstream of the Stibnite Glory Hole at Stibnite as well as its tributaries: Meadow Creek, West End Creek, and Fiddle Creek that are located within the Project area.

The decimation of fisheries has seriously impacted the tribal economy. Tribal harvest in the SFSR and its tributaries (including the Secesh River, Johnson Creek, and the EFSFSR) typically occurs from mid-June through August. Because the Tribe manages its harvest in a manner protective of ESA-listed fish returns, it closes these fisheries when either fish population numbers are low or the shared harvest allocation (between the state of Idaho and the Tribe) is met.

Consequently, the Tribe has taken an active role in restoring Chinook salmon runs in the EFSFSR and the SFSR for over 20 years, with financial support from the Bonneville Power Administration. The Tribe's DFRM spends conservatively \$2.5 million annually restoring Chinook salmon runs in the EFSFSR and SFSR. The Tribe's DFRM restoration activities include hatchery supplementation, fishery research, and watershed restoration. The Tribe's DFRM started an office in McCall, Idaho in the mid-1990s to focus on issues in the SFSR watershed; primarily the EFSFSR and Johnson Creek.

The Tribe's DFRM vision¹⁷ needs to be considered in order to understand the following fishery concerns regarding the Project:

- All species and populations of anadromous and resident fish and their habitats will be healthy and harvestable within Nez Perce Usual and Accustomed areas.
- Sound fisheries and habitat management actions will be implemented to improve survival, production, recovery, and restoration of all populations of native anadromous and resident fish species and their habitats within Nez Perce usual and accustomed areas.
- The DFRM shall be proactive in an ever-changing ecological and management environment.
- Tribal members' use of and access to all treaty rights and resources guaranteed under the Treaty of 1855 will be respected and promoted by the DFRM, our co-managers, and the public.

Air

Clean, clear air is a critical component to ensuring the health and resiliency of the Tribe's treaty--reserved resources. Air pollution reduces visibility, which can impair cultural and ceremonial practices for Tribal members and reduce enjoyment of these special places.¹⁸ Air pollution causes a host of environmental and human health problems, including damage to culturally important plants, sensitive forests, and fish habitat, acidification of lakes and streams, depletion of soil nutrients, aggravated asthma, heart attacks, and premature death.¹⁹ Impacts can be especially

¹⁷ Nez Perce Tribe Department of Fisheries Resources Management Plan 2013-2028.

¹⁸ Western Regional Air Partnership, *Regional Air Quality and the Regional Haze Rule: Information and Resources for Tribal Professionals*, https://www.wrapair2.org/pdf/Task1.1.1-RegionalHazeFactSheet_11.21.19final.pdf.

¹⁹ *Id.*

harmful to at-risk ecosystems²⁰ and especially harmful for sensitive human populations such as asthmatics, children, the elderly, people with diabetes, and people with heart or lung disease.

Water

Clean water is vital for the Tribe's cultural, spiritual, and economic uses. The Tribe has a vested interest in protecting water resources both on the Nez Perce Reservation and in its treaty territory throughout the Clearwater, Snake, Salmon, and Columbia river basins. As part of the foundation of Nez Perce history, the Earth (*wéet'es*) itself was pulled out of the water (*kúus*) by "the old man" (*qíwn*), as the first step in the creation process and has significant spiritual importance to Tribal members.²¹ Clean water is materially essential in contemporary tribal life as well, providing a home for the fish that are central to tribal cultural identity, and also in its role as important healing medicine that is consumed at the beginning of traditional dinners and utilized in the sweathouse. The Nez Perce have always revered the purest, direct sources of water in their lands, with seeps, springs, and cold mountain streams being very important. The United States has a general trust responsibility to protect tribal lands, assets, and resources and these include the water that flows over and through tribal lands and the natural resources that depend on that water.

Wildlife

The Forest provides a range of habitats suitable for bighorn sheep (*Ovis canadensis*; *tinúun*) and gray wolf (*Canis lupus*; *hímiin*) populations, which the Tribe has worked hard to restore and sustain. The Tribe values protection of its wildlife management and restoration legacy alongside the protection of ecological communities and broader landscape on which bighorn sheep and gray wolves depend.

The Tribe is nationally recognized for its leadership in the conservation of bighorn sheep and recovery of gray wolves. Bighorn sheep populations roam more than 25 miles up and down the Salmon River Canyon through the Frank Church-River of No Return Wilderness Area, north and northeast of the Project. Importantly, this is one of the last remaining native populations in the region and is threatened by disease and habitat degradation. Collaborative research led by the Tribe over a decade ago on federal lands, and the Tribe's ongoing advocacy for bighorn sheep, were instrumental in the reduction of disease risk on 70,000 acres of bighorn sheep on the Payette National Forest. Because this was a vital step for bighorn sheep recovery, the Forest must protect all bighorn sheep habitat. Several herds and lambing areas are within close proximity to Stibnite. Activities proposed are likely to adversely impact individuals, degrade habitat conditions, and deter expansion of populations into historical but unoccupied habitat across three national forests.

Gray wolves, extirpated in Idaho in the 1930s, gained federal protection in 1967 and were listed as endangered under the ESA in 1973. With the support of several partners, the Tribe led the recovery and reintroduction of gray wolves in central Idaho, including in the Forest, in the 1990s. Today, population numbers exceed recovery goals. Recovery and delisting of gray wolves are

²⁰ Industrial Economics, Inc., *Effects of Air Pollutants on Ecological Resources: Literature Review and Case Studies*, (Mar. 2011), <https://www.epa.gov/sites/default/files/2016-01/documents/ecofinalreport.pdf>.

²¹ Marshall, A.G. (2006). Fish, Water, and the Nez Perce Life. *Idaho Law Review*, at 763-793.

great conservation achievements. Protection of wolf habitat, which includes minimizing human disturbance, needs the utmost attention from the Forest.

SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT TECHNICAL COMMENTS

National Environmental Policy Act Framework

Section 101 of the National Environmental Policy Act (“NEPA”) declares a broad national commitment to protecting and promoting environmental quality. The purposes of NEPA are: to declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.²²

To ensure that NEPA’s commitment is infused into the ongoing programs and actions of the Federal Government, the Act also establishes some important ‘action-forcing procedures.’ Section 102 directs, to the fullest extent possible, all agencies of the Federal Government shall:

[I]nclude in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on--(i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.²³

The statutory requirement that a federal agency contemplating a major action prepare an Environmental Impact Statement (“EIS”) serves NEPA’s “action-forcing” purpose in two important respects.²⁴ It ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision. Simply by focusing the agency’s attention on the environmental consequences of a proposed project, NEPA ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.²⁵

²² 42 U.S.C. § 4321.

²³ 42 U.S.C. § 4332(C).

²⁴ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (internal citations omitted) (citing *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983); *Weinberger v. Catholic Action of Hawaii/Peace Educ. Project*, 454 U.S. 139, 143 (1981)).

²⁵ *Id.*

1.0 FOREST SERVICE PURPOSE AND NEED FOR ACTION

NEPA requires agencies to “briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.”²⁶ In accordance with this requirement, the Forest Service articulated the purpose and need for the Project as follows: “The Forest Service’s purpose is to consider approval of Perpetua’s proposed use of the surface of [National Forest System] 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 resulting in the 2021 MMP (Perpetua 2021a).”²⁷ The Forest Service further articulated the “need for action” as to “[c]onsider 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.”²⁸

Failure to Consider Actual Purpose and Need for Project in SDEIS

As articulated, the Forest Service’s “purpose” and “need for action” in evaluating the Project sidestep the fundamental issue: is there a real world purpose or need for the Project? The SDEIS simply fails to address this basic question.

The fact is there is not a clear purpose for the Project given its site-specific nature. There are other places in the world where gold, silver, and antimony may be mined with far less environmental impact than in the Project’s proposed location. In addition, the SDEIS does not address whether there is current or future demand for gold, silver, and antimony in the United States or elsewhere.

The United States is currently, and for the foreseeable future, a global supplier of gold and silver, and its current and future planned production of both metals exceeds global demand. Thus, there is no apparent need in the United States, including Idaho, for an additional gold or silver mine. More factual information is necessary to demonstrate the need to meet United States or global requirements for these minerals.

Agencies have “discretion to develop and rely on statements of purpose and need that are consistent with the agency's decision-making responsibilities while considering multiple relevant factors, including the public interest and the goals of an applicant.”²⁹ Thus, the Forest Service should address whether there are other practicable alternatives that would meet the purported purpose and need for the Project that are protective of tribal treaty rights and are less environmentally damaging. The Forest Service should also include and analyze other alternatives, both nationally and globally for meeting gold, silver, and antimony demand and evaluate these alternatives in an

²⁶ 40 C.F.R. § 1502.13.

²⁷ SDEIS at 1-8, 3-3.

²⁸ *Id.* at ES-1.

²⁹ 86 FR 55760 (October 7, 2021). *See also* 87 FR 23453, 23458 (April 20, 2022) (“agencies should have discretion to base the purpose and need for their actions on a variety of factors, which include the goals of the applicant, but not to the exclusion of other factors. Agencies have long considered myriad factors in developing a purpose and need statement. These include the agency's mission and the specifics of the agency decision, including statutory and regulatory requirements”).

SEIS. Such alternatives would include other proposed or developed projects or efforts throughout the world that would produce gold, silver, or antimony.

Consideration of global purpose and need is particularly appropriate considering the natural and human resources that will be adversely affected if the proposed Project is permitted, constructed, and operated. The EFSFSR has culturally-significant resources, and important fisheries and wildlife resources, all of which are critical to the Tribe and its treaty-reserved rights. The Tribe's way of life is intrinsically place-based, so adversely impacting or destroying a place also damages or destroys the cultural lifeways associated with it. Mining projects are an intense land use and are intrinsically destructive; therefore, the Project in the proposed location will cause substantial and irreparable multi-generational adverse impacts on the Tribe and its members that cannot be mitigated or restored. Avoidance of these impacts through careful consideration of the need for this Project is therefore essential.

The Forest and Corps should address in the purpose and need section of the SDEIS the potential conflict between current and future uses of natural resources, including the harm the Project will do to the Tribe's treaty-reserved rights and resources and include mitigation measures.

1872 Mining Law and the Claims Validation Prerequisite for Occupancy

The Forest's purpose and need statement is flawed because it assumes without proof or analysis that "Perpetua's proposed use of the surface of [National Forest System] lands" is "authorized by the U.S. mining law."³⁰ The Forest Service may not simply assume that Perpetua has a "statutory" right to occupy National Forest System lands to extract valuable minerals, without evidence that Perpetua has met the statutory criteria to occupy the land. The SDEIS simply states that "the Forest Service's need for action [is] established by the agency's responsibilities under the locatable minerals regulations at 36 CFR Part 228, subpart A, and the General Mining Law of 1872, as amended"³¹ and that its review and approval of Perpetua's proposed uses of federal land are authorized by the 1872 Mining Law and governed by the Forest Service's hardrock mining regulations at 36 CFR Part 228 Subpart A.³² This is insufficient.

In *Center for Biological Diversity v. U.S. Fish and Wildlife Service*,³³ the Ninth Circuit Court of Appeals held that the Forest Service could not approve a mining operation on National Forest System lands without validating the mining claims that the mining operation will permanently occupy. "If a valuable mineral deposit has been discovered on a claim, a miner may occupy the claim for mining purposes. In the absence of a discovery of a valuable mineral deposit, Section 22 gives a miner no right to occupy the claim beyond the temporary occupancy necessary for exploration."³⁴ The Court agreed with the district court that the right of occupancy under the 1872 Mining Law requires that the claimant demonstrates as a statutory prerequisite, for each claim, the

³⁰ SDEIS at 1-8, 3-3.

³¹ *Id.* at ES-1.

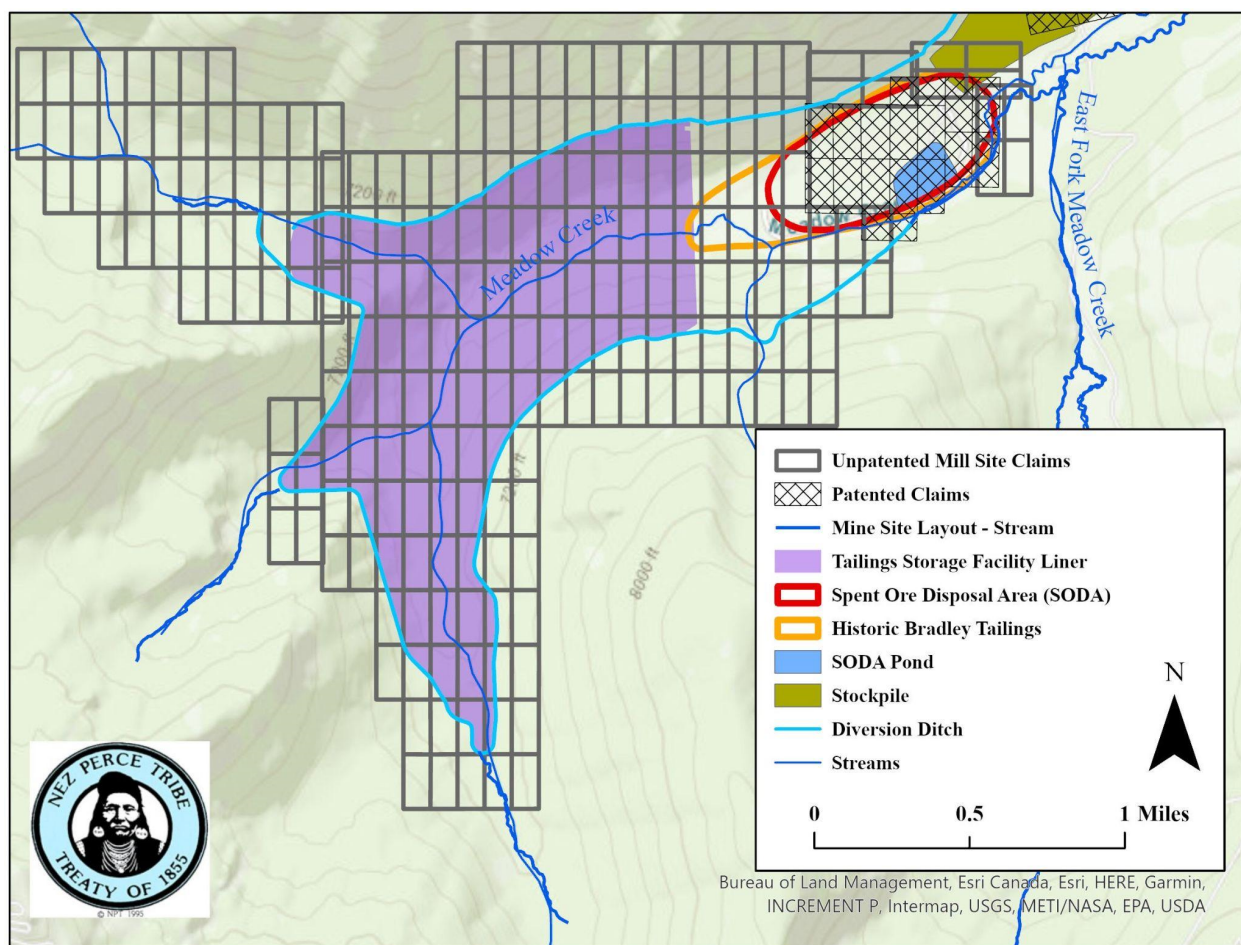
³² *Id.* at 1-10.

³³ *Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 33 F.4th 1202 (9th Cir. 2022).

³⁴ *Id.*

presence of valuable minerals on the claim.³⁵ The Court further held that the mining regulations under Part 228A, Subpart A do not apply to unvalidated mining claims.³⁶

Here, the Forest Service appears to violate the Ninth Circuit Court of Appeals' holding. There is no evidence in the record validating the existence of valuable minerals on each of Perpetua's mining claims. There is similarly no evidence in the record documenting that each millsite claim is associated with a valid mining claim, overlays nonmineralized ground, and otherwise meets the strict requirements of United States mining law.³⁷ In fact, the number and location of Perpetua's mill site claims along Meadow Creek (depicted in the figure below prepared by the Tribe) suggests that many mill site claims in this area may not be associated with a valid mining claim.



Since there is no evidence in the record demonstrating that the Forest determined the validity of Perpetua's mining claims, the Forest cannot presume that the mining regulations under Part 228A, Subpart A apply at this juncture and must do the requisite due diligence to determine claims validity and make those determinations available for Tribal and public review and comment in another SDEIS prior to issuing a decision on the Project.

³⁵ *Id.* at 1220.

³⁶ *Id.* at 1208.

³⁷ 30 U.S.C. § 26, 29, 42(a); *Cameron v. United States*, 252 U.S. 450, 460 (1920).

If the Forest cannot confirm that Perpetua’s mining claims are valid or determines that they are invalid, the Forest must evaluate Perpetua’s use and occupancy of National Forest System lands under Parts 251 and 261 regarding special use regulations under the Organic Act. The Part 251 regulations apply to occupancy and use of National Forest System lands.³⁸ Under these regulations, the applicant must file a special use proposal with the District Ranger or Forest Supervisor having jurisdiction over the affected land.³⁹ The Forest Service must then conduct an initial screening to determine whether the proposed use meets the “minimum requirements applicable to all special uses.”⁴⁰ If the proposal passes this initial screening, the Forest Service must conduct a second-level screening which requires, among other things, a showing that the proposed use is in the public interest.⁴¹ If the proposed use satisfies the Forest Service’s screening criteria, the Forest Service may grant a special use permit, but must include terms and conditions to “[m]inimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment,” among other requirements.⁴² The Forest Service must also “[o]therwise protect the public interest.”⁴³ “The USFS will grant a special-use application submitted under Part 251 only if the proposed use complies with the applicable forest plan and ‘will not create an exclusive or perpetual right of use or occupancy’” or ‘involve disposal of solid waste or disposal of radioactive or other hazardous substances’ on forest lands.”⁴⁴ Under the related Part 261 regulations, the Forest Service is also required to prohibit the destruction of cultural resources on public lands.⁴⁵

Despite these requirements recently affirmed by the Ninth Circuit Court of Appeals in *Center for Biological Diversity v. United States Fish & Wildlife Serv.*,⁴⁶ the Forest Service states in the Stibnite Gold Project SDEIS Comment Response Table: “228A regulatory framework was applied pending additional guidance from counsel. No validity assessment of unpatented claims was incorporated per Forest Service practice.”⁴⁷ Since the Forest Service has either failed to inquire as to whether all of the mining and millsite claims are valid for the Project or has failed to include the information it does have in the SDEIS, the administrative record does not show that the proposed facilities, uses, and associated operations are in fact authorized by United States mining law.

Right-of-Way Requirements under FLPMA

The Forest has also failed to comply with requirements for special uses on federal lands and rights of way under the Federal Land Policy and Management (“FLPMA”) right of way (“ROW”) provisions for the Project. At least three important potential substantive requirements flow from

³⁸ 36 C.F.R. §§ 251.54–251.64.

³⁹ *Id.* § 251.54(b).

⁴⁰ *Id.* § 251.54(e)(1).

⁴¹ *Id.* § 251.54(e)(5)(i)–(v).

⁴² *Id.* § 251.56(a)(1)(i)(B).

⁴³ *Id.* § 251.56(a)(1)(ii)(G).

⁴⁴ *Ctr. for Biological Diversity v. United States Fish & Wildlife Serv.*, 33 F.4th 1202, 1228 (9th Cir. 2022).

⁴⁵ 36 C.F.R. §§ 261.9(g)-(h), 261.10(a), (b).

⁴⁶ *Ctr. for Biological Diversity v. United States Fish & Wildlife Serv.*, 33 F.4th 1202 (9th Cir. 2022).

⁴⁷ See USFS – Stibnite Gold Project SDEIS Comment Response Table – 20 October 2022, at 1 (“228A regulatory framework was applied pending additional guidance from counsel. No validity assessment of unpatented claims was incorporated per Forest Service practice”).

the FLPMA’s ROW provisions. First, the Forest Service has a duty under Section 505(a) to impose conditions that “will minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment.”⁴⁸ Second, Section 505(b) requires a Forest Service determination as to what conditions are “necessary” to protect federal property and economic interests, as well as “otherwise protect[ing] the public interest in the lands traversed by the right-of-way or adjacent thereto,” and third, the Forest Service must ensure the ROW grants “do no unnecessary damage to the environment” and be “consistent with ... any other applicable laws.”⁴⁹ A grant of a ROW supporting other activities must satisfy all applicable treaties and laws, regulations and policies, including FLPMA, the Endangered Species Act, Organic Act, the National Forest Management Act (“NFMA”), National Historic Preservation Act, Clean Water Act, and Clean Air Act. It is not evident from the SDEIS that the Forest Service has complied with any of these requirements.

1.7 Federal Decision Framework

The Tribe is concerned that the SDEIS discloses that resources and/or areas would not maintain or move towards Forest Plan desired conditions into the foreseeable future under the action alternatives.⁵⁰ Further, Appendix A states that “[i]t is recognized that not all proposals would move towards or achieve desired conditions, goals, or objectives and there may be tradeoffs between moving towards or achieving these for one resource or another”⁵¹ which implies that the Project and its environmental impacts are acceptable consequences. The Tribe argues that any project or proposal must meet all relevant laws, regulations, and policies, not vice versa. The established regulations must not cater to or be amended to meet a proposed project. The Tribe recognizes there are tradeoffs in land management, however, when Forest Plan desired conditions, goals, objectives, standards, and guidelines are dismissed or amended to meet a proposal, they lose meaning, effectiveness, and adversely impact the federal trust responsibility of the Forest Service to the Tribe. Perpetua’s mining Project does not align with the direction of the Forest Plans; it moves the Forest away from meeting desired conditions.

The Tribe looks forward to the Forest’s rationale for deviation from compliance in the decision document. The Payette and Boise National Forest Plans define guidelines “[a]s Forest Plan management direction, a guideline is a preferred or advisable course of action generally expected to be carried out. Deviation from compliance does not require a Forest Plan amendment (as with a standard), but rationale for deviation must be documented in the project decision document.”⁵²

In Table 1.7-2 Key Permits, Approvals, and Regulation Compliance Likely Required, there is a permit missing. Under Idaho Department of Environmental Quality (“IDEQ”) permits (on page 1-14), a Title V operating permit will be required once the 40 CFR 63 Subpart EEEEEEE - National

⁴⁸ *Id.* § 1765(a).

⁴⁹ *Id.* §§ 1764(a)-(c).

⁵⁰ These resources include reclaimed areas (SDEIS at 3-73) and forested and non-forested vegetation communities within Forest Service-managed land (SDEIS at 4-288-289).

⁵¹ SDEIS at A-1.

⁵² Payette National Forest Land and Resource Management Plan at GL-17; Boise National Forest Land and Resource Management Plan at IV-21; SDEIS at Appendix A-2.

Emission Standards for Hazardous Air Pollutants (“NESHAPs”) for Gold Mine Ore Processing and Production Area Source Category units start up.⁵³

In Section 1-27 the proponent noted that EO 13990 (Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis) was revoked and that the Forest Service complies with the requirements of valid EOs when completing NEPA and implementing processes. However, they failed to mention E.O. 14008 (Climate Crisis: Tackling the Climate Crisis at Home and Abroad); or the Justice 40 initiative that both apply to this project. Mining is specifically mentioned in E.O. 14008, but not reviewed in this SDEIS. Also, E.O. 14008 required all federal agencies to prepare Climate Adaptation Plans. In the US Forest Service Climate Adaptation Plan, published in July 2022, a number of recommendations were put forth regarding extreme events, environmental justice, and disproportionate impacts to Tribal Nations that are relevant to the Stibnite SDEIS. Given that the proponent missed these climate change related policies, it is likely others were overlooked.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

NEPA requires that an EIS evaluate “all ‘reasonable [and] feasible’ alternatives in light of the ultimate purposes of the project.”⁵⁴ “In order to be adequate, an environmental impact statement must consider not every possible alternative, but every reasonable alternative.”⁵⁵ “The stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives.”⁵⁶ An agency need not consider alternatives that are “unlikely to be implemented or those inconsistent with its basic policy objectives.”⁵⁷

The Council on Environmental Quality's NEPA regulations describe the alternatives section as the "heart of an Environmental Impact Statement" and require exploration and evaluation of all reasonable alternatives.⁵⁸ The Council on Environmental Quality further defines reasonable alternatives as "those that are *practical or feasible* from the technical and economic standpoint and using common sense"⁵⁹ Moreover, under the Clean Water Act Section 404(b)(1) Guidelines, the Corps may only permit the least environmentally damaging practicable alternative.⁶⁰ Per the 404(b)(1) Guidelines, an alternative is considered practicable "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."⁶¹ NEPA regulations⁶² and the Forest Service Handbook⁶³ also require consideration of a no action alternative in an EIS.

⁵³ SDEIS at 1-14.

⁵⁴ *Protect Our Communities Found v. Jewell*, 825 F.3d 571, 580 (9th Cir. 2016) (quoting *City of Carmel-By-The-Sea*, 123 F.3d at 1155).

⁵⁵ *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985).

⁵⁶ *City of Carmel-By-The-Sea*, 123 F.3d at 1155.

⁵⁷ *Seattle Audubon Soc. v. Moseley*, S0 F.3d 1401,1404 (9th Cir. 1996).

⁵⁸ 40 C.F.R. § 1502.14.

⁵⁹ Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (Mar. 23, 1981).

⁶⁰ 40 C.F.R. § 230.10(a).

⁶¹ 40 C.F.R. § 230.10(a)(2).

⁶² 40 C.F.R. § 1502.14(c).

⁶³ Forest Service Handbook 1909.15, Chapter 10, Section 14.2.

2.2 Inadequate Range of Alternatives

Nez Perce Treaty Rights Alternative

As part of the purpose and need, the SDEIS identifies as one of the needs to "[e]nsure that the proposed occupancy and use of NFS lands is consistent with statutory and regulatory requirements."⁶⁴ The 1855 Treaty, as the Supreme Law of the Land under the United States Constitution, is identified in the SDEIS as an applicable federal law to which compliance is required to meet the Project's purpose.⁶⁵ The Forest must develop and include in the SDEIS all reasonable alternatives that protect Nez Perce treaty rights and resources. In fact, the Proposed Action and neither alternative in the SDEIS fulfill these requirements. The Forest concluded in the SDEIS that the Project will substantially and irreparably harm treaty rights and resources and cultural resources under both action alternatives. Construction and operation of the mine would directly and indirectly cause major harm to tribal resources. Tribal access to areas within the Project would be restricted during the Project's construction, operation, and closure and reclamation phases, preventing Nez Perce tribal members from exercising off-reservation rights to fish, hunt, gather, and pasture, for a period of 20 years, excluding reclamation. The Project would also impact salmon and other aquatic species and essential fish habitat that would in turn impact availability and harvestability of these and other treaty-reserved resources by the Tribe at its traditional fishing, hunting, and gathering areas. Given the Forest's treaty--based duty to avoid taking action resulting in harm to the Tribe's treaty rights, the Forest's two alternatives in the SDEIS are unreasonably narrow because both result in substantial and irreparable harm to the Tribe's treaty rights and resources.

No Forest Plan Amendments Alternative

The SDEIS states: "When a proposed project is not consistent with Forest Plan standards applicable to the location of a project and/or the types of activities proposed, the Forest has the following options: (1) modify the proposed project to make it consistent with the Forest Plan; (2) reject the proposal; (3) amend the Forest Plan so that the project would be consistent with the Forest Plan as amended; or (4) amend the Forest Plan contemporaneously with the approval of the project so the project would be consistent with the Forest Plan as amended."⁶⁶

The Forest's discretion to exercise any of these options to achieve Forest Plan consistency is not unbounded. The Agency's action is expressly "subject to valid existing rights."⁶⁷ There is no question that the Tribe's rights reserved in its 1855 Treaty with the United States are "valid existing rights" applicable to the Project area. These rights constrain the Forest's discretion to amend existing Forest Plan standards in ways aimed at accommodating the Project but which are inconsistent with the Agency's treaty-based and trust obligations to the Tribe and will result in harm to the Tribe's treaty-reserved rights and resources. Such is the case here. For example, the Forest seeks to amend standards that will remove existing prohibitions on the degradation of aquatic, terrestrial, and watershed resource conditions from beyond three years. These standards,

⁶⁴ SDEIS at 1.6.1.

⁶⁵ *Id.* at 1.10.1.3.

⁶⁶ *Id.* at A-1.

⁶⁷ 36 C.F.R. § 219.15(c)(3).

if amended, would authorize long-term degradation to resource conditions that will substantially and impermissibly harm the Tribe's treaty-reserved rights and resources.

To avoid harm to the Tribe's treaty-reserved rights and resources while maintaining consistency with Forest Plan standards, the Forest should not use option three above that weaken Forest Plan standards that harm the Tribe's treaty resources. Instead, the Agency must include and rigorously explore new reasonable alternatives that protect the Tribe's rights by embracing option one (change the Project) or option two (reject the proposal) and which by their terms do not require Forest Plan amendments.

Project Life Phases Alternative(s)

As noted in the EIS Scoping and Issues Summary Report (Section 2.6.12 Alternatives Development, one recommendation was, "[f]or every phase of mine life, develop a series of alternatives in which the restoration components can be pursued without ongoing mine development activities."⁶⁸ Mine life phases are generally recognized as exploration, permitting, construction, operations, reclamation and closure, and post-closure. Additionally, mine life phases may include different operations periods representing periods of mining, such as those involving mining of different open pits and other areas as described in the SDEIS. The SDEIS only includes alternatives that assume the mine is operated and closed as proposed and does not include alternatives that require restoration components without mining development, or for closure during mine life operational phases despite evidence of clear economic issues in later mine years.

No Antimony Production Alternative

The U.S. Geological Survey produced a report on antimony⁶⁹ that addresses its uses and applications; demand, availability of supply and consumption; strategic and critical resource issues; geology; resources and production; exploration for new deposits; environmental considerations; and problems and future research. The results are summarized as follows:

Antimony is used widely by modern industrialized society. Antimony's leading use is as a fire retardant in safety equipment and in household goods, such as mattresses. The element imparts strength, hardness, and corrosion resistance to alloys, including in lead-acid storage batteries.

The demand and availability of supply and consumption has increased during the past century from 7,710 metric tons in 1900 to 185,000 metric tons in 2008. In 2013, China produced about 80 percent of the world's supply of antimony. In the United States, there is one active antimony smelter in Thompson Falls, Montana (United States Antimony Corp.). Apparent consumption of antimony by the United States from 1979 to 2009 has ranged from approximately 20,000 metric

⁶⁸ AECOM Technical Services, Inc., *2018 Stibnite Gold Project EIS Scoping and Issues Summary Report and Errata*, 2020 Stibnite Gold Project, at 60.

⁶⁹ USGS. 2017. Seal, R.R., II, Schulz, K.J., and DeYoung, J.H., Jr., with contributions from David M. Sutphin, Lawrence J. Drew, James F. Carlin, Jr., and Byron R. Berger, 2017, Antimony, chap. C of Schulz, K.J., DeYoung, J.H., Jr., Seal, R.R., II, and Bradley, D.C., eds., *Critical mineral resources of the United States—Economic and environmental geology and prospects for future supply*: U.S. Geological Survey Professional Paper 1802, at C1–C17, <https://pubs.usgs.gov/pp/1802/c/pp1802c.pdf>.

tons to 47,000 metric tons with the peak occurring in 1997 and lower demand occurring since 2009.

The U.S. Government has considered antimony to be a critical mineral mainly because of its use in military applications. Currently, China has the bulk of the world's identified antimony resources, the majority of the world's antimony is mined in China, and much of the remainder is shipped to China for smelting. However, the U.S. Geological Survey report notes that, “[b]arring market manipulation by a few dominant producers, recycling, mining, and smelter production are expected to meet the demand for antimony and antimony compounds for the foreseeable future.”⁷⁰

There are abundant identified antimony resources available, but the bulk of those resources are in a few very large deposits that are not evenly distributed across the globe. Today's market favors large deposits that are conducive to high-volume bulk-mining techniques. The United States and the countries of the Western Hemisphere appear to have mostly small deposits that are uneconomic to mine under current and foreseeable conditions. According to the report the United States has no deposits, from which the ore is mined principally for antimony, that are large enough or rich enough to compete with foreign sources in normal times. The Perpetua proposed Project is cited as an example of identified resources in the United States that meet this description.

The U.S. Geological Survey report notes that, “[a]ntimony resources that may be mined in the future are likely to be those tied directly to deposits of precious metals, copper, lead, and (or) zinc, similar to those from which most domestic antimony has historically been recovered as a byproduct or coproduct. Gold is an important joint product with antimony, but gold-antimony veins are commonly mined just for their gold. Because the presence of antimony makes gold more difficult and more expensive to process (the antimony interferes with the heap-leaching agent by consuming oxygen and hindering the effect of cyanide on the gold ore), some amount of gold ore that has a high antimony grade may be stockpiled.”⁷¹ The report goes on to note that “[e]nhanced recovery of antimony from precious-metal deposits may represent the most readily available source of antimony if demand were to increase rapidly”⁷² and that antimony could be recovered from existing mines in Idaho and Nevada.⁷³

Information on antimony mine waste related to the environment is extremely limited. Limited data are available on the acid-generating potential of antimony mineral bearing mine waste. The presence of carbonate minerals, such as calcite, and only minor amounts of pyrite in the mine waste from antimony deposits in general suggest that the acid-neutralizing potential is likely to exceed the acid-generating potential of the mine wastes.

In general, trivalent antimony (Sb^{3+}) is more toxic than pentavalent antimony (Sb^{5+}). In humans, antimony can result in diseases of the liver, respiratory and cardiovascular systems, and skin. Compared to trivalent arsenic, pentavalent antimony is 5 times less cytotoxic and 10 times less

⁷⁰ *Id.* at C5.

⁷¹ *Id.* at C9.

⁷² *Id.*

⁷³ *Id.* at C10.

genotoxic. The EPA⁷⁴ has set a maximum contaminant limit of 6 ppb for antimony and 10 ppb for arsenic for drinking water. The World Health Organization drinking water guideline is 20 ppb for antimony and 10 ppb for arsenic.⁷⁵ National ambient-water-quality criteria with respect to freshwater organisms are not available from the EPA for antimony; however, mine drainage from antimony mines can locally exceed both acute and chronic ecological guidelines for antimony and arsenic.

The report notes that from an environmental perspective, no clear case study of the behavior of antimony and related trace elements in a modern mine setting using current best practices exists. The toxicity of aqueous antimony species to aquatic organisms is a notable gap in knowledge. Knowledge of the toxicity of antimony in sediments is also limited.

The Stibnite Mine was named for the antimony containing sulfide mineral stibnite (Sb₂S₃). As noted in the PRO, the Project area was historically mined from the mid-1920's through 1952 for antimony, gold, and tungsten using both underground and open pit mining methods, and from 1982 to 1997 for gold using open pit methods. The mining, milling and processing activities created numerous legacy impacts including underground mine workings, multiple open pits, development rock dumps, tailings deposits, heap leach pads, spent heap leach ore piles, a mill and smelter site, three town sites, camp sites, a ruptured water dam (with its associated erosion and downstream sedimentation), haul roads, an abandoned water diversion tunnel, an airstrip and other disturbance.

The proposed process circuit for the Project includes crushing, grinding, flotation, pressure oxidation and cyanide leaching. The flotation circuit consists of up to two sequential flotation stages to produce two different concentrates; the first stage of the circuit was designed to produce an antimony-rich concentrate, and the second stage was designed to produce a gold-rich concentrate that is pressure oxidized and cyanide leached for the recovery of gold and silver. If the antimony content of the feed material is not present in economic concentrations, then the antimony circuit would be bypassed and a gold bearing sulfide concentrate would be the only concentrate produced by the flotation circuit.

The December 22, 2020 Stibnite Gold Project Feasibility Study Technical Report (“Feasibility Report”)⁷⁶ is based on producing a by-product antimony concentrate with sale of the concentrate to an antimony smelter, with the report noting that “suitable, currently operating antimony smelters are located in Asia or Oman”⁷⁷ Smelters use a combination of pyrometallurgical processes to produce antimony metal including roasting to remove sulfur, fuming to produce antimony oxide, and reduction to produce antimony metal. The shipment of concentrate to an overseas smelter was considered appropriate given the estimated cost and perceived complexity of building and operating a secondary antimony processing plant.

⁷⁴ EPA, *National Primary Drinking Water Regulations*, 2009. https://www.epa.gov/sites/default/files/2016-06/documents/npwdr_complete_table.pdf.

⁷⁵ World Health Organization, *Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum*, April 24, 2017, at 314-315, <https://www.who.int/publications/i/item/9789241549950>.

⁷⁶ M3 Engineering and Technology Company, *Stibnite Gold Project Feasibility Study Technical Report*, 2020, <https://perpetuaresources.com/wp-content/uploads/2021/06/2021-01-27-feasibility-study.pdf>.

⁷⁷ *Id.* at 24-7.

ModPro2 acknowledges this in the following passage: “The concentrate, when sold, would likely be shipped to facilities outside of the United States for smelting and refining because there are currently no such facilities operating in the United States with capacity for refining antimony sulfide concentrate. There are United States companies with refining equipment facilities and expertise that could potentially be brought online at some future date to refine antimony sulfide concentrate; however, Perpetua Resources does not have contracts in place with these companies and their ability to handle these concentrates has not been determined.”⁷⁸

The importance of antimony as a matter of Project economics is overstated. As shown in Table 1 from the Feasibility Report base case,⁷⁹ the gross revenue from the production of antimony is only expected to earn \$275M over the Project life, or less than 4% of total revenue, while gold is expected to earn \$6.7B over the Project life, or 96% of total revenue. In addition, the cost of further shipping and refining gold is by orders of magnitude less than what is anticipated for antimony, making the net impact on Project economics even less significant. This suggests that there are multiple factors making antimony production economics from the Project marginal, and potentially revenue negative.

Table 1. Stibnite Gold Project Feasibility Report

Product	Total Payable Metals		Metal Price	Gross Revenue	
				\$M	% of Total
Gold	oz	4,200,000	\$1,600.00	\$6,720	95.8%
Silver	oz	968,000	\$20.00	\$19	0.3%
Antimony Concentrate	lb	78,433,000	\$3.50	\$275	3.9%
Total				\$7,014	

The aspect of antimony as a strategic and critical mineral has been over-emphasized with respect to the proposed Project. Recovery of antimony from precious-metal deposits currently being mined in Nevada and elsewhere in the United States represent a readily available source of antimony, if domestic production was considered justifiable. The more critical issue regardless of source would be antimony smelting capacity, which is currently limited. Present plans to ship antimony concentrates to China for smelting would in fact only do more to compound any present strategic or critical mineral issues.

The matter of antimony production from the Project is primarily a matter of economics. If the proposed Project proceeds to production, and economics do not warrant antimony production, it is not assured that antimony production will be included as part of the process, or as an Alternative that it will continue to be operated throughout the Project life. Given that a change in the proposal to not produce antimony in the future might have a significant impact on tailings and even possibly waste rock geochemistry, this option should have been considered as an Alternative in the SDEIS.

⁷⁸ ModPRO2 at 3-32.

⁷⁹ M3 Engineering and Technology Company, *Stibnite Gold Project Feasibility Study Technical Report*, 2020, at 22-3, <https://perpetuaresources.com/wp-content/uploads/2021/06/2021-01-27-feasibility-study.pdf>.

The SDEIS should also address the potential for antimony production to not occur at any point in the project life cycle. The SDEIS should include this as an action alternative and modify the environmental analysis to address what additional impacts would be expected should this occur in terms of the overall resource mined and/or milled, waste rock and tailings quantities and geochemistry, and impacts to water quantity and quality. If it is not included as an alternative, then the SDEIS should address what regulations would have to be addressed and how or if mining operations would be allowed to proceed until regulatory approvals are received. The SDEIS should also address limitations of the amount of concentrate stored at the site or otherwise stockpiled at locations outside of the mine site in the event the antimony is not immediately sold for refining.

Early Closure

As shown in Figure 1.5 Mill Feed and Gold Head Grade by Deposit and Year in the Stibnite Gold Project Feasibility Report as referenced in the SDEIS, gold production peaks in year four of the project life and then significantly declines over the remaining project life.⁸⁰ Given the volatility of gold prices, as well as uncertainty in silver prices and the antimony market overall, there is a reasonable possibility of early closure of the proposed project. The SDEIS should include as an action alternative the possibility of early closure and address what impacts and mitigation specific to that action would occur. The SDEIS should address if this would occur, how long operations could be suspended before the mine would be required to undergo permanent closure.

Alternatives Considered, Carried Forward, or Eliminated from Further Study

Section 2.6 of the SDEIS frequently cites various alternatives in this section as not being either “technically feasible” and/or “economically feasible.” However, nowhere in the SDEIS are these terms defined. Similarly, the basis for the alternatives provided in AECOM 2020 does not define technical or economic feasibility. Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study⁸¹ does however note that “In determining the range of alternatives to be considered, the emphasis is on what is “reasonable” rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.”⁸² This desire of the applicant is nonetheless indicated as influencing the decisions as suggested that “Information also was solicited from Midas Gold regarding the technical and economic feasibility of alternatives.”⁸³ Perpetua’s input as the basis for technical or economic feasibility should not have been used as the basis for the Project SDEIS, however lacking further definitions, and analysis and consideration of the alternatives relative to those definitions, it would appear the SDEIS relies entirely on Perpetua’s input.

⁸⁰ M3 Engineering and Technology Company, *Stibnite Gold Project Feasibility Study Technical Report*, 2020, at 1-15, <https://perpetuaresources.com/wp-content/uploads/2021/06/2021-01-27-feasibility-study.pdf>.

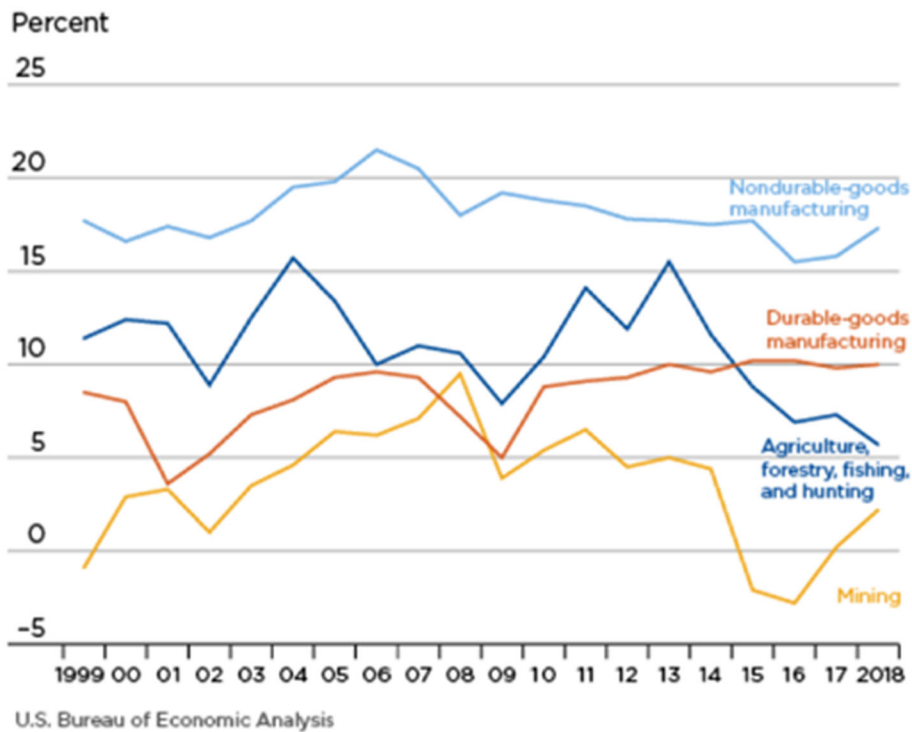
⁸¹ AECOM Technical Services, Inc., *Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study*, July 2020, at 2-3.

⁸² Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (Mar. 23, 1981).

⁸³ AECOM Technical Services, Inc., *Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study*, July 2020, at 3.

For an alternative to be economically feasible, the standard should not be whether the alternative retains the present projected profitability, but instead what is practical or reasonable. The following figure⁸⁴ (Chart 3) shows the rate of return for the United States domestic mining industry as well as other industry groups for the period 1999-2018. As suggested by the figure, none other than nondurable-goods manufacturing have consistently achieved a rate or return of 19.3%, and the mining industry's rate or return has ranged from less than zero to a high of below 10%. Therefore, it might be reasonable for an alternative to be economical provided the proponent achieves a rate of return of 10%. This would then be the standard upon which to measure the economic feasibility of a given alternative. By performing a cash flow analysis similar to that contained in the prefeasibility study but adding capital and operating costs, an evaluation can be made as to actual potential economic impacts.

Chart 3. Rates of Return for Selected Domestic Nonfinancial Industry Groups, 1999-2018



The SDEIS and supporting AECOM 2020 Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study document should have provided a definition of technical and economic feasibility; and the rationale of each alternative with respect to technical and/or economic feasibility should have been evaluated and considered therein. The basis for economic feasibility should consider what is typical for the mining industry and a range

⁸⁴ The Journal of the U.S. Bureau of Economic Analysis, *Returns for Domestic Nonfinancial Business*, February 2020, <https://apps.bea.gov/scb/2020/02-february/0220-domestic-returns.htm>.

of gold prices including the current gold price. Technical feasibility also should not be based on what Perpetua would prefer to do, but rather, what can be done.

Section 2.6.2.2. Tailings Storage Facility (“TSF”) Dry Stack Tailings states, “The use of the dry stack method of tailings disposal was evaluated and determined to be technically and economically infeasible.”⁸⁵ The determination as to the inclusion of dry stack tailings is based on AECOM 2020b which contains the following summary: “In AECOM’s professional opinion, filtered (dry stack) tailing is not feasible, both technically and economically, for the Project. This is due to the proposed fine tailing grind and filter clogging, the tailing transport, placement, and compaction issues resulting from the site’s wet and cold climate, an unprecedented tailing production rate for a filtered (dry stack) facility, and the relatively high operating costs discussed above.”⁸⁶ This opinion conflicts with other projects that have come to different conclusions, but where the project proponent ultimately favored the result. This includes not only the Greens Creek and Pogo Mines mentioned by AECOM, but also the Rosemont Project⁸⁷ referenced by AECOM, as well as the Twin Metals project.⁸⁸ Clearly, if filtered (aka dry stack) tailings are desirable, it can be achieved.

Rather than subjectively address the technical and economic feasibility of dry stack tailings, the SDEIS instead should have addressed whether dry stack tailings would provide an environmental or safety advantage over the Alternatives examined in the SDEIS. Given the level of public interest and concern regarding potential tailings catastrophic failures, dry stack tailings should have been carried forward as an alternative for comparison with the other alternatives in the SDEIS.

2.3 No Action Alternative

Inadequate Description of Baseline Conditions and No Action Alternative

Under NEPA, the Forest is required to “describe the environment of the area(s) to be affected or created by the alternatives under consideration”⁸⁹ The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process and is critical to any NEPA analysis. “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.”⁹⁰

The DEIS and SDEIS do not completely and accurately describe the no action alternative which the SDEIS uses as a baseline condition for comparing the environmental effects of the proposed action and alternatives. Other than a few obvious features such as the Yellow Pine pit, the DEIS

⁸⁵ SDEIS at 2-130.

⁸⁶ AECOM Technical Services, Inc. (AECOM), 2020b, Technical Memorandum, *Review of Midas Gold Idaho, Inc. (Midas Gold) Tailing Technology for the Stibnite Gold Project and Alternatives, Valley County, Idaho*, July 17, 2018, Updated March 31, 2020.

⁸⁷ Hudbay, *National Instrument 43-101 Technical Report. Feasibility Study. Updated Mineral Resource, Mineral Reserve and Financial Estimates*, Rosemont Project, Pima County, Arizona, USA, March 30, https://s23.q4cdn.com/405985100/files/doc_downloads/tech_reports/united_states/RosemontTechReport.pdf.

⁸⁸ Twin Metals Minnesota Project Mine Plan of Operations, December 18, 2019.

⁸⁹ 40 C.F.R. § 1502.15.

⁹⁰ *37 Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), *quoted in Great Basin Res. Watch v. Bureau of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016).

and SDEIS do not identify or describe, or otherwise account for as baseline conditions, the numerous and significant discharges and sources of contamination existing at the present, non-remediated site.

The existing conditions section does not characterize and describe the existing geochemical conditions or provide information as to the present contributions of and impacts from existing sources and/or discharges of contamination on baseline water quality within and adjacent to the Project area. In addition to the Yellow Pine/Pit Lake there are five adits or tunnels, three sources of waste rock, three sources of tailings or spent heap leach piles, and a mill and smelter site that the U.S. Environmental Protection Agency ("EPA") has identified as being sources of contamination at the Project site.

- In DEIS Section 3 Affected Environment, the Yellow Pine Pit Lake is identified 79 times. However, it is only identified in terms of its impact as a barrier on existing fisheries, with the following exceptions. Section 3.2.3.3 Legacy Mine Features identifies it as a legacy mine feature. Section 3.5.3.3.4 Soils and Reclamation Materials identifies it as a past mine activity where little or no soil cover is present. Section 3.8 Surface Water and Groundwater Quantity identify it as a surface water feature, and it is identified in Section 3.11 Wetlands and Riparian Resources. Outside of Section 3.12 Fish Resources and Fish Habitat, the only other mention is in Section 3.18 Public Health and Safety where it is mentioned as part of a past public health assessment.
- The EPA and Tribe have identified five different adits and/or tunnels that are sources of contamination at the Project site: (1) Bailey Tunnel; (2) Bonanza Adit; (3) DMEA Adit (includes DMEA Waste Rock Dump); (4) Meadow Creek Mine Adit; and (5) Monday Tunnel/North Tunnel/Cinnabar Tunnel. SDEIS Section 3.2.4.3 Legacy Mine Features only identifies the Bailey Tunnel and Monday Tunnel as legacy mine features. The DEIS does not characterize and describe the existing geochemical conditions or provide information as to the present contributions of and impacts from existing contamination from the adits and tunnels that have been identified at the Project that impact existing baseline water quality.
- EPA has identified the following waste rock piles as sources of contamination at the Project site: (1) NW Bradley Dumps & Hennessy Creek; (2) Bradley Mancamp Dumps; and (3) Bradley Northeast Oxide Dumps. SDEIS Section 3.2.4.3 identifies the Bradley Dumps as legacy mine features. SDEIS Section 3.7.4.3 identifies a portion of the Bradley dumps as part of the removal actions and Section 3.9.4.3 identifies the Bradley dumps as having a geochemical influence. The SDEIS does not characterize and describe the existing geochemical conditions or provide information as to the present contributions of and impacts from existing contamination from the waste rock piles that have been identified at the Project that impact existing baseline water quality.
- EPA has identified the following tailings piles as sources of contamination at the Project site: (1) Keyway Dam/Keyway Marsh; (2) spent ore disposal area and Bradley Tailings; and (3) Hangar Flats (Pioneer) Tailings Pile and Hecla Heap Leach. The Keyway Marsh is identified as a seep in Table 3.9-7. SDEIS Section 3.9.4.3 Geochemical Influence of

Historical Mine Wastes notes dissolved antimony concentrations in Meadow Creek increase from an average of 0.32 µg/L at YP-T-33 above the spent ore disposal area (Figure 3.9-7) to 6.1 µg/L at YP-T-27 below Keyway Marsh. The water quality of nearby seeps associated with the Bradley tailings, spent ore disposal area, and Keyway Dam also was elevated in metals, an indication that historical mining features are impacting the alluvial and bedrock aquifers. The spent ore disposal area and Bradley Tailings are also mentioned elsewhere in Section 3. The Hangar Flats Tailings are not identified in Section 3. The Hecla Heap Leach is identified in Sections 3.2.4.7, 3.9.4.2 and 3.18.4.1 as a historic mine feature. The existing conditions section does not characterize and describe the existing geochemical conditions or provide information as to the present contributions of and impacts from existing contamination from the tailings and heap leach piles that have been identified at the Project that impact existing baseline water quality.

- EPA identified the Meadow Creek Mill and Smelter as a source of contamination. The SDEIS identifies mill and smelter sites that have been remediated in the past but not specifically the Meadow Creek Mill and Smelter. The existing conditions section does not characterize and describe the existing geochemical conditions or provide information as to the present contributions of and impacts from existing contamination from the Meadow Creek Mill and Smelter have been identified at the Project that impact existing background water quality.

The environmental baseline described in the SDEIS accounts for neither the Tribe's existing Clean Water Act lawsuit against Perpetua, nor EPA's ongoing discussions with Perpetua to address, through a potential CERCLA order, restoration of the Stibnite mine site as required under federal law. The Tribe's expectation of the CERCLA process is that remediation of the existing conditions will be undertaken comprehensively and site-wide regardless of whether mining operations were permitted, started and then stopped, or proceed to completion. Without this information, the Forest cannot accurately identify and disclose in the DEIS the environmental baseline conditions in the Project area.

The SDEIS fails to recognize that the restoration of the mine site without additional mining would be expected to result in a significant improvement to existing water quality conditions as compared to baseline conditions described in the SDEIS. The SDEIS should have described the existing conditions in detail with respect to legacy mining activities and their impact on water quality, and used restored rather than existing conditions to establish and compare as baseline conditions for all other alternatives considered in the SDEIS.

Inadequate No Action Alternative

As the Tribe stated in its scoping and DEIS comments, a true no action alternative is not that the site will remain polluted/degraded since Perpetua is under an obligation to remediate all of the pollution/impacts under its broad, current liability. The Agency cannot skew the no action alternative to argue that approval of the Project is needed to clean up the site, when cleanup is already mandated by federal law. The SDEIS provides no such acknowledgement, and instead offers a vague, incomplete, and narrow description of the site. The SDEIS notes, "...the Plan would

not be approved and no mining, ore processing, or related activities would occur...”⁹¹ Thus, in the no-action alternative, the Forest needs to fully review Perpetua’s current liabilities and the extent of remediation that would be accomplished if Perpetua met its current liabilities, independent of approval of the Project under applicable federal laws such as the Clean Water Act and/or Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"). The Forest's review in the SDEIS should have included a full evaluation of the Tribe's recommended approach for a "no action alternative including cleanup" for the site, as described in the attached October 27,2020, memo prepared by Jim Kuipers, P.E., Kuipers & Associates.

Given that mining and storing 450 million tons of waste rock and tailings at the site cannot realistically, much less practically, be done without creating more environmental damage, the SDEIS should clearly have stated that the no action alternative with required remediation is the least damaging practicable alternative, and therefore the only alternative that the Corps can permit under Section 404 of the Clean Water Act.

Because the SDEIS and supporting documents do not provide a rationale for not addressing the Tribe's scoping and DEIS comments specific to a no action remediation alternative, and because the inclusion of this alternative will result in a significant change in how the alternatives are compared in terms of environmental impacts, in every aspect of the SDEIS, a further SDEIS is required to allow for that comparison, further Forest evaluation and disclosure of effects, as well as Tribal consultation and public review.

Table 2.4-13 Proponent Proposed Design Features

Climate Change measures are listed in only two MMPs. Previous comments on this matter were not addressed, namely that using LED light bulbs and smart technology for efficiency is a woefully inadequate response to protect the climate. The EPA is in the midst of rulemaking regarding heavy trucks and off-road vehicles, which will go into effect during this project. Climate mitigation measures that could be deployed include things like installing electric vehicle charging stations, powering part of the operation with solar or waste heat, using energy efficient appliances and HVAC equipment, and off-setting emissions through carbon sequestration. Federal incentives and tax credits are now available to deploy clean energy technology and energy efficient infrastructure that lower the cost to transition to fossil free energy, but also reduce operation costs over the lifetime of buildings, vehicles, etc. and increase profitability and shareholder satisfaction, but these measures were not included.

Table 2.8-1 Alternative Comparison and Impact Summary

Table states that SGP activities could contribute to factors that influence climate change, and then lists “Maximum LOM 3 200,671 MT (221,201 short tons/yr.) of CO₂e of total annual GHG emissions.” This should be changed to “will contribute an estimated x tons/year of GHG emissions” because ALL GHG emissions affect the climate. Mitigation measures that reduce the amount of annual and cumulative GHG emissions could be proposed per the previous comment. In addition, measures could be proposed to sequester carbon and off-set the GHG emissions produced by this project.

⁹¹ SDEIS at 2.3.

2.4.5.10 Surface Water and Groundwater Management

In Table 2.4-10, The total estimated gross fresh and recycled water usage being 4,431 gallons per minute (“gpm”), with “ore processing facility operations representing approximately 97 percent of water use associated with the SGP.”⁹² A water right of 9.6 cubic feet per second (“cfs”) (4,308 gpm) was also applied for, yet the SDEIS states that the majority of the water needed for ore processing would be recycled from the TSF. If that is the case, please explain why the water right application amount is so high?

2.4.7 Closure and Reclamation

The SDEIS states, “[c]losure and reclamation activities would be intended to achieve post-mining land uses of wildlife and fisheries habitat and dispersed recreation at the SGP.”⁹³ The SDEIS needs to expressly identify, fully evaluate and disclose impacts to the Tribe's 1855 Treaty-reserved rights and access to Tribal cultural resources as post-mining land uses. Vague references to “wildlife and fisheries habitat” or “dispersed recreation” are inadequate and do not address the unique treaty rights and other interests the Tribe has at the mine site and within the affected area.

2.4.9 Environmental Design Features

To protect air quality after the SGP begins operations, the Forest Service relies on the state of Idaho’s monitoring and enforcement of the SGP air permit to construct (“PTC”). However, the state of Idaho lacks the robust compliance assurance, monitoring, and enforcement resources that will be necessary to inspect and regulate such a facility in a remote location and ensure the SGP is meeting permit conditions and not violating the National Ambient Air Quality Standards (“NAAQS”). The minimum inspection frequency required of the air permit is once every five years. Given the extraordinary level of fugitive emissions controls necessary to achieve 93.3% control, and the State's own acknowledgement that this level of control will be very challenging⁹⁴, a once every five years inspection frequency is woefully inadequate to ensure NAAQS compliance.

In Table 2.4-12 Prominent Regulatory and Forest Plan Requirements, the listed dust control level is incorrect. The text reads: “The Proponent will prepare a dust mitigation plan with appropriate schedule or triggers for control deemed adequate by IDEQ to achieve the level of control of 93 percent of dust (as submitted in the proponent’s draft application for Permit to Construct from IDEQ).”⁹⁵ The level of control in the IDEQ PTC is 93.3% to achieve necessary controls to protect NAAQS for Particulate Matter (“PM”)10.⁹⁶

⁹² SDEIS at Section 2.4.5.10.

⁹³ *Id.* at Section 2.4.7.1.

⁹⁴ Idaho Department of Environmental Quality, 2022 Statement of Basis, Permit to Construct No. P-2019.0047 Project ID 62288, Perpetua Resources Idaho, Inc. Stibnite, Idaho Facility ID 085-00011, at 47.

⁹⁵ SDEIS at 2-94.

⁹⁶ Idaho Department of Environmental Quality, 2022, Permit to Construct P-2019.0047 Project ID 62288, Perpetua Resources Idaho, Inc. Stibnite, Idaho Facility ID 085-00011, at 3.

Also in Table 2.4-12, there is a statement: “Alternatively, the proponent could employ particulate matter or opacity monitors deemed adequate by IDEQ and the Forest Service and immediately apply water or chemical dust control when PM or opacity monitors reach levels within 10 percent of the threshold determined by IDEQ.”⁹⁷ Employing monitors is not a valid or allowable alternative for controlling dust on haul roads in the PTC. “Alternatively” should be replaced with “Additionally”.

Also in Table 2.4-12, there is a statement: “Dust abatement chemicals would be used in accordance with the applicable road maintenance Biological Assessment.”⁹⁸ There may be a potential conflict with meeting 93.3% dust control efficiency criteria on haul roads if use of dust abatement chemicals is limited.

Table 2.4-13 Proponent Proposed Design Features lists the environmental design features (EDFs) beyond regulatory requirements that have been proposed and committed to by Perpetua. A “commitment” is not a mitigation requirement unless it’s included as an actual, specific mitigation in the EIS and as an actual, specific permit requirement. For example, the first item in Table 2.4-13 is, “Following crushing, the crushed ore would report via conveyor to a dome-shaped, covered stockpile.”⁹⁹ Perpetua withdrew covered stockpiles from its application for the PTC, and covered stockpiles are not included in the PTC, so Perpetua is not required to have covered ore stockpiles as a condition of the PTC. Another EDF is, “Proper dust control would be employed along transportation corridors and active mining areas using aquatic safe dust suppression chemicals and methods.”¹⁰⁰ The Forest Service does not specify what proper dust control means (by including specific timing of measurement, application of controls, and recordkeeping requirements). Another listed EDF is, “All off highway diesel engines would be EPA Tier 4 or better.”¹⁰¹ The EDFs listed in the SDEIS are unenforceable unless included as mitigation measures and as permit requirements. The Forest Service should include all EDFs as mitigation measures.

2.6 Alternatives Considered but Eliminated from Further Detailed Study

Economic viability should not be used as a rationale for not minimizing environmental effects under NEPA.

2.7 Agency Preferred Alternative

Where is the engineering design plan for the tailings storage facility? There should be more details disclosed for the design and building of the large buttress and storage facility in upper Meadow Creek.

⁹⁷ SDEIS at 2-94.

⁹⁸ *Id.* at 2-104.

⁹⁹ *Id.* at 2-106.

¹⁰⁰ *Id.* at 2-107.

¹⁰¹ *Id.*

2.8 Summary Comparison

In Table 2.8-1 Alternative Comparison and Impact Summary the Forest Service does not disclose in the SDEIS that the ambient air within the Operation Area Boundary is not subject to meeting the NAAQS.¹⁰² Under the Clean Air Act, air permits and their specific enforceable provisions (e.g. air pollution control equipment, dust control plans, operational limits, etc.) are intended to ensure that NAAQS are not violated, but this only applies outside of a facility's operations area boundary. Air permits will not protect the Tribe's treaty-reserved rights and numerous cultural resources within the operational boundary. Trust responsibilities extend to all life, plants and animals that can't speak for themselves. The SDEIS does not address the issue of NAAQS exceedances inside the operations area boundary.

Information Missing in the SDEIS

Under NEPA's implementing regulations, "[w]hen an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking. (a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement."

Table 4.1-1 Incomplete and Unavailable Information in the DEIS provides a list of information that was not included in the DEIS but deemed relevant to reasonably foreseeable significant adverse impacts and essential to a reasoned choice among alternatives. The Forest, however, did not include with this Table, or anywhere in the DEIS, any explanation justifying the Agency's decision not to include this information in the DEIS because the overall cost of obtaining this information would be exorbitant. Without this justification, the Forest was required under NEPA to include all of the missing information identified in Table 4.1-1 in the DEIS. The SDEIS does not reference the DEIS or provide similar information on incomplete and unavailable information, leaving the inference that there no longer is incomplete or unavailable information deemed relevant to reasonably foreseeable significant adverse impacts and essential to a reasoned choice among alternatives. It is doubtful that this is the case, and regardless the SDEIS should have addressed this regulatory requirement.

Inadequate Description and Environmental Analysis of Mining Process, Storage, Closure, and Reclamation

According to SDEIS Section 2.4.5.7 Ore Processing, "[t]he gold and silver concentrations of the tailings would be regularly monitored and, if the concentrations are high enough to warrant further processing, they would be sent to the leaching circuit; otherwise, the tailings would be thickened and neutralized then routed to the TSF as described below."¹⁰³ This statement suggests that the pressure oxidation and cyanide leaching circuit will be sized to handle the full ore stream; also, that the tailings, if not pressure oxidized and cyanide leached, would be neutralized, assumedly

¹⁰² *Id.* at 2-136.

¹⁰³ SDEIS at 2-51.

with respect to cyanide. It would be unusual if the process facility, primarily designed for pressure oxidation and cyanide leaching of flotation concentrates, would also have the option of pressure oxidation and cyanide leaching of the full ore feed stream as well. This might also be expected to alter the geochemistry of the tailings depending on the option used. It would be unusual for a flotation tailings to undergo neutralization for cyanide; this infers that the flotation circuit will include cyanide. The SDEIS should clarify the statement with regards to tailings processing and neutralization and if the option to process the full stream is planned, then the SDEIS should address to what extent it might impact tailings geochemistry.

The potential for mercury to be collected by gold and silver cyanide leach carbon adsorption facilities in addition to its potential to become an environmental issue as a result in electrowinning and refining facilities is well established but should be further discussed in SDEIS Section 2.4.5.7. The SDEIS should discuss how the proposed process for the Project differs from that where the intermediate product from electrowinning has typically been treated in a low-temperature/negative pressure retort furnace for removal and capture of the majority of the mercury prior to refining. The proposed method appears to do this in one step. The SDEIS should identify the pros and cons of this approach with respect to removal and sequestration of mercury.

SDEIS Section 2.4.5.7, Ore Processing is confusing and unclear as to whether additional treatment for residual cyanide, in addition to neutralizing within the ore processing plant to less than approximately 10 milligrams weak acid dissociable cyanide, will occur before the tailings slurry is placed in the TSF. The SDEIS should clarify that the thickener “underflow” after neutralization would have less than 10 milligrams cyanide as it is pumped/placed in the TSF. The potential for, and impacts from, a tailings spill containing up to 10 milligrams Weak Acid Dissociable cyanide should be included and analyzed as a real and foreseeable event in the SDEIS.

The SDEIS provides limited information in Section 2.4.5.8 on the TSF with respect to the technical facets of the facility. No basis for the information is provided or referenced. In order to provide the necessary information for a NEPA-level analysis, it is necessary in the case of TSFs, and waste rock piles as well, to bring their detailed design to at least a 30% completion level, consistent with the American Society of Civil Engineers levels identified in the Reclamation and Closure Plan (“RCP”) and for TSFs a 90% completion level should have been performed if third-party review is intended.¹⁰⁴ This information should have been provided as the basis for the mine application prior to initiation of the NEPA process. The Forest Service should consult other Regions as to the normal provisions in this regard, including for the Resolution Copper Mine in Arizona (Tonto National Forest) and East Boulder Mine Stage 6 TSF in Montana (Custer Gallatin National Forest), as well as other NEPA analysis where TSFs and waste rock piles are involved.

A new SDEIS should provide the following for the TSF:

- A probabilistic and deterministic seismic evaluation for the area (included but references labeled confidential).

¹⁰⁴ Tetra Tech, Inc. 2019a. Reclamation and Closure Plan, Stibnite Gold Project – Errata. Valley County, Idaho. Prepared for Midas Gold Idaho, Inc. July 26, 2019.

- A dam breach analysis, a failure modes and effects analysis or other appropriate detailed risk assessment, and an observational method plan addressing residual risk.
- A description of the chemical and physical properties of the materials and process solutions to be stored in the TSF.
- A list of the assumptions used during the analysis and design of the facility and a description justifying the validity of each assumption.
- A description of proposed risk management measures for each facility life-cycle stage, including construction, operation and closure.
- A detailed description of how water, seepage, and process solutions are to be routed or managed during construction, operation and closure.
- A detailed description of stormwater controls, including diversions, storage, freeboard, and how extreme storm events will be managed.
- A flood event design criterion less than the probable maximum flood but greater than the 1-in-500 year, 24-hour event.
- Utilization of an Independent Review Panel to ensure the TSF design plans satisfy Best Available Technology.

The SDEIS descriptions of the TSF in terms of design basis, geotechnical conditions, geohazard conditions, liner, cover, reclamation and closure, anticipated construction and third-party oversight, and other facets typical and necessary to understanding a proposed project and evaluating its potential environmental impacts are inadequate. Other than with respect to reclamation and closure no basis for the information is provided or could be identified by searching the public available references. The SDEIS should be supplemented and reissued for public comment with a more complete description of the TSF (and waste rock piles) and provide the basis for, and public access to, the technical documentation that supports the description and any analysis in the SDEIS.

According to SDEIS Section 2.4.5.13 “Mine Site Borrow Sources various types of earth and rock material would be used from borrow sources for construction, maintenance, closure and reclamation activities. Most of these materials can be sourced at the mine site from existing development rock dumps, legacy spent heap leach ore in the spent ore disposal area and legacy heap leach facilities, and from development rock removed as part of proposed surface mining and underground exploration activities. These materials would be subject to physical and chemical testing to determine suitability for use.” This description does not identify the actual quantities of borrow materials for reclamation and closure that would be required. According to SDEIS Section 4.5.2.2 Reclamation Cover Materials, “[a] total of approximately 1,658,075 bank cubic yards (“BCY”) of suitable soils (Growth Media (“GM”) and seed bank material (“SBM”)) would need to be salvaged from the SGP for reclamation. A total of approximately 860,373 BCY of GM, chipped wood blend, and SBM are available for salvage at the SGP. The GM deficit is thus

estimated at approximately 797,702 BCY.”¹⁰⁵ “Options being considered by Perpetua for developing additional GM for the SGP include: utilizing materials from off-site borrow areas and supplementing additional salvage of GM through composting.” The SDEIS does appear to recognize the challenges associated with reclamation materials in SDEIS Section 4.5.2.2 Reclamation Cover Materials despite summarizing that the overall relatively poor quality of the soils at the mine site (outside of valley bottom soils), the long-term stockpiling of growth media/seed bank materials, and the high background concentrations of metals in soils would affect the quality and suitability of available reclamation cover materials. These challenges, coupled with the harsh winter climate (short growing season) and generally steep slopes of the area, would compound to present difficulties in growing and/or maintaining persistent vegetation cover over reclaimed areas. This is consistent with the mixed vegetative cover success of nearby reclaimed mining areas and the previous efforts by Perpetua and others at the mine site to establish self-sustaining cover on previously mined lands that have had some limited success. However, the suggestion in the DEIS, that adding a marginal amount of organic material as suggested, will somehow provide the answer is unsupported. Particularly given the expectations of infiltration reduction that have been attributed to the reclamation covers, the matter of borrow materials suitability and availability is of more significant concern and challenge than suggested by the SDEIS.

There is a well-established history of inadequate borrow material characterization leading to environmental impacts as a result of using unsuitable material for foundations and other needs. For this reason, the borrow sources should be identified and physically and chemically characterized and analyzed in the SDEIS rather than this subject being deferred to a later time. In addition, it is important to establish whether adequate quantities of materials for reclamation and closure respective of each Alternative analyzed in the SDEIS are actually available as otherwise additional borrow sources, not addressed in the SDEIS, could be required. Finally, the overall approach to reclamation cover materials should be further assessed including the practicality of construction of cover layers in 6 – 12 inch thicknesses, particularly where an engineered cover including a geomembrane liner is concerned, combined with revegetation challenges, and expectations that performance must be ensured over a very long time in the future.

According to SDEIS Section 2.4.5.15 Temporary Closure of Operations, during any temporary shutdown, the operator would continue to implement operational and environmental maintenance and monitoring activities to meet permit stipulations and requirements for environmental protection. If ore processing is not occurring, excess water collected from the various facilities would need to be discharged to the TSF for storage. In the case of a longer-term closure, water treatment could be necessary to allow discharge to the area streams and prevent filling of the TSF. A plan would need to be developed, reviewed and approved by the appropriate regulatory authorities, and implemented at the time of any longer-term temporary closure. In the event of temporary closure, particularly if as a consequence of bankruptcy of the operator, a plan to implement ongoing operations so as to continue to meet environmental protection measures should be required and included with the reclamation plan. Once a temporary closure occurs measures must be implemented immediately - it is too late to implement a plan that has not even been developed, including for long-term measures. Temporary closure should be considered as a part

¹⁰⁵ Tetra Tech, Inc. 2021a. Reclamation and Closure Plan Stibnite Gold Project. Prepared for Perpetua Resources Idaho, Inc. October 2021.

of the design, and not in reaction to circumstances when it is too late or difficult to easily implement mitigation measures.

The temporary closure of operations is typically described in an Interim Emergency Water Management Plan that provides information to the regulatory agencies on how process water systems, interceptor wells, seepage collection systems and stormwater management systems are operated and maintained to prevent discharges in the event the department assumes management of the mine facility. The plan typically includes process water flow charts showing electrical system requirements, pump operations, seepage collection and interceptor well operations and applicable operation and maintenance requirements. Temporary Closure of Operations should be addressed and detailed information provided in an Interim Emergency Water Management Plan and referenced in the SDEIS.

SDEIS Section 2.4.6 Surface and Underground Exploration proposes that exploration and development drilling would occur to evaluate potential mineralized areas outside of the proposed mining areas. Five acres of new temporary road disturbance and eight acres of drill site disturbance on Forest lands at the mine site at any one-time during construction and operations. Exploration sites would be reclaimed after completion of drilling. Reclaimed acres would become available for future exploration, never exceeding 13 acres of disturbance at any one time. Disturbance resulting from surface exploration would total approximately 25 acres of roads and 40 acres of drill pads.

The proposed exploration program to evaluate areas outside the proposed mining areas should be a separate proposal and include a detailed plan and environmental analysis of those actions on a stand-alone basis. The Golden Meadows Exploration Project EA serves as a starting point for the type of analysis that should be done for the additional exploration proposed in the SDEIS. The SDEIS should be supplemented to either remove this proposal or alternatively to provide additional details such as RCPs for the exploration areas.

According to SDEIS Section 2.4.7.4 “A low permeability geosynthetic liner would be incorporated into the cover over the entire surface of the backfilled Yellow Pine pit, including the re-constructed 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. Above the geosynthetic liner in the stream corridor, a layer of relatively fine material would be placed to protect the stream liner from puncture, followed by coarse rock armor to protect from exposure via stream scour, followed by floodplain alluvium at a minimum thickness equal to the maximum estimated scour depth of the proposed stream channel. Growth media would then be placed and the area revegetated. The lined corridor would be wide enough to accommodate future channel migration, evolution, and over-bank flooding.” The use of a low permeability geosynthetic liner is also described in Section 2.4.7.6 for the TSF and in Section 2.4.7.7 for the Hangar Flats Pit.

- The SDEIS and ModPRO2 do not provide additional details on the proposed liner system, the extent and nature of which appears to be entirely if not highly untested. The SDEIS should have taken a hard look at the proposal, including the extent to which a similar system has similarly been applied and used in what will be an geomorphologically active stream channel. As a result, the liner system will have to withstand the test of time,

including as the cover materials wear away, revegetation with rooting trees takes place, and ultimately when catastrophic storm events such as those which took place this past early summer in Montana occur resulting in areas of major river channel changes, other areas of deep incisions, and ultimately destruction of the natural river channel. The SDEIS must analyze and address what will be certain future natural events that will most likely result in severe compromise of the proposed cover systems. The Payette National Forest should consult with the Custer-Gallatin National Forest to learn more about what occurred in 2022 and get their input as to the necessity of the SDEIS to consider a similar event occurring at the proposed Stibnite Project.

- The SDEIS should describe the details of the cover system in order that its effectiveness and other characteristics can be assessed. The SDEIS should address the expected efficiency and longevity with respect to maintenance and replacement of the cover system given it will be required to continue to operate as per design in perpetuity, and address/include mitigation in the event of the failure of the cover system. The DEIS should address the potential impacts to the cover system such as long-term consolidation of the waste rock piles leading to differential settling, tree roots, and other potential causes of compromise of the proposed cover system.

The SDEIS describes the process of TSF closure in Section 2.4.7.6 TSF and TSF Buttress as follows, “After tailings consolidate sufficiently to use heavy equipment on top of the tailings, starting approximately 3 to 5 years after the end of deposition, Perpetua would begin with placement of cover material, then construct wetlands and restore Meadow Creek and its tributaries within appropriately sized lined floodplain corridors, place growth media, and revegetate the area.” Experience has shown that the consolidation of tailings is highly variable and site specific, and that final reclamation can require significant additional time than is inferred, since it is not described in detail. The Mount Polley Independent Expert Review Panel identified three principles for best available technology for existing TSFs as: no surface water; unsaturated conditions; and, achieve dilatant conditions by compaction.¹⁰⁶ The Canadian Dam Association describes TSF closure in four phases related to the management of risk of TSF’s depending on their state of closure.¹⁰⁷

- The SDEIS should include an RCP that identifies, in reasonable detail, what stage of TSF closure is expected to be achieved, how closure is to be achieved, and when in accordance with Canadian Dam Association recommendations.
- The SDEIS should also identify stable landform closure as an alternative for the TSF if it is not clear that the proposed action would result in that condition being achieved within a reasonable time-frame.

The SDEIS description in Section 2.4.7.12 Contouring, Grading, Growth Medium Placement, and Seeding is potentially the most minimal description of land reclamation activities ever provided in

¹⁰⁶ Independent Expert Engineering Investigation and Review panel, *Report on Mount Polley Tailings Storage Facility Breach*, 2015, <https://www.mountpolleyreviewpanel.ca/final-report>.

¹⁰⁷ BC MEND ML/ARD Workshop, *CDA Mining Dams Bulletin*, December 5, 2013, Vancouver, <http://bc-mlard.ca/files/presentations/2013-5-SMALL-cda-mining-dams-bulletin.pdf>.

the history of NEPA documentation dealing with hardrock mines. The SDEIS only references an RCP in the context of not describing a reclamation seed mix and rates.¹⁰⁸ No information is provided specific to the reclamation schedule.

The SDEIS should have more completely described the RCPs and provided important details such as the proposed cover design. An additional level of detail for the plans is necessary to conform with Forest Service regulations and guidance¹⁰⁹ which is the subject of the SDEIS, and should not be delayed or deferred to the Idaho permitting processes. The applicant should have submitted its application to the Idaho agencies and advanced that process concurrently with the SDEIS, but if they did not then the Forest Service should have required it during the technical completeness review process prior to initiation of the NEPA process. The SDEIS should be supplemented to include this information, including as it pertains to the effects-analysis, and the SDEIS re-issued for public review.

Perpetua did not specifically address long-term monitoring and maintenance in the ModPRO2 and similarly it is not described and addressed in the SDEIS. According to SDEIS Section 2.4.8.2 Reclamation Monitoring, monitoring would include erosion and sediment control monitoring along with slope stability monitoring, and the designations would be completed twice annually for erosion control purposes, once in the spring and once in the fall, and after three years for performance monitoring purposes. The SDEIS requires clarification whether the description is intended to mean that observational evaluations of erosion and slope stability will occur twice annually for three years and for what period thereafter? The revised SDEIS should also address what means other than observational, such as measurement of erosion or slope stability by physical methods that are in common use, are not proposed. This would include ortho-photographic methods to evaluate those features in addition to vegetation, as well as survey monuments and slope inclinometers as well as other means of measuring erosion and slope stability. While observational methods are important and a needed part of the plan, they are being supplemented, and in some cases replaced, by techniques that are more dependable and not subject to bias and level of expertise. They can also be performed remotely which in the case of slope stability is important to detect and/or prevent catastrophic failures.

The SDEIS does include a description of Reclamation Maintenance Procedures¹¹⁰ that might need to be implemented. We would suggest the list however is incomplete in that it makes the assumption that no major reconstruction of features such as stormwater channels and covers will be required such as might result from storm events greater than the 100-yr design storm event, causing damage to stormwater features and resulting in mass wasting including localized surficial slope failures. It is possible that settlement of the TSF and/or waste rock piles could take place over many years after post-closure. The Forest Service should consider continuation of embankment slope inclinometer, survey monument monitoring, and Light Detection and Ranging surveys to monitor long-term movement and settlement of the waste rock piles and TSF. The Forest

¹⁰⁸ Tetra Tech, Inc. 2021a. Reclamation and Closure Plan, prepared for Perpetua Resources Idaho, Inc., Boise, Idaho, October 2021 by Tetra Tech.

¹⁰⁹ USDA Forest Service. 2004. Reclamation Bond Estimation and Administration Guide. Training Guide for Reclamation Bond Estimation and Administrative For Mineral Plans of Operation authorized and administered under 36 C.F.R. 228A USDA – Forest Service April 2004.

¹¹⁰ SDEIS at 2-93.

Service could also consider conducting long-term vegetation monitoring and maintenance to ensure reclaimed surfaces are adequately protected from erosional forces and to prevent weed infestations. The SDEIS should note that these measures would need to be performed for as long as the performance of the reclaimed areas is intended, and therefore must be capable of withstanding or being repaired as a result of the most extreme climate impacts that might be expected to occur throughout and beyond the foreseeable future. The SDEIS should clearly and concisely note that there is no such thing as walk-away reclamation for the Project. The description in this regard is critical to evaluating not only the effectiveness of the proposed reclamation and closure measures by monitoring the post-reclamation results, but also in evaluating the potential for long-term impacts to occur if those features necessary to ensure the ongoing effectiveness are not maintained.

In contrast to the SDEIS for the proposed Project, the Donlin Gold Project Final EIS Section 2.3.2.5.2 Closure and Post-Closure contained detailed information on long-term monitoring and maintenance, which should be considered the minimum necessary for the DEIS.¹¹¹

In terms of post-closure management, the proposed Project will require extensive monitoring and maintenance. Monitoring should include water quantity, water quality, fish, wildlife, aquatic biota, revegetation, erosion, dam stability, and other monitoring to ensure that reclamation and closure measures are performing as intended and within acceptable standards. Monitoring would also determine when maintenance and corrective actions are needed to maintain roads, covers, stormwater channels, and other measures to ensure that reclamation remains viable over time. These monitoring and maintenance activities, in addition to operations, will need to be performed potentially in perpetuity, and should be described in the SDEIS in detail.

According to SDEIS Section 2.4.7.14 Closure and Reclamation Financial Assurance, the Forest Service would require financial assurance that, "...would provide adequate funding to allow the Forest Service to complete reclamation and post closure operation, including continuation of any post closure active or passive water treatment, maintenance activities, and necessary monitoring for as long as required to return the site to a stable and acceptable condition." The amount of financial assurance would be determined by the Forest Service and would, "...address all Forest Service costs that would be incurred in taking over operations because of operator default."¹¹² The SDEIS goes on to state that calculation of the initial bond amount would be completed following the Record of Decision, when enough information is available to adequately and accurately perform the calculation.

The Forest Service has taken the position that it does not address financial assurance in the SDEIS; however, we do not agree with this position. Financial assurance is an essential element of a proposed mining project and should have been disclosed in the SDEIS for the proposed Project, because the viability of the reclamation, closure, and post-closure management is a critical factor in evaluating potential long-term indirect, direct, and cumulative impacts and determining whether

¹¹¹ U.S. Army Corps of Engineers. *Donlin Gold Project Final Environmental Impact Statement*, April 2018, <https://dnr.alaska.gov/mlw/mining/large-mines/donlin/pdf/dgfeis.pdf>.

¹¹² USDA Forest Service, *Training Guide for Reclamation Bond Estimation and Administration: For Mineral Plans of Operation Authorized and Administered under 36 C.F.R. 228A*, Washington, D.C.: U.S. Forest Service, April 2004, https://www.fs.usda.gov/geology/bond_guide_042004.pdf.

the proposed project can be considered fully protective of environmental resources. Furthermore, this information is essential for an adequate analysis of the proposed Project, because it could make the difference between a project that is adequately managed over the long-term by the site operator and an unfunded or underfunded contaminated site that becomes a public liability that must be addressed under the CERCLA.

Potential additional care and maintenance measures that should be considered by the Forest Service to minimize long-term liability of reclamation uncertainties include long-term settlement of the waste rock piles and TSF, functionality of stormwater drainage channels and sediment ponds, stability of the TSF and other constructed river channels, and effects from climate change.

If a long-term trust fund will be established for the proposed project, the appropriate level of funding, types of financial instruments, and mechanics of the fund are critical to ensure that sufficient funds will be available when needed. In addition to the projected long-term engineering, maintenance, and monitoring costs of each activity, the SDEIS should discuss the financial assumptions used to estimate the funding levels, projected trust fund growth rate, and mechanics of the trust fund. The fund mechanics include: (a) requirements for timing of payments into the trust fund; (b) how the responsible agency ensures that the trust fund is bankruptcy remote; (c) acceptable financial instruments; (d) legal structure of the trust fund for tax purposes; (e) who will pay the taxes on trust fund earnings and trust fees and expenses; (f) how will taxes and fees be paid on the trust if the mining company goes out of business; (g) who will make investment decisions if the operator is no longer viable; (h) if the federal government controls the investment decisions, what legal and ethical issues arise from the responsible agency controlling investment decisions about investments in private companies, voting stock and similar issues if the trust owns stock; (i) the identity of the trust fund beneficiaries; and (j) the identity and corporate structure of the operator with responsibility and liability for financial assurance at this site.

The Project includes measures and controls that would require long-term post-closure operations and maintenance to protect water quality. The need for long-term post-closure operations and maintenance, facilities replacement, and monitoring should be acknowledged in the SDEIS. The SDEIS should contain adequate details regarding financial assurance commitments (e.g., for reclamation and long-term operations and maintenance) as well as meaningful assurances that a proper financial instrument will be established to ensure that adequate funds are available as long as they may be needed for this purpose.

CHAPTER 3 AFFECTED ENVIRONMENT

3.2.2.1 1872 Mining Law

The statutory right to search for, develop, and extract mineral deposits on public-domain lands open to mineral entry was established by the General Mining Act of 1872 (“1872 Mining Law”) and later legislation. These rights include the right to initially locate a mining claim and the right to reasonable access to the claim for further exploration, mining, or necessary ancillary activities, consistent with the Mining and Mineral Policy Act of 1970¹¹³ and other applicable laws. As

¹¹³ 30 U.S.C. § 21a.

described elsewhere in this EIS, regulations at 36 C.F.R. 228 Subpart A apply to Forest Service regulation of surface use of National Forest System lands for locatable mineral operations.

The relevant laws, regulations, and policies in the SDEIS fail to reference the Minerals and Geology Resources management direction of the Payette National Forest Land and Resource Management Plan¹¹⁴ and the Boise National Forest Land and Management Plan¹¹⁵ specifically the standards and guidelines, such as, but not limited to Standard MIST06 and Guidelines MIGU02, MIGU08, MIGU09, MIGU10, and MIGU11 in both Forest Plans.¹¹⁶

The SDEIS needs to clearly explain how the Project will meet Forest Plan compliance. In Appendix A, the SDEIS states that “[t]he Plan submitted by Perpetua aligns with the forest-wide goals and objectives for the PNF and BNF as they relate to Minerals and Geology resources.”¹¹⁷ The SDEIS leaves out reference to each Forest Plan’s standards and guidelines for Mineral and Geology Resources.¹¹⁸ In doing so, the SDEIS does not explain how the Project aligns with Forest Plan direction or how the Project would meet these standards and guidelines. For example, the SDEIS fails to reference Guideline MIGU11 and does not show how it considers relocation, closure, changes in management strategy, alteration, or discontinuance for resources (e.g., soils, vegetation, wetlands, water quality, aquatic species, terrestrial species, etc.) that will be degraded or lost due to mine facilities or practices.

3.3 Air Quality

The public access road between Stibnite Road at Sugar Creek and Thunder Mountain Road at Meadow Creek¹¹⁹ should not be excluded from the regulatory definition of ambient air. This road is intended to allow public access, not preclude it. EPA’s revised Ambient Air Policy describes conditions by which the public is to be excluded from an area controlled by a source and which would then justify excluding an area for purposes of analyzing the source’s impact on ambient air. Controlling public access through a site is not excluding public access through a site, thus the EPA revised Ambient Air Policy does not apply, and therefore, the public access road should be considered ambient air. As the public access road is ambient air, all emissions, modeling, and controls must be characterized and considered and are subject to the NAAQS.

The statement, “A determination was made by the IDEQ that the SGP would not require a Title V permit”¹²⁰ is erroneous. Once 40 C.F.R. 63 Subpart EEEEEEE (NESHAPs: Gold Mine Ore Processing and Production Area Source Category) units start up, IDEQ requires a Title V operating permit.¹²¹

¹¹⁴ Payette National Forest Land and Resource Management Plan 2003 at III-48 to III-51.

¹¹⁵ Boise National Forest Land and Resource Management Plan 2010 at III-50 to III-53.

¹¹⁶ Payette National Forest Land and Resource Management Plan 2003 at III-49 to III-51; Boise National Forest Land and Resource Management Plan 2010 at III-51 to III-53.

¹¹⁷ SDEIS at A-1 (internal citations omitted).

¹¹⁸ Payette National Forest Land and Resource Management Plan 2003 at III-49 to III-51; Boise National Forest Land and Resource Management Plan 2010 at III-51 to III-53.

¹¹⁹ SDEIS at 3-30.

¹²⁰ *Id.* at 3-35.

¹²¹ IDEQ 2022 Statement of Basis at 32.

In Table 3.3-4 Visibility Impairment and Deposition-Related Monitoring Sites, the table contains an error.¹²² The Tribe’s Clean Air Status and Trends Network (“CASTNET”) site, NPT006, started in 2015 not 2002. Also, the Table 3.3-9 CASTNET Dry Deposition Rates, Annual Average – Two Idaho Sites¹²³ and Figure 3.3-7 Trends in Dry Nitrogen and Sulfur Deposition Rates, 2006-2015,¹²⁴ include data prior to 2015 for the Tribe’s CASTNET site, NPT006. This is not possible because the site was not sampling prior to 2015.

3.4 Climate Change

Best Science is required for evaluating a project’s likely environmental consequences. The climate analysis relied heavily on the International Panel on Climate Change (“IPCC”) Sixth Assessment and excluded Idaho specific climate literature. It also did not include the IPCC 1.5 Report which explains why limiting global temperature rise to 1.5 °C is necessary to avoid the worst risks associated with climate change and the timeline for which this must be accomplished.¹²⁵ The proponent also notes that the Higher greenhouse gas (“GHG”) emissions from this Project add a small proportion to total emissions, skirting the problem that all emissions must be dramatically reduced to avoid the worst effects of climate change. Pleune et al. (2020) expressed this as follows:

The hotter the world gets, the graver the forecasted consequences. Observed warming trends reinforce the importance of limiting global warming to 1.5°C to avoid catastrophic effects and reduce the severity of unavoidable changes. To achieve this result, the International Panel on Climate Change (“IPCC”) identifies a reduction target for global net anthropogenic carbon emissions of 45 percent by 2030 and a net zero target by 2050 in order to limit warming to a (hopefully) manageable level. At this late stage in the game, the equation is simple. Higher greenhouse gas (“GHG”) emission trajectories lead to higher forecasted global warming with graver environmental and security consequences. In other words, high emissions result in high risk. Failing to reduce GHG emissions is a risk management failure.¹²⁶

¹²² SDEIS at 3-44.

¹²³ *Id.* at 3-54.

¹²⁴ *Id.* at 3-55.

¹²⁵ Intergovernmental Panel on Climate Change 2018, *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, at 3-24, <https://www.ipcc.ch/sr15/>.

¹²⁶ Pleune, Jamie and Ruple, John and Culver, Nada, *The BLM’s Duty to Incorporate Climate Science into Permitting Practices and a Proposal for Implementing a Net Zero Requirement into Oil and Gas Permitting*, December 28, 2020, 32 COLO. NAT. RES., ENERGY & ENVTL. L. REV. __ (2021), University of Utah College of Law Research Paper No. 410, <https://ssrn.com/abstract=3756375>.

Again, emissions must be cut by 45% by 2030, and reach net zero by 2050 to limit the rise in global temperature to 1.5 °C.¹²⁷ ¹²⁸ Gold mining is an energy intensive industry that contributes to greenhouse gas emissions.¹²⁹ The proposed mitigation measures do not reflect the urgent need to cut emissions from building operation, industrial processes, or transportation. In addition, the omission of information from the IPCC 1.5 report provides an incomplete summary of the risks of climate change or the urgency of a rapid response to the climate crisis.

Though the federal government may not currently have standards in place to limit emissions from mines, new buildings, and heavy duty trucks, the EPA is in the midst of rulemaking for heavy duty vehicles, and proposed rules were released in March 2022.¹³⁰ The Securities and Exchange Commission has also released proposed rules.¹³¹ As climate impacts intensify, more policy, regulations, legal scholarship, and legal actions can be expected to try to prevent the worst impacts of climate change, and to hold those who fail to do so to account.¹³² Climate change is an existential threat to humanity's existence, creates tremendous risks including the displacement of human beings and wildlife, extinction of 30-50% of animal and plant species by 2050, and 90% of marine species by 2100.^{133, 134} It also is a risk to the economy and a serious risk to mining operations. As the planet gets warmer, the potential to trigger tipping points that lead "to significant, policy-relevant impacts, including substantial sea level rise from collapsing ice sheets, dieback of biodiverse biomes such as the Amazon rainforest or warm-water corals, and carbon release from thawing permafrost."¹³⁵ In light of the risk, it behooves us all to incorporate mitigation measures into projects that reflect the urgency of the climate crisis, and that address the cumulative need for actions across all sectors and projects, regardless of proportional individual contributions to the problem. In addition, the Inflation Reduction Act has committed millions of dollars in incentives for electrification and adoption of electric vehicles including heavy duty trucks. Though it may not

¹²⁷ Boehm, S., L. Jeffery, K. Levin, J. Hecke, C. Schumer, C. Fyson, A. Majid, J. Jaeger, A. Nilsson, S. Naimoli, J. Thwaites, E. Cassidy, K. Lebling, M. Sims, R. Waite, R. Wilson, S. Castellanos, N. Singh, A. Lee, and A. Geiges, *State of Climate Action 2022*, October 2022, Berlin and Cologne, Germany, San Francisco, CA, and Washington, DC: Bezos Earth Fund, Climate Action Tracker, Climate Analytics, ClimateWorks Foundation, NewClimate Institute, the United Nations Climate Change High-Level Champions, and World Resources Institute. <https://doi.org/10.46830/wriprt.22.00028>, Version 1.2.

¹²⁸ United Nations Climate Change, *Climate Plans Remain Insufficient: More Ambitious Action Needed Now*, October 26, 2022, <https://unfccc.int/news/climate-plans-remain-insufficient-more-ambitious-action-needed-now>.

¹²⁹ Ulrich, Sam, Allan Trench, and Steffen Hagemann, *Gold mining greenhouse gas emissions, abatement measures, and the impact of a carbon price*, *Journal of Cleaner Production*, Volume 340, 2022, <https://doi.org/10.1016/j.jclepro.2022.130851>.

¹³⁰ US EPA Press Release, *EPA Proposes Stronger Standards for Heavy-Duty Vehicles to Promote Clean Air, Protect Communities, and Support Transition to Zero-Emissions Future*, March 7, 2022, <https://www.epa.gov/newsreleases/epa-proposes-stronger-standards-heavy-duty-vehicles-promote-clean-air-protect>.

¹³¹ U.S. Securities and Exchange Commission Press Release 2022-46, *SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors*, March 21, 2022, <https://www.sec.gov/news/press-release/2022-46>.

¹³² Proceedings of the National Academy of Sciences of the United States of America, *Recent responses to climate change reveal the drivers of species extinction and survival*, *PNAS* Volume 117 No. 8 4211-4217, <https://doi.org/10.1073/pnas.1913007117>.

¹³³ Kaiho, Kunio, *Relationship between extinction magnitude and climate change during major marine and terrestrial animal crises*, *Biogeosciences* Volume 19: 3369-3380, 2022, <https://doi.org/10.5194/bg-19-3369-2022>.

¹³⁴ Roman-Palacios, C., and J.J. Wiens, *Recent responses to climate change renewal the drivers of species extinction and survival*, 2020.

¹³⁵ Armstrong McKay, D. I. et al., *Exceeding 1.5 °C global warming could trigger multiple climate tipping points*, *Science* Volume 377, No. 6011, Sep. 9, 2022, <https://www.science.org/doi/10.1126/science.abn7950?cookieSet=1>.

currently be required, it is something that would be truly green and a clear example of a commitment to the environment and the climate, which the proponent purports to care about. It also behooves us all to prioritize where our money, time, and resources are spent in the next ten years. Given that antimony is a critical mineral used in batteries, the benefit may outweigh the cost of this mine for its use in batteries, but only if the contribution of the mine to greenhouse gasses are off-set during operations, not in 23 years. Indeed, with risks so grave, one might argue that the US Forest Service “has a statutory duty to respond to climate change, which includes the duty to avoid exacerbating climate change” as Pleune et al. argue so persuasively regarding the BLM and oil and gas leasing.¹³⁶

3.5 Soils and Reclamation Cover Materials

The SDEIS discloses that the total amount of new and re-distributed historical disturbance associated with the Project is approximately 1,675 acres,¹³⁷ of which 522 acres are highly disturbed.¹³⁸ Soils in the Project area are described as young, poorly developed, and occur on steep slopes. The SDEIS focuses on detrimental disturbance (“DD”), total soil resource commitment (“TSRC”), existing soil types, and quality of the reclamation cover materials.

The relevant laws, regulations, policies, and plans in the SDEIS fail to include Payette and Boise Forest Plan management directions for soils. Chapter 3.5.3 should include management direction specific to soils, not just reference to achieving desired conditions for wildlife and wildlife habitat.¹³⁹ For example, the SDEIS should recognize that the Plan’s desired conditions common to all resources includes that “[s]oils retain all or most of their natural productivity and are in a condition that promotes vegetative growths, hydrologic function, long-term nutrient cycling, and erosional stability.”¹⁴⁰ And that ecosystems on the Forests “[a]re dynamic in nature and resilient and resistant to natural and man-caused disturbances.”¹⁴¹ The Forest Plans also have specific direction, including goals, objectives, standards, and guidelines outlined across several pages,¹⁴² which should be included in the SDEIS.

Both Forest Plans include specific desired conditions that “[s]oil protective cover, soil organic matter, and coarse woody material are at levels that maintain or restore soil productivity and soil-hydrologic functions where conditions are at risk or degraded. Soils also have adequate physical, biological, and chemical properties to support desired vegetation growth.” The management direction continues to describe desired conditions for large woody debris, and states that “...management actions result in no long-term degradation of soil, water, riparian, and aquatic resources conditions.”¹⁴³ A goal shared by both Forests, but not mentioned in the SDEIS, is to

¹³⁶ Pleune, Jamie and Ruple, John and Culver, Nada, *The BLM’s Duty to Incorporate Climate Science into Permitting Practices and a Proposal for Implementing a Net Zero Requirement into Oil and Gas Permitting*, Dec. 28, 2020, 32 COLO. NAT. RES., ENERGY & ENVTL. L. REV. __ (2021), University of Utah College of Law Research Paper No. 410, <https://ssrn.com/abstract=3756375>.

¹³⁷ SDEIS at 3-72.

¹³⁸ *Id.* at 3-75.

¹³⁹ *Id.* at 3-73.

¹⁴⁰ Boise and Payette National Forest Land and Resource Management Plans at III-7.

¹⁴¹ *Id.* at III-6.

¹⁴² *Id.* at III-18-24.

¹⁴³ *Id.* at III-18.

“[m]aintain soil productivity and ecological processes where functioning properly, and restore where currently degraded. Maintain the physical, chemical, and biological properties of soils to support desired vegetation conditions and soil-hydrologic functions and processes within watersheds.”¹⁴⁴ The Forestwide management direction for soils should provide the fundamental benchmarks for measuring a project's impacts to soils. The Forest needs to better explain how the proposed Project meets Forest Plan direction for soils.

The SDEIS references Forest Service Manual 2840 Reclamation and includes the statement “[r]eclaimed areas may not always achieve desired conditions in the Forest Service management direction.”¹⁴⁵ which appears to contradict the objectives and policies in FSM 2840.¹⁴⁶ Under what circumstances and authorities can the Forest Service allow a proposed project to deviate from desired conditions? If the Forest cannot ensure that disturbed lands are reclaimed to a use that is consistent with long-term forest land and resource management plans, then the Forest should reject the Project.

The SDEIS also references Forest Service Manual 2550 Soil Management. Contrary to what is stated in the SDEIS, FSM 2550 does not include “[p]ractical methods to ensure that reclamation cover materials are suitable...”¹⁴⁷ FSM 2550 sets the authorities, objectives, and policies for soil quality management and resource inventories at the planning and project levels. Under FSM 2550, the Forest Chief has the responsibility to ensure “...that soils on National Forest System lands are conserved and protected in order to maintain healthy watersheds that provide critical ecological services.” Due to the nature of the existing conditions and what is proposed, the Forest needs to analyze and monitor soil quality to ensure that ecologically sustainable soil management practices are being applied (as pursuant to FSM 2551.12). This includes estimating the type, amount, and degree of change to soil quality that the proposed activities may produce (activities such as, but not limited to stockpiling and adding compost, fertilizer, and any other amendments to the reclamation cover materials). While FSM 2550 does not directly spell out “[p]ractical methods to ensure that reclamation cover materials are suitable”, the Forest needs to draw upon the plethora of restoration and reclamation research generated from its own research and development professionals and collaborators and not rely solely on Perpetua’s proposed actions, most of which are not supported or justified with best available scientific information.

Existing Soil Types

The SDEIS describes existing conditions of soil types in the Project area, specifically soil types suitable and unsuitable for reclamation and for soils located across six broad areas of potential disturbance, access roads, and off-site facilities. The Tribe is concerned about legacy mining disturbance and that most soil types contain elevated levels of arsenic, antimony, and mercury.¹⁴⁸ The Tribe understands that the soils in the project area naturally have high concentrations of metals, however, the environmental consequences of the proposed actions coupled with legacy disturbance outweigh concerns regarding natural concentrations. Just because natural conditions

¹⁴⁴ Boise and Payette National Forest Land and Resource Management Plans, SWGO01, at III-19.

¹⁴⁵ This statement is not written in Forest Service Manual 2840; SDEIS at 3-73.

¹⁴⁶ Forest Service Manual 2840 Reclamation, 1990.

¹⁴⁷ SDEIS at 3-73.

¹⁴⁸ *Id.* at 3-79 to 3-81.

appear unsuitable or high does not justify or support the purpose and need. If baseline conditions are such that reclamation would be impossible, the Forest should reject the Project.

The SDEIS states that total arsenic was identified as having the greatest potential for phytotoxicity in plants at the site,¹⁴⁹ but does not provide any further information. The SDEIS needs to describe the affected environment which includes research and restoration efforts to date regarding soils and vegetation. It needs to include findings from the soil survey generated by Tetra Tech, including information from the root zone analysis, Hecla reclamation efforts, and evaluations of vegetated soil within and adjacent to the Project area.¹⁵⁰ The SDEIS should also include an assessment of soil quality with respect to above and belowground biological components. What is the type, amount, and quality of vegetation growing on disturbed and undisturbed soils in the Project area? What is the type, amount, and quality of soil microorganisms in disturbed and undisturbed soils in the Project area? The Tribe feels that this information is necessary to understand the affected environment and environmental effects of each alternative.

Existing Total Soil Resource Commitment and Detrimental Disturbance

The SDEIS should reference the Forest Plan management direction (e.g., Guidelines and Standards) for TSRC and DD in Chapter 3.5 (e.g., Forest Plan Standard SWST03 requires, in an activity area where existing conditions of TSRC are below five percent of the area, management activities to leave the area in a condition of five percent or less TSRC following completion of the activities). Figure 3.5-1 needs to show the extent of existing TSRC and DD and provide information about those specific areas. The SDEIS needs to clarify the existing DD for each Forest. The SDEIS should also include the number of acres excluded from the TSRC analysis area, but would be impacted by SGP components, including acreage within IRAs, RNAs, Wilderness, and private land. How does the Forest disclose impacts to soils in these areas if they are not captured/categorized as DD or TSRC? Why didn't the Forest perform soil surveys for the existing or proposed transmission line ROW? If field investigations were not performed, how can the Forest determine existing DD and potential DD for each of the proposed actions? The SDEIS states that "[a]reas considered for TSRC are excluded from this (DD) requirement, but DD applies to vegetation clearing for new and upgraded utility corridors in areas that are available for multiple uses on NFS lands."¹⁵¹ What guidance and/or best available science does the Forest use to decipher whether soil disturbance is TSRC or DD? This guidance and decision-making process should be part of Chapter 3. Why is the TSRC activity area on the Boise NF so large (>76,000 acres), and why are some areas identified as TSRC where no project activities would occur?¹⁵² This would appear to minimize the project-affiliated TSRC. How is the TSRC activity area determined and delineated?

3.8 Surface Water and Groundwater Quantity

SDEIS Section 3.8 summarizes the existing conditions of groundwater and surface water hydrology at the SGP and surrounding areas. As noted in the SDEIS, the SGP and surrounding

¹⁴⁹ *Id.* at 3-86.

¹⁵⁰ TechTetra Tech, Inc. (Tetra Tech). 2020a. Supplemental Soil Survey Report: Stibnite Gold Project. Prepared for Midas Gold Idaho. July 8, 2020.

¹⁵¹ SDEIS at 3-87.

¹⁵² *Id.* at 3-74 and 4-79 (Table 4.5-1).

area “consists of mountainous terrain dissected by typically narrow valleys with steep slopes” and “[t]he hydrology of the analysis area is strongly influenced by seasonal patterns of snow accumulation during the winter, and snowmelt in the spring and early summer.”¹⁵³ Despite the apparent water-scarcity of the area, the SGP will require large amounts of water for ore processing, dust control, and other uses to support mining operations. Approximately 2.2 pounds of gold requires, on average, 70,000 gallons of water to produce.¹⁵⁴

The SDEIS notes that Perpetua’s existing water rights are valid, however, “the specific points of diversion, place of use, and beneficial use [do] not reflect planned SGP activities and [will] need to be adjusted through the transfer process, and through filing additional applications for permit.”^{155,156} The SDEIS points out that it is the responsibility of Idaho Department of Water Resources (“IDWR”) to “ensure enough water is available for the water right and that the oldest (senior) water rights are satisfied first.”¹⁵⁷ Per IDAPA Code 37.03.08 Water Appropriation Rules, IDWR relies on protestants to “bear the initial burden of coming forward with evidence for those factors relevant to [the public interest criteria described in]...Section 42-203A(5), Idaho Code....”¹⁵⁸ Although the SDEIS notes that Perpetua submitted additional water right applications for permit in December 2021, the SDEIS fails to disclose that several administrative protests concerning negative impacts to the public interest criteria have been filed with IDWR. The Tribe asks that the number and nature of protests filed with IDWR regarding Perpetua’s pending water rights be formally added to the record. The Forest should not proceed with an FEIS while the necessary water right applications (and numerous other environmental permits) are pending.

3.9 Surface Water and Groundwater Quality

The SDEIS states that “[t]he IDEQ is responsible for coordinating and administering groundwater quality protection programs in the state of Idaho. IDEQ also is responsible for establishing a point of compliance location, if applied for by a mine operator and pursuant to the Idaho Ground Water Quality Rule...¹⁵⁹ where groundwater and surface water downgradient of mining activity must meet established water quality standards.¹⁶⁰ If a point of compliance is not applied for, the mine operator must meet the ground water quality standards in ground water both within and beyond the mining area.” Where are the locations where groundwater and surface water downgradient of the mining activity must meet the water quality standards?

Table 3.9-6a shows more analytes with exceedances than are mentioned in the text. In addition, there are several analytes with the non-detect levels greater than the Strictest Potentially Applicable Standards (ex. Cd, Cu, Pb). Please acknowledge these and discuss any ramifications.¹⁶¹

¹⁵³ *Id.* at 3-102.

¹⁵⁴ Lezak, S., Wilson, C., Ansar, A., and Bazilian, M, *The case against gold mining*, Environmental Research Letters, 2022.

¹⁵⁵ SDEIS at 3-121.

¹⁵⁶ *Id.* at 3-136.

¹⁵⁷ *Id.* at 3-105; See Idaho Department of Water Resources, About Water Rights, <https://idwr.idaho.gov/water-rights/overview/>.

¹⁵⁸ IDAPA 37.03.08 Water Appropriation Rules at 11.

¹⁵⁹ SDEIS at 3-146; See IDAPA 58.01.11 Ground Water Quality Rule.

¹⁶⁰ SDEIS at 3-146.

¹⁶¹ *Id.* at 3-160.

Section 3.9.4.2, Tailings Decant Solution Chemistry subsection, page 3-158. Only five samples of synthetic tailings materials appear to have been analyzed. Based on Table 3.9-7 results are shown for samples from five different areas. Does this mean only one sample per area was analyzed? This does not seem to be a sufficient number to fully characterize the decant solution, as results would feed into the water treatment plant design and groundwater chemistry under the TSF.

Section 3.9.4.2, Humidity Cell Test Results subsection, page 3-166.

- Explain the purpose of this test. What are the Phase I and Phase 2 HCT cells?
- The SDEIS on page 3-166 and Table 3.9-8 have some conflicting information. The table lists other constituents that exceed the strictest potentially applicable water quality criteria that are not mentioned in the text or incorrectly listed as not exceeding (e.g., Pb, Ni, Se, Ag, Th, F). Were all the data used for all the analytes when modeling source terms?

In the SDEIS, copper analysis criteria was derived using the Biotic Ligand Model per guidance contained in IDEQ's Implementation Guidance for the Idaho Copper Criteria for Aquatic Life (2017).¹⁶² A conservative chronic copper analysis criteria was estimated by applying the lowest of the 10th percentile chronic criteria based on regional classifications for the Salmon River basin, Idaho Batholith, and third order streams, which led to an applied acute criterion of 2.4 µg/L. However, the SDEIS should have also applied the site class + river/stream metric, where rivers are defined as any water with stream order 2:5 and streams are defined as any water with stream order <5. Using that metric, the conservative acute and chronic copper criteria estimates would be 1.0 and 0.6 µg/L, respectively, based on a Mountain Stream site class designation.

The SDEIS relies on an arsenic water quality criterion of 10 µg/L. In September of 2016, EPA disapproved Idaho's human health criteria of 10 µg/L for both consumption of fish only and consumption of fish and water. EPA entered into a consent decree with Northwest Environmental Advocates that requires EPA to either approve of a new criterion submission by Idaho or to propose and finalize federal criteria for Idaho in the absence of EPA approval of a criterion adopted by Idaho. It is not appropriate to use a disapproved criterion for this assessment that has since been extended twice by Idaho for a period of six years and has yet to be approved of by EPA¹⁶³. Instead, the SDEIS should utilize EPA's National Recommended Water Quality Criteria for Human Health for the consumption of Water + Organism of 0.018 µg/L.

The SDEIS lists Aluminum as a constituent of concern.¹⁶⁴ There are no promulgated standards for Aluminum in Idaho, and in the absence of a state water quality standard, the authors of the SDEIS refer to the an analysis criterion for Aluminum of 0.38 mg/L, based on the EPA "Recommended Aquatic Life Criteria". Rather than a static number, EPA's Recommended Aquatic Life Criteria for Aluminum in Freshwater for the Protection of Aquatic Life is dependent upon the water chemistry parameters found at a particular site. These criteria use Multiple Linear Regression ("MLR") models to normalize the toxicity data and provide a range of acceptable values. The

¹⁶² *Id.* at 3-320.

¹⁶³ Idaho Department of Environmental Quality, *Water Quality: Docket No. 58-0102-1801*, <https://www.deq.idaho.gov/public-information/laws-guidance-and-orders/rulemaking/water-quality-docket-no-58-0102-1801/>.

¹⁶⁴ SDEIS at 3-320, Table 3.12-20.

criteria are calculated based on a site's pH, total hardness, and DOC.¹⁶⁵ The EPA has a tool called the Aluminum Criteria Calculator that should be used to determine both acute and chronic criteria for sites throughout the Stibnite project area. It is unclear if this methodology is being used to determine the analysis criteria. Regardless, the strictest applicable surface water quality standard (0.05 mg/L) should be used as the analysis criterion.

The SDEIS uses 0.0015 mg/L as the strictest standard to be applied for selenium,¹⁶⁶ and cites EPA's Freshwater Aquatic Life Criteria. However, 0.0015 mg/L is only the chronic criterion for lentic waters. EPA recommends a multi-media criterion consisting of four elements, two of which are based on the concentration of selenium in fish tissue (eggs and ovaries, and whole-body or muscle) and two elements are based on the concentration of selenium in the water-column (two 30-day chronic values and an intermittent value). EPA recommends that when implementing the criterion, the fish tissue elements take precedence over the water column elements.¹⁶⁷

The SDEIS uses EPA's Drinking Water MCL of 2,000 µg/L for the analysis of barium. Instead, the SDEIS should utilize EPA's National Recommended Water Quality Criteria for Human Health for the consumption of Water + Organism of 1,000 µg/L.

The SDEIS uses the narrative, "No numeric human health standard has been established for beryllium. However, permit authorities will address beryllium in NPDES permit actions using the narrative criteria for toxics in Section 200 of IDAPA 58.01.02, which states: Surface waters of the state shall be free from toxic substances in concentrations that impair designated beneficial uses. These substances do not include suspended sediment produced as a result of nonpoint source activities." Instead, the SDEIS should utilize EPA's Drinking Water MCL of 4 µg/L as the surface water quality standard for beryllium.

The SDEIS uses IDAPA 58.01.02 - CCC (chronic) criterion for the analysis of cadmium. This calculated criterion is dependent upon hardness and is appropriate to use so long as the criterion is less than EPA's Drinking Water MCL of 5 µg/L. If the calculated criterion for a data point exceeds 5 µg/L, then EPA's Drinking Water MCL for cadmium becomes the most stringent criterion and should be used for analysis.

The SDEIS uses the IDAPA 58.01.02 - CCC (chronic) criterion for the analysis of lead. This calculated criterion is dependent upon hardness and is appropriate to use so long as the criterion is less than EPA's Drinking Water MCL of 15 µg/L. If the calculated criterion for a data point exceeds 15 µg/L, then EPA's Drinking Water MCL for lead becomes the most stringent criterion and should be used for analysis.

The SDEIS uses the IDAPA 58.01.02 - CCC (chronic) criterion for the analysis of nickel. This calculated criterion is dependent upon hardness and is appropriate to use so long as the criterion is less than EPA's Drinking Water MCL of 58 µg/L. If the calculated criterion for a data point exceeds 58 µg/L, the EPA's Drinking Water MCL for nickel becomes the most stringent criterion and should be used for analysis.

¹⁶⁵ EPA, *Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018*, No. EPA-822-R-18-001.

¹⁶⁶ SDEIS at 3-145, Table 3.9-1.

¹⁶⁷ EPA, *Aquatic Life Ambient Water Quality Criteria for Selenium-Freshwater 2016*, No. EPA 822-R-16-006.

The SDEIS uses the IDAPA 58.01.02 criterion range of 6.5-9.0 for the analysis of pH. Instead, the SDEIS should utilize EPA's Secondary Drinking Water Standard of 6.5-8.5 µg/L.

The SDEIS uses the IDAPA 58.01.02 - CMC (acute) criterion for the analysis of silver. This calculated criterion is dependent upon hardness and is appropriate to use so long as the criterion is less than EPA's National Recommended Water Quality Criteria for Aquatic Life - CMC (acute) of 3.2 µg/L. If the calculated criterion for a data point exceeds 3.2 µg/L, then EPA's National Recommended Water Quality Criteria for Aquatic Life - CMC (acute) for silver becomes the most stringent criterion and should be used for analysis.

The SDEIS uses the IDAPA 58.01.02 - CCC (chronic) criterion for the analysis of zinc. This calculated criterion is dependent upon hardness and is appropriate to use so long as the criterion is less than EPA's National Recommended Water Quality Criteria for Aquatic Life of 120 µg/L. If the calculated criterion for a data point exceeds 120 µg/L, then EPA's National Recommended Water Quality Criteria for Aquatic Life for zinc becomes the most stringent criterion and should be used for analysis.

Mercury. While water column methylmercury concentration predictions are important to elucidate the long-term impacts of the proposed mining at the site, the applicable water quality standard applies only to fish tissue on the basis of human consumption. Many tribal members continue to exercise their treaty reserved rights to fish for salmon and steelhead in the EFSFSR downstream of the proposed mine site. In order to ensure the proposed action will not negatively affect tribal health or impact tribal treaty rights in the EFSFSR, fish tissue samples need to be analyzed throughout the site and the potential tribal health impacts need to be addressed in the SDEIS.

Methylmercury impacts have been detected hundreds of miles downstream of mine point sources.¹⁶⁸ Treaty-reserved rights to fish at usual and accustomed places are already impacted by methylmercury issues in the Snake River downstream of the Hells Canyon Complex, leading to the proposed Total Maximum Daily Load for Hg currently being negotiated between Idaho, Oregon, and EPA. Due to bioaccumulation of mercury, sturgeon harvest advisories from the Tribe's Fishery Commission have been in place since 2015 for sturgeon over three feet total length. Any increase in total mercury discharge from the Project may result in increased methylmercury concentrations in the mainstem Salmon and Snake Rivers, and would continue to threaten tribal members ability to harvest and consume sturgeon within the 1967 Indian Claims Commission aboriginal territory for the Nez Perce Tribe.

The SDEIS fails to address potential nitrogen contamination resulting from the proposed actions. Potential sources of nitrogen components in the proposed actions include leftover residues from explosives, precipitate from cyanide ore processing, domestic wastewater effluent, and increased sediment pollution. Since all these potential sources are included in the proposed Project, the following nitrogen components should be addressed specifically in the SDEIS and in the Sanitary Wastewater Individual Permit Application. The Sanitary Wastewater Idaho Pollutant Discharge

¹⁶⁸ Eagles-Smith C.A., et al. *Mercury in western North America: A synthesis of environmental contamination, fluxes, bioaccumulation, and risk to fish and wildlife*, Science of The Total Environment Volume 568, at 1213-26, 2016.

Elimination System Program (“IPDES”) permit or permit application has yet to be shared for review.

Ammonia is highly toxic to aquatic organisms, particularly to salmonids and mussels.¹⁶⁹ In high enough concentrations, ammonia can build up in the internal tissues and blood of aquatic organisms, often leading to death.¹⁷⁰ Ammonia can also absorb to several metal ions and be deposited into sediments which can be toxic to benthic or surface aquatic biota.¹⁷¹ Potential sources of ammonia in the proposed action include residue from Ammonium Nitrate Fuel Oil, residual cyanide from the cyanide neutralization facility where oxidized cyanide forms carbonate and ammonia, and waste effluent from the housing facility. Water quality criteria have been established by EPA and are dependent upon pH and water temperature.¹⁷² Individual criteria should be calculated for each data point collected at each monitoring location. Due to its close association with mining operations and its high toxicity, especially to salmonids, current conditions must be characterized and the potential impacts should be included in the SDEIS. Ammonia criteria should also be addressed in the Sanitary Wastewater IPDES permit that has yet to be shared for review. The ammonia water quality standard value of 2.1 mg/L is not explained in the SDEIS¹⁷³ nor is it the strictest potentially applied water quality standard.

Nitrate is relatively harmless in drinking water at low concentrations, but can contribute to eutrophication in streams and rivers. However, nitrate can go through partial denitrification by bacteria to form the less stable and more toxic nitrite ion. In addition, no surface water quality criterion was assigned for nitrate+nitrite¹⁷⁴ but the SDEIS uses the groundwater quality standard value of 10 mg/L for the surface water assessment¹⁷⁵ and the Target Post-Water Treatment Plant Effluent Analyte Treatment Objective standard.¹⁷⁶ EPA established ambient water quality criteria recommendations for nitrate+nitrite in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15)¹⁷⁷. The guidance recommends a nitrate+nitrite water quality criterion of 0.02 mg/L. However, detection limits reported for nitrate+nitrite in the Surface Water Quality Baseline Study were 0.05 mg/L,¹⁷⁸ which is higher than the recommended water quality criterion so additional data should be collected at the site and analyzed with a lower detection limit in order to accurately characterize current site conditions.

Total Kjeldahl nitrogen is the sum of organic nitrogen and ammonia nitrogen and is often monitored in wastewater effluent and its receiving body. Kjeldahl nitrogen was monitored in the

¹⁶⁹ Jermakka, J., et al., *Nitrogen compounds at mines and quarries: Sources, behaviour and removal from mine and quarry waters - Literature Study*, VTT Technical Research Centre of Finland Ltd., VVT Technology No. 226, Ser. No. 2242-1211, 2015.

¹⁷⁰ EPA, *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater*, 2013, No. EPA 820-F-13-013.

¹⁷¹ Jermakka, J., L., et al., *Nitrogen compounds at mines and quarries: Sources, behaviour and removal from mine and quarry waters - Literature Study*, VTT Technical Research Centre of Finland Ltd., VVT Technology No. 226, Ser. No. 2242-1211, 2015.

¹⁷² EPA, *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater*, 2013, No. EPA 822-R-13-001.

¹⁷³ SDEIS at ,Tables 3.9-10a or at 4-218 Table 4.9-10.

¹⁷⁴ *Id.* at 3-145, Table 3.9-1.

¹⁷⁵ *Id.* at 3-183, Table 3.9-10b.

¹⁷⁶ *Id.* at 4-218, Table 4.9-10.

¹⁷⁷ EPA, *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion II*, No. EPA 822-B-00-015, 2000.

¹⁷⁸ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project, Midas Gold, Inc.*, 2017.

current conditions analysis but was not included in the site-wide water chemistry modeling report.¹⁷⁹ In addition, no water quality criterion was assigned for Kjeldahl nitrogen in the Surface Water Quality Baseline Study;¹⁸⁰ EPA established ambient water quality criteria recommendations for Kjeldahl nitrogen in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15).¹⁸¹ The guidance recommends a Kjeldahl nitrogen water quality criterion of 0.08 mg/L. Since potential sources of Kjeldahl nitrogen are included in the proposed action, Kjeldahl nitrogen should be reanalyzed against this criterion and included in the SDEIS and IPDES permits, or supporting documents.

Total nitrogen is the sum of Kjeldahl nitrogen and nitrate+nitrite and is often monitored in wastewater effluent and its receiving body, and is often also correlated with sediment erosion. Total nitrogen was monitored in the current conditions analysis but was not included in the site-wide water chemistry modeling report.¹⁸² Why was it omitted? Also, no water quality criterion was assigned for total nitrogen in the Surface Water Quality Baseline Study;¹⁸³ EPA established ambient water quality criteria recommendations for total nitrogen in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15).¹⁸⁴ The guidance recommends a total nitrogen water quality criterion of 0.20 mg/L. Since potential sources of total nitrogen are included in the proposed action, it should be reanalyzed against this criterion and included in the SDEIS and IPDES permits, or supporting documents.

Phosphorus is relatively harmless in drinking water at low concentrations, but can contribute to eutrophication in streams and rivers. Sources of phosphorus include human or animal waste, detergents, food waste, and sediment erosion. While both total and dissolved phosphorus concentrations were included in the current conditions monitoring, only dissolved phosphorus was included in the current conditions and predictive modeling. Why was total phosphorus omitted? Total phosphorus is highly correlated with sediment and should have been included in the site-wide water chemistry analysis. In addition, no water quality criterion was assigned for total phosphorus in the Surface Water Quality Baseline Study;¹⁸⁵ EPA established ambient water quality criteria recommendations for total phosphorus in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15).¹⁸⁶ The guidance recommends a total phosphorus water quality criterion of 7.75 µg/L. Since potential sources of phosphorus are included in the proposed action, it should be reanalyzed against this criterion and included in the SDEIS and IPDES permits or supporting documents.

¹⁷⁹ SRK Consulting, *Stibnite Gold Project Proposed Action Site-Wide Water Chemistry Modeling Report*, 2018.

¹⁸⁰ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project, Midas Gold, Inc.*, 2017.

¹⁸¹ EPA, *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion II*, No. EPA 822-B-00-015, 2000.

¹⁸² SRK Consulting, *Stibnite Gold Project Proposed Action Site-Wide Water Chemistry Modeling Report*, 2018.

¹⁸³ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project, Midas Gold, Inc.*, 2017.

¹⁸⁴ EPA, *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion II*, No. EPA 822-B-00-015, 2000.

¹⁸⁵ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project, Midas Gold, Inc.*, 2017.

¹⁸⁶ EPA, *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion II*, No. EPA 822-B-00-015, 2000.

Since the publication of many of the proposed project's technical reports, several federal and state water quality standards have been changed. The following is a summary of constituents that need to be reanalyzed to reflect the most current and strictest potentially applicable standards:

Parameter	Units	Surface Water Quality Standard used in WQ Analysis ¹⁸⁷	Current strictest potentially applicable standard	Standard Source
pH	s.u.	6.5-9.0	6.5-8.5	EPA Secondary Drinking Water Standards ¹⁸⁸
Aluminum	µg/L	50	0.63* or less than 50	EPA Freshwater Aquatic Life-Chronic; ¹⁸⁹ or EPA Secondary Drinking Water Standards ¹⁹⁰
Ammonia	mg/L	2.1	1.9**	EPA Freshwater Aquatic Life-Chronic ¹⁹¹
Arsenic	µg/L	10	0.018	EPA Human Health Water + Organisms ¹⁹²
Barium	µg/L	2000	1000	EPA Human Health Water + Organisms ¹⁹³
Beryllium	µg/L	Narrative	4	EPA Drinking Water MCL ¹⁹⁴
Cadmium	µg/L	0.33	Hardness dependent if less than 5	IDAPA 58.01.02 - CCC; ¹⁹⁵ or EPA Drinking Water MCL ¹⁹⁶
Copper	µg/L	2.4 Hardness Dependent	0.6	Idaho BLM Guidance-Chronic***, ¹⁹⁷
Lead	µg/L	0.9	Hardness	IDAPA 58.01.02 - CCC; ¹⁹⁸ or

¹⁸⁷ SDEIS at 3-145, Table 3.9-1.

¹⁸⁸ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004, 2009.

¹⁸⁹ EPA, *Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018*, No. EPA-822-R-18-001.

¹⁹⁰ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004, 2009.

¹⁹¹ EPA, *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater*, 2013, No. 820-F-13-013.

¹⁹² EPA, *National Recommended Water Quality Criteria 2002: Human Health Criteria Calculation Matrix*, No. EPA-822-R-02-012.

¹⁹³ EPA, *Quality Criteria for Water 1986*, No. EPA 440/5-86-001.

¹⁹⁴ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004, 2009.

¹⁹⁵ IDAPA 58.01.02.

¹⁹⁶ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004, 2009.

¹⁹⁷ Idaho Department of Environmental Quality, *Implementation guidance for the Idaho copper criteria for aquatic life: Using the Biotic Ligand Model*, 2017, November 2017.

¹⁹⁸ IDAPA 58.01.02 Water Quality Standards.

Parameter	Units	Surface Water Quality Standard used in WQ Analysis ¹⁸⁷	Current strictest potentially applicable standard	Standard Source
			dependent if less than 15	EPA Drinking Water MCL ¹⁹⁹
Nickel	µg/L	24	Hardness dependent if less than 58	IDAPA 58.01.02 - Aquatic, Life, Chronic; ²⁰⁰ or IDAPA 58.01.02 - CCC ²⁰¹
Nitrate + Nitrite	mg/L	NA	0.02	EPA Nutrient Ecoregion II, level III ecoregion 15 ²⁰²
Phosphorus, T	µg/L	NA	7.75	EPA Nutrient Ecoregion II, level III ecoregion 15 ²⁰³
Silver	µg/L	0.7	Hardness dependent if less than 3.2	IDAPA 58.01.02 - Aquatic, Life, Acute; ²⁰⁴ or EPA Aquatic Life - Acute ²⁰⁵
Zinc	µg/L	54	Hardness dependent if less than 120	IDAPA 58.01.02 - CCC; ²⁰⁶ or EPA Freshwater Aquatic Life ²⁰⁷

* Value is dependent on pH, hardness, and DOC

** Value is dependent on pH and hardness

*** Copper criterion was derived using the Biotic Ligand Model per guidance contained in IDEQ (2017). A conservative chronic copper standard was estimated by applying the lowest of the 10th percentile chronic criteria based on regional classifications for the Salmon River basin, Idaho Batholith, third order streams, mountains, and mountain streams.

The SDEIS and its supporting documents provide abundant evidence that the SGP has been heavily influenced by historic mining. Under the Idaho Ground Water Quality rules, the natural background level is defined as “[t]he level of any constituent in the groundwater...unaffected by

¹⁹⁹ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004, 2009.

²⁰⁰ IDAPA 58.01.02 Water Quality Standards.

²⁰¹ *Id.*

²⁰² EPA, *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion II*, No. EPA 822-B-00-015, 2000.

²⁰³ EPA, *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria for Rivers and Streams in Nutrient Ecoregion II*, No. EPA 822-B-00-015, 2000.

²⁰⁴ IDAPA 58.01.02 Water Quality Standards.

²⁰⁵ EPA, *Ambient Water Quality Criteria for Silver*, No. EPA 440/5-80-071, 1980.

²⁰⁶ IDAPA 58.01.02 Water Quality Standards.

²⁰⁷ EPA, *1995 Updates: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water*, No. EPA-820-B-96-001, 1996.

human activities.”²⁰⁸ Historic mining legacy impacts make it difficult to establish baseline conditions for water quality comparisons. As stated in the Water Resources Summary Report, “[t]he areas with little or no historical mining...on the west side of the District such as the Fiddle and North prospects, may provide opportunities to establish natural background water quality in seeps and springs or groundwater monitoring wells.”²⁰⁹ A hydrology field survey completed in November of 2012 shows fairly significant (>5 gallons per minute) springs and seeps located in and that provide flow to the headwaters of perennial and intermittent drainages including Hennessey Creek, Fiddle Creek, Meadow Creek, East Fork Meadow Creek (Blowout Creek), Garnet Creek, Midnight Creek, West End Creek, and the EFSFSR.²¹⁰ In low flow conditions, it is surmised that springs and seeps sustain flows within these streams in the absence of precipitation. Although water quality samples “were collected for analytes that could be of interest to one or more agencies [involved in the permitting process with respect to surface water quality regulations]”²¹¹, baseline water quality testing performed on the seeps and springs in the headwaters of various streams within the Project area were not tested for constituents of concern including metals like arsenic and antimony. A more accurate picture of how the SGP will influence water quality may have been generated if these seeps and springs, particularly those with no legacy mining impacts in the headwaters of Fiddle Creek, had been tested and included as baseline water quality conditions rather than conditions at already degraded stream sampling sites.

3.10 Vegetation

The relevant laws, regulations, policies, and plans in the SDEIS need to include FSM 2070 Vegetation Ecology and statutes therein (e.g., FSM 2070.11), including reference to the Surface Mining Control and Reclamation Act of 1977 that “...directs the establishment on the mined areas, and all other lands affected, a diverse, effective, and permanent vegetation cover of the same seasonal variety native to the area of land to be affected and capable of self-regeneration and plant succession at least equal in extent of cover to the natural vegetation on the area”²¹² The SDEIS should also note in Chapter 3.10.3 that the Payette and Boise Forest Plans not only provide a framework for analysis of impacts on vegetation, but they also outline management direction for vegetation (e.g., desired conditions, standards, and guidelines).²¹³

The SDEIS discloses that the analysis area for vegetation covers over 17,000 acres across three national forests and private land. The analysis includes impacts to vegetation, including 11 forested potential vegetation types (“PVG”) (dominated by Persistent Lodgepole Pine (*Pinus contorta*; *qalámqalam*) and Warm, Dry Subalpine Fir (*Abies lasiocarpa*; *patóysiwey*) PVGs, followed by water, rock, and barren non-forest which cover 18% of the analysis area), botanical resources (i.e., special status plant species), and non-native plants (i.e., invasive and noxious plant species).

²⁰⁸ IDAPA 58.01.11.007.23.

²⁰⁹ Brown and Caldwell. 2017a. Stibnite Gold Project Water Resources Summary Report. Prepared for Midas Gold Idaho, Inc. November 2012. Page 60.

²¹⁰ Figure 1-3 on page 13 in HydroGeo, Inc., 2012a. Hydrology Field Survey for Golden Meadows Project. Midas Gold Idaho, Inc., November 2012.

²¹¹ Brown and Caldwell. 2017a. Stibnite Gold Project Water Resources Summary Report. Prepared for Midas Gold Idaho, Inc. June 30, 2017, at page 50, section 6-2.

²¹² Forest Service Manual 2070.

²¹³ See Payette National Forest Plan at III-8 to III-15 and III-29 to III-37 and Boise National Forest Plan at III-8 to III-15 and III-30 to III-39.

Existing disturbance is approximately 1,126 acres on NFS lands.²¹⁴ Approximately 3,046 acres of land in the analysis area occurs on lands not administered by the Forest.²¹⁵ Chapter 3.10 should cross-reference to sections which describe vegetation in the affected environment for Heritage Resources (Chapter 3.17) and Tribal Rights and Interests (Chapter 3.24). Many of the plant resources used by the Tribe are briefly described in the SDEIS,²¹⁶ but it would help if these plant resources were discussed in reference to vegetation classifications (i.e., existing vegetation communities in the PVGs, non-forested types, and LANDFIRE mapping) found within the Project area.

Surface soils in the analysis area contain metals, specifically antimony, arsenic, mercury, and silver, from legacy mine operations. Arsenic levels at the Project area are particularly high and have the greatest potential to cause phytotoxicity in plants.²¹⁷ The SDEIS needs to disclose information regarding existing conditions of these metals in the vegetation growing at the site. The SDEIS states that “[s]oils near the SGP that exceed the screening-level phytotoxicity criteria do continue to sustain native vegetation.”²¹⁸ However, the SDEIS fails to detail the type, extent, and quality of this “native vegetation” and whether there are toxic levels of metals detected in this vegetation. This information needs to be included in the SDEIS (i.e., as part of the affected environment for vegetation).

Special Status Plant Species

The SDEIS covers one ESA-threatened species (whitebark pine (*Pinus albicaulis*; *lálxsaway*)), two Forest Sensitive species (least moonwort (or little grapefern²¹⁹) (*Botrychium simplex*) and Sacajawea’s bitterroot (*Lewisia sacajaweanana*)), four Forest Watch species (bent-flower milkvetch (*Astragalus vexilliflexus* var. *vexilliflexus*), Blandow's helodium moss (*Helodium blandowii*), sweetgrass (*Hierochloe odorata*), and Rannoch-rush (*Scheuchzeria palustris*)), and non-native plants known to occur within or immediately adjacent to the Project area. The SDEIS also identifies modeled potential habitat for 29 Sensitive and/or Forest Watch species that occur across approximately 19,492 acres.²²⁰ The Tribe takes great interest in the status and recovery of these species, as many have important direct and indirect cultural significance. The SDEIS needs to add associated habitat types for the special status species, including whether the species is a wetland, riparian, or upland plant. This information could be added in Table 3.10-5. According to the most current National Wetland Plant List, seven of the 29 plant species are obligate to wetlands.²²¹ The SDEIS should also consider impacts to plant species listed in an updated draft of the Idaho State

²¹⁴ SDEIS at 3-220.

²¹⁵ *Id.* at 3-221.

²¹⁶ *Id.* at 3-515 to 3-516.

²¹⁷ *Id.* at 3-223.

²¹⁸ *Id.* at 4-87.

²¹⁹ USDA Plants, *Botrychium simplex* E. Hitchc. <https://plants.usda.gov/home/plantProfile?symbol=BOSI>.

²²⁰ SDEIS at 3-230 to 3-239.

²²¹ U.S. Army Corps of Engineers, *National Wetland Plant List*, 2020, version 3, <http://wetland-plants.usace.army.mil/>, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

Wildlife Action Plan (“SWAP”) which includes 42 plant species identified as either species of greatest conservation need (“SGCN”) or species of greatest information need (“SGIN”).²²²

Whitebark pine is listed as a threatened species under the ESA of 1973, as amended.²²³ The current and predicted range of whitebark pine occurs across the Tribe’s aboriginal homeland, much of which is now National Forest Service land (including lands and waters of Boise and Payette National Forests). Conservation and restoration of this species is of great importance to the Tribe. According to Mathys et al.,²²⁴ whitebark pine is stressed at the margins of its current range with very few locations for potential expansion. Limber pine (*Pinus flexilis*), another five-needle pine, is also documented in the Project area. High-elevation five-needle white pines are important functional and structural components of high elevation landscapes. These long-lived pines stabilize soils, reduce soil erosion, shade snowpack, regulate snowmelt and downstream runoff, and provide a high-energy food source for important wildlife species, including grizzly bears (*Ursus arctos horribilis*; *xáxaac*), black bears (*U. americanus*; *yá·kaʔ*), and many bird and small mammal species at high elevation. Five-needle pine forests are declining across most of their range in western North America due to the combined impacts of insects, pathogens, altered fire regimes, and shifting moisture regimes associated with climate change. The loss of these species would have serious, adverse consequences for community biodiversity and stability in high-elevation ecosystems. Whitebark pine occurs throughout the Project area and across both Forests, while the limber pine stand may be the only documented population of this species on the Payette Forest.²²⁵ Clark’s nutcracker (*Nucifraga columbiana*; *ʔispú·kux*) and red squirrel (*Tamiasciurus hudsonicus*; *cíلمي*) are extremely important to limber and whitebark pine conservation because they collect and disperse whitebark pine seeds. The mutualistic relationship between Clark’s nutcracker and these pines is highly evolved and important for the survival and well-being of these species.

Whitebark pine surveys were conducted in 2012, 2013, 2014, and 2019. The most recent survey in 2019 was associated with the Forests’ DEIS Alternative 2 disturbance footprint.²²⁶ The analysis needs to be updated to reflect the footprint of alternatives analyzed in the SDEIS. Surveys documented over 6,000 acres of potential habitat within the Project area and over 2,000 acres of occupied whitebark pine habitat within the 300-foot buffer²²⁷ and overlaps actions proposed for utilities, access roads, and the mine site. Under ESA protections it is unlawful to commit, to attempt to commit, to cause to be committed, or to solicit another to commit the following acts for whitebark: removal from federal lands, malicious damage, or destruction on federal lands, engaging in interstate or foreign commerce, and import or export into, out of, or through the U.S. The Forest must fulfill relevant Section 7 consultation requirements for whitebark pine. Connected

²²² Idaho Department of Fish and Game. 2022. *Idaho state wildlife action plan*, 2022 rev. ed., Boise, Idaho Department of Fish and Game, <https://idfg.idaho.gov/>.

²²³ Endangered and Threatened Wildlife and Plants; Threatened Species Status With Section 4(d) Rule for Whitebark Pine (*Pinus albicaulis*), 87 Fed. Reg. 76,882 (Dec. 15, 2022).

²²⁴ Mathys, A., Coops, N.C. and Waring, R.H., *Soil water availability effects on the distribution of 20 tree species in western North America*, *Forest Ecology and Management* 313: 144-152, 2014, <https://databasin.org/datasets/abe1cb6e7b5149318906aabc494f30d9/>.

²²⁵ SDEIS at 3-217.

²²⁶ Tetra Tech, Inc. 2019 Whitebark Pine Survey Report at 1-3.

²²⁷ SDEIS at 3-226.

actions on private lands should also be considered in analyses of the Project, even though the Forests may not have jurisdiction over the activities occurring on private lands.²²⁸

Least moonwort (or little grapefern) is a native, perennial, facultative hydrophyte fern. It is listed on the National Wetland Plant List as a facultative perennial fern (occurs in wetlands and non-wetlands).²²⁹ According to the SDEIS, two subpopulations of a single occurrence occur in swales adjacent to Johnson Creek Road.²³⁰ To realize the full impacts to these subpopulations, the Forest needs to revisit these sites and potential habitat (838 acres),²³¹ assess impacts, and disclose them in the SDEIS. These sites have not been surveyed since 2005. Sacajawea's bitterroot is a native perennial with succulent rosette leaves, white flowers, and a tuberous root. Endemic to central Idaho, a single occurrence of Sacajawea's bitterroot occurs approximately 300 feet above the Warm Lake Road and the existing transmission line corridor near the intersection of Warm Lake Road and Curtis Creek Road. The occurrence was last observed in 1999 and not documented in 2014 surveys (which occurred in late June).²³² This species has a very short growing season and aboveground parts disappear quickly after flowering (May/June).²³³ To realize the full impacts to this occurrence of Sacajawea's bitterroot, the Forest needs to revisit the site and potential habitat (2,351 acres)²³⁴ during its growing season, assess impacts, and disclose them in the SDEIS.

Both Forest Plans include Guideline BTGU01 which states “[f]or site/project-scale analysis, suitable habitat should be determined for Sensitive species within or near the project area. Conduct surveys for those species with suitable habitat to determine presence. Document the rationale for not conducting surveys for other species in the project record.”²³⁵ The Forest needs to update surveys and location information for least moonwort and Sacajawea's bitterroot, and for the other Sensitive plant species that have potential habitat in the Project area but have not been included in past special status surveys for the Project. These include candystick (*Allotropa virgata*) (390 acres of potential habitat), scalloped moonwort (*Botrychium crenulatum*) (74 acres of potential habitat), slender moonwort (*Botrychium lineare*) (838 acres), beautiful bryum (*Bryum calobryoides*) (28 acres), Cascade reedgrass (*Calamagrostis tweedyi*) (3,884 acres), Idaho douglasia (*Douglasia idahoensis*) (176 acres), bank monkeyflower (*Mimulus clivicola*) (404 acres), Tolmie's saxifrage (*Saxifraga tolmiei* var. *ledifolia*) (691 acres), and short-style tofieldia (*Triantha occidentalis* ssp. *brevistyla*) (532 acres).²³⁶

There are four Forest Watch species documented in the Project area (bent-flower milkvetch, Blandow's helodium moss, sweetgrass, and Rannoch-rush). Bent-flower milkvetch is a perennial legume with white to purple flowers and grows low to the ground on exposed, subalpine ridgelines

²²⁸ Endangered and Threatened Wildlife and Plants; Threatened Species Status With Section 4(d) Rule for Whitebark Pine (*Pinus albicaulis*), 87 Fed. Reg. 76,882 (Dec. 15, 2022).

²²⁹ U.S. Army Corps of Engineers 2020, National Wetland Plant List, version 3, U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

²³⁰ SDEIS at 3-228.

²³¹ *Id.* at 3-232.

²³² *Id.* at 3-229.

²³³ U.S. Forest Service, *Plant of the Week Sacajawea's bitterroot*, https://www.fs.usda.gov/wildflowers/plant-of-the-week/lewisia_sacajaweana.shtml.

²³⁴ SDEIS at 3-232.

²³⁵ Payette National Forest Plan at III-34; Boise National Forest Plan at III-36.

²³⁶ SDEIS at 3-231 to 3-239.

in subalpine fir and whitebark pine habitats. It is critically imperiled in Idaho. The nearest subpopulation occurs upslope and east of the West End Creek diversion and is the largest contiguous area of habitat and important to long-term viability of this species. Blandow's helodium moss (also named *Elodium blandowii*) forms in mats and hummocks in wet areas of the forest (e.g., fens, wetlands, and near streams). One occurrence is located near Trapper Creek within 300 feet of Burntlog Route, but there are 705 acres of mapped potential habitat. Imperiled in Idaho, northern sweetgrass (also named *Heirochloe hirta*²³⁷) is found in wetlands near Trapper Creek and mapped with having 996 acres of potential habitat. Sweetgrass growing in the Landmark area was also documented by the Idaho Native Plant Society during a botanical survey in 2022.²³⁸ Rannoch-rush is a perennial, herbaceous, and vulnerable²³⁹ plant that grows in wetlands. It is listed on the National Wetland Plant List as an obligate hydrophyte (almost always occurs in wetlands)²⁴⁰ and is documented in the Mud Lake area within 300 feet of Burntlog Road (modeled potential habitat is 850 acres).²⁴¹ With the exception of bent-flower milkvetch, none of these species were included in past special status surveys. Blandow's helodium moss, sweetgrass, and rannoch-rush have not been surveyed by the Forest since 2004. The Forest needs to update surveys and location information for these Forest Watch species that have occurrences and potential habitat in the Project area, including occurrences across 13 Inventoried Roadless Areas.²⁴²

Non-Native Plants

The SDEIS does an inadequate job of disclosing the distribution and extent of noxious weeds and non-native plant species occurring in the Project area. Two pages dedicated to noxious and non-native plants is insufficient. Table 3.10-6 lists noxious weeds and non-native plant species in Valley County and the analysis area and includes two species identified as “Noxious-Early Detection and Rapid Response” (yellow hawkweed (*Hieracium caespitosum*) and Syrian beancaper (*Zygophyllum fabago*)), however the SDEIS states that “[n]o known species of Early Detection and Rapid Response are known in the subregion.”²⁴³ Please provide clarification of occurrence for these species in the SDEIS.

According to the SDEIS, spotted knapweed (*Centaurea stoebe* ssp. *micranthos*) and rush skeletonweed (*Chondrilla juncea*) are the most extensive species in the analysis area.²⁴⁴ But the SDEIS fails to include life histories, management, spatial context, and mechanism of establishment and growth. The Vegetation Specialist Report includes maps of these species, but they lack extent (i.e., percentage distribution), and their locations are difficult to see on the maps.²⁴⁵ The maps in

²³⁷ Nature Serve Explorer, *Hierochloe hirta* Northern Sweet Grass,

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.140970/Hierochloe_hirta.

²³⁸ Idaho Native Plant Society, *Newsletter of the Idaho Native Plant Society*, Boise, Sage Notes 44(4), 2022, at 16-17, <https://idahonativeplants.org/wp-content/uploads/2022/12/SageNotesDecember2022.pdf>.

²³⁹ Nature Serve Explorer, *Scheuchzeria palustris*,

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.157508/Scheuchzeria_palustris.

²⁴⁰ U.S. Army Corps of Engineers 2020, National Wetland Plant List, version 3, U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

²⁴¹ SDEIS at 3-238.

²⁴² *Id.* at 3-231 to 3-239 and 3-494 to 3-495.

²⁴³ *Id.* at 3-241 to 3-242.

²⁴⁴ *Id.* at 3-241.

²⁴⁵ Stibnite Gold Project Vegetation: General Vegetation Communities, Botanical Resources, and Non-Native Plants Specialist Report.

Appendix C of the Vegetation Specialist Report leave out most of the species listed in the SDEIS and should also include common names of these plants in the legend. The SDEIS needs to include percent occurrence by mine features - utilities, mine site, off-site facilities, and access roads. Without spatial context and degree of their extent (% of each in the Project area), it is difficult to understand the affected environment and environmental consequences of the proposed action. The SDEIS also narrowly focuses on noxious weeds designated by the Idaho State Department of Agriculture and does not mention other non-native plants present within the Project area, except for bull thistle (*Cirsium vulgare*). Does this mean no other non-native plants exist in the Project area? What about the presence of non-native annual grasses? The Forest needs to disclose all non-native plants that occur in the affected environment. The existence of other non-native plant species may jeopardize reclamation efforts and fail to meet Forest Plan management direction, as well as violate other federal regulations (i.e., SMCRA).

The SDEIS needs to disclose any records or information about the non-native plant species' occurrences over time (i.e., what species have increased over time in the Project area; what species are likely to spread into the foreseeable future). The RCP states that Perpetua implemented a Weed Management Plan in 2015 and that studies conducted at the Project area have identified Canada thistle (*Cirsium arvense*), rush skeletonweed, spotted knapweed (*Centaurea* ssp.; three latin names are cited in the Vegetation Specialist Report), and yellow toadflax (*Linaria vulgaris*).²⁴⁶ These are worrisome plant species. The SDEIS needs to include more information about each of these species, as well as others listed in the SDEIS. For example, oxeye daisy (*Leuceanthemum vulgare*) is a species of concern because it is an aggressive invasive species that can spread quickly into undisturbed meadows and riparian areas, displace native vegetation, and produce many seeds that remain viable in the soil for several years. What management actions including monitoring has the Forest or Perpetua done to control establishment and growth of these species? Are any present on the reclaimed areas, and if yes, then how will the Forest control their spread when Perpetua disturbs these areas again under the proposed actions? The Weed Plan will be updated prior to construction²⁴⁷ and needs to be part of the FEIS so the Tribe can review it.

3.11 Wetlands and Riparian Resources

The SDEIS notes:

IDFG considers wetlands associated with Mud Lake, Tule Lake, and Warm Lake, to be poor fens (IDFG 2004). Mud Lake and its associated wetlands are designated as a Class I site under the Wetland Conservation Prioritization Plan (IDFG 2012), indicating that this area is in near pristine condition and likely provides habitat for high concentrations of state rare plant or animal species (IDFG 2004). All these sites are within the analysis area for wetlands and riparian resources but outside of the construction footprint for the SGP. Mud Lake occurs near the existing Burnt Log Road (FR 447) and Warm Lake and Tule Lake occur south of Warm Lake

²⁴⁶ SDEIS at 3-242.

²⁴⁷ *Id.* at 3-80.

Road (CR 10-579). For this analysis, wetlands associated with Mud Lake, Tule Lake, and Warm Lake are considered fens.²⁴⁸

Idaho has one of the lowest wetlands concentrations in the United States, with less than one percent of its land mass designated as wetlands, and has lost 56% of its wetlands since 1860. In addition, wetland cover is associated with biodiversity in arid regions, and is disproportionately important for the maintenance of biodiversity in Idaho. Therefore, any loss of wetlands in Idaho is significant. Wetlands are the most carbon rich terrestrial habitat, and losses of wetlands and their functions releases soil carbon into the atmosphere, and reduces the ability of the landscape to hold carbon, filter water, and sustain biodiversity.

There are three Forest Watch species mentioned in the vegetation section (3.10) of the SDEIS (Blandow's helodium moss, sweetgrass, and Rannoch-rush); all three species are considered wetland plants. Blandow's helodium moss (also named *Elodium blandowii*) forms in mats and hummocks in wet areas of the forest (e.g., fens, wetlands, and near streams). One occurrence is located near Trapper Creek within 300 feet of Burntlog Route, but there are 705 acres of mapped potential habitat. Imperiled in Idaho, northern sweetgrass (also named *Heirochloe hirta*) is found in wetlands near Trapper Creek and mapped as having 996 acres of potential habitat. Sweetgrass growing in the Landmark area was documented by the Idaho Native Plant Society during a botanical survey in 2022. Rannoch-rush is a perennial, herbaceous, and vulnerable plant that grows in wetlands. It is listed on the National Wetland Plant List as an obligate hydrophyte (almost always occurs in wetlands) and is documented in the Mud Lake area within 300 feet of Burntlog Road (modeled potential habitat is 850 acres). None of these species were included in past special status surveys. Blandow's helodium moss, sweetgrass, and Rannoch-rush have not been surveyed by the Forest since 2004.

Sensitive species Least moonwort (or little grapefern) is a native wetland, perennial, facultative hydrophyte fern. It is listed on the National Wetland Plant List as a facultative perennial fern (occurs in wetlands and non-wetlands). According to the SDEIS, two subpopulations of a single occurrence occur in swales adjacent to Johnson Creek Road. To realize the full impacts on these subpopulations, the Forest needs to revisit these sites and potential habitat (838 acres), assess impacts and disclose them in the SDEIS. These sites have not been surveyed since 2005.

Section 3.11.3, Clean Water Act, page 3-243. In February of 2022 the Corps adopted the pre-2015 rule and this no longer categorically excludes ephemeral features as jurisdictional waters²⁴⁹ and the General Condition 23(d) Stream Mitigation threshold changed to all losses of stream bed that exceed 3/100-acre. Although impact analysis has been completed and jurisdictional review by Corps is underway, the Tribe is unclear how this review will address impacts to WOTUS identified in the SDEIS. Would this increase the impacted acreage if adopted? The results of this review including (identification of acreage, full analysis and disclosure of impacts) need to be addressed in an addendum or supplement to the DEIS.

The National Forest Management Act ("NFMA") of 1976 includes direction to prevent watershed conditions from being irreversibly damaged and to protect streams and wetlands from detrimental

²⁴⁸ *Id.* at 3-249.

²⁴⁹ Revised Definition of "Waters of the United States," 86 Fed. Reg. 69,372 (Dec. 7, 2021).

impacts. The Organic Act of 1987 recognizes watersheds as systems that need to be managed to sustain their hydrologic function. The disruption of the hydrology of the slope above these wetlands due to road construction threatens wetlands that were not in the original assessment, and affects the availability of these habitats for wildlife. The disruption and destruction of wetland habitat for the duration of the project, and the extended timeline to reconstruct wetland habitat, displaces the communities that depend upon these habitats for nearly two decades, a significant impact that was not adequately addressed.

3.12 Fish Resources and Fish Habitat

The Tribe has worked to restore Pacific lamprey in the SFSR watershed, including the EFSFSR, as an important cultural and treaty resource since 2012, through releasing adult lamprey to naturally spawn.²⁵⁰ The SDEIS recognizes that Pacific lamprey are one of the native fish species within the analysis area²⁵¹, but fails to mention the effects of this project on the fish, recovery efforts being made to restore these unique fish to the SFSR ecosystem and fails to analyze how this proposed project would threaten restoration success.

For the Columbia River tribes and the Nez Perce Tribe, Pacific lamprey are a cornerstone species on par with salmon for their cultural and nutritional significance. Like salmon, they migrate as juveniles to the ocean and return to spawn in freshwater streams.²⁵² Lamprey have distinctive habitat requirements for their various life stages from larval ammocoetes, macrophthalmia to returning anadromous adults. Successful spawning of translocated lamprey in the SFSR watershed has been verified by parentage analysis for all translocation streams. Parentage analyses has also provided valuable life history data, such as lengths at age, ages of ammocoetes and macrophthalmia, and age at emigration from the natal stream.²⁵³

The Tribe has shared data on adult lamprey releases in the SFSR with the Forest Service in the past and is disappointed that this information has not been presented in the SDEIS, especially after it was identified as a gap in the DEIS comments by the Tribe.

3.13 Wildlife and Wildlife Habitat (Including Threatened, Endangered, Candidate, and Sensitive Species)

Existing conditions of wildlife species and associated habitats impacted by the Project span across three National Forests and lands outside Forest Service jurisdiction. The analysis area covers approximately 613,793 acres of land and includes a description of conditions for ESA-listed and candidate species (“TEPC”), focal species (Forest Sensitive Species and Management Indicator Species), Idaho Species of Greatest Conservation Need (“SGCN”), big game, and migratory birds.

²⁵⁰ Brostrom et al, *Pacific Lamprey Regional Implementation Plan for the Snake River Region: Lower Snake, Clearwater and Salmon Regional Management Units*, 2018, <https://www.pacificlamprey.org/wp-content/uploads/2022/02/2018.08.13-SnakeRIP.pdf>.

²⁵¹ SDEIS at 3-266, 3-515.

²⁵² Pacific Lamprey Conservation Initiative, *Region Comes Together to Restore Pacific Lamprey in the Columbia River Basin*, Newsletter May 5, 2022.

²⁵³ Brostrom et al., *Pacific Lamprey Regional Implementation Plan for the Snake River Region: Lower Snake, Clearwater and Salmon Regional Management Units*, 2018, <https://www.pacificlamprey.org/wp-content/uploads/2022/02/2018.08.13-SnakeRIP.pdf>.

ESA-listed species and species proposed for listing include Canada lynx (*Lynx canadensis*; *qéhep*) (Threatened), northern Idaho ground squirrel (“NIDGS”) (*Urocitellus brunneus*) (Threatened), wolverine (*Gulo gulo*; *seeḫin’iséḫin*) (Proposed Threatened), and monarch butterfly (*Danaus plexippus*) (Candidate).

The Forest modeled source habitat for wildlife species and groups by subwatershed. The SDEIS also discloses whether the species is documented in the analysis area. The Tribe is pleased to see that the analysis considers impacts to summer and winter habitats of bighorn sheep (*Ovis canadensis*; *tiñiun*). The SDEIS includes analysis of impacts to a select number of terrestrial vertebrate species identified in the 2015 Idaho SWAP as SGCN, but lacks supporting rationale for their inclusion. The SDEIS fails to include any invertebrate species (e.g., insects, arachnids, and mollusks) and their associated habitats, (except for monarch butterfly), many of which are found in the Idaho Batholith region. Idaho is also in the process of revising the SWAP which includes 25 invertebrate SGCN and 73 invertebrate SGIN.²⁵⁴ The Tribe requests that the Forest describe existing conditions in the Project area for invertebrate species, particularly terrestrial and aquatic insects and mollusks. The Tribe also requests that the Forest evaluate other big game species, such as moose (*Alces alces*; *sáaslaqs*) and mountain goat (*Oreamnos americanus*; *caXisXis*).

Under relevant laws, regulations, policies, and plans, the SDEIS should reference Forest Service Manual 2840 Reclamation, specifically section 2841 which includes “[r]eclamation components for plans of operations: Forest Supervisors shall ensure the following administrative and environmental components are adequately addressed in each Plan of Operations when applicable: ...[f]ish and wildlife habitat reclamation or mitigation.”²⁵⁵ A Wildlife Habitat Mitigation Plan has been provided by Perpetua, but it is the Tribe’s understanding that it has not been accepted by the Forest. Please provide additional information about why this plan has not been formally accepted by the Forest? Mitigation of environmental impacts and reclamation of National Forest Service lands is part of the need for action.²⁵⁶

3.14 Timber Resources

The analysis area for timber resources covers the mining site, access routes, offsite facilities, and utilities (approximately 855 acres, although it is unclear in the SDEIS how large is the entire analysis area for timber). Timber resources consist of conifer tree species typically harvested for forest products (e.g., Douglas-fir (*Pseudotsuga menziesii*; *páaps*), Engelmann spruce (*Picea engelmannii*; *heslips*), lodgepole pine, and ponderosa pine (*Pinus ponderosa*; *láaqa*), grand fir (*Abies grandis*; *pítḫpitḫ*), subalpine fir, and western larch (*Larix occidentalis*; *kimíle*)), including merchantable sawtimber-sized trees and sub-merchantable small trees.²⁵⁷ The Forest needs to update the SDEIS to reflect changes to whitebark pine status as an ESA-threatened species. Timber resource ownership and mining claim status across the analysis area includes 701 acres of Forest

²⁵⁴ Idaho Department of Fish and Game, *Idaho state wildlife action plan*, 2022 rev. ed. Boise, Idaho Department of Fish and Game, <https://idfg.idaho.gov/>.

²⁵⁵ Forest Service Manual 2840.

²⁵⁶ SDEIS at ES-1 and 1-8.

²⁵⁷ *Id.* at 3-381 to 3-383.

Service land, 104 acres on private land, and 50 acres on Idaho state land.²⁵⁸ These acres exclude burned areas due to wildfire within the analysis area.

3.16 Access and Transportation

The details of the post-closure access through the proposed mine site to the Thunder Mountain road is still to be determined.²⁵⁹

3.23 Special Designations

The Stibnite Gold project area is surrounded by special designation areas, including the Frank Church River of No Return Wilderness area, Recommended Wilderness Area, 13 Inventoried Roadless Areas (Bernard, Black Lake, Burnt Log, Caton Lake, Horse Heaven, Meadow Creek, Needles, Peace Rock, Reeves Creek, Secesh, Stony Meadows, Sugar Mountain, Whiskey) with different management themes, Research Natural Areas (Belvidere Creek and Chilcoot Peak - in Burntlog proposed route), Wild and Scenic Rivers that are eligible and suitable for inclusion in the national System include: Burntlog Creek (eligible), Johnson Creek (eligible), and SFSR (suitable).²⁶⁰ These special areas were designated for a particular reason that needs unique consideration with respect to consequential effects.

3.24 Tribal Rights and Interests

Revisions are needed in the analysis sections in this chapter to include the Tribe's 1855 Treaty under the "Relevant Laws, Regulations, Policies, and Plans." The Tribe's rights are well-established. The "usual and accustomed" treaty fishing right held by the Tribe, under the 1855 Treaty, has been upheld and defined in numerous court cases including the United States Supreme Court decisions in *U.S. v. Winans*²⁶¹ and *Seufert Bros. Co. v. U.S.*²⁶² Under United States law, an "usual and accustomed" fishing right is not defeasible: it is permanent and includes the right to cross private property as necessary to exercise the right when surrounding land ownership changes and is not limited to the Tribe's ceded area. And, as affirmed in *Washington v. United States*,²⁶³ these treaty-reserved fishing rights include meaningful protections against interference, including culverts that hinder fish passage and thereby diminish the number of fish available for harvest.

Section 3.24.1 Introduction

The assertion that the report "considers the rights and interests of federally-recognized American Indian Tribes (the Nez Perce Tribe, Shoshone-Bannock Tribes, and Shoshone Paiute Tribes) whose treaty fishing and hunting rights and traditional subsistence range . . . includes the [Project] area"²⁶⁴ is erroneous and without support to the extent it seeks to attach to the Project area any

²⁵⁸ *Id.* at 3-392.

²⁵⁹ Tetra Tech. 2021 Reclamation and Closure Plan Figure 3-10 at 3-83.

²⁶⁰ SDEIS at 3-477.

²⁶¹ *United States v. Winans*, 198 U.S. 371 (1905).

²⁶² *Seufert Bros. Co v. United States*, 249 U.S. 194 (1919).

²⁶³ *Washington v. United States*, 138 S Ct. 1832 (2018).

²⁶⁴ SDEIS at 3-497.

historical or legal right, title, or interest of the Shoshone-Bannock Tribes or Shoshone-Paiute Tribes.

The Tribe's rights are well-established in the Project area and SFSR watershed. The Project is located entirely within the Nez Perce's area of exclusive use and occupancy as adjudicated by the Indian Claims Commission in its 1967 decision.²⁶⁵ The U.S. Congress established the Indian Claims Commission in 1946 to adjudicate Indian tribes' claims against the United States for, among other issues, compensation for the taking of aboriginal lands by the United States without fair payment. The Indian Claims Commission required that compensable aboriginal land title be based on "actual exclusive and continuous use and occupancy 'for a long time' prior to the cession, transfer, or loss of the property."²⁶⁶ In this decision, the Indian Claims Commission made comprehensive findings regarding the Nez Perce's claim for unconscionable compensation for land ceded to the United States in the 1855 Treaty. The Indian Claims Commission's comprehensive findings in its decision were based on detailed anthropological evidence from both the United States and the Nez Perce of the area of "exclusive use and occupancy" and "aboriginal ownership" as against any other Indian tribes. Among other areas, the Indian Claims Commission's decision included the entire area encompassing the Project and affected SFSR watershed. Given this decision, other Indian tribes' asserted rights or interests within the Project area are without legal or other evidentiary support. No federal court has ever altered the Indian Claims Commission's findings of fact and conclusions of law nor is there any legal or evidentiary support that would justify doing so.

3.24.2 Tribal Rights and Interests Resource Area of Analysis

The Tribe acknowledges and supports the Forest's determination that the analysis area should not be limited to the Project area and must include the South Fork Salmon River ("SFSR") watershed which "encompasses (is larger than or equal in size to) the other analysis areas used in this EIS for tribal resources of concerns including fish and fish habitat, wildlife and wildlife habitat, vegetation and botanical resources, and cultural resources that may be directly or indirectly impacted by the [Project]."²⁶⁷ However, the analysis area should also include access and haul routes to the extent those routes, and the direct and indirect effects of Project-related activities on those access and haul routes, extend beyond the SFSR watershed, including Indian Creek and the Middle Fork Salmon River below Indian Creek confluence, Pearsol Creek, Beaver Creek, Upper Big Creek subwatersheds in the North Fork Payette River watershed.

3.24.3 Relevant Laws, Regulations, Policies, and Plans

The statement, "federal trust requires federal agencies to manage lands under their stewardship with full consideration of tribal rights and interests, particularly reserved rights, where they have been exercised since time immemorial"²⁶⁸ is a distortion of the law and does not suffice. Treaty-reserved rights are not mere factors for federal agencies to consider when making land management decisions. The Tribe's treaty rights give rise to enforceable, non-discretionary legal

²⁶⁵ *Nez Perce Tribe v. United States*, Docket #175, 18 Ind. Cl. Comm. 1 at 128.

²⁶⁶ *Id.*

²⁶⁷ *Id.* at 3-498.

²⁶⁸ *Id.*

obligations on the part of the federal government that extend beyond “consideration.” Meaningful and accountable action, not mere consideration, is necessary to comply with tribal treaties.²⁶⁹

Nez Perce Tribe Treaties (1855 and 1863)

Following the 1855 Treaty language, the next statement is inaccurate and should be deleted. It reads, “The Nez Perce Tribe Treaty of 1863 does not specifically list any off-reservation rights.” In addition to expressly not altering any rights reserved by the 1855 Treaty, Article VIII of the Treaty of 1863 expressly provides:

The United States also agree to reserve all springs or fountains not adjacent to, or directly connected with, the streams or rivers within the lands hereby relinquished, and to keep back from settlement or entry so much of the surrounding land as may be necessary to prevent the said springs or fountains being enclosed; and, further, to preserve a perpetual right of way to and from the same, as watering places, for the use in common of both whites and Indians.

Shoshone-Bannock Tribes Treaty (1868)

The Forest references Article 4 of the Fort Bridger Treaty, “the right to hunt on the unoccupied lands of the United States so long as game may be found thereon” in support of the Agency’s statement that the Shoshone-Bannock Tribes “reserved rights outside of established reservations, including hunting rights.”²⁷⁰

Again, it is important to emphasize that the Project is located entirely within the homeland of the Nez Perce people, the *Nimíipuu*, and within the Tribe’s area of exclusive use and occupancy, as adjudicated between the Tribe and United States by the Indian Claims Commission. Additionally, the Forest’s interpretation of the Shoshone-Bannock Tribe’s treaty rights to encompass off-reservation rights other than hunting is not supported by any federal court determination. While the Shoshone-Bannock Tribes often cite *State v. Tinno*,²⁷¹ that decision is not binding precedent (the court recognized that it lacked jurisdiction and issued an advisory opinion) and at most found that the treaty word “hunt” would have been understood to include fishing, and that some evidence had been provided of Shoshone-Bannock Tribes fishing at the Yankee Fork of the Salmon River. The United States Supreme Court’s more recent decision in *Herrera v. Wyoming*²⁷² also lends no support to the Forest’s interpretation. In *Herrera*, the Court overturned a Wyoming state court decision upholding a citation issued to a Crow Tribal member for harvesting elk in the Bighorn National Forest pursuant to the terms of an 1868 treaty between the Crow Tribe and the United

²⁶⁹ See Working Group of the Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights, *Best Practices For Identifying and Protecting Tribal Treaty Rights, and Other Similar Rights In Federal Regulatory Actions and Federal Decision-Making*, November 30, 2022, at 11 (“Tribes were extremely supportive of the statement that “treaties are substantive law” but commented that the implementation of this fundamental principle through decision-making and regulatory drafting is lacking. Tribes asserted agencies have a legal duty and a trust responsibility to uphold Tribal treaty rights and protect and improve treaty-reserved resources, not whenever convenient or “where applicable,” but in all matters and manners. Tribes stated that treaty rights are not subject to an agency’s discretion”).

²⁷⁰ SDEIS at 3-501.

²⁷¹ *State v. Tinno*, 497 P.2d 1386 (Idaho 1972).

²⁷² *Herrera v. Wyoming*, 139 S. Ct. 1686 (2019).

States. And while the treaty hunting language at issue in *Herrera* is identical to the language in the Shoshone-Bannock Tribe’s 1868 treaty, nothing in the Court’s decision addresses the precise legal questions of whether Shoshone-Bannock Tribe’s off-reservation treaty right to “hunt” includes fishing or other activities; or whether those hunting rights apply to lands within the Project area or SFSR watershed as delineated in the SDEIS.

Shoshone-Paiute Tribes Executive Order (1877)

The Forest offers vague and indecipherable references to “[p]revious treaties with ancestral Shoshone-Paiute bands” that, with the exception of the Ruby Valley Treaty of 1863, are identified as “unratified”²⁷³ and which the Forest asserts “establish various rights (or do not extinguish rights), which has led to complex unresolved claims and rights.”²⁷⁴ These references and accompanying characterization lack accompanying or verifiable evidence. The Tribe disputes the Forest’s rationale for including this information under “relevant laws, regulations, policies, and plans” to support the Forest’s assertion that the “traditional subsistence range (or “traditional use area” meaning, geographic areas commonly used for the provision of food, clothing, shelter, spiritual, and other purposes)”²⁷⁵ of the Shoshone-Paiute Tribes encompasses the Project area and SFSR watershed.

Nez Perce Tribe

The statement, “Article 3 of the Nez Perce Tribe Treaty of 1855 affords the Tribe off-reservation rights for fishing, hunting, gathering, and grazing livestock in ‘all usual and accustomed places’ on open and unclaimed lands outside the reservation”²⁷⁶ requires revision. Revise to reflect the Treaty language, as follows: “Article 3 of the Nez Perce Tribe Treaty of 1855 reserves to the Tribe the right to fish at all usual and accustomed fishing places, and hunt, gather, and pasture horses and cattle on open and unclaimed land.”²⁷⁷

The next sentence should be revised as follows to reflect the Indian Claims Commission’s determination: “[t]he analysis area is located within the area ~~claimed to have been~~ exclusively used and occupied by the Nez Perce Tribe, as adjudicated by the Indian Claims Commission.”

The statement, “Some of the usual and accustomed fishing rights identified by the United States were within the Operational Area Boundary (Greiser 1998)” should be expanded to read: “The United States documented Nez Perce sites used during and before 1855 including village sites, fishing locations, named usual and accustomed fishing places from Nez Perce oral tradition based on depositions and affidavits of Nez Perce elders given in 1997 and 1998, and archaeological sites that predate most historical records that contain riverine/aquatic resources or evidence of use of such resources. These sites are all evidence of Nez Perce usual and accustomed fishing places, and include usual and accustomed fishing places within the Operational Area Boundary” (Greiser 1998).

²⁷³ SDEIS at 3-501.

²⁷⁴ *Id.*

²⁷⁵ *Id.* at 3-497.

²⁷⁶ *Id.* at 3-505.

²⁷⁷ *Id.*

Land Status and Access

The opening paragraph is problematic and requires revision for clarity and accuracy. The statement “Much of the [Project] is on National Forest System land...and is mostly unoccupied federal lands; therefore, most lands are available for treaty rights as stated in the various treaties and executive orders. usual and accustomed fishing places are also available” [sic] does not make grammatical sense and uses inaccurate or inappropriate terms out of context. The term “open and unclaimed land” is employed in the 1855 Treaty and has been interpreted by courts to include National Forest System lands.²⁷⁸ Why, therefore, has the Forest Service characterized the National Forest System lands on the Payette and Boise National Forests in the SDEIS as “mostly unoccupied”? What factors or criteria is the Forest applying to deem some federal lands “unoccupied”? The term “unoccupied lands” suggests language from the 1868 Fort Bridger Treaty to which the Nez Perce Tribe was not a party. “Unoccupied” is, therefore, inapt to describe National Forest System lands subject to Nez Perce treaty-reserved rights. The term “usual and accustomed fishing places” is also specific to the Nez Perce Tribe’s 1855 Treaty and not does not appear anywhere in the 1868 Fort Bridger Treaty or other ratified or unratified treaty for which the Shoshone Bannock Tribes or Shoshone Paiute Tribe claims an interest related to the Project. As explained above, the Tribe’s “usual and accustomed” fishing right is not defeasible: it is permanent, includes the right to cross private property as necessary to exercise the right when surrounding land ownership changes, and is not limited to the Tribe’s ceded area.

Water Resources

The Tribe, and United States as the Tribe’s trustee, submitted substantial evidence in the Snake River Basin Adjudication regarding the Tribe’s occupation and use of the Salmon River drainage. That evidence, supported by numerous expert reports and depositions of Nez Perce elders, documents Nez Perce fishing, hunting, and gathering in the area. Evidence submitted by the United States as trustee for the Tribe included an affidavit from T. Weber Greiser, an archaeologist, who researched anthropological and historical resources and conducted interviews with Nez Perce Tribal members to document fishing, hunting, and gathering by members of the Tribe, including the identification of the “usual and accustomed fishing places” of the Tribe.²⁷⁹ The Greiser Affidavit confirms that stream reaches within the SFSR watershed area, including stream reaches within the Project area, contain Nez Perce usual and accustomed fishing places.²⁸⁰

The Forest includes references to the Greiser Affidavit in this section to identify streams with usual and accustomed fishing places in the vicinity of the Operations Area Boundary. The Forest’s interpretation of this information, however, requires revision.

First, in addition to the streams the Forest listed, the Greiser Affidavit documents the following usual and accustomed fishing places as identified by Nez Perce elders in their appended affidavits:

²⁷⁸ See *State v. Arthur*, 261 P.2d 135 (1953), cert. denied, 347 U.S. 937 (1954); *Confederated Tribes of Umatilla Indian Res. v. Maison*, 262 F. Supp. 871, 873 (D. Or. 1966), aff’d. sub nom, *Holcomb v. Confederated Tribes of Umatilla Indian Res.*, 382 F.2d 1013 (9th Cir. 1967).

²⁷⁹ See Affidavit of T. Weber Greiser, *In re the General Adjudication of Rights to the Use of Water from the Snake River Basin Water System*, Case No. 39576 (5th Jud. Dist. Idaho Sept. 8, 1998).

²⁸⁰ *Id.* Ex. A, at 70 (map depicting Nez Perce usual and accustomed fishing places based on known archaeological, ethnographic, and historic references).

East Fork South Fork Salmon River to the headwaters, No Man’s Creek, Tamarack Creek, Stibnite Creek, Salt Creek, Pepper Creek, and Sugar Cane Creek.

Second, the Greiser Affidavit emphasizes that specific sites and locations identified as usual and accustomed fishing places “are considered to be bases for activities upstream or downstream along stretches of rivers or streams and nearby tributaries.”²⁸¹ He explains: “Nez Perce elders talk about use of a stream, a tributary or a general area, as in the recent depositions, they may not identify a specific site since the actual locations of fish or other subsistence resources changes from year-to-year.”²⁸² Mr. Greiser notes:

The archaeological, historical, and ethnographic records of Nez Perce usual and accustomed fishing places should not be considered complete. As can be seen by reviewing HRA’s database of usual and accustomed fishing places, some of the reported sites are not relocatable due to passage of time or destruction by natural or human-caused events. There is likely an unquantifiable number of sites that will never be known for the same reasons. In addition, only limited parts of the Nez Perce aboriginal area have been subjected to intensive investigation above or below the ground surface. For the past three decades or so, survey or inventory for archaeological sites has been conducted only in advance of some ground-disturbing project where federal regulations regarding protection of archaeological or historical resources apply. It should also be noted that while many historical documents and maps are helpful, others contain indecipherable site locational information. Finally, many Nez Perce elders with knowledge helpful for locating usual and accustomed fishing places are no longer with us and often their knowledge was not passed down to younger generations or collected by interested non-tribal members.²⁸³

Given Greiser’s explication, the Tribe is concerned that the Forest’s interpretation of the information contained in his Affidavit concerning the location and scope of Nez Perce usual and accustomed fishing places within and adjacent to the Operations Area Boundary is unduly narrow. The Forest asserts, for example, that “intermittent reaches to the EFSFSR above the Above Operations Area were identified as usual and accustomed fishing places based on identification by elders.” Not only is this statement factually inaccurate (elders identified the EFSFSR to the headwaters as a usual and accustomed fishing place), but also the Forest is pinpointing stretches of a stream as a usual and accustomed fishing place while categorically dismissing geographically adjacent stream stretches or tributaries simply because they were not specifically identified as a usual and accustomed fishing places in the Affidavit. This interpretation is evident with the Forest Service’s statement, “Other tributaries to the EFSFSR in the Operations Area Boundary were not identified as usual and accustomed fishing places (e.g. Meadow Creek, Blowout Creek, Rabbit Creek”) etc.”

These stream stretches, although not specifically identified as usual and accustomed fishing places in the Greiser Affidavit or accompanying Nez Perce Tribal member affidavits, are very close

²⁸¹ Affidavit of T. Weber Greiser, at 28-29.

²⁸² *Id.* at 29.

²⁸³ *Id.* at 34.

geographically. As the Greiser Affidavit suggests, to conclude that the Nez Perce fished one tributary and not the adjacent tributaries solely because they have not been expressly identified as usual and accustomed fishing places in the Affidavit, is unreasonable. Greiser specifically states that usual and accustomed fishing places “likely extend both upstream and downstream from any of the specified locations.”²⁸⁴ This view is supported by the affidavits of Elmer Paul Crow, Jr., Silas Caleb Whitman, and Rudolph “Rudy” Carter, all enrolled members of the Nez Perce Tribe, which are appended to the Greiser affidavit. The Crow affidavit states: “I consider a ‘usual and accustomed place,’ as it says in the 1855 Treaty, to be anywhere the Nez Perces were camped. I consider these places to be areas, not specific sites.”²⁸⁵ (The Greiser Affidavit provides a map titled “Distribution of Known Archaeological Sites,” which shows a cluster of archeological sites in the Project area, suggesting that Nez Perce heavily used and likely camped in the Project area.²⁸⁶) The Whitman Affidavit states: “My understanding of the phrase ‘usual and accustomed fishing places’ from the 1855 Treaty is that we reserved the right to go to every river and stream within our aboriginal territory to take fish. And we were not limited to just specific sites along those stream and river systems.”²⁸⁷ The Carter Affidavit states: “We fish the whole stream, not just specific sites. The entire stream we call a fishing place.”²⁸⁸ In light of this information, the Forest should instead view the usual and accustomed places identified within and adjacent to the Operations Area Boundary as dispositive of historical fishing in all streams in the area.

Third, the Forest Service erroneously states:

The SGP mine area...has been affected by historical mining that has altered the nature and potential use of usual and accustomed fishing locations and springs. Hence, there is no archeological, ethnographic, or historical evidence of recent or present use according to the affidavit (Greiser 1998), which is consistent with use of the area for mining.²⁸⁹

This passage represents a gross misreading of the Greiser affidavit. The United States contracted with Mr. Greiser to document Nez Perce usual and accustomed fishing places, not to present evidence of recent or present use of such places.²⁹⁰ Nevertheless, the Greiser affidavit does in fact document usual and accustomed area use contemporary with its 1998 writing, including within the Project area. Specifically, the appended Crow Affidavit states in important part: “Attachment A to this affidavit is a list of 466 creeks, streams and rivers I have personally fished at in my time. My family and I are still using all these places on a regular basis.”²⁹¹ The Crow Affidavit includes in the list the “East Fork of South Fork Salmon River,” “Tamarack Creek,” “Stibnite Creek,” “Pepper Creek,” “Salt Creek,” and “Sugar Cane Creek.” In the 25 years since the Greiser affidavit was published, the Nez Perce Tribe and its members have continued to exercise the Tribe’s reserved rights within the Project area. The Tribe would be happy to share this information with the Forest Service upon request through government-to-government communications.

²⁸⁴ *Id.* at 7.

²⁸⁵ Affidavit of Elmer Crow Jr. at 3.

²⁸⁶ Greiser Affidavit at 73.

²⁸⁷ Affidavit of Silas Caleb Whitman at 4.

²⁸⁸ Affidavit of Rudolph H. “Rudy” Carter at 5.

²⁸⁹ SDEIS at 4-669.

²⁹⁰ Greiser Affidavit at 8.

²⁹¹ Crow Affidavit at 3.

Wetlands

As the SDEIS notes, there are numerous wetland resources identified in the Operations Area Boundary and adjacent areas throughout the analysis area.²⁹² Wetlands provide important ecological functions for associated streams and rivers. Impacts to wetland and riparian areas are impacts to fisheries, wildlife, and vegetation habitat and therefore treaty rights and resources.²⁹³

Congress enacted the Clean Water Act (“CWA”) in 1972 to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”²⁹⁴ The CWA establishes several goals, including attainment and preservation of “water quality which provides for the protection and propagation of fish, shellfish, and wildlife”²⁹⁵ To further its goals, the CWA prohibits “discharge of any pollutant” into navigable waters except in accordance with the CWA terms.²⁹⁶ The Corps issues permits for the discharge of dredged or fill material pursuant to section 404 and subject to the Corps’ and EPA’s 404(b)(1) Guidelines (“Guidelines”).²⁹⁷ Corps regulations governing the issuance of Section 404 permits declare that “[m]ost wetlands constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.”²⁹⁸

The Corps must ensure compliance with the 404(b)(1) Guidelines before issuing a permit. The Guidelines prohibit the permitting of any discharge of dredged or fill material: 1) if there is a practicable alternative to the proposed discharge, 2) if the discharge causes or contributes to violations of applicable state water quality standards, 3) if the discharge will cause or contribute to significant degradation of the environment, or 4) unless all appropriate steps have been taken to minimize potential adverse impacts.²⁹⁹ These factors both individually and cumulatively must be considered when evaluating the specific details of the 404 application.

The Corps cannot authorize a discharge without “sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with [the Section 404(b)(1)] Guidelines.”³⁰⁰

When a project is not “water dependent,” and the Project would fill “special aquatic sites,” including wetlands, the Corps’ regulations create a rebuttable presumption that there are practicable and environmentally preferable alternatives, and such alternatives are presumed to have less adverse impact unless “clearly demonstrated” otherwise.³⁰¹ This substantive requirement mandates the Corps to select the least environmentally damaging practicable alternative).

²⁹² SDEIS at 3-514.

²⁹³ *Id.*

²⁹⁴ 33 U.S.C. § 1251(a).

²⁹⁵ *Id.* § 1251(a)(2).

²⁹⁶ *Id.*

²⁹⁷ 33 U.S.C. § 1344; 40 C.F.R. Part 230.

²⁹⁸ 33 C.F.R. § 320.4(b)(1); *see also Id.* § 320.4(b)(2).

²⁹⁹ 40 C.F.R. § 230.10.

³⁰⁰ 40 C.F.R. § 230.12(a)(3)(iv); *see* 33 C.F.R. §§ 320.2(f) and 320.4(a)(1).

³⁰¹ 40 C.F.R. § 230.10(a)(3); *Sierra Club v. Flowers*, 423 F. Supp. 2d 1273, 1352 (S.D. Fla. 2006).

Pursuant to the Guidelines, no discharge of dredged or fill material shall be permitted if, among other things, a practicable alternative to the proposed discharge would have less of an adverse impact on the aquatic ecosystem.³⁰² An alternative is practicable “if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.”³⁰³ Practicable alternatives include “activities which do not involve a discharge of dredged or fill material,” as well as “discharges of dredged or fill material at other locations” where such discharges would result in fewer impacts to the aquatic environment.³⁰⁴ The applicant has the burden of demonstrating that no feasible alternative exists, and the Corps must engage in a reasoned analysis of this issue.³⁰⁵

The Corps cannot blindly and uncritically accept an applicant’s study of alternatives and its assertions that no practicable alternative exists.³⁰⁶ Under the regulations, any “practicable” alternative to achieve the basic and overall project purposes must be determined to be cost-effective, when viewed from the perspective of the industry as a whole. The financial circumstances of a particular applicant are not considered relevant if an alternative could be achieved practicably by a “typical” applicant. The preamble to the 404(b)(1) regulations states: “Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project. The term economic might be construed to include consideration of the applicant’s financial standing, or investment, or market share, a cumbersome inquiry which is not necessarily material to the objectives of the Guidelines. We consider it implicit that, to be practicable, an alternative must be capable of achieving the basic purpose of the proposed activity.”³⁰⁷

But the least environmentally damaging practicable alternative need not be the least-costly, nor the most profitable.³⁰⁸ The regulations presume that less environmentally damaging alternatives are available to the applicant and practicable, unless the applicant clearly demonstrates otherwise. In the absence of such a clear showing, the Corps is required to deny the permit application.³⁰⁹

The Corps also cannot authorize any discharge of dredged or fill material that will cause or contribute to significant degradation of the waters of the United States.³¹⁰ The “degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by the [] Guidelines.”³¹¹

³⁰² 40 C.F.R. § 230.10.

³⁰³ 40 C.F.R. § 230.10(a)(2).

³⁰⁴ 40 C.F.R. § 230.10(a)(1).

³⁰⁵ *Sierra Club v. Flowers*, 423 F. Supp. 2d 1273, 1352 (S.D. Fla. 2006) at 1356–57.

³⁰⁶ *Friends of the Earth v. Hintz*, 800 F.2d 822, 835–36 (9th Cir. 1986).

³⁰⁷ Guidelines for Specification of Disposal Sites for Dredged or Fill Material, 45 Fed. Reg. 85,339 (Dec. 24, 1980).

³⁰⁸ *La. Wildlife Fed’n v. York*, 761 F.2d 1044, 1048 (5th Cir. 1985) (noting that the Corps had properly chosen “alternatives that reduced both the applicants’ profit and the economic efficiency of their proposed operations in order to preserve other environmental values”).

³⁰⁹ See 40 C.F.R. § 230.12(a)(3)(i), (iv).

³¹⁰ *Id.* § 230.10(c).

³¹¹ *Id.* § 230.10(d).

To ensure the mandatory CWA requirements are satisfied, the Corps must evaluate the direct, secondary, and cumulative impacts of the activity on a number of resources.³¹² The EPA Guidelines require the Corps to make detailed factual determinations regarding the individual and collective effects associated with the discharge activity, and “no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States.”³¹³ “Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests required by subparts B and G ..., with special emphasis on the persistence and permanence of the effects outlined in those subparts.”³¹⁴

The Corps cannot issue a 404 permit if it “would be contrary to the public interest.”³¹⁵ This requires the Corps to consider “the probable impacts” of a proposed project on “[a]ll factors which may be relevant to the proposal[,] including the cumulative effects.”³¹⁶ “Evaluation of the probable impact which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case.”³¹⁷

All factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.³¹⁸

The Corps must fully consider the impacts from the entire mine in making its public interest determination. “To require [the Corps] to ignore the indirect effects that would result from its actions would be to require it to wear blinders that Congress has not chosen to impose.”³¹⁹ In addition to the above-analyzed cases, the Ninth Circuit has recognized the Corps’ duty to consider these impacts in order to ensure that issuance of the 404 permit is in “the public interest.” In *Ocean Advocates*, after finding that the Corps failed to consider the cumulative impacts from increased shipping traffic resulting from the issuance of a 404 permit for an oil refinery dock, the court noted that upon remand and consideration of these effects, “the Corps may impose conditions on the operation of permitted terminals at any time ‘to satisfy legal requirements or to otherwise satisfy the public interest.’ 33 C.F.R. § 325.4(a).”³²⁰

The 404(b)(1) Guidelines also prohibit the Corps from issuing a 404 permit “unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the

³¹² See, e.g., 33 C.F.R. §§ 320.4(a)(1), 336.1(c)(5) (endangered species), 336.1(c)(8) (fish and wildlife); 40 C.F.R. §§ 230.11(a)-(h), 230.20-23 (aquatic ecosystem), 230.53 (aesthetics).

³¹³ 40 C.F.R. §230.10(c).

³¹⁴ *Id.*

³¹⁵ 33 C.F.R. § 320.4(a)(1).

³¹⁶ *Id.*

³¹⁷ *Id.*

³¹⁸ *Id.*

³¹⁹ *Riverside Irrigation District v. Andrews*, 758 F.2d 508, 512 (10th Cir. 1985).

³²⁰ *Ocean Advocates v. United States Army Corps of Engineers*, 402 F.3d 846, 871 (9th Cir. 2005) (emphasis added).

discharge on the aquatic ecosystem.”³²¹ Those seeking a 404 permit must mitigate the impacts of the proposed dredge and fill activities by “avoiding, minimizing, rectifying, reducing, or compensating for resource losses.”³²² The purpose of the compensatory mitigation program is to “offset unavoidable impacts to waters of the United States authorized through” 404 permits.³²³ Mitigation is required for “significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment.”³²⁴ These adverse effects to aquatic resource functions, whether direct or indirect, must be mitigated.³²⁵

Additionally, under NEPA, an EIS must: (1) “include appropriate mitigation measures not already included in the proposed action or alternatives,”³²⁶ and (2) “include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f)).”³²⁷ “All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperation agencies. . . .”³²⁸

As part of reviewing and approving the mitigation plan, Corps regulations require that Perpetua provide “financial assurance” to cover mitigation costs: “(n) Financial assurances. (1) The district engineer shall require sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with applicable performance standards. . . .”³²⁹ “The rationale for determining the amount of the required financial assurances must be documented in the administrative record for either the DA permit or the instrument.”³³⁰

Environmental Justice

Environmental Justice is more than Executive Order 12898. On January 27, 2021, President Biden signed Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad. In E.O. 14008, President Biden made clear that securing environmental justice must be a key consideration in how the United States governs. One key undertaking is the Justice40 initiative, requiring that 40 percent of the overall benefits of certain federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. The categories of investments include climate change, clean energy and energy efficiency, remediation and reduction of legacy pollution, and development of critical clean water and wastewater infrastructure. On January 10, 2022, USDA issued a memo to agencies that provided guidance on how each mission area can effectively integrate and operationalize Justice40 (“J40”) implementation as part of the agency equity action plans. USDA mission areas identified J40 Covered Programs, the program benefits to drive toward underserved communities, and metrics for each program to track success.

³²¹ 40 C.F.R. § 230.10(d).

³²² 33 C.F.R. § 320.4(r)(1).

³²³ 40 C.F.R. § 230.91(a)(1). *See also Id.* § 230.93(a).

³²⁴ 33 C.F.R. § 320.4(r)(2).

³²⁵ *Id.*; 40 C.F.R. § 230.93(a).

³²⁶ 40 C.F.R. § 1502.14(f).

³²⁷ 40 C.F.R. § 1502.16(h).

³²⁸ Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,031 (Mar. 23, 1981).

³²⁹ 33 C.F.R. § 332.3(n).

³³⁰ 33 C.F.R. § 332.3(n)(2).

USDA, under Secretary for Natural Resources and Environment, established a Forest Service Equity Action Plan representing a broad set of high-leverage actions with potential for creating high impact and enduring systemic change that benefit employees, tribes, partners, and the public. As part of this Forest Service Equity Action Plan update, the agency developed a Forest Service J40 implementation plan. J40 is considered one of the key priorities USDA is leveraging to support the goals of Executive Order 13985 on advancing racial equity, namely, reducing barriers and increasing investments in underserved communities. In addition, Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, requires the head of each agency to prepare a plan for addressing any barriers to full and equal participation in programs, services, procurement, contracting, and other funding opportunities. In this plan, the Forest Service committed to assessing barriers and identifying equity outcomes for underserved communities by focusing on several actions including increasing tribal trust responsibilities and participation in Forest Service activities that honor tribal rights and interests.

4.0 ENVIRONMENTAL CONSEQUENCES

“NEPA imposes procedural requirements designed to force agencies to take a ‘hard look’ at environmental consequences”³³¹ of their proposed actions. “An EIS must ‘reasonably set forth sufficient information to enable the decisionmaker to consider the environmental factors and make a reasoned decision.’”³³²

4.2 Geologic Resources and Geotechnical Hazards

The final antimony concentrate would be placed in 2-ton supersack containers ready for shipment off site for further refining.³³³ Add this to the risk of hazardous material spills in the project area and its waters and also enroute to the overseas refinery. The annual transport is estimated at 365 to 730 truckloads.³³⁴ It is assumed that the concentrate, when sold, would be shipped to facilities outside of the U.S. for smelting and refining because there are currently no smelters in the United States with capacity for refining the antimony concentrate. This risk is unacceptable and grounds for denying the approval of this Project.

4.3 Air Quality

The Forest Service relies on the IDEQ air permit for assuring requirements under the Clean Air Act are met.³³⁵ There are several issues with this. First, the Forest Service cannot claim as mitigation measures state of Idaho PTC plans that have not yet been finalized. The PTC’s Fugitive Dust Control Plan, Operations and Maintenance Plan, Access Management Plan, and Haul Road Capping Plan, although referenced in the PTC, have not yet been written, and will not be subject

³³¹ *League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton*, 752 F.3d 755, 763 (9th Cir. 2014).

³³² *Alaska Ctr. for Env’t v. Armbrister*, 131 F.3d 1285, 1289 (9th Cir. 1997) (quoting *Oregon Env’tl. Council v. Kunzman*, 817 F.2d 484, 493 (9th Cir. 1987)).

³³³ SDEIS at 2-50.

³³⁴ *Id.* at 2-140.

³³⁵ *Id.* at 4-35.

to a public comment process. The Forest Service must clearly identify mitigation measures in the SDEIS necessary to minimize the Project's adverse impacts to the environment.

Second, the Forest Service does not address fugitive dust control measures on the Project access roads into the mine (outside of the mining operations boundary). The fugitive dust control plan in the Environmental Monitoring and Management Program does not specify dust control requirements³³⁶ (by including specific timing of measurement, application of controls, and recordkeeping) and is, therefore, inadequate to protect the NAAQS and avoid sedimentation of adjacent waterways. The Forest should clearly state specific, detailed fugitive dust control requirements for mitigation of adverse environmental impacts.

Third, as we have also commented regarding the SDEIS (at 2-136 and 2-137) and the Air Quality Specialist Report (at p.1), under the Clean Air Act, air permits and their specific enforceable provisions (e.g., air pollution control equipment, dust control plans, operational limits, etc.) are intended to ensure that NAAQS are not violated, but this only applies outside of a facility's operations area boundary. Even with a well-developed, data-supported, practically enforceable air permit, within that operational boundary (aside from the specific question the Tribe has raised about the public access road being ambient air), a facility is allowed to exceed the NAAQS. Any air permit, therefore, will not protect the Tribe's treaty-reserved rights and numerous cultural resources within the operational boundary. Trust responsibilities extend to all life, plants, and animals that cannot speak for themselves. The SDEIS does not address the issue of NAAQS exceedances inside the operations area boundary.

The public access road between Stibnite Road at Sugar Creek and Thunder Mountain Road at Meadow Creek³³⁷ should not be excluded from the regulatory definition of ambient air. This road is intended to allow public access, not preclude it. EPA's revised Ambient Air Policy describes conditions by which the public is to be excluded from an area controlled by a source and which would then justify excluding an area for purposes of analyzing the source's impact on ambient air. Controlling public access through a site is not excluding public access through a site, thus the EPA revised Ambient Air Policy does not apply, and, therefore, the public access road should be considered ambient air. As the public access road is ambient air, all emissions, modeling, and controls must be characterized and considered, and subject to the NAAQS.

Table 4.3-20 SGP Public Access Route Receptor Results and NAAQS Compliance Demonstration shows compliance with the NAAQS.³³⁸ The values in Table 4.3-20 come from a 2021 report by Air Sciences, Inc. However, the public access road modeling in the Air Sciences 2018 report showed PM10 and PM2.5 NAAQS exceedances using the site-specific meteorological data set BULKRN.³³⁹ In the SDEIS, the Forest Service has chosen to present only the 2021 modeling results in Table 4.3-20, which had no exceedances and used the Q&V meteorological data set. This

³³⁶ Brown and Caldwell. 2021. Stibnite Gold Project. Environmental Monitoring and Management Program. Prepared for Perpetua Resources Idaho, Inc. at 2-16.

³³⁷ SDEIS at 4-41.

³³⁸ *Id.* at 4-52.

³³⁹ Air Sciences, Inc. 2018. Stibnite Gold Project. Air Quality Analysis. Prepared for Midas Gold Idaho, Inc., Project No. 335-1-2 at 113.

is not an accurate representation of modeling results. Both the 2018 and 2021 data sets are valid, so all data should be presented.

4.4 Climate Change

The SDEIS fails to offer mitigation or adaptation measures for climate change impacts. Mitigation measures for climate change could be integrated into the habitat restoration components of this project, and the construction and operation of the facilities. In addition, adaptation measures that could protect the road from washouts, reduce the likelihood of accidents causing forest fires, and innumerable actions that reduce risk, improve soil health, improve the capacity of the area to absorb carbon and cool water, could be proposed.

4.5 Soils and Reclamation Cover Material

Under the National Forest Management Act of 1976 (“NFMA”), all Forests are required to assess the impacts of management actions to ensure that they “will not produce substantial and permanent impairment of the productivity of the land.”³⁴⁰ Perpetua’s Project would create permanent adverse damage to soil resources. Under both action alternatives, soil productivity on more than 2,000 acres of land will not recover.³⁴¹ This environmental consequence jeopardizes the recovery and health of the Tribe’s treaty resources. The Tribe disagrees with Perpetua that they can leave the site in a better post-mine condition. The duration of impacts to soil resources would exceed the 50-year threshold for some actions³⁴² which will prevent conditions from ever being better than if no further actions at the Project site were to occur.

The Forest Service Manual directs soil resource management to focus on ecological functions with an objective of maintaining or improving soil quality on National Forest Lands “to sustain ecological processes and function so that desired ecosystem services are provided in perpetuity”³⁴³ and with the policy to “[m]anage ecosystems to maintain or improve soil quality.”³⁴⁴ Under both action alternatives, there would be long-term use of soil resources for mining purposes and the activities would completely remove native soil and there would be permanent loss of soil productivity.³⁴⁵ Without adequate soil resources, Tribal rights and interests will not be provided in perpetuity.

The SDEIS fails to evaluate impacts to soils from dust abatement applications and to fully incorporate and analyze components of the mitigation measures and the RCP. Several components of the RCP are not analyzed or considered in the SDEIS for soils, including stockpile locations, conditions, and specifications (e.g., slope construction should be less steep than 2.5H:1V considering the landscape), and the impact of using alternative growth media materials to achieve reclamation goals.

³⁴⁰ U.S. Forest Service. 1976. NFMA. (16 U.S.C. § 1600); 16 U.S.C. §1604(6)(g)(3)(C).

³⁴¹ SDEIS at 4-79.

³⁴² *Id.* at 4-79 and 4-82.

³⁴³ Forest Service Manual 2550.2.

³⁴⁴ Forest Service Manual 2550.3(1).

³⁴⁵ SDEIS Ch 4.5.

It is concerning that under both action alternatives, the Forests will be violating Forest Plan Standards for soil resources. The action alternatives would violate the following Standards on the Payette National Forest: SWST02, SWST03, MA13 MPC 3.1-1301, and MA13 MPC 3.2-1306. The action alternatives would violate the following Standards on the Boise National Forest: SWST02, MA20 MPC 3.1-2010, MA21 MPC 3.1-2108, MA19 MPC 3.2-1919, MA20 MPC 3.2-2010, MA21 MPC3.2-2113, MA20 MPC3.2-1914, MA20 MPC3.2-2005, MA21 MPC3.2-2108, and MA20 2006. The Forest needs to disclose the standards that will not be met, provide justification for the violations, and explain why the Forest is not proposing project-level amendments (except for SWST03 on the Payette).

Total Soils Resource Commitment

The Forest needs to clarify whether the TSRC activity area includes IRAs and other special designated areas because the SDEIS includes conflicting statements.³⁴⁶ The amount of TSRC increases dramatically under both action alternatives. Recovery of greater than 40% soil productivity within a 50-y timeframe would be unlikely on more than 2,000 acres of land under both action alternatives. Development rock and unreclaimed areas (e.g., open pits) would be permanent TSRC. Because TSRC would exceed Payette Forest Plan direction, the Forest is proposing to waive Standard SWST03. The TSRC would increase from 3 to 17% on the Payette (1,457 acres).³⁴⁷ How can the Forest waive a Standard, and in doing so, what does that mean in terms of reclamation, post-mining land use, meeting Forest Plan management direction, and providing treaty resources in perpetuity? A large portion of the estimated TSRC would occur within the Operations Area Boundary.³⁴⁸ The SDEIS states that “[a]fter mine closure, hunting, fishing, and gathering areas would be restored through reclamation and revegetation of disturbed areas and wildlife would return.”³⁴⁹ If this statement is true, the Forest would not need to amend SWST03. The SDEIS also states in several places that “[t]here are no known types of natural resources (or subsistence resources) available for exercise of treaty rights in the Operations Area Boundary that are not available on the surrounding NFS lands.”³⁵⁰ The SDEIS discloses that the Forest is taking a conservative approach to the uncertainty in reclamation success by categorizing all project-related disturbances as TSRC (with the exception of the transmission line ROW because the Forest has determined this to be DD)³⁵¹ and requesting an amendment to exceed the TSRC standard on the Payette. Uncertainty in reclamation success should be a reason for the Forest to reject the Project. The Forest is treating the TSRC impacted areas as sacrifice zones and furthermore, the Forest is uncertain about Perpetua’s ability to restore soil productivity. The Tribe finds the proposed actions and TSRC amendment unacceptable. It is unacceptable to the Tribe for the Forest to exceed a Forest Plan Standard, treat federal land upon which the Tribe has treaty rights as sacrifice areas, and allow a Project to exceed the TSRC Standard at the Forestwide scale (which would have adverse consequences to future foreseeable projects on the Forest). Granting an amendment to TSRC sets the precedent that mining companies can continue to permanently damage soil resources on NFS lands.

³⁴⁶ *Id.* at 4-76-77.

³⁴⁷ *Id.* at 4-79.

³⁴⁸ *Id.* at 4-81.

³⁴⁹ *Id.* at 4-669.

³⁵⁰ *Id.* at 4-667, 669, 673, 675, 678.

³⁵¹ *Id.* at 4-78-79, 4-82.

Detrimental Disturbance

Existing conditions detail that the DD analysis area occurs across both Forests, however environmental consequences to DD are only described for the Payette. The SDEIS needs to disclose impacts to DD on the Boise National Forest and clarify any violations of Forest Plan Standards (e.g., standard SWST02). Detrimental disturbance would occur on 500 acres of the transmission line ROW. Vegetation clearing would occur indefinitely along the transmission line and be maintained by Idaho Power Company.³⁵² The Forest estimates that vegetation clearing in the transmission line ROW could result in DD as high as 16% (which exceeds Forest Plan Standards for DD). How did the Forest estimate this number without having performed a site survey along the existing and proposed utility line corridor? How is the Forest considering DD on timber resource areas when Perpetua has not provided an acreage estimate or indicated the location of forest resources intended for use? If all forested areas in the analysis area meeting the definition of timber resources are assumed to be harvested for sale during the Project's construction and operations,³⁵³ what is the overlap for consequences to soils (i.e., would these areas fall under DD or TSRC)? What is the extent of DD on areas that have experienced wildfire in the past 20 years? The Project area spans 13 IRAs, and the SDEIS discloses that 740 acres of vegetation clearing would occur within six IRAs.³⁵⁴ How many of these acres are analyzed as DD?

Reclamation Cover Materials

The Project would disturb approximately 3,564 acres of land (NFS and non-NFS land combined) under the preferred alternative.³⁵⁵ The Tribe is concerned about the reduced quantity and quality of reclamation cover materials. Project-related disturbance at the mine site under both action alternatives would be subjected to reclamation activities, except approximately 278 acres associated with the Hangar Flats high walls, the West End pit land and high walls, Yellow Pine pit high wall, the Stibnite Lake feature, plus the Midnight, West End, and Plant Site ponds. Soil productivity of un-reclaimed disturbance would be reduced to zero on 278 acres.³⁵⁶ For all other areas, disturbance would be subject to reclamation, which requires approximately 1,650,075 bank cubic yards ("BCY") of suitable soil material. Under both alternatives, there would not be enough suitable soil materials for reclamation (the deficit is >790,000 BCY).³⁵⁷ Perpetua proposes to use off-site materials (e.g., commercial compost from beef and dairy feedlots, weed-free alfalfa hay, straw mulch, "potentially other soil amendments", fertilizer and on-site materials (e.g., from food waste composting) to both replace the deficit and improve the quality of the reclamation cover materials.³⁵⁸ The SDEIS, however, lacks any analysis or best available science in regards to the proposed soil amendments and how they would comply with regulations, policies, and plans. The Forest needs to determine the ecological and economic impacts of bringing off-site materials to a high-elevation landscape with naturally thin and poorly developed surface and subsurface layers. Compost and fertilizers will likely support greater establishment and growth of noxious weeds and

³⁵² *Id.* at 4-83.

³⁵³ *Id.* at 4-463.

³⁵⁴ *Id.* at 4-643.

³⁵⁵ *Id.* at 4-297.

³⁵⁶ *Id.* at 4-78.

³⁵⁷ *Id.* at 4-84.

³⁵⁸ *Id.* at 4-85 and Stibnite Gold Project Soils and Reclamation Cover Materials Specialist Report at 16-17.

non-native plants. Perpetua also proposes to stockpile off-site compost—a counterproductive measure knowing that stockpiling can reduce soil quality.

The Tribe is also concerned about the elevated levels of metals (e.g., arsenic, antimony, and mercury) in the surface and subsurface soils and requests that the Forest require the screening of metals as part of the growth media suitability guidelines for plant growth. Trace metals are naturally elevated in surface soils in the Project area,³⁵⁹ which may hinder or limit vegetation establishment and growth.³⁶⁰ The Forest needs to take a hard look at the feasibility of reclamation and improvement of site productivity to ensure the continued existence of tribal rights and interests. The Forest needs to set the standards for reclamation and take advantage of the wealth and expertise of its own research professionals who have conducted numerous restoration and reclamation studies. Reclamation requirements shall be those reasonable, practicable, and necessary to attain standards.³⁶¹ This should include measures of soil health (e.g., plant growth and composition, belowground microbial abundance and diversity, soil organic matter, soil texture, pH, etc.).

The SDEIS discloses that the best salvaged materials will be reserved for wetland restoration while poor quality mediums will be used for upland reclamation.³⁶² This is unacceptable considering (again) that soil quality will be further compromised from long-term storage in deep stockpiles (piles 200' tall stored for 1 to 42 years).³⁶³ Sacrificing uplands for the sake of wetlands does not comply with NFMA and Forest Plan direction. Lands should be treated equally. Upon further review of the SDEIS and RCP, the Tribe notes that wetlands on or along the Burntlog Route are not proposed for restoration after mine closure and road decommissioning.³⁶⁴

The Tribe has little faith that the Project area will be reclaimed to a condition that is better than existing conditions given the proposed impacts to soil quality, delays between initial disturbance and final reclamation (> 16y), and that past reclamation efforts have not been successful.³⁶⁵ The amount of suitable soil available as growth media is suspect given that soil horizons and suitability vary across the Project area. The Tribe is not optimistic that reclamation efforts will sustain Tribal resources in perpetuity. Because there are inadequate resources to reclaim all lands disturbed by the Project to a condition commensurate with pre-mining conditions and that the purpose and need of the Project does not align with NFMA and Forest Plan management direction (i.e., the Project will not move the landscape toward desired conditions, will create adverse impacts to Treaty resources and exercise of Treaty rights, and jeopardizes the trust responsibility that the Forest has to the Tribe), the Forest needs to reject the Project.

³⁵⁹ Tetra Tech. 2021 Reclamation and Closure Plan at B-26.

³⁶⁰ *Id.* at B-28.

³⁶¹ Forest Service Manual 2840.3.

³⁶² SDEIS at 4-85.

³⁶³ *Id.* at 4-86.

³⁶⁴ RCP at 4-23.

³⁶⁵ SDEIS at 4-78.

4.6 Noise

Tribal concerns regarding noise include noise health stressors affecting wildlife as well as noise impacts to tribal experiences in traditional use areas.³⁶⁶ The Forest states in the 2020 DEIS that “...noise in a community can contribute to stressors that may influence health such as”:

- Reductions in quality of life (potentially work, home, and school life), as noise can disrupt speech and sleep, potentially leading to increases in stress and reduction in productivity.³⁶⁷
- Effects on cardiovascular health via increases in blood pressure.³⁶⁸
- Changes in hormone levels related to a stress response.³⁶⁹

4.8 Surface Water and Groundwater Quantity

Section 4.8 of the SDEIS defines the environmental consequences of the proposed action to surface water and groundwater quantity. Throughout the SDEIS, the Forest Service highlights the interplay between seasonal surface precipitation (i.e., snow accumulation, melt, and runoff), streamflows, groundwater expressions as springs and seeps at the surface, and groundwater flows. Given the complexities of this interconnected hydrology, the Tribe is concerned that the SDEIS is grievously underestimating the impacts to surface flows, groundwater levels, and groundwater dependent ecosystems.

For surface flows, the SDEIS correctly notes that the Idaho Water Resource Board holds two minimum flow water rights located downstream of the proposed project area: #77-14190 for the EFSFSR and #77-14174 for the SFSR.³⁷⁰ The SDEIS fails to include minimum flow water right #77-14193 on Sugar Creek.³⁷¹ Additionally, it is unclear how alterations within the West End drainage - specifically, the stream diversion and the creation of the West End pit lake - will impact flows within Sugar Creek. The SDEIS states that the minimum flow water rights are subordinate to future Domestic, Commercial, Municipal, and Industrial (“DCMI”) uses and, in some cases, future non-DCMI allotments. The Forest Service, however, fails to provide important context. Although Idaho’s minimum flow protections for streams are woefully inadequate, the primary goal of the settlement agreement provisions detailed in the 2004 Snake River Water Rights Agreement were “to conserve and enhance fish habitat in order to address ESA concerns.”³⁷² As a result, 205 minimum stream flow water rights were established in streams within the Clearwater and Salmon

³⁶⁶ *Id.* at 3-517.

³⁶⁷ U.S. Department of Transportation. 2005. Final Report. High-speed Ground Transportation Noise and Vibration Impact Assessment. HMMH Report No. 293630-4. Federal Railroad Administration. Office of Railroad Development. October 2005.

³⁶⁸ Babisch, W. 2011 Cardiovascular effects of noise. *Noise and Health* (serial online) 2011. 13:201-204. December.

³⁶⁹ Evans, G. W., P. Lercher, M. Meis, H. Ising, and W. Kofler. 2001. Community noise exposure and stress in children. *J of Acoustic Soc Am.* 109(3) pp 1023-1027. March. Genesis Engineering Inc. and Levelton Engineering Ltd. (Genesis and Levelton). 2003. Non-Road Diesel Emission Reduction Study. October 14.

³⁷⁰ *Id.* at 3-121 to 3-122.

³⁷¹ Idaho Department of Water Resources. Water Right Report #77-14193.

<https://research.idwr.idaho.gov/apps/shared/WrExtSearch/Reports/WaterRightReport?basin=77&seq=14193&suffix=>

³⁷² Idaho State Water Plan, Idaho Water Resource Board, November 2012, at 71.

River Basins that, according to the State of Idaho’s water management plan, “provide significant protection for steelhead, salmon, and bull trout.”³⁷³ Furthermore, IDWR has a responsibility to “regulate the delivery of the instream flows through the designated stream reaches.”³⁷⁴ The Tribe wonders how this can be achieved when, to date, it is unknown whether the EFSFSR, the SFSR, or Sugar Creek are meeting minimum stream flows. Despite the legal inadequacies of Idaho’s minimum stream flow water rights, given how important the state of Idaho considers minimum stream flow water rights to the protection of ESA listed species, should not mitigation or compensation measures be pursued?

For groundwater levels, the hydrologic model appears to consider the water table as a static parameter that remains constant despite pumping, capture of runoff/contact water, and changes in groundwater loss/recharge due to stream diversions. It seems reasonable that stream diversions and capture of runoff may alter the water table in such a way that negatively impacts groundwater recharge. Furthermore, the SDEIS notes that “[c]limate change impacts to groundwater could decrease the availability of groundwater...in the area...[and that] [c]limate change induced changes in precipitation and evaporation could also impact the overall site-wide water balance which could result in significant changes to the amount of water being treated and discharged.”³⁷⁵ This statement, followed by a lack of meaningful discussion on how climate change induced changes could impact the site-wide water balance, highlight the inadequacy of the Forest Service’s reliance on water rights permitting requirements to protect water quantity.

The SDEIS states, “Instream rights on the SFSR are subordinate to 20.6 cubic feet per second (“cfs”); maximum diversions proposed by Perpetua from all sources and uses would be 9.68 cfs, within the allowance of the SFSR instream rights.”³⁷⁶ Where did 20.6 come from? Please provide additional information to clarify. Related, it poses an important question on whether a single applicant can command nearly half of the legally appropriable water in the stream. A recent legal review of Idaho case law found that “[c]ases involving surface water consistently have held that an appropriator may not command the entire flow of a stream to effect an appropriation of only a portion.”³⁷⁷

Section 4.8.3 is titled Mitigation Measures,³⁷⁸ however, mitigation isn’t actually discussed. For example, what happens if surface water flows are less than predicted? Monitoring will occur and may increase but an actual mitigation measure isn’t provided. Please provide examples of what this might be.

General negative impacts that are concerning and unanswered questions:

- Flows from springs and seeps are expected to be reduced in the areas where groundwater levels are lowered. This impacts the associated vegetation and ecosystems, etc.

³⁷³ Idaho State Water Plan, Idaho Water Resource Board, November 2012, at 79.

³⁷⁴ Nez Perce Tribe, *Special Master’s Term Sheet for Nez Perce Tribe Water Rights*, 2004, at 2.

³⁷⁵ SDEIS at 4-69.

³⁷⁶ *Id.* at 4-174.

³⁷⁷ Fereday, J. C., Meyer, C. H., & Creamer, M. C., *Water Law Handbook: The Acquisition, Use, Transfer, Administration and Management of Water Rights in Idaho*, Givens Pursley, LLP, 2004, at 67.

³⁷⁸ SDEIS at 4-177.

- Reductions are expected in stream flows, particularly in baseflow in certain mining years for certain streams/reaches.³⁷⁹ These could cause flows less than the minimum stream flows if IDWR approves the water right application.
- What are the impacts in Mine Year-1 from filling the TSF? This doesn't appear to have been modeled. Please provide additional details.
- Is there enforcement for minimum stream flow diversions? Where are there locations that surface water flows need to be met?

4.9 Surface Water and Groundwater Quality

According to the SDEIS, the West End pit is predicted to take 57 years to fill to approximately six feet below the level of where the predicted outflow from the pit lake to the surface water would be anticipated to spill over.³⁸⁰ In the event that water levels rise to the level near spill over, temporary water treatment is proposed to occur if needed; however, the unlined West end pit lake is predicted to receive groundwater inflow and produce groundwater outflow infuse connecting groundwater sources with persistent (at a minimum to Mine Year 112 where modeling was concluded) and elevated levels of antimony, arsenic, and mercury.³⁸¹ The SDEIS does not clearly define whether the Project will be responsible for treatment of potential spillover events in perpetuity. In reference to Sugar Creek, which “is listed 303(d) category 5 for arsenic (primary contact recreation) and mercury (cold water aquatic, primary contact recreation, salmonid spawning)³⁸² and receives water from West End Creek, the SDEIS does not cover whether impaired groundwater release from the West End Pit falls under the proposed IPDES permit for the Project or whether these effects have been modeled to infer the potential consequences on the downstream water quality standards of West End Creek, which is listed by IDEQ as fully supporting or good quality in categories 1 and 2 of §305(b) of the Clean Water Act (“CWA”).³⁸³

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.³⁸⁴ 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.³⁸⁵

The SDEIS states that “[t]he TSF would be designed and operated as a closed-circuit, zero-discharge facility meaning no tailings water would be discharged to the surface water or

³⁷⁹ *Id.* at 4-165, Table 4.8-4.

³⁸⁰ *Id.* at 4-224.

³⁸¹ *Id.* at 4-225.

³⁸² Payette National Forest, 2022, Stibnite Gold Project: Water Quality Specialist Report at 76.

³⁸³ Payette National Forest, 2022, Stibnite Gold Project: Water Quality Specialist Report.

³⁸⁴ *Stone v. High Mountain Mining Company*, USDC Colorado, Civil Action Case No. 19-cv-1246-WJM-STV, (2022).

³⁸⁵ Brown and Caldwell, 2022, Stibnite Gold Project: Idaho Pollutant Discharge Elimination System Individual Permit Application.

groundwater except in compliance with applicable permits and regulations.”³⁸⁶ However, the bottom liner is modeled to leak consolidation water due to minor defects in the liner from 34.3 m³/year in Mine Year 1 to 402 m³/year in Mine Year 14³⁸⁷ from the TSF with elevated concentrations sometimes orders of magnitude in exceedance of the strictest water quality criteria concentrations of arsenic, antimony, mercury, and residual cyanide.³⁸⁸ It is unclear in the SDEIS whether the seepage rate is projected to continue increasing from Mine Year 15 to 22 prior to cover placement. Based on the predicted surface water chemistry, elevated concentrations of arsenic, antimony, mercury, and residual cyanide will be present and subsequently leaching at increasing rates during this time frame.³⁸⁹ Compared to the entire water storage capacity (maximum of one foot of hydraulic head allowed to persist above tailings)³⁹⁰ of the TSF this volume is relatively small, but still remains an entirely unacceptable amount of contaminated water entering the watershed. The underdrain is designed to collect much of this seepage water but according to the SDEIS “[w]aters infiltrating into the subsurface under the mine facilities would mix with alluvial groundwater and are not subject to water treatment except in instances where alluvial groundwater is subsequently pumped for mine dewatering.”³⁹¹

The SDEIS states that the underdrain flows would be collected in a sump downstream of the toe of the buttress, monitored for water quality, then either discharged to Meadow Creek if underdrain water is not exceeding water quality standards or otherwise pumped to the ore processing facility, or sent to a contact water pond for either treatment and discharge or water used for the mill process.³⁹² Because the underdrain collection of seepage is proposed to enter Meadow Creek at a point source as the first option, an IPDES permit with water treatment requirements, monitoring requirements, and effluent limitations for all constituents of concern (aluminum, antimony, arsenic, cadmium, copper, manganese, mercury, zinc, sulfate, and TDS) should be put in place and included in the SDEIS for review. The monitoring requirements and effluent limitations for all the above constituents previously mentioned above, are not made clear in the Stibnite Gold Project IPDES Permit Application. What conditions would the IPDES permit, if any, require? Would it be practicable to treat metals to meet State water quality standards? How frequent will the sump be monitored? How long will post-closure monitoring and/or treatment occur? These are fundamental questions left unanswered in the SDEIS. It is also unclear in the SDEIS on how the TSF Underdrain Internal Outfall will be routed to a treatment facility.

It is assumed that the underdrain system will contain all seepage below the lower geosynthetic cover in the TSF; however, this assumption is unreasonable and it should not be assumed that because an underdrain system is in place that all seepage will be contained. The SDEIS does not account for the volume of seepage not collected by the underdrain system and thus fails to require this contaminated water allocated to the IPDES permit.

The SDEIS should address the expected efficiency and longevity with respect to maintenance and replacement of the underdrain system given it will be required to continue to operate as per design

³⁸⁶ SDEIS at 2-57.

³⁸⁷ *Id.* at 4-211.

³⁸⁸ *Id.* at 4-204.

³⁸⁹ *Id.* at 4-209.

³⁹⁰ IDEQ Rules for Ore Processing by Cyanidation (2012).

³⁹¹ SDEIS at 4-212.

³⁹² *Id.* at 2-56.

in perpetuity, and address/include mitigation in the event of the failure of the underdrain system. The SDEIS should also outline a plan for detecting leaks in all geosynthetic cover systems (both the bottom and top covers) in perpetuity.

The SDEIS does not address methods to ensure that the geosynthetic bentonite clay cover at all covered sites will remain properly hydrated to prevent cracking and subsequent leaking. This is especially relevant to the covering of tailings to prevent further leakage. Studies using geosynthetic covers incorporating a layer of bentonite encased between nonwoven and woven geotextiles, laminated with a polyethylene geofilm and 769 mm (~30 inches) of sandy planting medium planted with perennial grasses did not prevent cracking of the laminated bentonite, subsequently increasing annual seepage rates.³⁹³ These findings suggested that plant roots were likely the cause of substrate dehydration and subsequent bentonite cracking. Based on these findings, the proposed 12 inches of planting medium above the geosynthetic covers is therefore insufficient to prevent drying of the bentonite layer after being planted leading to perpetual seepage while increasing annual seepage rates.

The SDEIS does not explain how the bentonite layer will stay hydrated after being unrolled while exposed and not subject to a confining load, even while covered with a layer of High-density Polyethylene (“HDPE”). In addition, while HDPE does have good UV resistance, how is it determined whether the HDPE remains flexible and sturdy enough before filling with tailings to support a confining load after tens of years exposed to adverse environmental conditions on the perimeter of the TSF where tailings have not yet been deposited? It is required that HDPE be used in the cyanidation process,³⁹⁴ but sturdier products such as reinforced polyethylene have been developed which are a better choice for chemical and ultraviolet resistance, and flexibility to prevent cracking from the weight of tailings.

The SDEIS states ammonia concentrations were not explicitly modeled.³⁹⁵ An explanation is provided in the Water Quality Specialist Report in Section 5.2.5. The SDEIS should provide the reasoning in this report.

Figure 4.9-3 shows a large spike in TSF Buttress seepage volume to the alluvial aquifer during the year of cover placement. Please explain why. Also, if the cover is placed, why are the alluvial recharge volumes similar to or higher than before the cover?

Tables 4.9-2 and -3 show concentrations of constituents that exceed the strictest potentially applicable surface water quality criteria from runoff and seepage from the TSF Buttress and Embankment, respectively.³⁹⁶ The SDEIS states toe seepage and runoff go to the contact water pond that is treated. However, some of the water infiltrates into the aquifer. They discuss the modeled results of mixing this water with groundwater, which shows antimony and arsenic above the water quality standards during operations and post cover (Table 4.9-4).³⁹⁷ To prevent the degradation of groundwater, why isn't there a liner under the embankment and buttress?

³⁹³ Benson, C. H., Thorstad, P. A., Jo, H. Y., & Rock, S. A. (2007). Hydraulic performance of geosynthetic clay liners in a landfill final cover. *Journal of Geotechnical and Geoenvironmental Engineering*, 133(7), 814-827.

³⁹⁴ IDEQ Rules for Ore Processing by Cyanidation (2012).

³⁹⁵ SDEIS at 4-184.

³⁹⁶ *Id.* at 4-195 to 4-198.

³⁹⁷ *Id.* at 4-199.

Section 4.9.2.2 2021 MMP

Water Treatment

New Source Performance Standard on page 8-2 of the 20220131 Water Management Plan for Stibnite states, “In addition to the Idaho surface water standards, the SGP is also subject to the ELGs as codified in the New Source Performance Standards for gold mines in 40 CFR 440.104. The parameters with ELGs are pH, total suspended solids, cadmium, copper, lead, mercury, and zinc.” The target post-water treatment plant effluent analyte concentrations in Table 4.9-10 do not include copper or TSS. Would the WTP design be able to meet these standards? In addition, these parameters should be included in all appropriate surface water monitoring locations.

The SDEIS states after closure and a liner on the TSF, the water treatment plant solids would go on top of the liner.³⁹⁸ Please describe the water cycle associated with this (ex. water capture and treatment).

West End Pit Lake Chemistry

The SDEIS predicts post closure exceedances of water quality standards for dissolved antimony, arsenic, and mercury (the table also shows lead in some years).³⁹⁹ The only outflows appear to be groundwater. In the Groundwater Chemistry section, it says if groundwater is below water quality standards this may raise concentrations, but if they are above the standards then the new concentrations result in little change. This information is vague. How does the lake chemistry impact groundwater concentrations?

Midnight Backfill

Porewater chemistry exceeds the water quality standards for antimony, arsenic, manganese, lead, sulfate, and TDS.⁴⁰⁰ How does this impact groundwater quality beneath the pit? Although the SDEIS states the backfill would be mounded at closure to promote runoff, why isn't a cover proposed over the Midnight backfill?

Section 4.9.2.2, Yellow Pine and Hanger Flats Backfill subsection:

Water chemistry in the inundated backfill within these pits is expected to have antimony and arsenic concentrations above groundwater quality standards, and elevated concentrations of mercury that are below groundwater standards but may contribute water quality standard exceedances in surface water.⁴⁰¹ The SDEIS does not provide information on when these exceedances occurred, but Tables 4.9-14⁴⁰² and 4.9-15⁴⁰³ show concentration exceedances post closure. How does this affect groundwater concentrations beneath these pits?

³⁹⁸ *Id.* at 4-220.

³⁹⁹ *Id.* at 4-225.

⁴⁰⁰ *Id.* at 4-231.

⁴⁰¹ *Id.* at 4-232.

⁴⁰² *Id.* at 4-237 to 4-238.

⁴⁰³ *Id.* at 4-241 to 4-242.

Figure 4.9-15. The points (locations) at which water quality predictions are made are missing from the Yellow Pine and Hanger Flats pit drawings. Also, there is no water table shown on the Yellow Pine pit figure. Please add.

Section 4.9.2.2, Groundwater Chemistry subsection:

Midnight pit backfill, A groundwater discharge location to surface water isn't mentioned.⁴⁰⁴ Please include a discussion.

The SDEIS states, "Existing groundwater monitoring data near the confluence of Meadow Creek and the East Fork SFSR exhibit antimony and arsenic concentrations above groundwater standards, indicating the mixture of leachate with these waters would result in little change to groundwater concentrations relative to standards. This is also the case for groundwater concentrations with the Sugar Creek drainage."⁴⁰⁵ Suggesting minor effects to groundwater. "Major effects would be limited to the groundwater area (i.e., around MWH-A17 and SRK-GM-04S) where antimony and arsenic concentrations are below groundwater standards." These wells appear to be along Hennessy Creek, upstream of the confluence with Sugar Creek and EFSFSR. These predicted exceedances are concerning.

The SDEIS states, "The effects of the infiltration of leachate from the TSF, TSF Buttress, stockpiles and Midnight pit backfill..."⁴⁰⁶ However, leachate effects to groundwater from stockpiles isn't discussed. Please include.

Surface Water Chemistry

Figure 4.9-21- This figure shows baseline, operations, and post-closure values for each surface water site. Please add that these are average concentrations shown in the tables.

This figure shows a predicted dissolved mercury concentration during operations over four times the standard at West End Creek node YP-T-6. The SDEIS states this is because the surface water in upper West End Creek is above the standard under existing conditions due to the diversion of West End Creek around the operations associated with the West End pit. The increase in mercury is concerning; West End Creek fully supports its designated uses. What else could be done to decrease the mercury concentrations to below water quality standards?

Tables 4.9-18⁴⁰⁷ and 4.9-19⁴⁰⁸ provide data for two of the seven sites. It would be helpful to show similar tables for the other sites that show predicted exceedances of water quality standards.

Organic Carbon subsection: The SDEIS states the potential impacts of the additional organic carbon added is expected to be low given overall discharge rate is small. This is a qualitative assessment with the potential for OC to cause an increase in methylation.⁴⁰⁹ The text in Section 6.4.1.4 (Organic carbon) of the Water Quality Specialist Report provides additional information

⁴⁰⁴ *Id.* at 4-243.

⁴⁰⁵ *Id.* at 4-244.

⁴⁰⁶ *Id.*

⁴⁰⁷ *Id.* at 4-249.

⁴⁰⁸ *Id.* at 4-250.

⁴⁰⁹ *Id.* at 4-252.

and should be summarized here to provide additional context. We recognize no organic carbon samples were analyzed in the Water Quality Baseline Study. Organic carbon should be added to future analyses.

Fuels and Hazardous Chemicals subsection: The SDEIS recognizes the potential for small spills but does not discuss the large quantities of fuel and hazardous chemicals stored at the site and the potential environmental risks.⁴¹⁰ It mentions environmental protection practices and design features would minimize the risk of accidental releases. Despite best plans and efforts, it seems large releases are possible given the remote location of the site, access challenges, and harsh weather conditions. This section should be expanded on.

Surface Water Temperature

An increase in TSS could also raise surface water temperatures.⁴¹¹ Please add mention of this and how it could be incorporated into the model/results/interpretation.

Please add a legend to Figures 4.9-27, 4.9-28, and 4.9-29 (ex. CW, BT, SS, A, B).

The predicted surface water temperatures are elevated in the TSF and TSFB area for certain mine years as well as farther down gradient (see Figures 4.9-27 and -28). This is concerning.

4.9.2.4 Model Sensitivity and Uncertainty

The SDEIS states, “Incorporation of first-flush chemistry in the model predictions would slightly increase predicted analyte concentrations.”⁴¹² This should be elaborated on (briefly described on page 43 of the Water Quality Specialist Report). Would different analytes exceed water quality criteria? What would the expected concentrations of constituents of concern be? How long would the exceedances last? What would the anticipated or potential effects be?

The SDEIS states, “Effects of model uncertainty from simulating dissolved rather than total concentrations have not been evaluated, but total concentrations of analytes that appear in particulate form would be greater than the simulated dissolved concentrations.”⁴¹³ The report states mercury is found more-so in particulate form rather than dissolved. The surface water quality standard value for mercury is listed in Table 3.9-1 (12 ng/L in total form). “The EPA recommends that a human-health methylmercury criteria of 0.3 mg/kg that is translated to a total-mercury concentration of 2 ng/L in surface water be utilized in the analysis. This recommendation is incorporated into the impacts analyses, but table-reported standard values utilize the 12 ng/L (0.000012 mg/L) representing the lowest concentration adopted as a standard.” By modeling the dissolved fraction of mercury, total mercury may very well be higher and exceed the water quality standard, which is in total form. Quantification of total mercury concentrations should be performed in the stream predictions.

⁴¹⁰ *Id.* at 4-267.

⁴¹¹ *Id.* at 4-269.

⁴¹² *Id.* at 4-279.

⁴¹³ *Id.* at 4-280.

Top of page 4-280 3rd bullet: please provide the duration.

4.9.3 Mitigation Measures

The SDEIS states, “The mitigation measures described below are in addition to the Forest Service requirements and EDFs accounted for in the preceding impact analysis.”⁴¹⁴ It would be helpful to list what these are or include a reference to ensure all the impacts identified have mitigation measures covered (ex. see Table 2-3 of the Water Quality Specialist Report for EDFs).

Figure 4.9-29 – Please include a timeframe for this figure, either on the figure or in the text reference (ex. x years post operations). Please also include a legend.

4.10 Vegetation

The Tribe is concerned about the irreversible and irretrievable impacts to vegetation, including the destruction and loss of ESA-threatened whitebark pine, loss of potential habitat for special-status plant species, spread of non-native and noxious, invasive plant species (on more than 3,000 acres of disturbed land), and likely permanent changes to the function and structure of vegetation that supports wildlife, nutrient cycling, and soil stability. Impacts may result in changes to the Project area that persist in perpetuity. The SDEIS discloses that land disturbed under both alternatives would not maintain and move towards Forest Plan desired conditions into the foreseeable future (> 2,000 acres under both alternatives⁴¹⁵, including >270 acres of land where mine activities would prevent the regrowth of vegetation⁴¹⁶). Impacts to vegetation are greater under the preferred alternative (2021 MMP) than the Johnson Creek Road alternative. These lands currently support native vegetation that sustains terrestrial and aquatic habitats on the Forests. The proposed actions are unacceptable and inconsistent with NFMA policies, Forest Plan direction, and, most important, the Forest’s trust responsibility to the Tribe.

The Forest needs to take a hard look at impacts to plant resources used by the Tribe, which are only briefly described in the SDEIS.⁴¹⁷ Reference in the analysis should also be made to associated habitat types where these plant resources are found (i.e., impacts need to have spatial (e.g., linked with PVGs) and temporal (e.g., phenology and gathering season) context). The SDEIS fails to discuss the “so, what?” aspect of an environmental effects analysis. For example, the SDEIS describes that there will be increased habitat fragmentation for plant populations, but fails to explain where, how, when, and why it is meaningful. Under all action alternatives, construction and maintenance of utilities and access roads could fragment many wetlands indefinitely - the SDEIS needs to explain the consequences of fragmentation to vegetation, soils, hydrology, aquatics, and wildlife. The SDEIS needs to interpret and support (using best available scientific information) the conclusory statements. The magnitude, extent, direction, duration, and speed of effects of each alternative need to be defined quantitatively and/or qualitatively. These interpretations of resource impacts should also be built on and integrated with other resources. The Forest concludes that both action alternatives will not contribute to the loss of viability of plant species within the planning area (i.e., Payette and Boise administered lands), however, the Tribe

⁴¹⁴ *Id.* at 4-281.

⁴¹⁵ *Id.* at 4-288 to 4-300.

⁴¹⁶ *Id.* at 4-305.

⁴¹⁷ *Id.* at 3-515 to 3-516.

is deeply concerned that the activities will reduce viability and availability of plant species for Tribal harvest and use within the Project area, which is just as important as the entire planning area.

In many places throughout Chapter 4 (Environmental Consequences), the SDEIS discloses impacts to plants and pollinators from dust and emissions, however, the types, conditions, and seasonality of pollinators are not discussed as part of the affected environment. The SDEIS fails to include pollinators, or any invertebrate, as part of the affected environment for soils, vegetation, and wildlife. This information, including but not limited to, the diversity and abundance of pollinators that exist in the project area, needs to be a part of the SDEIS.

The SDEIS does not adequately analyze components or effectiveness of the RCP. If the Project is required to adhere to Forest Service-required mitigation measures, the design features and resource protection measures, and procedures in the RCP, then the SDEIS needs to consider these in the effects analysis and explain their effectiveness. The reclamation seed mixes proposed in the RCP, for example, are not reflective of the PVGs in the Project area. The likelihood that these areas will comply with NFMA policies and Forest Plan directions is low. The SDEIS even discloses that vegetation removal and tree clearing under all action alternatives would not maintain or move toward desired conditions for vegetation as described in the Forest Plans, and likely that any or all impacts may result in changes to the surrounding ecosystem that persist in perpetuity and would result in these areas not being able to meet desired conditions for the foreseeable future. The SDEIS fails to give adequate attention to the permanent loss of habitat types. Most impacts to PVGs under all action alternatives would be related to disturbance activities at the mine site and would occur in the Warm, Dry Subalpine Fir (PVG 7) and Persistent Lodgepole Pine (PVG 10) types, which are the most extensive PVGs in the analysis area. This is unacceptable.

According to the SDEIS, dust abatement measures would be used during construction, operation, and closure to reduce the amount of fugitive dust.⁴¹⁸ The SDEIS provides a few scientific references but fails to disclose impacts from these measures. The SDEIS lacks relevant references as to the impacts of dust abatement chemicals on soils, vegetation, and wildlife. Magnesium chloride (MgCl₂) and MgCl₂ - lignin sulfonate products used to suppress dust on roadsides can damage vegetation foliage, alter soil quality, move in roadside drainages of up to 98 m from roads, and accumulate over time, often to toxic concentrations, in trees and soils.⁴¹⁹ High MgCl₂ soil concentrations from application caused mortality of Douglas-fir, lodgepole, ponderosa, and limber pines, and aspen in just two to four years.⁴²⁰ Considering the life of the Project (> 20 y), the Tribe is concerned about long-term consequences to soils and vegetation from dust abatement chemicals. The SDEIS fails to address and take a hard look at these actions, and the Tribe requests that the Forest Service use the least environmentally damaging dust suppressant, and monitor impacts to vegetation, soils, water, and terrestrial and aquatic ecosystems.

⁴¹⁸ *Id.* at 4-631.

⁴¹⁹ Goodrich, B. A., et al., *Condition of Soils and Vegetation Along Roads Treated with Magnesium Chloride for Dust Suppression*, Water, Air, and Soil Pollution 198, 2009, at 165-188.

⁴²⁰ Goodrich, B. A. and Jacobi. W. R., *Foliar damage, ion content, and mortality rate of five common roadside tree species treated with soil applications of Magnesium Chloride*, Water, Air, and Soil Pollution 223, 2012, at 847-86.

Impacts to Whitebark Pine

The SDEIS lacks specific spatial and temporal details about the impacts to whitebark pine under each alternative, including number of individual trees and acreage associated with specific location (private versus federal land) and proposed actions (facilities, utilities). Instead, the SDEIS summarizes the total amount of impacted acres and number of individual trees removed. Without spatial reference, it is difficult to know where these impacts occur within the Project area. The SDEIS references the Stibnite Gold Project Vegetation Specialist Report Appendix F for details about the survey conducted by Tetra Tech, however Table F-1 is not associated with any maps or citation, and therefore lacks meaning.⁴²¹ The Forest needs to do a better job at disclosing the impacts to whitebark pine.

Under ESA protection, it is unlawful to commit, to attempt to commit, to cause to be committed, or to solicit another to commit the following acts for whitebark pine: removal from federal lands; malicious damage or destruction on federal lands; engaging in interstate or foreign commerce; and import or export (into, out of, or through the U.S.).⁴²² Actions under all alternatives, including the No Action Alternative (e.g., existing and approved activities described in the SDEIS⁴²³), will harm whitebark pine. Under both action alternatives, utility activities include new and upgraded transmission lines, substations, communication towers, and repeater sites. According to the SDEIS, vegetation clearing would occur indefinitely on the new and upgraded transmission line⁴²⁴ (> 1,000 acres under both alternatives⁴²⁵), which would impact an indefinite number of continuously-establishing seedlings as well. The proposed alternative would remove an estimated 193 trees for utilities (not counting what would be removed to maintain the transmission line ROW indefinitely), 478 trees for access roads, and 564 trees for operations at the mine site.⁴²⁶ But these numbers are based on surveys of a previously proposed footprint (Alternative 2 from the Forests' DEIS)⁴²⁷ and are only estimates.

Under both action alternatives, the Forest would be violating Forest Plan Standards applicable to whitebark pine. The action alternatives would violate the following Standards on the Payette National Forest: TEST03, TEST04, TEST08, TEST11, TEST28, TEST31, MA13 MPC 3.1-1301, MA13 MPC 3.1-1302, and MA13 MPC 3.2-1306. The action alternatives would violate the following Standards on the Boise National Forest: TEST03, TEST04, TEST08, TEST11, TEST28, TEST31, MA18 1801, MA18 1802, MA18 1804, MA20 MPC 3.1-2010, MA21 MPC 3.1-2108, MA19 MPC 3.2-1919, MA20 MPC 3.2-2010, MA21 MPC3.2-2113, MA20 MPC3.2-1914, MA20 MPC3.2-2005, MA21 MPC3.2-2108, MA20 2006, MA19 1911, and MA21 2105. The Forest needs to disclose the Standards that will not be met, provide justification for the violations, and explain why the Forest is not proposing project-level amendments.

⁴²¹ Payette National Forest, 2022, Stibnite Gold Project Vegetation: General Vegetation Communities, Botanical Resources, and Non-Native Plants Specialist Report.

⁴²² 50 CFR Part 17; Endangered and Threatened Wildlife and Plants; Threatened Species Status With Section 4(d) Rule for Whitebark Pine (*Pinus albicaulis*), 87 Fed. Reg. 76,882 (Dec. 15, 2022).

⁴²³ SDEIS at 4-287.

⁴²⁴ *Id.* at 4-84.

⁴²⁵ *Id.* at 4-297 and 4-304.

⁴²⁶ Payette National Forest, 2022, Stibnite Gold Project Vegetation: General Vegetation Communities, Botanical Resources, and Non-Native Plants Specialist Report, Appendix F.

⁴²⁷ Tetra Tech, Inc. 2019 Whitebark Pine Survey Report at 1-3.

The Tribe is concerned that the SDEIS does not contain mitigation measures or a restoration plan for the loss of whitebark pine or limber pine in the analysis area. The SDEIS is silent on impacts to limber pine and to the mutualistic relationships between five-needle pines and seed dispersers. It is also unclear in the SDEIS what will happen to whitebark pine removed under each action alternative, and whether the Forest will require Perpetua to restore impacted habitat. According to the RCP, post-mine conditions will not be conducive to whitebark pine growth, therefore it will not be included in the seed or planting mixes.⁴²⁸ This is unacceptable.

Impacts to Sensitive and Forest Watch Species

Actions under the preferred alternative would cause adverse impacts to known occurrences of Sensitive and Forest Watch species including bent-flower milkvetch (Cinnabar Peak subpopulation), least moonwort (wetlands along Johnson Creek Road), Blandow's helodium (wetlands along Burntlog Route), sweetgrass (wetlands near Burntlog Route), Sacajawea's bitterroot (along new and upgraded transmission line), and rannoch-rush (wetlands near Burntlog Route). In some cases, actions would completely remove individual plants and could result in conditions that would no longer support the species (e.g., for Blandow's helodium and sweetgrass).⁴²⁹ The Tribe is concerned about these impacts to known occurrences, and is also concerned that because the Forest has not surveyed for occurrences since 2004 for some of these plants, that direct impacts to individual plants and their habitats could be greater than realized. Surveys for occurrences of other plant species with potential habitat under both alternatives should also be conducted and disclosed to the Tribe prior to any decision.

The SDEIS fails to disclose that wetlands along the Burntlog Route will not be reclaimed,⁴³⁰ which may cause irretrievable and irreplaceable habitat for many plant and wildlife species, including Sensitive and Forest Watch species. The SDEIS also fails to consider impacts to vegetation considering projected climate shifts which may exacerbate reclamation efforts (estimated to take place over several decades). The Project area encompasses alpine and subalpine forests and riparian forest that are vulnerable to projected changes in climate, yet the SDEIS falls silent on these vulnerabilities and how the actions may complicate post-mining recovery and land uses.

Under both action alternatives, the Forests would be violating Forest Plan Standards applicable to botanical resources. The action alternatives would violate the following Standards on the Payette National Forest: BTST01, BTST02, BTST03, WIST01, WIST02, MA13 MPC 3.1-1301, MA13 MPC 3.1-1302, and MA13 MPC 3.2-1306. The action alternatives would violate the following Standards on the Boise National Forest: BTST01, BTST02, BTST03, WIST02, WIST08, WIST09, MA18 1801, MA18 1802, MA18 1804, MA20 MPC 3.1-2010, MA21 MPC 3.1-2108, MA19 MPC 3.2-1919, MA20 MPC 3.2-2010, MA21 MPC3.2-2113, MA20 MPC3.2-1914, MA20 MPC3.2-2005, MA21 MPC3.2-2108, and MA20 2006. The Forest needs to disclose the Standards that will not be met, provide justification for the violations, and explain why the Forest is not proposing project-level amendments.

⁴²⁸ Reclamation and Closure Plan at 3-70.

⁴²⁹ SDEIS at 4-293.

⁴³⁰ Reclamation and Closure Plan at 4-23.

Impacts to Non-Native Plants

The SDEIS fails to discuss the “so, what” aspect of an environmental effects analysis regarding noxious weeds and non-native plants. The SDEIS also fails to describe the most concerning noxious weeds and non-native plants, and estimate how and to what extent they could spread under the proposed actions. What is their preferred habitat? What conditions support establishment and growth? Discussing their life histories can help create effective control measures.

Under both action alternatives, the Forests are likely to violate Forest Plan Standards and Guidelines for non-native plants. The action alternatives have the potential to violate the following Standards and Guidelines on the Payette National Forest: NPST03, NPST06, NPST07, NPST08, NPST10, NPST11, NPGU01, NPGU02, NPGU03, NPGU04, NPGU05, and NPGU06. The action alternatives have the potential to violate the following Standards and Guidelines on the Boise National Forest: NPST03, NPST06, NPST07, NPST08, NPST10, NPST11, NPGU01, NPGU02, NPGU03, NPGU04, NPGU05, and NPGU06. The Forest needs to disclose the Standards and Guidelines that will not be met, provide justification for the violations, and explain why the Forest is not proposing project-level amendments for Standards.

4.11 Wetlands and Riparian Resources

The SDEIS states, “Wetlands would continue to function within natural ecosystem processes that include these natural events”⁴³¹ It seems that including the word “provide” prior to function in that sentence would better describe the role of wetlands during those events as they provide sediment capture, slow runoff, and retain/filter contaminants.

The No Action Alternative would be the best option for wetland and riparian areas.

The 2021 Modified Mine Plan and Johnson Creek Route proposed mining actions in SDEIS⁴³² suggests that “the mine site wetland and riparian area losses due to other indirect impacts (e.g., hydrology changes) would be contained within a 45.08-acre area of delineated wetlands within the mine dewatering drawdown area (Figure 4.8-10). The magnitude of impacts would be major, and localized, and the impacts would range from temporary to permanent”. The site would be permanently impacted at the mine site and the dewatering is a huge change in the wetlands hydrology. To say that it could be a temporary impact is not justifiable.

In the SDEIS,⁴³³ “temporary impacts” are not defined, but the USACE definition is “temporary impacts occur when fill and/or cut impacts occur in wetlands that are restored to preconstruction contours when construction activities are complete. (e.g., stockpile, temporary access). These impacts must be minimized to the greatest extent possible.” The temporary impacts on the mine site would not be considered temporary, but would be permanent impacts. The SDEIS states that “As project design progresses, temporary loss would be better defined.”⁴³⁴ This needs to be

⁴³¹ SDEIS at 4-301.

⁴³² *Id.* at 4-307.

⁴³³ *Id.* at 4-306-324.

⁴³⁴ *Id.* at 4-308.

addressed in the SDEIS now, not as the project progresses. Temporary is referred throughout the SDEIS 13 times in the wetland section 4.11 alone.

As stated in SDEIS⁴³⁵ “Regarding the clearing of tall trees, clearing within 50 feet of the centerline of transmission lines could impact wetlands and riparian areas due to the loss of overstory components. Loss of overstory in forested wetlands could lead to conversion to other wetland types even when a reduction in total wetland acreage would not occur. Potential wetland conversion losses due to the clearing of tall trees are included.” The loss of overstory could cause flashier periods of runoff and reduce water retention during hotter months resulting in downstream impact. The transmission lines will have continued maintenance with tree clearings and pesticide treatments to secure the transmission lines, unless the transmission line is decommissioned. The SDEIS states that Johnson Creek Route Alternative transmission line disturbance would be temporary.⁴³⁶ The Wetlands and Riparian Resources Specialist report⁴³⁷ states that the transmission lines would remain in use by Idaho Power Company and that the impacts of tall tree clearing on 4-18 wetlands in these areas would be considered permanent. Please clarify and/or correct the contradiction.

“Wetland functional units that would be loss [sic] due to direct impacts and indirect impacts due to wetland conversion are presented in Table 4.11-4. An estimated total of 1,054.4 wetland functional units would be lost, approximately 375.9 of which would be due to impacts to high-value wetlands.”⁴³⁸ Meaning about a third of the wetlands are considered highly functioning wetlands. Are there Forest Watch Species or Sensitive Species found within wetlands to give them a higher functional value? And if functional units are higher because of the wetland plant species for functional values, there needs to be a plan for the plant species in that site/wetlands. The SDEIS should also reference the plant species and include it in the mitigation plan for planting and should suggest removing species from the site and replanting them at the mitigation site.

The SDEIS states, “The indirect effects, including changes in hydrology, water quality, and increase [sic] dust and/or mercury deposition has been examined through inspection of dewatering drawdown and distance to roadways, but is difficult to quantify precisely. As a result, functional units that would be lost if these indirect effects occur may be underestimated.”⁴³⁹ An underestimation is not efficient; if anything, there should be an overestimation. Within the wetland section alone, underestimating was referred to two times when suggesting the functional units lost for each mining action.

The SDEIS suggests the “magnitude of two actions are expected to be greater along the Johnson Creek Route than would be expected on standard roads due to frequency of travel, size of equipment, and use across seasons. However, the potential impacts would be less than for the Burntlog Route, as the Johnson Creek Route is not near Mud Lake and would not have impacts on the fen. 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.

⁴³⁵ *Id.*

⁴³⁶ *Id.* at 4-317.

⁴³⁷ Wetlands and Riparian Resources Specialist Report at 72.

⁴³⁸ SDEIS at 4-308.

⁴³⁹ *Id.* at 4-318.

Effects from changes to hydrology and water quality could range from negligible to moderate and could be long-term or permanent depending on the actual impact”.⁴⁴⁰ This is a huge range of impacts that should be addressed better than given a wide range from negligible, moderate, long-term to permanent.

The SDEIS⁴⁴¹ states that “some of the functional units that would be lost would be due to temporary impacts associated with transmission line construction, the estimated total of functional units that would be lost is greater than reported in the CMP (which only considered permanent effects). Approximately 414.1 of the functional units lost would be temporary.” The temporary losses are not being used in the Conceptual Mitigation Plan. This needs to be verified and addressed in the mitigation plan and explained why it is not.

The SDEIS mentions BMPs attributable to road usage. However, no details are provided on what those BMPs would include. A summary of BMPs specific to Waters of the United States impacts in the construction of either of the access routes and offsite areas would aid readers in understanding initial avoidance measures outside of mitigation (e.g., silt fencing, dust control, revegetation, buffers, weed control, contaminant transport, etc.). For example, it states in SDEIS that although the impact of dust deposition has not been quantified, the effect magnitude would most likely be minor (small but measurable change) and long-term, limited to the life of the SGP. A BMP such as dust minimization during vehicular travel (e.g., road watering) should be considered to minimize the potential effect.

The SDEIS⁴⁴² states that “Coordination with the USACE for approval of existing and predicted wetland functional assessment scores is ongoing and may also result in changes relative to the totals listed in this section. Wetland baseline functions may be revised in a way that results in a change to baseline functional scores. Final impact acreages would be determined as part of the CWA Section 404 permit application and would be agreed upon by the USACE.” How can the baseline scores of functions change, that is why they are considered baseline scores. Changing the scores should result in further assessment of the functional values by someone outside the Perpetua involvement, a neutral party.

The SDEIS⁴⁴³ states that Perpetua proposes to utilize mitigation bank credits in the North Fork Payette subbasin. Details on the mitigation bank are lacking and may impact the feasibility of using a wetland bank. For example: What wetland bank would be used? Would this bank have ample enough credits to utilize for the impacts of SGP to the North Fork Payette River subbasin? What is the credit ratio? What are the anticipated costs of credits? Will onsite wetland mitigation/restoration offset the cost of purchasing credits? Consider the timeframe of mitigation. These answers may be included in the Conceptual Mitigation Plan⁴⁴⁴ but should be summarized in

⁴⁴⁰ *Id.*

⁴⁴¹ *Id.*

⁴⁴² *Id.* at 4-323.

⁴⁴³ *Id.* at 4-322.

⁴⁴⁴ Tetra Tech 2021b. Conceptual Stream and Wetland Mitigation Plan. Stibnite Gold Project, Valley County, Idaho. Prepared for Perpetua Resources Idaho, Inc. S. Army Corps of Engineers File Number: NWW-2013-0321. December 2021.

the SDEIS so readers may gain a broad understanding of the details of how these impacts will be mitigated.

The SDEIS Section 4.11.3⁴⁴⁵ should include tables 7-15, 7-16, and 7-17 from the Wetland and Riparian Resources Specialist report⁴⁴⁶ would be helpful for readers to compare the losses of wetland and riparian function and habitat fragmentation metrics for the two alternatives.

4.12 Fish Resources and Fish Habitat

Affected Environment

In the SDEIS, it is noted that Sugar Creek is left out of the environmental consequences analysis due to West End Creek not being a fish bearing stream and contributing relatively minor flow volumes to Sugar Creek.⁴⁴⁷ The Tribe strongly disagrees with excluding Sugar Creek out of the environmental consequences analysis and encourages that it be included in the FEIS based on the following:

- West End Creek contains Endangered Species Act (ESA) listed bull trout, this is confirmed through environmental Deoxyribonucleic Acid (“eDNA”) samples collected in 2014 and 2019.⁴⁴⁸ This eDNA data was shared with Perpetua and the U.S. Forest Service, but was not used to adequately characterize fish presence in the Project area. The Tribe strongly recommends not relying solely on Perpetua’s data but rather using all available fishery data to better characterize presence and absence of fish at the Project site.
- Sugar Creek is hydrologically connected to the Project through West End Creek. West End Creek currently delivers mine-influenced water with arsenic, antimony and mercury to Sugar Creek and has the potential to impact ESA listed chinook, steelhead, bull trout as well as cutthroat trout which are listed as a sensitive species.
- Sugar Creek contains some of the highest quality and currently accessible spawning and juvenile rearing habitat in the EFSFSR for the three ESA listed fish species. Within the EFSFSR watershed, Sugar Creek supports the highest densities of spring/summer Chinook salmon and represents the only documented bull trout spawning habitat utilized by both fluvial and resident forms. Excluding Sugar Creek from the environmental consequences analysis resulted in this stream not being evaluated in numerous tables illustrating impacts to fish in the Environmental Consequences section in the SDEIS.

⁴⁴⁵ SDEIS at 4-322.

⁴⁴⁶ Wetland and Riparian Resources Specialist report 2021.

⁴⁴⁷ SDEIS at 3-260.

⁴⁴⁸ Keller, W., Maloney, B., & Miller, K. (2020). South Fork Salmon River & Big Creek Watershed Restoration Report April 1, 2019 - March 31, 2020. McCall, ID: Nez Perce Tribe: Department of Fisheries Resources Management, Watershed Division.

- Sugar Creek is 303(d) listed as impaired by the State of Idaho because of arsenic exceedance for Idaho's human health criterion and mercury exceedance for aquatic life criterion.⁴⁴⁹
- The SDEIS predicts an increase over baseline conditions for mercury, arsenic and antimony concentrations in West End Creek.⁴⁵⁰

The Tribe's Fishery Restoration Efforts Disrupted by the Project

Project actions will not only negatively impact ESA fish species in the immediate mine site area, but will impede the Tribes ongoing restoration, research, and fish production activities throughout the entire SFSR watershed. The Tribe's DFRM has an estimated 200 employees, has an annual operating budget in excess of \$22 million, and works in the Nez Perce ancestral homeland, in what is now north-central Idaho, northeastern Oregon, and southeastern Washington. The Tribe's DFRM program is one of the largest and most successful tribal fisheries programs in the United States. The Tribe began this program in the early 1980s after federal courts acknowledged the Tribe's role as a co-manager of its fisheries. The program is funded primarily through Bonneville Power Administration as part of its implementation of the Northwest Power Act's required mitigation for the effects of the Columbia River hydropower system.

The Tribe's DFRM started an office in McCall, Idaho in the mid-1990s to focus on issues in the SFSR watershed; originally the EFSFSR and Johnson Creek. The DFRM spends approximately \$2.5 million annually restoring Chinook salmon populations and habitat in the EFSFSR and SFSR. The Tribe's DFRM restoration activities within the SFSR watershed include: hatchery supplementation, fishery research, and watershed restoration.

The Project would negatively impact the Tribe's hatchery supplementation project, as discussed below. During the 1940's, mining operations at the Stibnite site resulted in the extirpation of a genetically distinct subpopulation of summer Chinook salmon in the EFSFSR. Historic mining operations continue to impact Chinook salmon in the EFSFSR, through elevated water temperatures, lack of riparian vegetation, excess sedimentation, fish passage barriers, water quality degradation, and stream channel alterations. Further, the Yellow Pine Pit still blocks Chinook from accessing historic spawning grounds in Meadow Creek and other headwater reaches of the EFSFSR. In an effort to supplement salmon returns in the EFSFSR, the Tribe and Idaho Fish and Game have outplanted adult Chinook salmon in Meadow Creek since 2009. During the proposed 20-year mine operation plan, the Tribe would be unable to outplant Chinook salmon in Meadow Creek and supplement the EFSFSR population. The SDEIS states that the Tribe's ability to harvest and manage its traditional fish resources in the Project area will be impacted.⁴⁵¹ However, the SDEIS does not analyze how the Tribe's ability to continue to release Chinook in Meadow Creek will be affected, or the extent of harvest impacts within the EFSFSR. The Project used Chinook salmon numbers in the project area in numerous estimates, such as predictions of fish in the Yellow Pine Pit, based largely on the number of progeny from outplanted Chinook. The SDEIS does not

⁴⁴⁹ Idaho Department of Environmental Quality 2018/2020 Integrated Report, Appendix A: Clean Water Act Section 305 (b) List and Section 303(d) List at 332.

⁴⁵⁰ SDEIS at 4-351.

⁴⁵¹ *Id.* at 2-170.

examine production loss (i.e., juvenile recruits per spawner) resulting from the discontinuation of Chinook outplants in the Project area, nor does it address the effects of these losses on Chinook salmon recovery efforts in the EFSFSR during the mine life.

Similarly, the Tribe's research projects will be negatively impacted by the proposed Project. In particular, the Johnson Creek Artificial Propagation and Enhancement ("JCAPE") project's daily operations will be negatively impacted by the heavy Project traffic for the first two years (construction phase of the modified mine plan and 20+ years under the Johnson Creek route alternative) of the mine utilizing the Johnson Creek road for access to the mine site. JCAPE is a small-scale supplementation (production) project that is designed to increase production of the summer Chinook salmon spawning population in the EFSFSR and Johnson Creek. The JCAPE project produces up to 150,000 Chinook salmon smolts annually for direct release into Johnson Creek and oversees monitoring and evaluation of adult and juvenile spring/summer Chinook throughout the South Fork Salmon subbasin. The JCAPE project conducts activities at several locations, including adult trapping on Johnson Creek, juvenile migrant trapping on Johnson Creek and on the Secesh River, adult brood stock holding and spawning at the SFSR adult salmon trap, and egg incubation and juvenile fish rearing at the McCall Fish Hatchery. The disruption of JCAPE production and research activities and the potential for increased road-related sediment into Johnson Creek resulting from Project activities should be discussed in more detail in the FEIS.

The proposed Project would disrupt the Tribe's watershed restoration efforts in the EFSFSR due to restricted access from mining operations. The Tribe has been actively working on watershed restoration in the EFSFSR watershed since 2007. The Tribe submitted a project during the 2007-2009 Northwest Power and Conservation Council Fish and Wildlife Provincial Review⁴⁵² for the EFSFSR, to address fish passage at the legacy Yellow Pine Pit in the Stibnite Gold Project area. The Tribe originally intended to reestablish fish passage there through a 30-foot tall cascade and rehabilitate one mile of fish habitat above the Glory Hole through a degraded reach of the upper mainstem EFSFSR. Before the Tribe could implement the project, however, the private landowner of the Glory Hole river reach, entered into a lease-to-purchase option with Midas Gold. Consequently, the reach was inaccessible to the Tribe for fishery habitat enhancement projects, and the Tribe's restoration efforts were directed elsewhere within the SFSR and EFSFSR watersheds. The Tribe also participated in a collaborative group that specifically identified restoration projects in the EFSFSR watershed to improve fisheries. These projects include decommissioning Mule Hill road and Sugar Creek road spurs. The proposed Project will severely hamper the Tribe's ability to perform watershed restoration due to restricted access during the Project mine life.

The FEIS needs to adequately address/analyze the impacts of Project disruptions to the Tribes' efforts in hatchery supplementation, fishery research, and watershed restoration in the EFSFSR. The FEIS needs to recognize that Project models and estimates based on empirical Chinook salmon data will change when the Tribes outplanting efforts are hindered by the Project.

⁴⁵² Columbia Basin Fish & Wildlife Program, *Contract 33331: 2007 127 00 EXP NPT EFSF SALMON RIV PASSAGE RESTORATION*, <https://www.cbfish.org/Contract.mvc/Summary/33331>.

The Chinook salmon redd count data in the SDEIS cites the Nez Perce Tribe's unpublished data incorrectly.⁴⁵³ Twelve redd counts are misrepresented in Table 3.12-2 and the Tribe's data is portrayed incorrectly. The SDEIS cites an older annual report⁴⁵⁴ but provides data through 2021. The data also consolidates redd numbers from Sugar Creek to Quartz Creek which is downstream of the project area.

Impacts to Chinook Salmon

Chinook salmon (*Nacòx*) are intimately interwoven into the Tribe's culture and religion and continue to be a critical fishery for subsistence harvest. It cannot be understated how important Chinook salmon are to the Tribe. Historic mining activities at the Stibnite site extirpated Chinook salmon from the headwaters of the EFSFSR in the 1940's due to sediment and pollutants.⁴⁵⁵ The Tribe has been actively recovering Chinook salmon in the EFSFSR watershed since the mid-1990s and utilizing this watershed since time immemorial. Impacts to Chinook salmon from the Project are a direct impact to Treaty Resources that fall under the 'trust responsibility' of the Forest Service to protect.

The South Fork Salmon River Major Population Group, which includes the EFSFSR and Johnson Creek spring/summer Chinook spawning aggregates (collectively referred to as the East Fork South Fork Salmon River population) are at a high risk rating for abundance and productivity and a low risk for spatial structure and diversity.⁴⁵⁶ Habitat concerns in the EFSFSR exist and would be exacerbated by Project activities. Sediment remains a concern for the fish populations due to landslides and wildfires, which have been documented to have delivered excessive sediment to streams in these populations in the last 5 years.⁴⁵⁷ High stream temperatures are a limiting factor in these populations.⁴⁵⁸ Recommended future actions by National Marine Fisheries for reducing limiting factors that impede the recovery of Chinook salmon include reducing and preventing sediment delivery, improving riparian function and improving water quality⁴⁵⁹ - which this Project jeopardizes both in the short term and questionable long-term plans.

The Tribe is concerned with the following impacts to Chinook salmon from this Project:

- The adult migration and spawning life stages would experience a reduction in habitat due to the thermal requirement for Chinook salmon. There would be a net decrease in thermally

⁴⁵³ SDEIS at 3-275, Table 3.12-2.

⁴⁵⁴ Rabe, C., D.D. Nelson and T. Hodsdon. *Status and monitoring of natural and supplemented Chinook in Johnson Creek Idaho*. Annual progress report to Bonneville Power Administration, Project No. 199604300, 2018.

⁴⁵⁵ National Marine Fisheries Service, *ESA Recovery Plan for Snake River Idaho Spring/Summer Chinook Salmon and Snake River Basin Steelhead: Appendix C, Idaho Management Unit*, NMFS West Coast Region, Portland, Oregon, November 2017.

⁴⁵⁶ NOAA, *2022 5-Year Review: Summary & Evaluation of Spring and Summer Chinook Salmon*, National Marine Fisheries Service West Coast Region.

⁴⁵⁷ Nez Perce Tribe, *Nez Perce Tribe NOAA 5-Year Review Answers*, Nez Perce Tribe, McCall Watershed Program, April 2, 2020.

⁴⁵⁸ National Marine Fisheries Service, *ESA Recovery Plan for Snake River Idaho Spring/Summer Chinook Salmon and Snake River Basin Steelhead: Appendix C, Idaho Management Unit*, NMFS West Coast Region, Portland, Oregon, November 2017.

⁴⁵⁹ NOAA. *2022 5-Year Review: Summary & Evaluation of Spring and Summer Chinook Salmon*. National Marine Fisheries Service West Coast Region.

suitable spawning habitat both upstream and downstream from the Yellow Pine pit lake cascade barrier during operations and post-closure due to a slightly warmer 7-day average daily maximum water temperatures.⁴⁶⁰ And these values would likely be higher if climate change had been factored into the Stream and Pit Lake Network Temperature model. Because Chinook salmon spawn in late August, when stream temperatures are their highest and flows at their lowest, they are particularly susceptible to stream temperature increases from this Project.

- Changes to water chemistry from this Project have the potential to impact juvenile life history stages of Chinook salmon, and particularly those present in Sugar Creek, a key EFSFSR tributary known to support spring/summer Chinook spawning and rearing. The SDEIS predicts that concentrations for key constituents are comparable or lower than existing conditions.⁴⁶¹ Sugar Creek is currently 303(d) listed as impaired because of arsenic exceedance for Idaho's human health criterion and mercury exceedance for aquatic life criterion.⁴⁶² West End Creek which flows into Sugar Creek is predicted to have an increase over baseline conditions for mercury, arsenic and antimony concentrations in West End Creek.⁴⁶³
- Alterations to streams and a reduction in flow have the potential to negatively impact Chinook salmon. Steam flow reductions would affect fish productivity during operations but would return to existing conditions post-closure.⁴⁶⁴ Post closure time frames on water treatments are indefinite, which is not acceptable when considering the near-term negative impacts to threatened Chinook salmon.
- For the first two years of the mine there will be increased Project related traffic along the Johnson Creek increasing the chance of a fuel or chemical spill into streams with Chinook salmon. A fuel or chemical spill into a stream with Chinook salmon could offset the Tribes restoration efforts and ability to harvest treaty resources.
- Increases in fine sediment delivered to streams has been shown to negatively alter habitat for Chinook salmon and steelhead spawning and rearing in the SFSR.⁴⁶⁵ Both of the action alternatives would deliver sediment to live water from proposed road construction and maintenance, increased traffic use, removal of vegetation, pit highwalls, mining activity, fugitive dust and Project related mass wasting events.

⁴⁶⁰ SDEIS at 4-358.

⁴⁶¹ *Id.* at ES-18.

⁴⁶² Idaho Department of Environmental Quality 2018/2020 Integrated Report, Appendix A: Clean Water Act Section 305 (b) List and Section 303(d) List at 332.

⁴⁶³ SDEIS at 4-351.

⁴⁶⁴ *Id.* at ES-18.

⁴⁶⁵ Platts, W. S., Torquemada, R. J., McHenry, M. L., & Graham, C. K. (1989). Changes in Salmon Spawning and Rearing Habitat from Increased Delivery of Fine Sediment to the South Fork Salmon River, Idaho. *Transactions of the American Fisheries Society*, 118:274-283.

Impacts to Steelhead

Similar to Chinook, steelhead trout (*Hey-ey*) are important treaty resources. The SFSR and its component watersheds comprise one of only four drainages in the Columbia River Basin that support viable populations of wild B-run steelhead.⁴⁶⁶ Many of the research and watershed restoration actions taken by the Tribe are implemented to improve steelhead viability. The steelhead Salmon River Major Population Group is not viable with many individual populations remaining uncertain. Updated, population-level abundance estimates of steelhead (last five years) highlight recent sharp declines. The South Fork Salmon distinct population segment has a moderate risk rating for abundance and productivity and a low risk for spatial structure and diversity.⁴⁶⁷

The Tribe is concerned with the following impacts to steelhead from this Project:

- Changes to water chemistry particularly to those steelhead spawning and rearing in Sugar Creek for the reason cited above for Chinook.
- Changes to flow would result in a net decrease in productivity between baseline conditions and post-closure conditions.⁴⁶⁸
- Impacts to steelhead spawning and rearing habitat for the reason cited above for Chinook.

Impacts to Bull Trout

Out of the three ESA listed fish species in the Project area none are impacted as greatly as bull trout (*Islam*) due to habitat loss and increased stream temperatures. Bull trout are found throughout the Project area, above and below the Yellow Pine Pit. The EFSFSR and its tributaries are a stronghold for bull trout.⁴⁶⁹ The EFSFSR is an important genetic refuge because, unlike other areas in the SFSR watershed, brook trout are not present in the EFSFSR, eliminating the risk of hybridization. Bull trout are mainly found in cold streams; water temperature above 15°C limits bull trout distribution.⁴⁷⁰

The Tribe is concerned with the following impacts to bull trout from this Project:

- Changes to water chemistry particularly to those bull trout spawning and rearing in Sugar Creek for the reason cited above for Chinook and steelhead.

⁴⁶⁶ USDA. (2001). Biological Assessment for the Potential Effects of Managing the Payette National Forest in the SF Salmon River Section 7 on Snake River Spring/Summer and Fall Chinook Salmon, Snake River Steelhead and Columbia River Bull Trout. U.S. Department of Agriculture, Forest Service, Payette National Forest.

⁴⁶⁷ NOAA. 2022 5-Year Review: Summary & Evaluation of Snake River Steelhead. National Marine Fisheries Service West Coast Region.

⁴⁶⁸ SDEIS at 4-372.

⁴⁶⁹ Hogen, D.M. and D.L. Scarnecchia. 2006. Distinct fluvial and adfluvial migration patterns of a relict charr, *Salvelinus confluentus*, stock in a mountainous watershed, Idaho, USA. Ecology of Freshwater Fish 15(4): 376-387.

⁴⁷⁰ Fraley, J.J and B.B. Shepard. 1989. Life history, ecology and population status of migratory bull trout (*Salvelinus confluentus*) in the Flathead Lake and River System, Montana. Northwest Science 63(4):133-143.

- There would be a net loss in thermally suitable bull trout habitat due to water temperatures exceeding thermal requirements for spawning and rearing.⁴⁷¹ The SDEIS analysis shows elevated water temperatures past this 15°C threshold which could potentially impact bull trout occupancy, migration, and spawning behavior.⁴⁷²
- The loss of the Yellow Pine pit lake would result in a net long-term impact to bull trout, but a permanent negligible net change once the Stibnite Lake is obstructed by mine year 11.⁴⁷³
- It is shortsighted to assume that there will be a metapopulation of bull trout present in the South Fork Subbasin in the next 20-114 years that is sufficiently robust to be able to repopulate the Stibnite Lake, especially considering the likelihood of there being thermal barriers blocking volitional movement in the proposed mine areas.

Impacts to Westslope Cutthroat Trout

Westslope cutthroat trout (*Wawa Lam*) are currently designated as a “Sensitive” species by the Forest Service. After being petitioned, the United States Fish and Wildlife Service determined Westslope cutthroat trout are unwarranted for ESA listing. Westslope cutthroat trout are broadly distributed throughout the SFSR although they currently occupy only 85% of their potential historic range.⁴⁷⁴

The Tribe is concerned with the following impacts to Westslope Cutthroat trout from this Project:

- Cutthroat trout are found throughout Project above and below the Yellow Pine Pit, and similar to bull trout, will suffer habitat loss from mining operations.
- Resident fish, including cutthroat trout, will have more isolated populations without the ability to move freely between project area streams.
- In the Meadow Creek drainage where cutthroat are found, there will be a large decrease in available habitat due to the piping of Meadow Creek around the tailing storage facility footprint.
- In addition, the upper 10 km of Meadow Creek would remain blocked in perpetuity due to the high-gradient stream segments flowing off the TSF.⁴⁷⁵

⁴⁷¹ SDEIS at 4-379.

⁴⁷² *Id.* at 4-339.

⁴⁷³ *Id.* at 4-379.

⁴⁷⁴ Thurow, R. F., Lee, D. C., & Rieman, B. E. (1997). Distribution and Status of Seven Native Salmonids in the Interior Columbia River Basin and Portions of the Klamath River and Great Basins. *North American Journal of Fisheries Management*, 17, 1094-1110.

⁴⁷⁵ SDEIS at 4-383.

Resolving Impacts to Chinook Salmon, Steelhead, Bull Trout, and Westslope Cutthroat Trout

The Project as currently analyzed by the SDEIS has unacceptable impacts to the fish species listed above. This Project should be rejected by the Forest Service due to numerous detrimental impacts to fish species.

In relation to impacts to ESA listed and sensitive species fish the FEIS should:

- Revamp the current mine plan to lessen impacts to fish species.
- Add Sugar Creek back into the environmental consequences analysis.
- Quantitatively document the direct effects to fisheries (population declines, identify specific reaches that will no longer be usable for fish species).
- Discuss what elevated stream temperatures mean for bull trout populations as a result of the Project.
- Incorporate climate change into stream temperature models.
- Investigate the potential impact of thermal barriers to fish migration above the mine site and below the Sugar Creek reach.
- Quantify the cumulative impact/share of Project area water temperature increases to downstream 401 water temperature criteria.
- The Tribe strongly recommends not relying solely on Perpetua's fishery data but rather using all available data to better characterize presence and absence of fish at the Project site. As an example, the SDEIS says bull trout are absent in West End Creek⁴⁷⁶ and Fiddle Creek,⁴⁷⁷ however, the Tribe has detected bull trout in both of these streams using eDNA.⁴⁷⁸

Dewatering, Fish Salvage, Relocation

Dewatering and associated fish salvage in the Yellowpine Pit lake would have a moderate, localized, long-term impact on all fish species within the study area.⁴⁷⁹ Dewatering would impact streams including EFSFSR, Meadow Creek and tributaries, and East Fork Meadow Creek. In total, 17.11 km of stream channel are estimated to be subject to dewatering and fish salvage. In some cases, reaches would be dewatered, and fish salvaged, more than once.⁴⁸⁰ Rescue and relocation

⁴⁷⁶ *Id.* at 3-260.

⁴⁷⁷ *Id.* at 3-291.

⁴⁷⁸ Keller, W., Maloney, B., & Miller, K. (2020). South Fork Salmon River & Big Creek Watershed Restoration Report April 1, 2019 - March 31, 2020. McCall, ID: Nez Perce Tribe: Department of Fisheries Resources Management, Watershed Division.

⁴⁷⁹ SDEIS at 4-330.

⁴⁸⁰ *Id.* at 4-330.

protocols are provided in the Fisheries and Aquatic Resources Mitigation plan.⁴⁸¹ After reviewing this mitigation plan, the Tribe has the following concerns:

- Fish salvage will occur during low flow periods, this correlates to periods of elevated stream temperatures during which cold water species such as Chinook salmon, steelhead, bull trout and cutthroat trout are most likely to be thermally stressed. This is one of the reasons the Tribe feels that the SDEIS is incorrect in stating that there will be moderate impacts to fish from fish salvage.
- Estimates of carrying capacity of the relocation areas into which salvaged fish are released are not included. Many of the relocation areas are utilized numerous times for fish salvage operations. Resident fish occupying these relocation areas have the potential to be displaced and newly released fish will have to search for new habitat and food resources during a time they are thermally stressed. Smaller fish searching for new habitat will have increased probability for displacement and predation rates.
- As noted above, 17.11 km of stream channel are estimated to be subject to dewatering and fish salvage. This accounts for the activities occurring in the Project area but does not include all Project impacted stream channels along the Burnt Log route and Johnson Creek route during culvert replacements and powerline upgrades. A full account of all dewatering and fish salvage activities should be evaluated in the FEIS.
- As noted in the SDEIS, there would be some incidental mortality (generally less than 10 percent) from fish salvage.⁴⁸² Table 5-8 in the mitigation plan⁴⁸³ notes that the Yellow Pine Pit has 216 bull trout, 101 cutthroat, reducing these fish by potentially 10% is significant, especially given that bull trout are a ESA-listed species. Given the disturbance and predicted mortality to these fish species, it is unclear how the SEIS concluded a moderate impact on fish species from fish salvage in the Yellow Pine Pit.

Noise and Vibration

As noted in the SDEIS, explosives detonated near water can produce shock waves that may be lethal or damaging to fish, fish eggs, or other aquatic organisms. Outside of the zone of lethal or harmful shock waves, the vibrations caused by drilling and blasting have the potential to disturb fish causing stress or altering behavior.⁴⁸⁴ The SDEIS concludes that because all blasting would be conducted in compliance with applicable regulations and standards there would be negligible impacts to fish from noise and vibrations.⁴⁸⁵ The SDEIS further states that there could be areas, such as the Yellow Pine pit lake near the East Fork SFSR tunnel and adjacent Hangar Flats pit where Meadow Creek is closest, where reducing setbacks may be required. Looking at images of the proposed 0.9 mile fish tunnel found in the Stibnite Gold Project Story Map it is apparent how close it is to the Hennesey Shear Zone and the Meadow Creek Fault Zone. There will be five years

⁴⁸¹ Brown and Caldwell. 2021. Fish and Aquatic Resources Mitigation Plan at 5-11.

⁴⁸² SDEIS at 4-330.

⁴⁸³ Fish and Aquatic Resource Mitigation Plan at 516.

⁴⁸⁴ SDEIS at 4-331.

⁴⁸⁵ *Id.* at 4-332.

of heavy blasting and disturbance immediately adjacent to this fish tunnel. All of the studies cited in the SDEIS regarding impacts to fish from blasting were examining surface streams and lakes. What are the noise and vibrations impacts in regards to the fish passage tunnel with it being located subsurface and in such close proximity to the blasting zones? The FEIS should take a closer look at impacts to fish utilizing the fish tunnel and calculate sound decibels, duration of blasting, frequency of blasting in relation to this unique subsurface fish tunnel.

Spill Risk

The SDEIS consistently downplays the potential risk of contaminants spilling into aquatic ecosystems. There should be a section in the FEIS that documents Perpetua's current record with fuel spills and Project related vehicles going off the road during trips to the Stibnite site. In Perpetua's recent past, there has been a fuel spill from an airplane crash carrying fuel, staff vehicles that have gone off the road and contractor vehicle rollovers. This all took place during the Golden Meadows exploration/Administrative Settlement Agreement and Order on Consent stage with relatively low numbers of personnel traveling compared to this mine proposal.

The SDEIS does not sufficiently analyze the impacts from potential contaminants spilling into aquatic ecosystems. Considering the massive quantities of toxic materials that would be used annually at the site (e.g., 5,800,000 gallons of diesel fuel),⁴⁸⁶ the Project poses an implicit risk for spilled contaminants to affect aquatic organisms and persist outside the project area and downstream (> 0.5 mile) from spill locations. In contrast, the SDEIS states that the EFSFSR and associated tributaries, including streams within 0.5 mile of access routes, are the major surface water bodies that could be impacted by potential spills.⁴⁸⁷ This assertion falsely suggests that impacts of a contaminant spill (e.g., large diesel spill) would only impact streams within 0.5 mile of the spill location. On the contrary, an example from the Kalamazoo River proves that spilled diesel oil can travel over 30 miles downstream from the spill location.⁴⁸⁸ Documentation of previous diesel spills on aquatic ecosystems illustrate how detrimental and long lasting the effects are to aquatic life. A 2,000 gallon diesel spill in California's Hayfork Creek impacted the food web from macroinvertebrates to fish to avian species feeding on the fish. The study concluded that impacts from the diesel fuel would be long lasting in the aquatic ecosystem.⁴⁸⁹ Analysis of all risks of contaminant spills is necessary, including the full distance downstream that all contaminants could persist from spill locations and how those concentrations would impact aquatic organisms.

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.

⁴⁸⁶ *Id.* at 4-347.

⁴⁸⁷ *Id.* at 4-347.

⁴⁸⁸ NPR, *Firm Blamed in the Costliest Onshore Oil Spill Ever*, 2012, <https://www.npr.org/2012/07/10/156561319/oil-company-knew-michigan-pipeline-was-cracked>.

⁴⁸⁹ Bury, R. Bruce, *The Effects of Diesel Fuel on a Stream Fauna*, California Fish and Game, 1972.

⁴⁹⁰ SDEIS at 3-105, 3-111, 3-142, 3-214, 3-477, 3-485, 3-498, 3-508, 3-513.

This Middle Fork subwatershed needs to be added to the analysis area along with impacts to fisheries and other aquatic organisms.

The percent of access routes that are located in riparian conservation areas is insufficiently quantified. The SDEIS notes that 6.5 miles or 18% of the 36-mile Yellow Pine Route is located within 100 feet of streams.⁴⁹¹ It is unclear how the Yellow Pine Route was calculated as a 36-mile distance or why the riparian area is only considered within 100 feet of a stream channel. The Boise National Forest Land and Resource Management Plan⁴⁹² is useful in calculating the percentage of routes in close proximity to streams. Using guidance from this document, 61% of Johnson Creek Road is located within the riparian conservation areas buffer. Considering the high proportion of roads in riparian conservation areas, the risk of a spill reaching surface water needs to be properly analyzed. The measures included in the Spill Prevention, Control and Countermeasure Plan would reduce the potential for a spill to reach downstream waters, yet there is no guarantee of no effects to aquatic life.

The SDEIS falsely claims to qualitatively assess risk of vehicular accidents. The SDEIS cites data with very low rates of large truck accidents resulting in spills of hazardous material.⁴⁹³ However, these data are assumed to be from mostly straight, multi-lane, paved highways, in stark contrast to the steep, sinuous, narrow dirt roads associated with the Project. The SDEIS acknowledges that statistics for haul truck road accidents on county roads and/or in mountainous terrain are very limited,⁴⁹⁴ but that does not make it appropriate to use data comparatively from paved roads to suggest that the risk of spills in the SFSR watershed is very low. Equally unacceptable is the SDEIS making the assumption that transportation on these roads would be safer than highway roads because there is less traffic and lower speeds.

The SDEIS lacks any analysis on the risk of fuel spills from airborne traffic. Indeed, an airplane crashed and spilled fuel at the site in February 2012, releasing 100 gallons of diesel fuel.⁴⁹⁵ The SDEIS does not describe how air traffic will arrive at the site during the life of the mine. Analysis of the risk of fuel spills from airborne traffic is imperative, and an air route that avoids flying over critical habitat for Endangered Species Act-listed fish species should be detailed.

The SDEIS concludes that design features and permit stipulations and regulatory requirements from state and federal agencies would reduce the risk of spills and ensure that effective response is provided should a spill occur.⁴⁹⁶ Anyone who has traveled along the EFSFSR or Johnson Creek during spring stream flows understands that it would be nearly impossible to contain a spill during high flows. Once again the SDEIS relies heavily on professional judgment regarding the use of BMPs with little to no analysis of spill risks. The Tribe recommends quantifying all hazardous materials being taken to the site, total number of trips in riparian buffers and running different spill risk scenarios.

⁴⁹¹ *Id.* at 4-338.

⁴⁹² Boise National Forest Land and Resource Management Plan at B-33.

⁴⁹³ SDEIS at 4-135.

⁴⁹⁴ *Id.* at 4-136.

⁴⁹⁵ *Id.* at 3-101.

⁴⁹⁶ *Id.* at 4-333.

Altered Physical Stream Structure

Mine operations such as open pits, diverting the river into a fish tunnel, diverting Meadow Creek into a channel, stockpiling waste rock and growth media (soil), vegetation removal and construction of a tailings storage facility embankment will alter the physical stream structure and reduce fish habitat complexity and connectivity. Accessing the mine by building haul roads and reconstructing the Burnt Log road and upgrading power transmission lines will alter headwaters of streams, riparian areas, wetlands, and fens all of which is important to fish habitat.

It is unacceptable that all Project area streams (minus Sugar Creek) are being placed into a pipe or tunnel so this proposal can proceed. Permanent fish relocation occurs as a result of the tailings storage facility in Meadow Creek. The EFSFSR tunnel is another permanent fish relocation and river alteration. Fiddle Creek, which is fish-bearing with threatened bull trout, would be routed into a culvert under a growth media stockpile. Hennessy Creek would be diverted in a pipe and routed to Fiddle Creek. West End Creek, which is also fish-bearing with threatened bull trout,⁴⁹⁷ will be diverted into a clean water diversion for 1.5 miles, meaning a lined ditch, not conducive to quality fish habitat. Garnet Creek would be re-routed in a riprap channel through a culvert during operations. Midnight Creek would be rerouted for 0.3 miles, then piped under roads before it enters the fish tunnel.

The EFSFSR would be rerouted into a tunnel nearly a mile long to divert the river away from where the proposed Yellow Pine pit would be dug. This tunnel would allow volitional fish passage upstream at quite an ecological cost, if it actually works. The loss of stream biota, fisheries habitat, impaired riparian and stream function for 20 plus years in exchange for a fishway with artificial lighting, flow control, fish salvage and connectivity to questionable upstream water quality and habitat seems suspect. The effectiveness of a post-mining, reestablished EFSFSR channel across the Yellow Pine pit is questionable due to a lack of groundwater interactions from the lined channel, riparian cover which will take decades to establish and provide shade, and an unknown timeframe for when mining will cease due to ongoing exploration.

Touting adaptive management is only as good as the “clearly identified outcomes”⁴⁹⁸ which are difficult to predict in such a large and complex mining operation as the proposed Stibnite Gold mine. The timeframe of the project is directly tied to the ongoing exploration which is designed to prolong the mining.

Although the stream “enhancements” and restoration, such as restoring passage at the box culvert⁴⁹⁹ are touted as positive habitat improvements, the timeframe for completion are uncertain if continued exploration extends the mine life. Efforts such as riparian restoration may take decades to become established due to a harsh growing environment. Some restored stream segments may not ever become suitable aquatic life habitat due to a number of factors.

⁴⁹⁷ Keller, W., Maloney, B., & Miller, K., *South Fork Salmon River & Big Creek Watershed Restoration Report April 1, 2019 - March 31, 2020*, McCall, ID: Nez Perce Tribe: Department of Fisheries Resources Management, Watershed Division, 2017.

⁴⁹⁸ 43 C.F.R. § 46.30.

⁴⁹⁹ Brown and Caldwell. 2021. Fish and Aquatic Resources Mitigation Plan at 5-29.

Water Temperature

Climate change will affect fish habitat through changes in precipitation, temperature, and soil moisture. The Idaho Batholith region will shift from being strongly snow-dominated to a mix of rain and snow.⁵⁰⁰ This increased winter rain will create flashier hydrologic peaks.⁵⁰¹ Increased average winter temperatures will lead to reduced snowpack and decreased soil moisture in the Northern Rockies.⁵⁰² Climate change will also increase stream temperatures, which will reduce the number of tributaries providing cold-water refuge for resident salmonids like bull and cutthroat trout.⁵⁰³ The SDEIS looked at impacts of water temperature on Chinook, steelhead, bull trout and cutthroat over the life of the mine plan. Certain tables examine water temperature out to Mine Year 112, however climate change was not considered in the Stream and Pit Lake Network Temperature model due to uncertainties such as future restoration and riparian shading.⁵⁰⁴ Estimating water temperature out to mine year 112 has inherent uncertainties in its own right, this is not an adequate justification for not including impacts from climate change on stream temperatures.

It is noted in the SDEIS that if climate change had been incorporated into the stream temperature models an increase of 0.1° to 2.0° C is forecasted for 2030-2059. This range of expected temperature increase attributed to climate change is based on a forecast period approximately 75 years shorter than the model predictions through Mine Year 112.⁵⁰⁵ Stream shading resulting from riparian vegetation could take over a hundred years to fully establish and reduce stream temperatures.⁵⁰⁶ There are inherent flaws in the assumption that predicted stream temperatures do not need to be corrected for climate change due to the longevity it takes for riparian vegetation to become established and the rate at which the climate is warming.

As noted in the SDEIS on Table 4.12-2, stream temperatures increase over baseline conditions during the first 27 years of the Project with some stream reaches increasing an additional 6.8°C, and this is without considering climate change into the model. Is there any analysis to show that listed fish species will be able to persist until Mine Year 112 when the reductions in stream temperatures are realized? The FEIS must incorporate climate change into stream temperature models and evaluate if fish can persist in stream reaches with elevated temperatures until shading effects are realized. The FEIS needs to include direct and indirect effects of elevated stream temperatures on fish species downstream from the Project area.

Meadow Creek upstream from EFMC has decreasing water temperatures during mine operations and closure/reclamation activities (Mine Year 6-18) because this stream is being placed in a pipe

⁵⁰⁰ Klos, P. Z., Link, T. E., & Abatzoglou, J. T., *Extent of the rain-snow transition zone in the western U.S. under historic and projected climate*, Geophysical Research Letters, 41, 4560-4568, 2014.

⁵⁰¹ ISAB, *Climate Change Impacts on Columbia River Basin Fish and Wildlife*, ISAB Climate Change Report 2007-2. Portland, OR: Independent Scientific Advisory Board for the Northwest Power and Conservation Council. Retrieved, 2007.

⁵⁰² Gergel, D. R., Nijssen, B., Abatzoglou, J. T., Lettenmaier, D. P., & Stumbaugh, M. R., *Effects of climate change on snowpack and fire potential in the Western USA*, Climatic Change, 141, 287-299, 2017.

⁵⁰³ Isaak, D. J., Peterson, E. E., Ver Hoef, J. M., Nagel, D., Wollrab, S., Chandler, G., . . . Parkes-Payne, S. *Analysis of Spatial Stream Networks for Salmonids Fish Data Analysis Tool, Phase 2 Report*, BPA Project 2017-002-00, 2020.

⁵⁰⁴ SDEIS at 4-336.

⁵⁰⁵ *Id.* at 4-336.

⁵⁰⁶ *Id.* at 4-336.

shielding it from solar radiation.⁵⁰⁷ While placing streams in pipes may help with reducing water temperature it eliminates fish habitat and restricts fish movement. Bull trout and cutthroat trout are documented in the Meadow Creek reach that is scheduled to be placed in a pipe. Any gains to fish from reduced stream temperatures are lost with reduced habitat from streams being placed in pipes.

The Stream and Pit Lake Network Temperature modeling was based on historic water temperature data without the Stibnite Gold Project (SGP).⁵⁰⁸ Using historic water temperature data without the SGP to model future stream temperatures is flawed due to large scale watershed modifications from this Project such as vegetation clearing, stream diversions, and altered stream flows. The FEIS should incorporate and consider Project watershed alterations being proposed in stream temperatures modeling.

The Stream and Pit Lake Network Temperature Model relies heavily on riparian shading to moderate stream temperatures. Improving the riparian planting plan by planting wider buffers (7 feet to 18 feet), increasing the percentage of taller tree species, including enhanced reaches, and planting earlier in the mine life increases shade and reduces stream temperatures.⁵⁰⁹ The SDEIS stream temperature modeling is largely based on the QUAL2K model. The Washington State Department of Ecology developed a spreadsheet-based model called Shade.xls to predict stream shading by reach as needed by the Qual2K model. The Shade.xls model accounts for latitude, longitude, topography, vegetation (height, density, and overhang) and solar radiation in its calculations.⁵¹⁰ It was noted that modeled shading simulations between 40% and 70% should be run to get a range in shade effects. The 40% shading effectiveness would represent the case of impaired survivability. It is unclear in the SDEIS what shade sensitivity scenario was used to model stream temperatures. Traditional riparian plant growth curves are not adequate for the Stibnite site due to poor soil conditions, high elevation, and short growing season. Current site revegetation efforts at the Stibnite site highlight the difficulties the Forest Service and Perpetua have had trying to grow vegetation at this site over numerous years with impaired survivability. Shading effects should be modeled at a lower plant survivability range to reflect Stibnite growing conditions. The FEIS should include a range of shade sensitivity scenarios with those representing the lower end of plant survivability as being more representative of the Stibnite site growing conditions.

Increased water temperatures resulting from the Project pose a significant risk to ESA- listed fish species. Relevant water temperature criteria from the Idaho Department of Environmental Quality is cited in the final Stream and Pit Lake Network Temperature model report at Table 1-2:

- Salmonid Spawning Criteria: Maximum daily average temperature - 9°C Maximum daily maximum temperature - 13°C
- Bull Trout Criteria: Maximum daily average temperature - 13°C
- Coldwater Aquatic Life Criteria: Maximum daily average temperature - 19°C

⁵⁰⁷ *Id.* at 4-336.

⁵⁰⁸ *Id.* at 3-318.

⁵⁰⁹ 2021 Brown and Caldwell. Stream and Pit Lake Network Temperature Model Refined Proposed Action (ModPRO2) Report at ES-2.

⁵¹⁰ SDEIS at 2-3.

Currently, stream temperature at the Project site is Functioning At Risk (“FR”)⁵¹¹ and out of compliance for the bull trout temperature criteria. Water temperature exceeded the 9°C maximum daily average for temperature criterion for salmonid spawning at least 29 percent of the time and exceeded the 13°C maximum daily maximum temperature criterion for salmonid spawning between 4 and 9 percent of the time.⁵¹² The SDEIS documents an decrease in total available habitat for Chinook salmon and bull trout meeting optimal thermal requirements.⁵¹³ Based on modeled results, the effects of the Project on bull trout caused by changes to thermally suitable habitat are expected to be major, permanent, and localized.⁵¹⁴ Bull trout and Chinook salmon would be the most negatively affected species, because they migrate and spawn in the summer and fall, when lower flows and higher air temperatures would amplify the impacts of the project on stream temperatures. The direct effect of elevated stream temperatures on fish numbers in the Project area needs a more robust evaluation. Increased stream temperatures will reduce dissolved oxygen concentrations, reduce juvenile fish and egg survival, further stress fish making them more susceptible to disease and infection.

Water Quality

The Stibnite area continues to exhibit impaired water quality due to historic mining activities. No stream on the SGP mine site is considered within acceptable risk levels for chemical contamination.⁵¹⁵ The SDEIS notes most metals analyzed in mine site streams occur at concentrations below water quality standards with the exception of arsenic, antimony and mercury.⁵¹⁶ With concentrations of these metals already elevated, it is unacceptable that water chemistry at the Project continues to further degrade post mine closure for certain reaches that contain listed fish species. As noted in the SDEIS on Table 4.12-4, antimony, arsenic and mercury seasonally increase in YP-T-6 (West End Creek) and YP-T-1 (Sugar Creek) and exceed the mercury analysis criteria for mercury for numerous stream reaches within the Project area. The toxic metalloids arsenic and antimony, either individually or in combination, have caused adverse environmental effects in the vicinity of contaminated mines around the world.⁵¹⁷

Metal contamination in stream waters or sediments can be detected up to hundreds of kilometers from their source,⁵¹⁸ and their presence can impose direct and indirect deleterious health effects on salmonid-bearing watersheds.⁵¹⁹

⁵¹¹ *Id.* Table 3.12-17 at 3-316.

⁵¹² Etheridge, A. B., *Occurrence and Transport of Selected Constituents in Streams near the Stibnite Mining Area, Central Idaho, 2012-14*, U.S. Geological Survey Scientific Investigations Report 2015-5166, 2015.

⁵¹³ SDEIS at 4-359 and 4-374.

⁵¹⁴ *Id.* at 4-375.

⁵¹⁵ *Id.* at 3-320.

⁵¹⁶ *Id.* at 4-438, 4-348-352, 4-523.

⁵¹⁷ Dovick MA, Kulp TR, Arkle RS, Pilliod DS. *Bioaccumulation trends of arsenic and antimony in a freshwater ecosystem affected by mine drainage*. Environmental Chemistry, 2015.

⁵¹⁸ E. V. Axtmann, S. N. Luoma, *Large-scale distribution of metal contamination in the fine-grained sediments of the Clark Fork River, Montana, U.S.A.*, Appl. Geochem. 6, 75–88, 1991.

⁵¹⁹ Christopher J. Sergeant, Erin K. Sexton, Jonathan W. Moore. 2022. *Risks of mining to salmonid-bearing watersheds*, Science Advances 8 Applied Ecology, July 1, 2022.

Antimony can be toxic to aquatic life and bioaccumulate in tissue. Ambient water quality for the protection of aquatic life has not been established for antimony so thresholds to fish are not established. It is known that antimony and arsenic is currently exceeding the state criteria listing streams in the project as impaired.⁵²⁰ The analysis shows that the rock in the pit walls and development or waste rock is capable of leaching antimony and other elements into surface and groundwater in concentrations that exceed water quality criteria.⁵²¹

Arsenic is highly toxic to aquatic organisms. Arsenic is a suspected carcinogen to fish and is associated with necrotic and fibrous tissues and cell damage, especially in the liver⁵²². Arsenic concentrations currently exceed the analysis criteria in all assessment nodes except YP-T-11 in Sugar Creek so maintaining arsenic levels at or near baseline conditions is not a high bar.

Mercury is harmful and biomagnifies in the aquatic food web particularly when it is in the organic form (methylmercury). Dissolved mercury currently exceeds the 2.0E-6 mg/L analysis criteria at six of the ten nodes.⁵²³ Table 4.12-4 in the SDEIS highlights that mercury concentrations will exceed baseline conditions for post project closure.

The FEIS should model fish tissue levels of antimony based on predicted surface water quality and include a description on what it means for the health of fish species. Modeled water chemistry changes are documented in the DEIS with no explanation to the impacts they could pose to listed fish species and aquatic food webs.

In relation to water chemistry impacts to fish, the FEIS should address the following:

- Document and model water chemistry changes in relation to health impacts of fish and aquatic organisms. Model the impacts of heavy metals individually and cumulatively to assess what it means for fish health.
- There are so many factors that will influence site water chemistry (tailing liner leaks, water contacting development rock, seep and spring inputs, water levels). The level of confidence in stream chemistry modeled data should be discussed and uncertainties highlighted.
- There has been limited fish tissue sample data collected at Project. With changes to water chemistry, what are project fish tissue concentrations and how does this play into human consumption values?
- Why is the modeling of water chemistry at stream reaches stopped at Sugar Creek? The potential to impact the EFSFSR and SFSR water chemistry should be explored, the downstream boundaries of impacts should include stream reaches below Sugar Creek.
- Mine reclamation at Cinnabar mine site should be examined as potential mitigation measures for water chemistry in the EFSFSR due to the Project.

⁵²⁰ SDEIS at ES-15.

⁵²¹ *Id.* at ES-14.

⁵²² *Id.* at 3-321.

⁵²³ *Id.* at 3-322.

- The potential and impact of antimony concentrate entering a waterbody from a spill should be evaluated and documented.
- If antimony is not mined due to low economic value this would dramatically change the water chemistry model results, this should be discussed and modeled.
- The transportation of antimony from the site to the shipping yard should be detailed. Antimony concentrate bags will need to be transported from the site along roads with listed fish species such as the Snake and Columbia River. Will the concentrate be barged down these rivers?

As described in the SDEIS, the Project will reduce the quantity of groundwater and surface water within the analysis area. Flow predictions for specific streams and time frames (years) have such wide ranges (i.e., 0-100%), that it is impossible to adequately gauge flow reduction impacts to fish. Mine dewatering would lower groundwater levels around the open pits. The lowered groundwater levels would have the potential to reduce surface water flows in areas where streams, seeps, and springs are recharged from the deeper groundwater aquifer.⁵²⁴ The impacts of pit dewatering on surface and groundwater resources must be further detailed. Assessment of the total deficit, water required to replenish deficits, and the time estimated for the system to reach equilibrium need to be conducted with specific regard to fish.

The SDEIS documents a decrease in stream flows and at the same time recognizes that the mine will need to acquire additional water rights. These water rights may or may not be approved as they are currently being protested. The impacts to fish from reduced stream flows does not seem to encompass the entire water budget needed by the Project activities.

The SDEIS insufficiently analyzes potential synergistic impacts of water temperature, water quality and quantity changes from the Project. For instance, coupling decreases in flow with increases in temperature and alterations to water chemistry could alter bull trout occupancy and the ability of Chinook to use critical habitat.

Monitoring of Operations

Water treatment and the monitoring of mine-influenced waters are described in the 2021 Water management Plan which refers to discharges, outfalls and applicable water quality limits as permitted under the Idaho Pollutant Discharge Elimination System. However, the application for this permit has not yet been declared final or approved yet so much remains unknown. Additional water treatment options will continue to be evaluated during operations to optimize the approach to water treatment during all mine phases.⁵²⁵ What kind of Federal oversight will this evaluation be under? Assuming that the claimant will be monitoring these water treatment options does not provide much confidence in the outcome, similar to the fox watching the hen house scenario.

⁵²⁴ Stibnite storymap, <https://storymaps.arcgis.com/stories/6b13451c9abb4f8090fabc579f982aec>.

⁵²⁵ Brown and Caldwell. 2021. Water Management Plan.

Sediment and Turbidity

The SDEIS inadequately addressed the potential impacts of Project related sediment and turbidity on fisheries. The geologic formation of the Idaho Batholith is generally mentioned in the SDEIS, however this extremely erodible geology is not highlighted in the sediment and turbidity section as having the potential to greatly impact fisheries. There are numerous publications specific to the SFSR watershed that highlight effects from ground disturbing activities on this unique geology in relation to fish species.^{526 527} With sediment and turbidity being such a known limiting factor to the recovery of Endangered Species Act fish in the SFSR watershed it was surprising that the final conclusion for this section regarding impacts to Chinook salmon, steelhead, bull trout and westslope cutthroat trout would be moderate, permanent and localized.⁵²⁸ This conclusion was not based on sediment modeling analysis but rather on professional judgment regarding the use of future restoration actions as mitigation and Best Management Practices (“BMP”s). More rationale for this unsubstantiated “moderate” judgment call is necessary to be believable.

The 2019 Stream Functional Assessment report uses a ledger system as a tool based on a rating system of Watershed Condition Indicators (“WCI”) and other aquatic resource elements at multiple spatial and temporal scales.⁵²⁹ It is not a sediment model although it combines results of complex models (e.g., groundwater modeling, stream temperature modeling, water chemistry modeling, etc.) to evaluate impacts of the project. A peer-reviewed, repeatable sediment model must be conducted and incorporated into this analysis, with predictions of sediment loading in all of the impacted reaches and streams at various phases of the mine.

The SDEIS relies heavily on the assumption that BMP’s and regular road maintenance will minimize stream delivery to streams. While the SDEIS notes that the potential exists for increased runoff, erosion, and sedimentation which could result in a sediment load into streams during the building of Burntlog route, however sedimentation would be minimized using BMP’s and required maintenance.⁵³⁰ As noted in the SDEIS, Table 4.12-6, all stream segments currently analyzed for sediment and turbidity in the project area are currently Functioning at Unacceptable Risk (“FUR”) as defined by WCIs. These streamside roads are currently maintained by Perpetua using BMP’s, however the streams adjacent to these roads continue to be categorized as FUR.

The SDEIS inadequately addresses the addition of new roads and their associated disturbance on aquatic ecosystems. Road density is positively correlated with subsurface fine sediment in adjacent streams.⁵³¹ As noted in Table 3.12-7 the streams within the Project site are largely listed as FUR

⁵²⁶ Platts, W. S., Torquemada, R. J., McHenry, M. L., & Graham, C. K. *Changes in Salmon Spawning and Rearing Habitat from Increased Delivery of Fine Sediment to the South Fork Salmon River, Idaho*, Transactions of the American Fisheries Society, 118:274-283, 1989.

⁵²⁷ Megahan, W. F., & Kidd, W. J., *Effects of logging and logging roads on erosion and sediment deposition from steep terrain*. *Journal of Forestry*, 70:136-141, 1972.

⁵²⁸ SDEIS at 4-342.

⁵²⁹ Rio ASE. 2019. Stream Functional Assessment Report. Prepared for Midas Gold Inc.

⁵³⁰ SDEIS at 4-340.

⁵³¹ Al-Chokhachy, R., Black, T. A., Thomas, C., Luce, C. H., Rieman, B., Cissel, R., . . . Kershner, J. L., *Linkages between unpaved forest roads and streambed sediment: why context matters in directing road restoration*, *Restoration Ecology*, 24(5), 589-598, 2016.

for Road Density/Location.⁵³² While the SDEIS quantifies Road Density/Location in the baseline section it omits a critical WCI of Road Density/Location in its environmental consequence analysis section. The Burntlog Route would require approximately 15 miles of new access road construction. Numerous roads would need to be constructed within the mine site to access and haul mineralized rock and development rock, however these do not appear accounted for in the SDEIS. The Project would construct 9 miles of new roads for transmission lines, however, the SDEIS fails to describe how the Watershed Condition Indicator for Road Density/Location will be altered by the Project and what it means for fish if subsurface fines increase in adjacent streams. An analysis of changes to the WCI Road Density/Location is needed in the FEIS.

The SDEIS did not include modeling to quantify sediment delivery to streams from upgrading transmission line roads and widening of existing access roads along Johnson Creek during the first two years of the mine. The SDEIS notes that utilities associated with the Project (existing transmission line grades and structure work, right-of-way clearing, new transmission line, and transmission line access roads) would cross 37 different streams and upgrade 63 miles of road.⁵³³ The Johnson Creek route crosses 43 different streams including 27 miles of road that are within 0.5 miles of surface water resources.⁵³⁴ Johnson Creek road will need to be widened to accommodate mining machinery and traffic. Widening roads and clearing roadside ditches of vegetation has been shown to exponentially increase sediment delivery to streams.⁵³⁵ Once again it is assumed that BMP's and federal regulations will minimize sediment delivery to streams based on professional judgment with no analysis.

The SDEIS lacks modeled results showing how increases in Project related traffic will impact sediment delivery to streams. The SDEIS notes that during the construction phase traffic would increase by 65 vehicle trips per day and during the mining and operation phase (approximately 15 years) traffic would increase a total of 50 trips per day.⁵³⁶ It is not clear in the SDEIS if Project related road maintenance traffic is also included in these numbers. Increased vehicular traffic causes sediment detachment and can contribute substantially to stream sedimentation.⁵³⁷ The Watershed Erosion Prediction Project model allows for several options for road configurations, soil, climate, traffic use, gradient, length, and width as well as fill slope and buffer characteristics.⁵³⁸ The Tribe recommended that in the FEIS there is analysis regarding impacts of traffic on sediment delivery to streams. All Project related traffic including personnel, supply vehicles and associated road maintenance should be included.

The SDEIS inadequately details maintenance work that will occur on roads associated with the Project. General discussions on graveling, grading and routine road maintenance are discussed throughout the document, however a detailed road maintenance plan describing specific activities

⁵³² SDEIS at 3-292.

⁵³³ *Id.* at 4-340.

⁵³⁴ *Id.* at 4-347.

⁵³⁵ Luce, C. H., & Black, T. A., *Sediment production from forest roads in western Oregon*, Water Resources Research, 2561-2570, 1999.

⁵³⁶ SDEIS at 4-338.

⁵³⁷ Ziegler, A.D., Sutherland, R.A., & Giambelluca, T.W., *Interstorm surface preparation and sediment detachment by vehicle traffic on unpaved mountain roads*. *Earth Surface Processes and Landforms*, 26, 235-250, 2001.

⁵³⁸ Dube, K., Black, T., & Luce, C., *Comparison of road surface erosion models with measured road surface erosion rates*, National Council for Air and Stream Improvement, Technical Bulletin, No. 988, 2011.

and frequency of these actions was not found in the SDEIS. A maintenance plan is critical to understand resource impacts related to roads. The improvement work that will occur to existing roads needs to be quantified, and maintenance plans for all roads associated with the Project need to be established and included in the FEIS.

Table ES-3 quantifies the total mine component acreage impacts on previously undisturbed land; 881 acres for the mine site, 341 acres for access roads, 422 acres for utilities, 30 acres for off-site facilities, all of which totals 1,674 acres of impacts on undisturbed land.⁵³⁹ This impact of land surface area changing from vegetated to unvegetated as a result of mine development will increase sediment delivery to streams. As mentioned earlier, the Project is located in an area of highly erosive, decomposing granitic soils where revegetation takes time, and the erosive effects of steep unvegetated banks in a watershed with flashy hydraulic events cannot be underestimated. With these acres of Project impacts leaving unvegetated, disturbed ground it is hard to understand predictions in Table 4.12-6 moving sediment and turbidity from FUR to Functioning at Risk (“FR”) during mine years 1-20.⁵⁴⁰ Quantifying what percent of this disturbance occurs in riparian conservation areas or adjacent to streams is needed in the FEIS.

The SDEIS does not adequately address the risk to ESA-listed fish related to mass wasting events on roads associated with the Project. Table 3.2-1 in the SDEIS quantifies current numbers of landslides and rockfalls along the Johnson Creek route (45) and Burtlog route (26), however it does not analyze impacts to aquatic ecosystems from sediment delivery from these mass wasting events. Table 3.2-1 actually identifies 451 landslides along the Johnson Creek route however this appears to be a typo as the rest of the document has this number at 45.⁵⁴¹ Multiple avalanches and landslides have caused extensive damage to the McCall-Stibnite Road over the last decade. Similar events are likely to occur again, not only for the McCall-Stibnite Road, but also for sections of the proposed Burntlog Route and Johnson Creek Route where roads are adjacent to steep terrain. Wildfires, new road construction, pit highwalls, devegetation of the Project site will cause additional mass wasting events that impact streams with ESA-listed fish species. The FEIS needs to analyze risk of landslides using more rigorous methods, such as landslide susceptibility or landslide hazard modeling. Additionally in the FEIS, the location of potential mass wasting areas should be described and their risks to ESA- listed fish species fully addressed.

The SDEIS insufficiently analyzes sediment impacts to surface water from factors other than roads. The Yellow Pine pit lake has been acting as a sediment trap for Meadow Creek, the East Fork of Meadow Creek and the upper EFSFSR. With the new fish passage tunnel during mine year 1-23, this will no longer be the case. When the fish passage tunnel is constructed and water is allowed to enter this tunnel, it can be expected that the river’s sediment will be released downstream. With a large amount of disturbance proposed, the FEIS needs to include more robust quantification and analysis on sediment delivery to area streams.

In summary, all stream segments currently analyzed for sediment and turbidity in the Project area are currently Functioning at Unacceptable Risk. The unique geology of this area makes it particularly susceptible to Project related erosion that will impact ESA listed fish species. The

⁵³⁹ SDEIS at ES-22.

⁵⁴⁰ *Id.* at 4-356.

⁵⁴¹ *Id.* at 3-29.

SDEIS inadequately analyzes impacts to aquatic ecosystems from sedimentation associated with the Project and relies too heavily on assumptions tied to BMP's and road standards. Both of the action alternatives would deliver sediment to live water from proposed road construction, maintenance, increased traffic use, removal of vegetation, pit highwalls, mining activity, fugitive dust and Project related mass wasting events. In the FEIS, sediment models for the Burnt Log and Johnson Creek Routes need to incorporate increased vehicle traffic, road widening, and the impacts from blading the road and clearing ditches. In addition, Project related sediment outside of roads needs to be identified, discussed and analyzed in the FEIS.

Stochastic Events Not Fully Analyzed

In addition to roads, the SDEIS does not adequately address climate change and blasting with explosives as it relates to stochastic events near Endangered Species Act-listed fish at the Project site. The SDEIS only states that "Current climate change trends, such as increased heavy precipitation events and more precipitation falling as rain instead of snow, could lead to increased soil erosion and change in land cover, which could potentially impact slope stability in the analysis area. Damage due to seismic activity in the area also could be exacerbated by climate-induced instability in the analysis area."⁵⁴² However, the SDEIS omits any analysis of this potential instability or the increased risk of erosive events in light of climate change. Furthermore, the SDEIS notes that blasting will occur, but does not analyze the increased risk of erosive events. Unfortunately, all stream reaches in the headwaters of the EFSFSR subwatershed are already at unacceptable risk for sediment/turbidity for Chinook salmon, steelhead, and bull trout.⁵⁴³ The risk of erosive events associated with the Project needs to be analyzed, and synergistic agents such as climate change and blasting should be included in the models.

There is no assessment of geologic hazards on any of the mine access roads, including the existing Warm Lake highway, Johnson Creek road, Stibnite Road, or the newly proposed Burntlog Road. There are landslides, avalanches and mass wasting events on the existing streamside roads nearly every spring. These roads are mostly located on the Idaho batholith, which is granitic, known for decomposing easily, and not being competent or well suited for road bases.

Stream Flow

The effects of the 2021 Modified Mine Plan on changes in stream flow would be major, long-term (occurring during operations), and localized at the Meadow Creek, East Fork SFSR at Stibnite, and East Fork SFSR upstream from Sugar Creek sites, but minor, long-term (occurring during operations), and localized at the East Fork SFSR upstream from Meadow Creek.

The East Fork SFSR would experience reduced flows during mine operations compared to baseline. The project would utilize stream flow as part of its water supply and project groundwater pumping which has the potential to reduce groundwater discharge to the stream. The Preferred alternative also proposes new surface water intake with fish screens to be installed near the upstream end of the Tunnel fishway to supply raw water for ore processing makeup when

⁵⁴² *Id.* at 3-66.

⁵⁴³ *Id.* at 4-356.

necessary.⁵⁴⁴ The need for stream water withdrawal is not quantified besides being written as to be limited to lower flows in baseflow months. Leaving enough water in the stream for aquatic biota is essential to threatened fishes and the macroinvertebrate community upon which they depend. This project proposes turning a functioning ecosystem into an industrial site (pipes and lined channels affecting every stream in the project area except Sugar Creek) jeopardizing treaty resources.

This reduction in river flows is a direct negative effect on the quantity of fisheries habitat as well as decrease in water quality due to an increase in chemical contaminants, such as arsenic and antimony. These negative impacts could jeopardize the existence of Endangered Species Act-listed fish during the mining operations which may not be able to rebound and repopulate in the long-term due to climate change effects.

The largest impact to fish are major, long term, and localized on bull trout habitat and westslope cutthroat trout due to reduction of stream flows (through analysis of relevant PHABSIM modeling). The direct mortality of fish would be an irreversible impact that could occur under the Action Alternatives.

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. The loss of existing aquatic habitat in the Yellow Pine pit lake may constitute an irretrievable commitment of resources.

The FEIS needs to quantify changes to the key watershed condition indicators, the effects from baseline on peak/base flows are negligible to a decrease in functional index, no positive changes.⁵⁴⁵ The effects of the 2021 MMP on changes in stream flow would be major, long-term (occurring during operations), and localized at the Meadow Creek, East Fork SFSR at Stibnite, and East Fork SFSR upstream from Sugar Creek sites, but minor, long-term (occurring during operations), and localized at the East Fork SFSR upstream from Meadow Creek.⁵⁴⁶ The significant, long-term impacts on stream flows are another reason to reject this mine proposal.

Mine Impacts to Fish Resources and Fish Habitat

The SDEIS notes qualitative changes in Functional Index,⁵⁴⁷ but predicted changes are not quantified.

The Fisheries and Aquatic Resources Mitigation Plan, Fishway Operations and Management Plan, Environmental Monitoring and Management Plan, and the Conceptual Stream and Wetland Mitigation Plan do not offer enough mitigation to offset the reduction of essential fish habitat needed for the continued existence of fish in the project area streams and downstream. The FEIS

⁵⁴⁴ Brown and Caldwell. 2021. Fish and Aquatic Resources Mitigation Plan at 5-36.

⁵⁴⁵ SDEIS at 4-357, Table 4.12-6.

⁵⁴⁶ *Id.* at 4-355.

⁵⁴⁷ *Id.* at 4-357

should look to further reduce fishery habitat loss and provide more meaningful mitigation that results in a net gain of habitat for listed fish species or the proposal should be denied.

Returns of wild steelhead and Chinook salmon are severely depressed. Current abundances of Snake River sp/sm Chinook salmon are 0.7% of historical abundances and only 7.1%⁵⁴⁸ of the Columbia Basin Partnership's⁵⁴⁹ mid-range goal. Current Snake River steelhead returns are 3.1% of historic abundances and 24.9% of the partnership's mid-range goal. NOAA recently determined during their 5-year status reviews that spring/summer Chinook salmon in the three SFSR populations (mainstem SFSR, Secesh River and EFSFSR) were at high risk,⁵⁵⁰ and steelhead in the Secesh River and SFSR (includes EFSFSR) were at moderate risk⁵⁵¹ for abundance and productivity metrics. Further, no SFSR Chinook or steelhead population was considered viable. During the review, NOAA identified that the major areas of concern for continued fish survival included fine sediment, low flows, high temperatures, poor water quality and lack of flood plain complexity. Each of these major concerns for continued fish survival and persistence in the SFSR watershed will be directly exacerbated by the SGP. Given the fishes current status, wild anadromous fish in the SFSR cannot afford additional pressures on their spawning and rearing life stages.

The Tribe is concerned with all SGP impacts on aquatic species, but are particularly sensitive to mining effects on anadromous fish due to their continued low abundance and cultural importance. Below, we detail our concerns with the existing SDEIS analyses of mining impacts to fisheries resources. Our comments within this section include the general lack of evaluations for aquatic species of special concern (e.g., Pacific Lamprey, Western Pearlshell Mussel), the exclusion of potential impacts to key fish habitat (e.g., migratory corridors and rearing areas downstream of the mine-site, Sugar Creek, and Johnson Creek), and flaws with the tools (e.g., critical habitat, intrinsic potential, occupancy, and flow-productivity models) used to evaluate sp/sm Chinook salmon, steelhead, Cutthroat Trout and Bull Trout habitat within the mine-site area.

Fish Analysis Scope

We find the SDEIS lacking a complete fisheries effects analysis for the entire project/analysis area.⁵⁵² The SDEIS only examines direct mining impacts to tributary reaches located within the immediate mine site,⁵⁵³ and fails to provide sufficient evidence to why the remaining analysis areas were excluded. Impacts to fish habitat outside the mine-site may occur from indirect mining activities across the entire analysis area (e.g., increased sediment delivery from haul roads and

⁵⁴⁸ National Marine Fisheries Service, *Rebuilding Interior Columbia Basin Salmon and Steelhead*, 2022, <https://repository.library.noaa.gov/view/noaa/46461>.

⁵⁴⁹ National Marine Fisheries Service, *A vision for salmon and steelhead: goals to restore thriving salmon and steelhead to the Columbia River basin*, Phase 2 report of the Columbia River Partnership Task Force of the Marine Fisheries Advisory Committee. Portland, OR, 2020, https://s3.amazonaws.com/media.fisheries.noaa.gov/2020-10/MAFAC_CRB_Phase2ReportFinal_508.pdf?null.

⁵⁵⁰ National Marine Fisheries Service. West Coast Region, *2022 5-Year Review: Summary & Evaluation of Snake River Spring/Summer Chinook Salmon*, 2022, <https://doi.org/10.25923/A3AY-DW78>.

⁵⁵¹ National Marine Fisheries Service West Coast Region, *2022 5-Year Review: Summary & Evaluation of Snake River Basin Steelhead*, 2022, <https://doi.org/10.25923/PXAX-H320>.

⁵⁵² SDEIS at 3-259 and Figure 3.12-1.

⁵⁵³ *Id.* at 3-260.

transmission lines). The SDEIS states that all watercourses and waterbodies in the analysis area are included because they may be directly or indirectly affected.⁵⁵⁴ We expect the FEIS to include potential impacts for all fish resources within the analysis area, or to provide sufficient evidence that impacts will be negligible to fish resources outside the mine-site.

The SDEIS only attempts to understand direct mining effects in two sub-watersheds (Sugar Creek and the EFSFSR headwaters) contained within the mine site. The SDEIS incorrectly assumes the majority of direct impacts to fish and habitat disturbance would occur at the mine site. SGP activities will increase temperatures, reduce flows, and change the hydrograph of tributaries within the mine-site, but these changes will also be experienced for all downstream waterways. The waterways directly downstream of the mine-site support the majority of anadromous and resident fish in the SFSR watershed. If these downstream populations are negatively affected by SGP, even minor changes in habitat could proportionally result in a much larger fisheries impact, than large habitat changes for a small group of fish within the mine-site.

Additionally, Johnson Creek, mainstem SFSR, and the Secesh River support some of the most abundant sp/sm Chinook salmon and steelhead populations in the Columbia River Basin. Future increases in temperatures due to climate change are expected, and modeling exercises suggest these streams (if left in their current state) will remain below temperature thresholds,⁵⁵⁵ and likely become population strongholds with some of the lowest extinction risks in the Snake River Basin.⁵⁵⁶ Even small mining impacts that create changes in streamflow, temperatures and water quality in these downstream habitats threaten these abundant and important fish populations. These populations may be needed in the near future to support Snake River sp/sm Chinook salmon and steelhead persistence. Ignoring potential impacts to fish populations downstream of the mine-site is unacceptable and required in the FEIS.

The SDEIS is flawed by treating habitat degradation in a myopic, segmented fashion, rather than holistically and cumulative, and by ignoring downstream fish rearing and migration corridors. The SDEIS details alterations to available habitat, streamflow and water temperature for specific stream reaches and through the full timeline of mining operations. However, it incorrectly reports these changes for individual stream segments as if they are independent of all connected stream segments, and does not account for additive effects of habitat modifications. Additionally, the SDEIS only examines headwater tributaries containing spawning and early rearing habitat for potential mining impacts, while impacts to major rearing and migration corridors downstream of the mine site are not evaluated. A more comprehensive, holistic approach to analyze degradation to all stream reaches potentially impacted through direct and indirect mining operations needs to be taken. For instance, stream segments downstream of the mine site with decreased streamflow or increased temperatures may preclude adult migration into and use of all habitat upstream, or juvenile survival/timing through the migration corridor downstream. Therefore, there must be consideration of how fish habitat alterations may impact use of all connected habitat.

⁵⁵⁴ *Id.* at 3-259.

⁵⁵⁵ Isaak, D. J., Young, M. K., Nagel, D. E., Horan, D. L., & Groce, M. C. *The cold-water climate shield: Delineating refugia for preserving salmonid fishes through the 21st century*, *Global Change Biology*, 21(7), 2540–2553, 2015, <https://doi.org/10.1111/gcb.12879>.

⁵⁵⁶ Crozier, L. G., Burke, B. J., Chasco, B. E., Widener, D. L., & Zabel, R. W., *Climate change threatens Chinook salmon throughout their life cycle*, *Communications Biology*, 4(1), 222, 2021, <https://doi.org/10.1038/s42003-021-01734-w>.

Flaws in Fisheries Data used in SDEIS

The SDEIS analysis is flawed through the lack of necessary fish data. "Reach-specific fish distribution (i.e. presence/absence) data were not available for all streams potentially affected by the action alternatives, especially outside the mine site."⁵⁵⁷ West End Creek is an example of a stream that needs to be surveyed for fish abundance and density. West End Creek is a critical component of the Project but lacks any fisheries surveys in the SDEIS⁵⁵⁸ even though eDNA samples confirmed bull trout presence in 2014 and 2019 (NPT data). Similarly in Fiddle Creek eDNA samples confirmed bull trout presence in 2016 (NPT data). Baseline species distribution data are essential to fully understand the potential effects of all alternatives in the SDEIS. The discrepancies between the fish presence data in the SDEIS and NPT data highlight the need for additional fish surveys at the Project site. The FEIS needs to include fish distribution data for all streams that may be impacted directly or indirectly by the Project.

The fish effect analyses attempt to broadly classify the likelihood of stream use by fish using coarse geomorphic stream characteristics (e.g., wetted width, bankfull width, stream gradient, floodplain width, discharge, and temperature)⁵⁵⁹. Coarse geomorphic characteristics may not be the most applicable or appropriate method for assessing direct mining impacts to fish populations. Fish require more than a specific width or gradient of a stream. Fish also need high quality water, correct spawning substrate, large woody debris, and require a complex food web to support their growth and survival. The SDEIS ignores these ecological needs and incorrectly characterizes fish effects caused from mining using a small subset of related geomorphic variables that are easily manipulated to get desired effects. The FEIS should reevaluate effects to fish using an integrated or life-cycle model which directly ties all habitat conditions with potential fish capacity at all life-stages to accurately assess impacts from mining and related activities.

The Critical Habitat analysis is unclear, flawed, and does not include all the data available to determine critical SFSR fish habitat. Chinook salmon Critical Habitat was initially designated in 1993 and later updated in 1999 for their listing under ESA. The SDEIS attempts to refine the Critical Habitat by coupling Chinook salmon occurrences (fish observations and spawning redd counts) with the National Hydrograph Dataset⁵⁶⁰. However, it's unclear how and when the fish observation data was collected and which life-stages were targeted. The redd counts supposedly used are outdated (1985-2011), referenced incorrectly making their validation impossible, and they are not included in Figure 3.12-5 to help reviewers understand the spatial extent of included redds. Anadromous fish utilize different habitat types throughout their life-cycle, identifying Critical Habitat using fish observations of a single life-stage may grossly underestimate the habitat needed for the species survival. The FEIS Critical Habitat analysis needs to be clear on the fish observation methods used, include fish observations from multiple life-stages, and conduct the analysis with the most relevant and accurate information.

⁵⁵⁷ SDEIS at 4-329.

⁵⁵⁸ *Id.* at 3-254, 260, Figure 3.12-3b, Figure 3.12-4, Figure 3.12-5, Figure 3.12-8, Figure 3.12-9.

⁵⁵⁹ Ecosystem Sciences, 2019c, *Technical Memorandum Intrinsic Potential Model Chinook Salmon and Steelhead*. December 2019, Updated in February 2022.

⁵⁶⁰ SDEIS at 3.270.

While the critical habitat modeling of ESA listed species is flawed and lacks validation, the assessments provided in Table 4.12-9 showing comparative loss of habitat by species for each of the alternatives are not linked to population viability.⁵⁶¹

We commented previously that the Nez Perce Tribe and Idaho Department of Fish & Game have been extensively surveying Chinook salmon redds in the SFSR (including EFSFSR) watershed since 1998. These surveys are a critical tool to discern Chinook salmon occurrence and spawning habitat use. Most notably, the Critical Habitat analysis is still missing the many Chinook salmon redds that have been surveyed in the SFSR, EFSFSR, Sugar Creek, Burnt Log Creek, and Tamarack Creek. Given the incorrect reference to redd data, and the lack of reference to NPT or IDFG it is unclear if the Critical Habitat analysis was actually updated from the earlier DEIS version. Omitting available Chinook salmon redd data skews the critical habitat analysis and may ignore a major component of all the habitat used by Chinook salmon.

As included in the SDEIS, the Intrinsic Potential analysis is specifically flawed, due to the misuse and lack of model input validation. The Intrinsic Potential model is based on the geomorphic stream characteristics of wetted width, bankfull width, gradient, valley bottom width, and valley width ratio.⁵⁶² However, the model was constructed with scant field-derived data, and modeled input data were not validated with field data. To elucidate this fact, less than 5% of the input data for bankfull and wetted width are empirical, field-derived data. A gaping discrepancy exists between the distributions of modeled and field data for bankfull and wetted width used in the model, most notably for the minimum, mean, and median values. For instance, median modeled bankfull width is 1.9 meters, a stark disparity with the median bankfull value of 6.0 meters observed in field data. For this single input, the Intrinsic Potential model seems flawed because 95% of the inputs are mostly modeled with input data that does not match empirical data collected at the site. The other model input data (gradient, valley bottom width, and valley width ratio) are entirely (100%) modeled. The SDEIS includes no indication of accuracy or precision of the modeled data, or comparisons to empirical measurements for the same evaluation points. With no validation of the modeled input data, the validity and predictions of the Intrinsic Potential model are questionable.

The Occupancy Model is flawed because it misuses the original model that was built for a large geographic scale, and fits with data primarily from disparate river systems and species interactions. The Occupancy Model in the DEIS uses the same model formation and parameter estimates developed by Isaak et al.⁵⁶³ However, the scale of the Isaak study was 399,000 km² which is completely incongruent with the 43 mi² (111 km²) size of the SDEIS analysis area.⁵⁶⁴ The Isaak et al. model broadly applies for bull trout and cutthroat trout in northern Rocky Mountain USA streams, and was not intended for precise predictions in short river reaches as used in the SDEIS. In fact, using the exact occupancy model parameter estimates from Isaak et al. is statistically inappropriate for the new higher resolution and modeled input data used in the SDEIS analysis.

⁵⁶¹ *Id.* at 4-362, 4-367, 4-374.

⁵⁶² Ecosystem Sciences, 2019c, *Technical Memorandum Intrinsic Potential Model Chinook Salmon and Steelhead*. December 2019, Updated in February 2022.

⁵⁶³ Isaak, D. J., S. J. Wenger and M. K. Young, *Big biology meets microclimatology: Defining thermal niches of aquatic ectotherms at landscape scales for conservation planning*, *Ecological Applications* 27: doi:10.1002/eap.1501, 2017, [http://esajournals.onlinelibrary.wiley.com/hub/journal/10.1002/\(ISSN\)1939-5582/](http://esajournals.onlinelibrary.wiley.com/hub/journal/10.1002/(ISSN)1939-5582/).

⁵⁶⁴ 2020 DEIS at Appendix J-7, Sections 2.0 and 3.0.

To make the analysis more ill-fitting, the Isaak, et al. model formation and parameter estimates were developed with fish occurrence data collected primarily in western Montana, which may not be representative of occupied habitat in SFSR streams with high densities of anadromous fish for prey or competition. Given that the Isaak et al. model only included a paltry amount of data from the SFSR watershed, it is unclear why the occupancy models were not refit to include all the available SFSR data. For instance the Idaho Department of Fish and Game has surveyed over 1,000 bull trout in the SFSR watershed and adjacent Big Creek watershed. Further, the Nez Perce Tribe and Forest have surveyed over 400 sites with bull trout presence in the SFSR watershed and adjacent Big Creek watershed. This plethora of data is missing from the SDEIS Occupancy Model. For these reasons of scale and geographic discrepancy, and missing empirical data, the SDEIS Occupancy Model is fallacious. In the revised FEIS, the Forest should construct new Occupancy Models that are built for the site and scale being analyzed, and fit it primarily with fish survey data from the SFSR or adjacent watersheds.

The analysis of Chinook salmon and steelhead streamflow/productivity in the SDEIS is flawed by misusing observational models developed for different river systems, different conditions, and different geographic scales. The SDEIS followed an approach described in the Big Creek Water Diversion Project⁵⁶⁵ where population productivity was regressed on stream flow. Flow-productivity relationships for Chinook salmon were described using the nearby Johnson Creek Chinook salmon population, and steelhead relationships were described using fish returning to the Lemhi River. Neither river system is a good use case for fish residing in the upper EFSFSR due to vastly different stream characteristics, fish habitat, and species interactions. In both cases, the flow-productivity models only describe a basic relationship between fish productivity and streamflow, and ignore confounding variables which more accurately explain the variation in productivity. For instance, anadromous fish travel thousands of miles and spend the majority of their lives away from their natal rearing areas. During this time, they are exposed to multiple bottlenecks (e.g., Lower Snake and Columbia River hydrosystem, ocean rearing, adult migration) that often threaten their survival more than their short period of juvenile rearing in natal reaches. To assume future Chinook salmon and steelhead productivity is predicted by stream flow in natal areas alone is incorrect. Flow is merely acting as a random variable explaining general environmental/climate conditions that affect fish during their entire life cycle (i.e., productivity). Altering stream flows during mining operations will decouple flow from the general environmental variable that productivity is related with. Thus, rendering the SDEIS analysis of SGP effects on fish productivity false, and incapable of truly evaluating impacts to Chinook salmon and steelhead. Additionally, the SDEIS use of the flow-productivity model neglects the many ways in which the mine will impair productivity, such as the cumulative effects of decreased streamflow, elevated water temperatures or higher heavy metal concentrations. Chinook salmon and steelhead productivity needs to be considered with other habitat degradation incorporated into the analysis.

The 2021 BC Stream and Pit Lake Temperature Model report goes into more details about the enhanced riparian planting zone extending 16 - 18 feet⁵⁶⁶ from 7 feet and revised to include taller species. This speculative assumption is questionable due to the difficult planting conditions at the altered site. Perpetua understands the challenges of plant survival at this elevation and contaminated soil conditions. It is well known that restoration strategies rarely go as planned. Yet

⁵⁶⁵ SDEIS at 3-283.

⁵⁶⁶ 2021 Brown and Caldwell Stream and Pit Lake Temperature Model Report at 2-9.

the model is optimistic about the shading and the subsequent lower stream temperatures resulting. There are a lot of questionable assumptions in this temperature model starting with the Stibnite Hydraulic Site Model and relating to the outfall location being undetermined as well as the water treatment plant phasing is preliminary and draft.

The SDEIS inadequately characterizes changes in habitat conditions and fish potential by disregarding uncertainty that is propagated throughout model inputs and predictions. Many of the models in the SDEIS are flawed due to being fit with a dearth of empirical data; primarily relying on modeled input data that lead to less precise and invalid predictions. For instance, the habitat occupancy models use modeled water temperature and streamflow as input data to predict occupancy probability by bull trout and cutthroat trout. Similarly, the intrinsic potential models use modeled wetted width and bankfull width as input data to predict intrinsic potential for Chinook salmon and steelhead. These modeled input data are not empirical truth and should not be treated as such. A thorough habitat risk assessment under each alternative is impossible when failing to consider the precision and accuracy of model inputs, and accounting for uncertainty in habitat change predictions. To properly assess the SGP impacts to the natural environment and all aquatic species, the FEIS needs to include an analysis of empirical versus modeled data to ascertain what level of accuracy and precision are inherent in the models, model input data needs to include uncertainty to propagate error across models, and it needs to report model predictions with associated error which includes uncertainty from all associated models (e.g., 95% confidence intervals or a range of plus/minus one standard error).

Fishery Tunnel Concerns

The proposed EFSFSR fish tunnel would provide passage for all four ESA threatened and special status fish species. This assumption is based on professional judgment and review of other similar or longer tunnels that have been documented to be fish passable.⁵⁶⁷ This assumption of fish passage is not supported by the literature referred to in the SDEIS. The Gowans et al. abstract states that 13 Atlantic salmon in northern Scotland traveled through a 2.5 km long, 3 meter diameter tunnel with proportions of fish passing numerous obstructions ranging from 63 - 100%. The results were that only 4 of the 54 tagged fish reached the spawning areas,⁵⁶⁸ not an acceptable percentage for ESA- listed fish in the SFSR watershed.

Wollebaek et al. 2011 is a genetic population study of Arctic char in Norway and a subterranean tunnel of 1,300 meters in length, 7.1 m² with a neutral gradient. "It is an open question to what extent char in our study lakes utilize the spill gates or the tunnel for (upstream) migration."⁵⁶⁹ This literature is questionable for use in comparison to the effectiveness of the proposed fishway at Stibnite.

⁵⁶⁷ SDEIS at 4-326.

⁵⁶⁸ Gowans, A.R.D., J.D. Armstrong, I.G. Priede, and S. Mckelvey. *Movements of Atlantic salmon migrating upstream through a fish-pass complex in Scotland*, Ecology of Freshwater Fish 12: 177-189, 2003.

⁵⁶⁹ Wollebaek, J., J. Heggenes, and K.H. Roed, *Population connectivity: dam migration mitigations and contemporary site fidelity in arctic char*, Evolutionary Biology 11: 207-222, 2011.

The Design Feature has an alternative to the fishway in the EFSFSR tunnel to “provide adult passage by trap and haul if needed”⁵⁷⁰. Criteria may be put in place so that if any unusual or unexpected events occur that result in adverse impacts to fish during operations, fish passage through the fishway will be switched to trap and haul operations”.⁵⁷¹ More detailed explanation and work plan is necessary to work out the details of when and how to truck adult fish. The SDEIS considers trap and haul to be the primary adaptive management components to the fishway plan as a fall back for upstream and downstream volitional passage.⁵⁷² Perpetua has frequently touted Project benefits to fish, focusing on the fish tunnel providing upstream and downstream passage of migratory and anadromous salmonid fish. If trap and haul becomes the primary means to get fish upstream of the Yellow Pine Pit then this is the same as the no-action alternative.

Additional Aquatic Organisms that Need to be Analyzed

The Tribe considers it an egregious oversight to omit analysis on impacts to Pacific lamprey (*Entosphenus tridentatus*) in the SDEIS. The Tribe has worked to restore this important cultural and treaty resource since 2012, through releasing adult lamprey in the SFSR and Johnson Creek.⁵⁷³ The SDEIS recognizes that Pacific lamprey are one of the native fish species within the analysis area.⁵⁷⁴ Nonetheless, the SDEIS does not include any survey or analysis on impacts to the populations present. The FEIS needs to explicitly address the Project impacts to Pacific lamprey.

The SDEIS omits analysis on impacts to Idaho giant salamanders (*Dicamptodon aterrimus*), which have been documented in the SFSR watershed.⁵⁷⁵ ⁵⁷⁶ The Project may degrade important Idaho giant salamander habitat, through construction and increased use of roads, as well as ground-disturbing activities. Indeed, occurrence of Idaho giant salamander is negatively correlated to road density.⁵⁷⁷ Nonetheless, the SDEIS does not mention Idaho giant salamanders or potential impacts from the Project. The Forest needs to remedy this omission in the FEIS with an analysis of effects on Idaho giant salamanders from the Project.

The SDEIS similarly lacks any analysis on Western pearlshell mussels (*Margaritifera falcata*). These native freshwater mussels exist throughout Nez Perce territory, including the SFSR and EFSFSR watersheds. The Idaho Department of Fish and Game detected Western pearlshell mussels in 2008 in the EFSFSR, upstream of the Johnson Creek confluence.⁵⁷⁸ These mussels are

⁵⁷⁰ SDEIS at 2-107.

⁵⁷¹ *Id.* at 2-107, 2-119; Brown and Caldwell 2021. Fishway Operations and Management Plan at 3-2, 3-9 - 3-11, 4-2.

⁵⁷² Brown and Caldwell 2021. Fishway Operations and Management Plan at 4-2.

⁵⁷³ Brostrom et al., *Pacific Lamprey Regional Implementation Plan for the Snake River Region: Lower Snake, Clearwater and Salmon Regional Management Units*, 2018, <https://www.pacificlamprey.org/wp-content/uploads/2022/02/2018.08.13-SnakeRIP.pdf>.

⁵⁷⁴ SDEIS at 3-266, 3-515.

⁵⁷⁵ Pilliod, D. S., Goldberg, C. S., Arkle, R. S. and L. P. Waits, *Estimating occupancy and abundance of stream amphibians using environmental DNA from filtered water samples*, Canadian Journal of Fisheries and Aquatic Sciences. 70:1123 -1130, 2013, <https://cdnsiencepub.com/doi/10.1139/cjfas-2013-0047>.

⁵⁷⁶ Idaho Fish and Game. Idaho Official Government website species status, <https://idfg.idaho.gov/species/taxa/18250>.

⁵⁷⁷ Sepulveda, A. J. and W. H. Lowe, *Local and Landscape-Scale Influences on the Occurrence and Density of Dicamptodon aterrimus, the Idaho Giant Salamander*, Journal of Herpetology, 43:469-484, 2009.

⁵⁷⁸ Idaho Department of Fish & Game database, <https://idfg.idaho.gov/data> and <https://idfg.idaho.gov/species/observation/1963025> mussel survey/observations that occurred in valley county

particularly susceptible to degraded water quality from mining, as their life span may reach as high as 100 years. The SDEIS did not include any targeted surveys to detect whether Western pearlshell mussels are present in or near the Project site. The SDEIS also omitted any analysis on freshwater mussel populations that may be affected through impaired water quality. For the FEIS, the Forest needs to conduct targeted surveys for freshwater mussels in and near the Project mine site. Similarly, the FEIS needs to include an analysis on impacts to freshwater mussels from increased sedimentation, altered streamflow, altered water temperatures, and the potential risk of toxic contaminants from spills.

Freshwater mussel embryos develop into larvae called glochidia, which are released into the water and must encounter and attach to a host fish's fins or gill filaments. Glochidia must encounter and attach to a suitable host fish soon after being released into the water. When ready, the glochidia release from the fish, burrow into the sediment, and begin their free-living existence. The chances of glochidia finding a host fish, landing in a suitable environment and reaching adulthood are incredibly slim.⁵⁷⁹ This relationship to salmonid fishes like cutthroat trout, salmon and steelhead highlights the importance of supportive habitat conditions for all stages of the mussel's life cycle.

Aquatic macroinvertebrates were surveyed for baseline studies in 2012-2014 and in 2016 generally indicate assemblages of high water quality and relatively stable habitat. More recent inventories should be done for the FEIS, with monitoring during and after mining operations. Aquatic insects are the basis of the food web and can be sensitive to changes in water quality and quantity as are predicted in the SDEIS in several different sections in chapter 4.

Summary of Fisheries Concerns

Reduced access for the Tribe to perform fishery restoration, elevated stream temperatures, reduced water quality and quantity, habitat destruction, passage barrier impacts and direct mortality to the existing fisheries from the Project would limit future continued existence of native fish in the project area. Most of these impacts are irreversible; such as lethal summer stream temperatures for fish, thermal barriers restricting fish migration, degraded water quality making the waters and habitat unlivable for aquatic organisms, literally burying stream channel habitat under waste rock, geomorphic barriers to fish passage and direct killing of fish by dewatering habitat. The headwaters of the EFSFSR is an important cold water refuge for threatened salmonids and this proposal would alter the stream temperature regime for fisheries.

Downstream effects to the fisheries below the mine site have not been analyzed sufficiently.

4.13 Wildlife and Wildlife Habitat

The Tribe raised several concerns regarding impacts to plants and wildlife in scoping and DEIS comments. The Tribe remains concerned that soils, wildlife, and vegetation are not identified as significant issues in the SDEIS. Under both alternatives, thousands of acres will not maintain or

https://idfg.idaho.gov/species/observations/list?category=All&species_id=20574&county_id=224&field_datetime_value%5Bmin%5D%5Bdate%5D=&field_datetime_value%5Bmax%5D%5Bdate%5D=®ion_id=All&gmu_id=All&items_per_page=25.

⁵⁷⁹ The Xerces Society, *Freshwater Mussels of the Pacific Northwest* by Ethan Jay Nedeau, Allan K. Smith, Jen Stone, and Sarina Jepsen. Second Edition, 2009, <https://www.xerces.org/publications/id-monitoring/freshwater-mussels-of-pacific-northwest>.

move towards Forest Plan desired conditions for vegetation into the foreseeable future. How is this impact not significant?

Because the Forest does not deem impacts to soils, wildlife, and vegetation as significant issues in the SDEIS, none of the action alternatives were developed to minimize impacts to plant and wildlife habitat. Both action alternatives pose significant and adverse impacts to wildlife and wildlife habitat, especially to wolverine (>2,000 acres directly impacted), alpine species, wetland and riparian wildlife, and migratory birds. Further, the lack of mitigation measures presented in the SDEIS to avoid, or minimize adverse impacts is unacceptable. Mitigation measures need to compensate for habitat loss, fragmentation, and disturbance that would occur under the alternatives. The SDEIS discloses that both alternatives will result in adverse effects to wildlife (e.g., wolverine) and wildlife habitat (e.g., loss of vegetation in perpetuity). The action alternatives would further degrade habitat conditions for Canada lynx (a Forest Plan Standard violation) and cause irreversible impacts such as direct mortality from collisions with mine-related traffic and structures. The Tribe requests that the Forest identify wildlife and wildlife habitat as significant issues.

Impacts to wildlife and wildlife habitat are assessed in terms of acres of habitat disturbed, changes in noise, changes in recreation, miles of road, movement barriers, changes in traffic and human activity, miles of roads plowed, construction and use of roads, structures, and utilities, exposure to metals and emissions, and risk of direct injury or mortality. Under each alternative, the intensity, duration, and context of impacts are presented for each wildlife species and wildlife habitat type and discussed relative to the mining components—mine site, access roads, utilities, and off-site facilities. The SDEIS discloses impacts and changes to species viability and availability. The Forest concludes that both action alternatives will not contribute to the loss of viability of wildlife species within the planning area (i.e., Payette and Boise administered lands), however, the Tribe is deeply concerned that the activities will reduce viability and availability of plant and wildlife species for Tribal harvest and use within the Project area, which is just as important as the entire planning area.

Under both action alternatives, the Forests would be violating Forest Plan Standards for wildlife and wildlife habitat. The action alternatives would violate the following Standards on the Payette National Forest: TEST15, TEST34, WIST01, WIST03, WIST06, MA13 MPC 3.1-1301, MA13 MPC 3.1-1302, and MA13 MPC 3.2-1306. The action alternatives would violate the following Standards on the Boise National Forest: TEST15, TEST34, WIST03, WIST06, WIST08, WIST09, MA18 1801, MA18 1802, MA18 1804, MA20 MPC 3.1-2010, MA21 MPC 3.1-2108, MA19 MPC 3.2-1919, MA20 MPC 3.2-2010, MA21 MPC3.2-2113, MA20 MPC3.2-1914, MA20 MPC3.2-2005, MA21 MPC3.2-2108, and MA20 2006. The Forest needs to disclose the Standards that will not be met, provide justification for the violations, and explain why the Forest is not proposing project-level amendments.

The Tribe is pleased that the Forest considered and used new literature to update habitat models for 15 species. However, the Forest needs to update the analysis for NIDGS and include new findings about overwintering habitat, diet, and habitat distribution models.⁵⁸⁰ Furthermore, it

⁵⁸⁰ See U.S. Fish and Wildlife Service, *5-year Review Northern Idaho Ground Squirrel (Urocyon flavus)* and references therein, 2022.

should be noted that for some habitat models, special features such as foraging and nesting habitats, snags, and downed wood large snags, hollow live trees, and large dead and downed trees for foraging are not represented well in models, and the SDEIS does a poor job at interpreting impacts to these features. The SDEIS fails to consider species interactions (e.g., primary and secondary cavity nesters, mutualistic relationships (e.g., whitebark pine and Clark's nutcracker)) and changes to spatial configuration of the landscape. The SDEIS also lacks snag estimates and whether they are meeting snag requirements for wildlife species, such as flammulated owls. Association of foraging and nesting habitat, snags, and downed wood for nest sites and prey habitat, are special habitat features not represented by the model for boreal owls.⁵⁸¹ For great gray owls, the model overestimates the amount of source habitat because it does not account for forest stands proximate to open meadows or other foraging habitats.⁵⁸² The SDEIS fails to elaborate beyond this clarification in Chapter 4.13 for great gray owls.

The SDEIS also fails to evaluate belowground ecosystems, terrestrial invertebrates, other big game (e.g., moose and mountain goat), and culturally important wildlife species and fails to include best available scientific information on mining impacts to wildlife and wildlife habitat and cumulative impacts of climate change on wildlife habitat in the analysis area. The SDEIS fails to analyze impacts to large or medium-size forest stands that have species composition required to achieve old forest habitat for applicable PVGs. According to the Boise National Forests Plan, management actions within large or medium size class forested stands that have the species composition required to achieve old forest habitat for the applicable PVGs shall contribute to or not preclude restoration of old forest habitat (Boise Forest Plan Standard WIST 09).⁵⁸³ The SDEIS fails to analyze actions that would not retain forest stands that meet the definition of old forest habitat for the applicable PVGs, management actions are permitted in such stands as long as they will continue to meet the definition of old forest habitat (Boise Forest Plan Standard WIST08).⁵⁸⁴ The Project area provides habitat for wolverine, flammulated owl, Columbia spotted frog, and fisher that all have high climate change vulnerability scores in the Intermountain Region,⁵⁸⁵ yet the SDEIS falls silent on these vulnerabilities and how the action alternatives may complicate post-mining recovery and post-mining land uses.

The Tribe is concerned about the increase in access roads, traffic, noise, light, winter recreation, and associated impacts to wildlife and wildlife habitats. The SDEIS needs to include impacts to wildlife and wildlife habitat due to structures in and around the mine site, including fences. The Tribe is especially concerned about the construction and use of the Burntlog Route under the preferred alternative because of adverse impacts to wildlife and vegetation, especially to wolverine. In terms of wildlife habitat loss, the preferred alternative would cause greater habitat loss than the Johnson Creek Road alternative. The Tribe is concerned that the SDEIS does not include mitigation measures for impacts to wildlife and wildlife habitat. The SDEIS fails to discuss the "so, what" element of an effects analysis. The SDEIS needs to interpret and support (with best

⁵⁸¹ SDEIS at 3-355.

⁵⁸² *Id.* at 3-363.

⁵⁸³ Boise National Forest Plan at III-27.

⁵⁸⁴ *Id.*

⁵⁸⁵ Figgins et al., *Chapter 9: Effects of climate change on terrestrial animals*, In Halofsky, J. E.; Peterson, D. L.; Ho, J. J.; Little, N. J.; Joyce, L.A., eds. 2018, Climate change vulnerability and adaptation in the Intermountain Region. Gen. Tech. Rep. RMRS-GTR-375. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Part 1 at 264-315.

available scientific information) the conclusory statements. The magnitude, extent, direction, duration, and speed of effects of each alternative need to be defined quantitatively and/or qualitatively. These interpretations of resource impacts should also be built on and integrated with other resources.

The SDEIS fails to fully incorporate and analyze components of Perpetua's proposed mitigation measures⁵⁸⁶ and the RCP. The Tribe is pleased that design features and best management practices are included in the SDEIS but recommends that these are supported by best available science and formalized in an implementation and monitoring effectiveness plan. This plan should also include documentation of suspected injury and/or mortality from exposure to chemicals, metals, or emissions associated with the proposed actions. To ensure compliance with the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act, the Tribe requests that the Forest develop a conservation plan that lists migratory birds of concern as a surrogate for all migratory birds potentially impacted by the Project. It would include avoidance and minimization measures to avoid birds and their habitats, as well as compensatory mitigation for unavoidable impacts to birds and their habitat.

The Tribe also has concerns about the RCP and Wildlife Habitat Mitigation Plan. A restored ecosystem should have the following attributes: 1) similar diversity and community structure with comparison to a reference site; 2) presence of indigenous species; 3) presence of functional groups required for long-term stability; 4) capacity of the physical environment to sustain reproduction; 5) normal functioning; 6) integration with the landscape; 7) elimination of potential threats; 8) resilience to natural disturbance; and 9) self-sustainability.⁵⁸⁷ The proposed actions will cause significant adverse impacts to wildlife and wildlife habitat such that the Tribe does not support the claim the site will be fully restored. Considering the soil resource limitations (and deficits) and poor vegetation reestablishment, several of the attributes will be impossible to achieve.

The Wildlife Habitat Mitigation Plan is narrow in scope and only provides feedback for a limited group of wildlife species and habitats. The Wildlife Habitat Mitigation Plan also lacks components important to wildlife such as connectivity, plant species composition, nutrient cycling, forage patterns, species migrations, species assemblages, and mutualistic relationships. It should also include focal species monitoring to assess success. The Wildlife Habitat Mitigation Plan only considers forage, hiding cover, and structure, and the RCP only uses plant canopy cover to gauge success. Using only these indices over a short period of time (<5 years) is an insufficient predictor of long-term success. There is more to a restored site than aboveground plant cover. Long-term monitoring in the western United States shows that short-term monitoring of plant production and/or cover alone detected "false" and "true" failures—situations where a project was abandoned only after four years and determined a failure, but decades later the plant community recovered. The lag in plant community response was attributed to soil properties that need more time to recover (i.e., infiltration and nutrient cycling associated with soil organic matter accumulation). The lack of soil organic matter limited the short-term recovery of the system, and thus, was deemed a reclamation failure.⁵⁸⁸ In contrast, many restoration projects deemed successful do not persist

⁵⁸⁶ Tetra Tech, Inc. 2021. Wildlife Habitat Mitigation Plan, Draft. Boise, ID. 116.

⁵⁸⁷ Society for Ecological Restoration International Science and Policy Working Group, 2004, The SER International primer on ecological restoration, www.ser.org and Tucson: Society for Ecological Restoration International.

⁵⁸⁸ Herrick, J. E., Schuman, G. E., and Rango, A. 2006a. *Monitoring ecological processes for restoration projects*. Journal for Nature Conservation 14: 161-171.

because one or more processes are absent.⁵⁸⁹ Integration of ecological indicators that reflect soil and site stability, hydrologic function, and biotic integrity have the potential to help avoid identifying false or true failures in restoration. Successful restoration for wildlife habitat goes beyond aboveground features. The narrow scope of the mitigation plan proposed is unacceptable and the Tribe requests that other ecological indicators are included to evaluate restoration success. One suggestion is to use the "International principles and standards for the practice of ecological restoration" developed by the Society for Ecological Restoration.⁵⁹⁰ It is the responsibility of the Forest Supervisor to ensure that administrative and environmental components are adequately addressed in each Plan of Operations when applicable, this includes fish and wildlife habitat reclamation or mitigation.⁵⁹¹

4.14 Timber Resources

Under the NFMA, all Forests are required to assess the impacts of management actions to ensure that they “will not produce substantial and permanent impairment of the productivity of the land”⁵⁹² Permanent loss of timber resources would occur under all action alternatives. The SDEIS failed to consider NFMA requirements for reforestation on lands suitable for timber production. There is no mention in the SDEIS how timber would be harvested and how it would impact other resources such as soils (e.g., DD and TSRC), aquatics, and wildlife. As a result of the Project's actions, disturbed areas would remain unavailable for planting or regrowth for over 15 years, and some acres would be converted permanently from a forest to non forest use (i.e., permanently prevented from returning to timber vegetation following the Project). The RCP even states that the primary goal of the RCP “...is not the establishment of forest vegetation throughout reclaimed areas of the SGP...”⁵⁹³ which appears to violate NFMA and Forest Plans. It is the policy of the Forest Service that “[a]ll 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.”⁵⁹⁴ The Tribe would like to know how the action alternatives comply with NFMA policies and Forest Plan directives related to timber resources. Under both action alternatives, more than 60% (>300 acres) of the impacted timber analysis area would not be reclaimed. Under the preferred alternative, 595 acres of timber resources would be removed, and only 20% of this could be adequately restocked within 5 y after the final harvest. Perpetua needs to explain how this qualifies as leaving the site in a better condition than existing.

4.23 Special Designations

The SDEIS appears to dismiss altogether any impacts to the WSR water rights as the Shoup quantification gage is upstream of the confluence with the SFSR. The Forest Service fails to disclose that the monthly minimum flows described in the WSR water rights #75-13316 and #77-

⁵⁸⁹Herrick JE, Havstad KM, and Rango A. 2006b. *Remediation research in the Jornada Basin: past and future*. In: Havstad KM, Huenneke LF, Schlesinger WH (eds) *Structure and function of a Chihuahuan Desert ecosystem: the Jornada Basin long-term ecological research site*. Oxford University Press, New York, pp 278104.

⁵⁹⁰ Gunn, et al. 2019. *International principles and standards for the practice of ecological restoration*. Second edition *Restoration Ecology* 27: S1-346.

⁵⁹¹ Forest Service Manual 2841.

⁵⁹² 16 U.S.C. § 1604(6)(g)(3)(C).

⁵⁹³ Reclamation and Closure Plan at 2-1.

⁵⁹⁴ Forest Service Manual 2840.3.

11974 are used throughout the designated Salmon Wild and Scenic River from the mouth of the North Fork of the Salmon River to Long Tom Bar^{595,596} While it is unknown whether monthly WSR flows are met at Long Tom Bar, Perpetua proposed mitigation in their water right application for permit because flows at the Shoup quantification gage do not always meet minimum flows.⁵⁹⁷ Furthermore, the SDEIS notes that “[v]ariable precipitation, decreased streamflow, and more precipitation falling as rain instead of snow could impact the characteristics and quality of special designation areas.”⁵⁹⁸ The SDEIS fails to detail how variable water supply conditions may impact the characteristics and quality of WSRs. The Tribe asks that the Forest Service reanalyze the impacts to WSRs and, in particular, include emphasis on the WSR sections downstream of the Project area.

4.24 Tribal Rights and Interests

This section requires substantial rewriting. The narrative uses the vague, catch-all term “tribal rights and interests” to ostensibly include the rights and interests claimed by the Tribe, Shoshone-Bannock Tribes, and the Shoshone Paiute Tribe. As discussed in detail in Section 3 of these comments, the other tribes’ claims to rights and interests in the Project area lack factual and legal support. Even if the Forest disagrees with the Tribe’s longstanding position on this issue, this section needs to identify, evaluate, and disclose the effects of the Project and alternatives on the Tribe as a unique government, and not just include this information with “tribal rights and interests” from other tribes. Aggregating the Tribe’s rights and interests with other purported tribal rights and interests in the area is fatally flawed as a matter of fact and law and is offensive to the fundamental notion of tribes as individual sovereigns with different cultures, practices, and rights. These revisions must align with, and be clearly traceable to, the Tribe’s treaty-reserved rights and other interests as distinguished from other asserted tribal rights and interests. This required review must include all of the impacts to the Tribe’s treaty rights, including the direct, indirect, and cumulative impacts.

Table 4.24-1 Impact Definitions for Tribal Rights and Resources

The Tribe is concerned that the table the Forest has developed to describe the “impact definitions for Tribal rights and resources” in terms of “intensity, duration, and context” fails to account for or accurately or comprehensively capture the potential effects or harm to the Tribe’s treaty-reserved rights and other rights and interests.⁵⁹⁹ For example, under “intensity” the term “minor” provides the change is not “to a measurable degree.” How does the Forest define or determine “measurable degree” in the context of archaeological or ethnohistoric cultural resources, areas of elevated spiritual importance, TCPs or sacred sites”? Similarly, for “major” impacts, how does the

⁵⁹⁵ Idaho Department of Water Resources. Water Right Report 77-11941.

<https://research.idwr.idaho.gov/apps/shared/WrExtSearch/Reports/WaterRightReport?basin=77&seq=11941&suffix=>

⁵⁹⁶ Idaho Department of Water Resources. Water Right Report 75-13316.

<https://research.idwr.idaho.gov/apps/shared/WrExtSearch/Reports/WaterRightReport?basin=75&seq=13316&suffix=>

⁵⁹⁷ Idaho Department of Water Resources. Application for Permit 77-14378.

<https://research.idwr.idaho.gov/apps/Shared/LfRelatedDocs/Home/DownloadDoc?eid=917515>.

⁵⁹⁸ SDEIS at 4-72.

⁵⁹⁹ *Id.* at 4-665.

Forest define or determine “large” changes in conditions or “substantially altered” rather than just “to a measurable degree”?

4.24.2.2.2 2021 MMP

The Tribe vehemently disagrees with the statement, “[l]ong-term, minor impacts would be associated with the disturbance or displacement of plant and wildlife species that are used for traditional purposes and subsistence.”⁶⁰⁰ This statement contradicts the comments the Tribe has submitted on the Project to date as well as the Forest’s own analysis in the SDEIS.

Tribal Historical/Archaeological Sites

The Forest’s assertion that any effects to the Burnlog Route or Thunder Mountain Road “would be avoided through design alterations or protective measures”⁶⁰¹ is vague, inadequate, and fails to meet the Agency’s obligations to identify, evaluate, and disclose effects. The following assertion is also inadequate for similar reasons: “consultation with the Tribes would be ongoing; therefore, if additional potential impacts are identified such as discoveries of cultural significant sites or resources during or post construction, formal, government-to-government consultation would occur.”⁶⁰² The Forest’s commitment to consult with the Tribe post-Project authorization if additional impacts are identified does nothing to identify, fully evaluate, and disclose effects pre-Project approval. Moreover, consultation alone does not compel the Forest to take any action whatsoever to address impacts to cultural resources. The Forest’s determination that impacts to tribal historical and archaeological sites would be localized, temporary to permanent, and negligible to minor” is vague, unsupported and fails to meet the stringent requirements under NEPA.

Land Status and Access

The Tribe agrees that due to the Project, “[t]here would be a long-term loss of access to land for exercising treaty rights, usual and accustomed fishing places, access to streams and fountains, and access to potential sacred sites or places, TCPs, CLs, and historic properties within the Operations Area Boundary while the lands are occupied for mining.”⁶⁰³ The Tribe vehemently disagrees with the Forest’s assertion that [t]herefore, a mitigation measure for access impacts would be incorporated into any decision on the [Project].”⁶⁰⁴ The Forest’s assertion suggesting that mitigation “for access impacts” is adequate to allow the Project to proceed is unsupported as a matter of fact and law. The Forest lacks authority to authorize any undertaking, including the Project, that will violate the Tribe’s treaty rights. Given the scope, duration, and severity of the impacts to the Tribe’s treaty rights, there is no “measure for access impacts” adequate to mitigate for these treaty violations.

⁶⁰⁰ *Id.* at 4-666.

⁶⁰¹ *Id.* at 4-667.

⁶⁰² *Id.*

⁶⁰³ *Id.* at 4-669.

⁶⁰⁴ *Id.*

The Tribe opposes the Forest’s assertion that access to federal lands available for treaty rights would be “localized, long-term and moderate.”⁶⁰⁵ There would be a long-term loss of 13,441 acres of National Forest system lands within the Area Operations Boundary and containing known usual and accustomed fishing places. The Tribe also takes issue with the Forest’s assertion that “[w]hile offsite presence of tribal resources means the impact to overall access to a specific resource would be negligible to minor, this would still constitute a localized, long-term, and moderate to major impact to tribal treaty rights specific to those resources in their specific locations...”⁶⁰⁶ Asserting an “offsite presence of tribal resources” to support the Forest’s claim that “overall access to a specific resource would be negligible to minor” is a misleading and irrelevant observation as applied to a principled inquiry of the Project’s effects on the Tribe’s treaty-reserved rights. In the 1855 Treaty, The Tribe reserved to itself, and the United States secured, the right to take fish at all usual and accustomed fishing places. Moreover, a very small percentage of the Payette and Boise National Forests contain habitat occupied by treaty-reserved anadromous species or resident species such as bull trout. While the Operations Boundary may only represent 0.3% of the Payette and Boise National Forests, that percentage fails to reflect the substantially smaller percentage of those federal lands containing anadromous and bull trout habitat. Protecting and restoring this remnant intact habitat on National Forest System lands to protect these Tribe’s treaty rights and resources is therefore of paramount importance.

The Forest’s assertion characterizing the effects of the Project on Tribal access as “localized, long-term and moderate”⁶⁰⁷ is wrong. By the Forest’s own analysis, motorized access to active mine areas and non-motorized access in the Project area would be restricted.⁶⁰⁸ The effects on Tribal access are substantial and therefore must be labeled as major.

Wetlands

The Tribe agrees with the Forest’s assessment that the Project will result in major impacts to numerous wetlands within the contributing basin within the headwaters of the East Fork SFSR, a place of known importance to the Tribe.⁶⁰⁹ These impacts, as the Forest further observes, will substantially affect water quality, water storage/recharge, and water flow. The Project will also cause major and permanent impacts to usual and accustomed fishing places including Sugar Creek and portions of the East Fork SFSR, as well as to tribal treaty rights and resources, including those associated with potential historic properties, sacred sites or places, TCPs, and CLs, depending on the wetland and the type of tribal use.⁶¹⁰

The Forest maintains that under Clean Water Act Section 404, “a compensatory mitigation plan would be required to compensate for lost wetland areas and their associated function including temporal loss of aquatic functions and values of approximately 20 years in the Salmon River drainage”.⁶¹¹ The Tribe disagrees with the Forest’s assertion that major impacts to the Tribe’s treaty-reserved rights and resources, caused by permanent destruction and alteration of on-site

⁶⁰⁵ *Id.*

⁶⁰⁶ *Id.*

⁶⁰⁷ *Id.* at 4-670.

⁶⁰⁸ *Id.*

⁶⁰⁹ *Id.* at 4-672.

⁶¹⁰ *Id.*

⁶¹¹ *Id.*

wetlands, may be addressed through compensatory mitigation under Section 404 of the Clean Water Act. As described elsewhere in the Tribe's comments, federal agencies lack authority to take action that will result in a violation of the Tribe's treaty-reserved rights. The Project will block and restrict the Tribe's access to, and use of, known usual and accustomed fishing places. This is a violation of the Tribe's treaty rights. The Corps accordingly cannot authorize a Section 404 permit that will result in violation of the Tribe's treaty rights, regardless of the agency's authority to consider a compensatory mitigation plan off-site for lost wetland areas and their associated function.

Environmental Justice

The Forest's analysis of environmental justice impacts is inaccurate and requires revision. The Agency's obligations under applicable executive orders and policies relating to environmental justice impacts are not limited to physical and biological environmental justice impacts on reservation lands. Indeed, the Tribe's treaty-reserved rights secured in the 1855 and 1863 Treaties are necessarily rooted in the Tribe's and United States' mutual understanding that the Reservation would not be sufficient in geographic scope and resource availability to continue to provide for the cultural, subsistence, ceremonial, spiritual, and economic needs of the Tribe. Through the 1855 Treaty, the Tribe therefore reserved to itself, and the United States secured, the right to travel off reservation and fish at all usual and accustomed fishing places, and hunt, gather, and pasture on open and unclaimed land. The Tribe's reservation of rights which it has exercised as a sovereign since time immemorial -to continue to access and use resources across its homeland - was fundamental to the Tribe's agreement to cede millions of acres of this land to the United States. Accordingly, the Forest's direction to limit its analysis of physical and biological environmental justice concerns to reservation lands, while ignoring the intent and scope of the Tribe's off-reservation treaty-reserved rights, is erroneous. Fully evaluating and addressing the physical and biological impacts on the Tribe's treaty resources is not only a treaty obligation rooted in the Agency's obligations under the U.S. Constitution but is also necessary to fully understand the environmental justice impacts that disproportionately affect the Tribe.

Mitigation

The SDEIS fails to adequately discuss mitigation measures for the Project.⁶¹² NEPA implicitly requires the discussion of mitigation measures in impact statements by requiring the discussion of "any adverse environmental effects which cannot be avoided."⁶¹³ Council on Environmental Quality regulations implement this implicit requirement by requiring the discussion of mitigation measures in impact statements.⁶¹⁴ Agencies must discuss measures in sufficient detail to ensure there has been a fair evaluation of environmental consequences.⁶¹⁵ The discussion must also be

⁶¹² *Id.* at 1-11, 1-15, 2-31.

⁶¹³ 42 U.S.C. 4332(2)(C).

⁶¹⁴ 40 C.F.R. §§ 1502.14(f), 1502.16(h).

⁶¹⁵ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989) ([O]mission of a reasonably complete discussion of possible mitigation measures would undermine the "action forcing" function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects").

reasonably complete.⁶¹⁶ An inadequate discussion of mitigation measures in the impact statement is a violation of NEPA.⁶¹⁷

The SDEIS repeatedly states, “[m]itigation measures and monitoring actions [that will] not be known fully until required permits have been issued.”⁶¹⁸ The SDEIS also states that, following the Record of Decision, Perpetua would integrate all required Forest requirements and mitigation commitments into the current draft Environmental Monitoring and Management Program, which consists of a program framework and appendices containing component monitoring and management plans.⁶¹⁹

According to the SDEIS:

At this time, no mitigation measures have been identified for Tribal Rights and Interests. Mitigation measures may be added, revised, or refined based on public comment, agency comment, or continued discussions with Perpetua regarding this analysis. The adopted mitigation measures will be finalized in the final EIS.⁶²⁰

This vague and cursory discussion fails to meet the requirements of NEPA. The Forest has not explored with the Tribe any potential measures to revise the Project to avoid violating treaty-reserved rights and resources and other interests and cannot defer this discussion to Perpetua or until after the Forest issues a final EIS and decision on the Project.

5.0 CUMULATIVE EFFECTS

Cumulative impacts are those "impact[s] on the environment which result from the incremental impact[s] of the action when added to other past, present, and reasonably foreseeable future actions within [each resources'] cumulative effects analysis areas".⁶²¹

5.3 Air Quality

On page 5-14 of the SDEIS, the Forest Service states, “Overall, air emissions are expected to increase as a result of the SGP and the past, present, and future actions. However, these emissions would be regulated in accordance with State and federal air permitting requirements.” As the Tribe has commented previously in this letter regarding the SDEIS (at 2-136 & 4-35) and the Air Quality Specialist Report (p.1), the Forest Service’s reliance on air permitting requirements is inadequate to protect air quality and the Tribe’s treaty-reserved rights and cultural resources.

5.5 Soils and Reclamation Cover Materials

⁶¹⁶ *Id.*

⁶¹⁷ *South Fork Band Council of Western Shoshone of Nevada, v. U.S. Dept. of Interior*, 588 F.3d 718, 727 (9th Cir. 2009) (holding that uncertainty of anticipated harms “does not relieve BLM of the responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset”).

⁶¹⁸ *Id.* at 2-92.

⁶¹⁹ *Id.* at 2-119.

⁶²⁰ *Id.* at 4-682.

⁶²¹ *Id.* at Table 5.1-1 at 5-1.

Under all alternatives, cumulative impacts to soils and reclamation cover materials include past and ongoing activities, such as, forest management, mining and mine reclamation, mineral exploration (e.g., Golden Meadows), motorized use, fire suppression, prescribed fire and wildfire, camping, boating, fishing, and hunting. Reasonably foreseeable future actions (“RFFA”) include East Fork RAMP and South Fork Plunge Watershed Projects, but should also include projected mineral exploration activities (e.g., Horse Heaven Project and any anticipated exploration plans from Perpetua) that would create additional soil disturbance and add to the reclamation cover deficit within the Project area.

5.8 Surface Water and Groundwater Quantity

The Tribe disagrees with the Forest Service’s assessment that “there are no RFFAs that have or would affect surface water and groundwater quantity in the CEA.”⁶²² Halofsky and others note that “timing of water availability is likely to shift, and summer flows may decline.”⁶²³ The Tribe argues that changes in water supply due to a changing climate should be considered as a potential RFFA. The SDEIS notes that the “effects of these natural changes [regional climate change] cannot be accurately quantified.”⁶²⁴ The Tribe wholeheartedly agrees with this statement; hence, why it is so critical for the Forest Service to carefully consider all impacts and not simply dismiss or not quantify impacts because it is too difficult.

The SDEIS fails to compare water quantity cumulative effects between the No Action Alternative and the 2021 Modified Mine Plan.⁶²⁵ It seems reasonable that the removal of legacy mining materials in contact with surface waters in Meadow Creek and the EFSFSR under the ASAOC Phase I could impact groundwater recharge and/or streamflow gains from groundwater by diverting streams away from their historical channels. Additionally, the Tribe is concerned that the Forest Service dismissed other projects and has not looked at cumulative downstream effects on the EFSFSR, SFSR, and the mainstem Salmon River. The SDEIS should be revised to include these analyses. As the Tribe has commented previously in this letter regarding the SDEIS, the Forest Service’s reliance on external agency permitting requirements is inadequate to protect water quantity and the Tribe’s treaty-reserved rights.

5.9 Surface Water and Groundwater Quality

As noted above, the SDEIS fails to consider a changing climate as a RFFA in their cumulative effects analysis. Halofsky and others indicate “increased magnitude of peak streamflows will damage roads near perennial streams..., thus affecting...water quality and aquatic habitat.”⁶²⁶

⁶²² SDEIS at 5-21.

⁶²³ Halofsky, J. E., Peterson, D. L., Dante-Wood, S. K., Hoang, L., Ho, J. J., & Joyce, L. A, *Climate change vulnerability and adaptation in the Northern Rocky Mountains [Part I]*, Gen. Tech. Rep. RMRS-GTR-374, Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station, 2018, at 1-273, 374, 1-273.

⁶²⁴ SDEIS at 4-69.

⁶²⁵ *Id.* at 5-20 and 5-21.

⁶²⁶ Halofsky, J. E., Peterson, D. L., Dante-Wood, S. K., Hoang, L., Ho, J. J., & Joyce, L. A, *Climate change vulnerability and adaptation in the Northern Rocky Mountains [Part I]*, Gen. Tech. Rep. RMRS-GTR-374, Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station, 2018, at 1-273, 374, 1-273.

Additionally, “[w]ater quality will decrease in some locations if wildfires and floods increase, adding sediment to rivers.”⁶²⁷

5.10 Vegetation: General Vegetation Communities, Botanical Resources, and Non-native Plants

Under all alternatives, RFFAs, past, and present actions would impact vegetation communities, occurrences and habitats of special status plants (e.g., whitebark pine), and distribution of noxious weeds and non-native plants. The Tribe is concerned that perpetual disturbances from mining coupled with wildland fire, climate change, forest management, and other human activities will cause irreversible and long-term damage to vegetation communities within and adjacent to the Project. Acres disturbed by the Project plus acres disturbed by other activities (e.g., exploration, transportation, wildland fire) have the cumulative potential to increase the occurrence of noxious weeds and non-native plants. If the Forest allows this Project to violate many Forest Plan Standards and Guidelines and proceed as planned, then the footprint of “sacrifice areas” will continue to grow. The Forests’ actions will pave the way for future mining activities and thus create a great magnitude of adverse and long-term impacts to treaty resources.

5.11 Wetlands and Riparian Resources

The Forest needs to take a hard look at the impacts on wetland plant resources used by the Nez Perce Tribe, which are not described in the SDEIS. Reference in the analysis should also be made to associated habitat types specific to wetlands where these plant resources are found (i.e., impacts need to have spatial (e.g., linked with Potential Vegetation Groups) and temporal (e.g., phenology, gathering season) context).

The magnitude is expected to be greater on roads used for the SGP than would be expected on standard roads due to frequency of travel, size of equipment, and use across seasons. In addition, the Burntlog Route would be near Mud Lake, which is characterized by Idaho Department of Fish and Game as a poor fen.⁶²⁸ Indirect impacts of road improvements and vehicle travel (i.e., increased dust) are likely to impact this fen and degrade its function as habitat for a fen-specific special status plant, Rannoch-rush (*Scheuchzeria palustris*), which is described further in Section 4.10 Vegetation. Although the impact of dust deposition.

5.12 Fish Resources and Fish Habitat

Inadequate subwatersheds are used in the cumulative effects analysis because the proposed Burntlog Route could affect the headwaters of Indian Creek in the Middle Fork Salmon River subwatershed. Also, downstream effects could be detected in the main SFSR, the main Salmon and possibly even the Snake and Columbia Rivers from a hazardous material spill. Therefore, the subwatersheds should be expanded to cover these areas in the Middle Fork Salmon and SFSR in the cumulative effects analysis area.

⁶²⁷ *Id.*

⁶²⁸ Idaho Department of Fish and Game, *Wetland Conservation Strategy for the High Valleys of the Salmon River, Idaho*, Prepared by Bottum, E. for Idaho Department of Fish and Game, Natural Policy Bureau, Boise, Idaho, 2004.

Assumptions stated in the SDEIS Section 4.12.2.2 are that much of the fish habitat modeling and analysis presented in this section are based on the hydrologic and site-wide water chemistry modeling performed by Midas Gold Idaho, Inc., or its consultants. Predictions generated by groundwater and hydrologic models are associated with a degree of uncertainty and can be limited in their predictive power. Yet many of the results in the SDEIS are based on these models. Errors in the input files of any of the models compound as the models are cumulatively used.⁶²⁹ So many of the conclusions in the SDEIS are based on problematic simulated model results cited in these comments are reason enough for this mine plan approval should be denied.

Impacts to fish were modeled against baseline; how are these models connected? For example, was water chemistry modeled in coordination to the reduction in stream flow? Heavy metals, such as arsenic and antimony, have the potential to concentrate as flows decrease. Stressors to these fish should be looked at independently but also cumulatively. Stressors to bull trout due to increased temperature, sediment, heavy metal concentrations and a reduction in flow should be looked at in a cumulative fashion to better understand impacts to fish. The flaws in the original hydrologic model are compounded by all the other models used to predict effects, such as the Stream and Pit Lake Network Temperature Model.

The SDEIS is flawed by treating habitat degradation in a myopic, segmented fashion, rather than holistically and cumulatively, and by ignoring downstream fish rearing and migration corridors. The SDEIS details alterations to available habitat, streamflow and water temperature for specific stream reaches and through the full timeline of mining operations. However, the SDEIS fallaciously reports these changes for individual stream segments as if they are independent of all connected stream segments, and does not account for additive effects of habitat modifications. Additionally, the SDEIS only examines headwater tributaries containing spawning and early rearing habitat for potential mining impacts, while impacts to major rearing and migration corridors downstream of the mine site are not evaluated. A more comprehensive, holistic approach to analyze degradation to all stream reaches potentially impacted through direct and indirect mining operations needs to be taken. For instance, stream segments downstream of the mine site with decreased streamflow or increased temperatures may preclude adult migration into and use of all habitat upstream, or juvenile survival through the migration corridor downstream. Therefore, there must be consideration of how fish habitat alterations may impact use of all connected habitat.

5.13 Wildlife and Wildlife Habitat including Threatened, Endangered, Proposed, and Sensitive Species

Under all alternatives, RFFAs, past, and present actions would impact wildlife and wildlife habitat. The Tribe is concerned that disturbances from mining combined with wildland fire, climate change, forest management, and other human activities will cause irreversible and long-term damage to wildlife and wildlife habitat within and adjacent to the Project. Acres disturbed by the Project plus acres disturbed by other activities (e.g., exploration, transportation, wildland fire) have the cumulative potential to increase the occurrence of noxious weeds and non-native plants which will degrade the quality and distribution of wildlife habitat. If the Forest allows this Project to violate many Forest Plan Standards and Guidelines and proceed as planned, then the footprint of “sacrifice areas” will continue to grow. The Forests’ actions will pave the way for future mining

⁶²⁹ SDEIS at 4-145 Figure 4.8-1.

activities and thus create adverse and long-term impacts to treaty resources. The Tribe has little faith that impacts will be offset and reduced through restoration considering that the land will take decades to recover. The preferred alternative would result in adverse cumulative impacts on which the Tribe considers unacceptable.

5.14 Timber Resources

Under all alternatives, RFFAs, past, and present actions would impact timber resources. Mining activities under the proposed action alternatives would convert suitable timber areas to non-suitable, and RFFAs such as mining has the potential to increase the amount of land removed from timber production. The Tribe is concerned that disturbances from mining combined with wildland fire, climate change, forest management, and other human activities will cause irreversible and long-term damage to forest vegetation. Acres disturbed by the Project plus acres disturbed by other activities (e.g., exploration, transportation, wildland fire) have the cumulative potential to increase the occurrence of noxious weeds and non-native plants which will degrade the quality and distribution of forest resources. If the Forest allows this Project to violate many Forest Plan Standards and Guidelines and proceed as planned, then the footprint of “sacrifice areas” will continue to grow. The Forests’ actions will pave the way for future mining activities and thus create adverse and long-term impacts to treaty resources. The Tribe has little faith that impacts will be offset and reduced through restoration considering that the land would take decades to recover. The preferred alternative would result in adverse cumulative impacts on which the Tribe considers unacceptable.

5.23 Special Designations

On page ES-30, the SDEIS states there will be “no impacts to [‘Wild and Scenic Rivers’] free-flowing conditions are anticipated under either action alternative.”⁶³⁰ The Tribe finds this statement severely lacking in factual background as Perpetua proposed mitigation in their water right application for permit.⁶³¹ The Forest Service should consider downstream impacts to Wild and Scenic Rivers (“WSR”), not just those areas that “intersect with the SGP area”.⁶³² Furthermore, please explain why Section 7(a) of the WSR does not apply to rivers and tributaries within the Project area as they are all tributaries to a designated WSR river segment on the mainstem Salmon River. Finally, as the State of Idaho does not have specific state regulations that “...address eligible, suitable, or designated WSRs,”⁶³³ the Tribe believes that places even more responsibility on the Forest Service to conduct a thorough analysis of how the SGP will impact WSRs.

5.24 Tribal Rights and Interests

The Tribe’s treaty-reserved rights to fish, hunt, and gather are influenced by changes to resource and habitat conditions across resource areas. Thus, the reasonably foreseeable future projects across resource areas in this chapter should also be identified in this section.

⁶³⁰ SDEIS at ES-30.

⁶³¹ Idaho Department of Water Resources. Application for Permit 77-14378, <https://research.idwr.idaho.gov/apps/Shared/LfRelatedDocs/Home/DownloadDoc?eid=917515>.

⁶³² SDEIS at 3-477.

⁶³³ *Id.* at 3-484.

Mineral exploration and mining activities: Revise “may” in the following statement to read, “will likely” and revise “disturb” to “impact” to read: “During exploratory drilling, development, and operations, the increased ground disturbance will likely impact tribal treaty rights, access to usual and accustomed fishing places and springs, tribal resources historic properties, sacred sites or places, TCPs, and CLs.”

Under the Closure and Reclamation Projects/CERCA Actions, the following statement requires revision: “Perpetua is currently conducting such activities under a current ASAOC with EPA and Forest Service. ~~These actions~~ Phase One of the ASAOC is aimed at improving site conditions by removing some hazard waste and mine tailings and capping historic waste rock dumps. ~~restore landscapes that can eventually restore traditional tribal resources by removing hazardous wastes, mining tailings, and capping historic waste rock dumps.~~”

Recreation and tourism: Change the first sentence to read: “Recreational activities (i.e., camping, hiking, hunting, trapping, trail riding, firewood harvest, fishing etc.), are likely to continue to impact tribal treaty rights and resources. Increased road and trail networks open new areas to additional human disturbance, which lead to potential vandalism, introduction of noxious or invasive weeds, displacement or destruction of treaty resources, and destruction of historic properties, sacred sites or places, TCPs, and CLs.”

APPENDIX A: Payette National Forest and Boise National Forest Land and Resource Management Plans Consistency Review and Amendments

Perpetua’s mining project *does not align* with the direction of the Forest Plans; it moves the Forest away from meeting desired conditions. The Forest acknowledges and justifies this in part in Appendix A of the SDEIS where it states: “[i]t is recognized that not all proposals would move towards or achieve desired conditions, goals, or objectives and there may be tradeoffs between moving towards or achieving these for one resource or another.”⁶³⁴ The Tribe recognizes there are tradeoffs in land management, however, when Forest Plan desired conditions, goals, objectives, standards, and guidelines are dismissed or bent to meet a proposal, they lose meaning and effectiveness.

The Forest Plan amendments waive or remove the time frame for resource impacts.⁶³⁵ How is it possible to waive a project’s time frame (20 years) and stay true to the non-degradation intent of the Forest Plan components? What purpose do Forest Plan standards serve if they can so easily be bent or set aside?

The Tribe is disappointed in the Forest’s rationale in Table 1⁶³⁶ for deviation from Forest Plan compliance. Perpetua will not be able to maintain or restore ecosystem integrity when the entire upper Meadow Creek watershed is permanently altered. **Adverse impacts to surface water and groundwater quality and quantity will occur in perpetuity and thus will degrade Tribal resources.**

⁶³⁴ *Id.* at A-1.

⁶³⁵ *Id.* at A-5.

⁶³⁶ *Id.* at A-5 to A-20.

The SDEIS lists fourteen Forest Plan standards to be amended to the Payette and Boise National Forest Land and Resource Management Plans as project-specific.⁶³⁷ “When a proposed project is not consistent with Forest Plan standards applicable to the location of a project and/or the types of activities proposed, the Forest has the following options: (1) modify the proposed project to make it consistent with the Forest Plan; (2) reject the proposal; (3) amend the Forest Plan so that the project would be consistent with the Forest Plan as amended; or (4) amend the Forest Plan contemporaneously with the approval of the project so the project would be consistent with the Forest Plan as amended.”⁶³⁸

The Forest's discretion to exercise any of these options to achieve Forest Plan consistency with a project is not unbounded, however. The Agency's action is expressly “subject to valid existing rights.”⁶³⁹ There is no question that the Tribe's rights reserved in its 1855 Treaty with the United States are “valid existing rights” applicable to the Project area. To avoid harm to the Tribe's treaty-reserved rights and resources while maintaining consistency with Forest Plan standards, the Tribe recommends that the Forest reject the Project in its entirety.

The Payette and Boise National Forest need to reinitiate Section 7 consultation with the Regulatory Services on the Payette and Boise Forest's Land and Resource Management Plans regarding the proposed Plan amendments. What is the status of Section 7 consultation for this? The Tribe would like to be involved through government consultation in this process. This proposed Project will have an adverse effect on ESA-listed fish and their habitat so the Forest must demonstrate (e.g., from monitoring results of projects below main spawning areas) during planning or consultation that similar projects have been implemented and sediment delivery to streams was avoided or minimized.⁶⁴⁰

The Project-level general management actions amendments that allows for degradation of resource conditions in the short term and avoids long-term resource degradation at a Forest-wide scale are of particular concern. These amendments label the entire project area as a sacrifice zone. How can this even be considered while the Forest is trying to minimize adverse environmental effects?

Under the preferred alternative (2021 MMP), the Forest is proposing to amend 14 Forest Plan Standards. The Tribe has identified the following additional Plan standards that the Tribe has determined the Project will violate and therefore requests the Forest analyze to determine compatibility/compliance:

- PNF standards #1302 - Activities associated with the project would degrade water quality and habitat for treaty-reserved resources.
- BNF ST01 - Have all the plant species been inventoried?

⁶³⁷ *Id.* at 1-11 and 1-12.

⁶³⁸ *Id.* at A-1-2.

⁶³⁹ 36 C.F.R. § 219.15(c)(3).

⁶⁴⁰ NOAA Fisheries. 2003. Endangered Species Act Section 7 Consultation Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation Boise, Payette, and Sawtooth National Forest Land and Resource Management Plan Revisions Southwest Idaho Ecogroup.

- PNF SWST02 + BNF SWST02 - Detrimental disturbance of soils is estimated to be as high as 16% on the proposed transmission right of way under both action alternatives.⁶⁴¹
- PNF + BNF ST03 - Have all the special status plant species been inventoried?
- PNF + BNF LSST02 - Some project infrastructure may not fully comply with right-of-way planning and may not serve the needs of all parties.
- PNF + BNF LSST12 - The Water Management Plan does not speak to monitoring water withdrawals, nor has the water rights been approved yet.
- PNF + BNF MIST09 - Mining operations (solid and sanitary waste facilities) within riparian conservation areas would increase toxic metal from facilities and long term degradation of surface treaty resources would occur.
- PNF + BNF SWST06 - The determination of instream flows needed for protection of water-related resources have not been accomplished.
- PNF + BNF SWST07 - 303(d) improvement would not be attained.
- PNF + BNF SWST10 - Trees and snags important for treaty wildlife resources would be removed from riparian conservation areas for operations.
- PNF + BNF SWST 12 - Project components located in landslide-prone areas and mitigation measures will not be sufficient to avoid triggering landslides.
- PNF + BNF TEST03 - It is unknown if this project would be consistent with consultation on the Forest Plans. Project specific consultation is ongoing however, it is anticipated that the Project would not meet some portions of the recovery plans for listed species.
- PNF + BNF TEST04 - Project specific consultation is ongoing, however, it is anticipated that the Project could contribute to ESA listing.
- PNF + BNF TEST07 - Stream diversions during construction, operations and closure/ post-closure will not meet this standard. Fisheries habitat would be permanently blocked in Meadow Creek by the tailings storage facility and its buttress.
- PNF + BNF TEST08 - Have all the plant species been inventoried?
- PNF + BNF TEST11 Where will toxicants be stored in relation to sensitive plants and whitebark pine habitat, have all the site specific details been fully developed?
- PNF + BNF TEST15 - Five of the seven lynx analysis units exceed the 30% of habitat in unsuitable condition and additional habitat would be converted to unsuitable condition.

⁶⁴¹ *Id.* at 4-83.

- PNF + BNF TEST28 + TEST31 -This mine proposal will have adverse effects on whitebark pine by removing them along the Burntlog route.
- PNF + BNF TEST34 - There would be a net increase in groomed or designated over snow routes over baseline in lynx analysis units.
- PNF + BNF TRST04 - Tribal consultation is ongoing but restoration, enhancement, and maintenance measures have not been agreed upon, it seems likely that some effects to plant communities of tribal interest would be unavoidable.
- PNF + BNF WIST01 - This standard may not be met depending on the exact location of project components in relation to large tree size class distributions by potential vegetation group with the project's watersheds.
- PNF + BNF WIST02 - Sensitive plant species surveys have not been completed for the project area so some impacts to habitat may be unavoidable even with mitigation. They may be project facilities located in sensitive plant, wildlife or fish treaty-resource areas that may contribute to ESA listing in the future.
- PNF + BNF WIST03 - Proposed mitigation measures may not avoid disruption of treaty resource reproductive success during nesting or denning periods given the year-round nature of the proposed mine.
- PNF + BNF WIST05 - Surveys have not identified active nest stands, but there would be direct loss of mature forest habitat.
- PNF + BNF WIST06 - Proposed mitigation measures may not avoid displace of treaty-reserved wildlife resources in winter/spring ranges given the year-round nature of the proposed mine and the intensity of the noise, air quality, and water related impacts anticipated.
- BNF-21 #2154 - New roads (Burntlog sections) would be constructed in riparian areas and adverse effects to treaty reserved resources and their habitat may be realized by implementing this project without demonstrable short- or long-term benefits to those species or their habitats.

The 2003 NOAA Fisheries Biological Opinion for the Land and Resource Management Plan Revisions for the Boise, Payette, and Sawtooth (Southwest Idaho Ecogroup) National Forests ("SWIE LRMP") has the following Terms and Conditions: 2. To implement RPM #2, Maintain linkages between the SWIE LRMP and broad-scale restoration/recovery strategies, the Forest Service shall:

In the Upper Salmon, South Fork Salmon, and Little Salmon River subbasins, not allow likely to adversely affect actions with adverse effects lasting three years or longer on ESA-listed anadromous fish species or their habitat prior to completion of the appropriate consultation framework document, unless informed or driven by

recommendations from existing or new subbasin assessments or watershed analyses.⁶⁴²

There is no documentation in the Project record any existing or new subbasin assessments or recent watershed analyses for the upper EFSFSR, as required in the above-referenced 2003 BiOp for actions resulting in likely adverse effects lasting longer than three years. The Tribe accordingly requests that the Forest perform these requisite assessments and analysis and provide it for Tribal and public review and comment in a new SDEIS prior to initiating Endangered Species Act consultation on the Project and prior to issuing a final EIS or decision on the Project.

Have the default WCI values for this subbasin based on the best available data on functioning habitat conditions for ESA-listed fish within SFSR subbasin been revised within the Aquatic Conservation Strategy?⁶⁴³

Financial Assurance

Which agency will be taking charge of the financial assurance, the Forest Service or the Idaho Department of Lands? The Federal government will not accept corporate guarantee bonding. The development of financial assurance at this proposed mine site should include a transparent review process with consistent reporting listing how each variable adds up to the final amount.⁶⁴⁴

Air Quality Specialist Report

The introduction of the Air Quality Specialist Report does not acknowledge air protection to the environment (secondary NAAQS).⁶⁴⁵ Only human health impacts are discussed (primary NAAQS). The affected environment is then portrayed as near-field or far-field. Under the Clean Air Act, air permits and their specific enforceable provisions (e.g., air pollution control equipment, dust control plans, operational limits, etc.) are intended to ensure that NAAQS are not violated, but this only applies outside of a facility's operations area boundary. Even with a well-developed, data-supported, practically enforceable air permit, within that operational boundary (aside from the specific question the Tribe has raised about the public access road being ambient air), a facility is allowed to exceed the NAAQS. Any air permit, therefore, will not protect the Tribe's treaty-reserved rights and numerous cultural resources within the operational boundary. Trust responsibilities extend to all life, plants and animals that can't speak for themselves. The SDEIS does not address the issue of NAAQS exceedances inside the operations area boundary.

The information included in the Air Quality Specialist Report and the SDEIS is inconsistent. Some information about air quality in the Air Quality Specialist Report is not included in the SDEIS, and some information about air quality in the SDEIS is not included in the Air Quality Specialist

⁶⁴² *Id.*

⁶⁴³ *Id.*

⁶⁴⁴ Christopher J. Sergeant, Erin K. Sexton, Jonathan W. Moore, Alana R. Westwood, Sonia A. Nagorski, Joseph L. Ebersole, David M. Chambers, Sarah L. O'Neal, Rachel L. Malison, F. Richard Hauer, Diane C. Whited, Jill Weitz, Jackie Caldwell, Marissa Capito, Mark Connor, Christopher A. Frissell, Greg Knox, Erin D. Lowery, Randal Macnair, Vicki Marlatt, Jenifer K. McIntyre, Megan V. McPhee, Nikki Skuce. *Risks of mining to salmonid-bearing watersheds*, Science Advances 8 Applied Ecology, July 1, 2022.

⁶⁴⁵ U.S. Forest Service, *Stibnite Gold Project Air Quality Specialist Report*, Payette National Forest, 2022.

Report. This can be clearly seen when comparing Tables 2.4-12 and 2.4-13 of the SDEIS with Tables 2-2 and 2-3 in the Air Quality Specialist Report. For example, the Air Quality Specialist Report Table 2-2 Prominent Regulatory and Forest Plan Requirements for Air Quality includes “Deploy a satellite or network connected visibility web camera as part of the FS visibility network aimed from the boundary of Frank Church River of No Return Wilderness (“FCRNRW”) south of mine across to FCRNRW boundary north of mine and/or from north to south on the FCRNRW boundary looking to the opposite boundary to document frequency of plume blight and visibility impacts to the wilderness area”, but this requirement is missing in the SDEIS. Additionally, in the SDEIS Table 2.4-13 Proponent Proposed Design Features, “Dust emission controls would reduce dust from crushing, conveying, and stockpiling” is listed, but is not included in the Air Quality Specialist Report. With these inconsistencies it is not clear what requirements the USFS is really proposing. All requirements should be in both locations.

The reference for the Fugitive Dust Control Plan listed on page 13 is not listed in the reference section and Forest Service personnel could not provide the document when asked. The Forest Service must include an actual fugitive dust control plan as a mitigation measure for the project.

The statement “On June 17, 2022 IDEQ issued a final Permit to Construct (“PTC”) and Statement of Basis (“SOB”) stating that the SGP will not require a Title V permit”⁶⁴⁶ is not true, see IDEQ 2022, Statement of Basis, Permit to Construct No. P-2019.0047, Project ID 62288, Perpetua Resources Idaho, Inc. Stibnite, Idaho Facility ID 085-00011.

The Air Quality Specialist Report states on page 63, “The main ore processing facility building, and coarse ore stockpile would be enclosed.” This is incorrect. There is no requirement in the PTC for the ore stockpiles to be enclosed.⁶⁴⁷

The Air Quality Specialist Report states on page 3-20 of Appendix D, “The EPMs would target maintaining a control efficiency of 90 percent on the on-site haul roads.” This is incorrect. In the IDEQ PTC, the control efficiency for haul roads is 93.3% for haul roads.⁶⁴⁸

Water Quantity Specialist Report

The Water Quantity Specialist Report (“WQSR”) states, “maintain instream flows for fish . . . to the maximum extent practicable.”⁶⁴⁹ What does to the maximum extent practicable mean? Will Perpetua reduce water use and scale back production?

The Figure 7-8a blue box is for EOY 12 pit extent for both figures but the areas in blue are different.⁶⁵⁰ Please provide additional information to explain this figure. Should the figure on the left be EOY 5 pit extent?

Two areas in the WQSR mention the TSF Buttress is lined:

⁶⁴⁶ *Id.* at 17.

⁶⁴⁷ IDEQ 2022 Permit to Construct at 3.

⁶⁴⁸ *Id.*

⁶⁴⁹ Water Quantity Specialist Report. 2022. at 9, Table 2-3, first box.

⁶⁵⁰ *Id.* at 68, Figure 7-8a.

- Impacts to Groundwater Levels - The WQSR states, “Lowered groundwater levels in the vicinity of the TSF and TSF Buttress are predicted to slightly reduce flows in underdrain systems constructed below the facilities and their liners...”⁶⁵¹
- Impacts to Groundwater Flow - The WQSR states, “The presence of the fully lined TSF and TSF Buttress...”⁶⁵²
- However, in the SDEIS the TSF Buttress is not lined.⁶⁵³ Please reconcile. How were the models run? There is no figure in this document that shows a liner.

The WQSR discusses the reduction in stream flow in Meadow Creek between the TSF and Hangar Flats pit compared to baseline of up to 40% (because the creek is lined so no recharge from groundwater), but that the IPDES permitted outfall will largely offset this by the addition of treated water.⁶⁵⁴ How long of a stream section is reduced before the outfall? It would be helpful to have a series of figures that show stream reduction percentages in map view over time.

Stibnite Gold Project Stibnite Hydrologic Site Model Refined Modified Proposed Action (ModPRO2) Report

The Hydrologic Site Model Refined Modified Proposed Action (ModPRO2) Report does not model⁶⁵⁵ the filling of the TSF in Mine Year -1, even though the model includes Mine Year -1. This is a concern, as the October 8, 2020 Brown and Caldwell memo on water right diversion rates and volumes mentions filling the TSF in Mine Year-1 may result in the need for mitigation for Forest Service water rights for Wild and Scenic Rivers on the Salmon River. Was a hydrologic model done in order to know this is an issue and that mitigation may be needed? Why wasn't it done with the current hydrologic model for a cumulative effect?

Section 3.2.1. For West End pit lake development, the 100-year post-mining SHSM climate scenario is based on historical data from 1918 to 2017. Is this a valid assumption? How might climate change affect these scenarios (more water, less water, precipitation more as rain versus snow, earlier or later peak flows, etc)?

TSF consolidation water is treated in the post-mining period through Mine Year 40. What happens if treatment is needed beyond Mine Year 40? Will Perpetua be required to continue treating?

⁶⁵¹ *Id.* at 64.

⁶⁵² *Id.* at 71.

⁶⁵³ SDEIS at 2-53 and 7-86.

⁶⁵⁴ Water Quantity Specialist Report at 75.

⁶⁵⁵ Brown and Caldwell. 2021. Stibnite Gold Project Stibnite Hydrologic Site Model Refined Modified Proposed Action (ModPRO2) Report. Prepared for Perpetua Resources Idaho, Inc. August 2021.

Stibnite Gold Project Site-Wide Water Balance (“SWWB”) Model Refined Modified Proposed Action (ModPRO2) Report

The SWWB report states “forced evaporation only operates in the summer months . . .” yet later in the paragraph it states, “evaporators turn on in March and run...”.⁶⁵⁶ This appears to be inconsistent.

The SWWB states, “Water needed for ore processing above the water available from reclaim is termed additional water. Additional water needs are a direct result or prediction of the SWWB, and makeup water is sourced from stored MIW, dewatering, or freshwater supply.”⁶⁵⁷ Figure 6-18 is the Additional Water Needs Boxplot⁶⁵⁸, which based on the definition above would include the three sources. However, later in the next paragraph, it appears to discuss the freshwater supply shown for groundwater (Figure 6-19) and surface water (Figure 6-20).⁶⁵⁹ It is unclear if Figure 6-18 includes only the freshwater additional water supply or all the additional water supplies (ex. stored MIW, dewatering). It would be helpful to have similar plots as the groundwater and surface water plots for stored MIW and dewatering sources.

Figure 6-24 shows Process Makeup Water Required⁶⁶⁰ (all sources) and Figure 6-25 shows TSF Reclaim to Process.⁶⁶¹ It appears there is generally more than sufficient supply by the TSF Reclaim. Is this correct? Would the data from Figure 6-24 equal the sum of the data from Figures 6-18 (additional water needs) and 6-25 (TSF reclaim)?

⁶⁵⁶ Brown and Caldwell. 2021. Site-Wide Water Balance Model ModPRO2 Report at 6-10.

⁶⁵⁷ *Id.* at 6-21.

⁶⁵⁸ *Id.* at 6-22.

⁶⁵⁹ *Id.* at 6-22-23.

⁶⁶⁰ *Id.* at 6-26.

⁶⁶¹ *Id.* at 6-27.