



Nez Perce

TRIBAL EXECUTIVE COMMITTEE

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October 27, 2020

Submitted via FedEx, Overnight Delivery

Linda Jackson, Forest Supervisor
Payette National Forest
500 N. Mission St., Bldg. 2
McCall, ID 83638-3805

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

Dear Forest Supervisor Jackson:

On behalf of the Nez Perce Tribe ("Tribe"), thank you for the opportunity to comment on the Payette and Boise National Forests' ("Forest" or "Agency") Stibnite Gold Project and U.S. Army Corps of Engineers' ("Corps") Clean Water Act Section 404 review (collectively "Stibnite Gold Project" or "Project") Draft Environmental Impact Statement ("DEIS"). This transmittal letter, accompanying technical comments, flash drive containing electronic copies of citation attachments, prior submitted comments, and information generated between the Tribe and United States pursuant to our government-to-government interactions, represent the comments of the Tribe.

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"). In the 1855 Treaty, the Tribe reserved and the United States secured to the Tribe 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.² These were not "rights" that impose responsibilities on the United States. For the *Nimiipuu* they were and are a

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.

guarantee of our ability to preserve our culture and identity that are inextricably linked to the reserved rights. These 1855 Treaty rights are the “supreme law of the land.”³

The Tribe has endured immeasurable harm over the last two centuries as a result of misguided federal policies, exploitative resource extraction and land management practices, and broken treaty promises that have ignored our culture and threatened our way of life. Gold mining has played a particularly egregious and lasting role in this ignominious history of hardship and loss. Shortly after the 1855 Treaty was ratified, gold was discovered within the Tribe’s homeland. Multitudes of prospectors, ignoring our treaty rights, illegally flooded our lands, stealing vast quantities of gold and other resources and befouling our pristine waters and sacred places. The United States, unwilling to enforce its treaty obligations and expel the gold-seeking trespassers, instead forced the Tribe to enter into a new treaty (“1863 Treaty”).⁴ While the 1863 Treaty retains our fishing, hunting, gathering, pasturing, and travel rights, our Reservation was substantially reduced—opening to non-Indian settlement lands from which gold and other resources had been illegally taken.

Given gold mining’s legacy of dispossession and wanton destruction of our land and resources, the Tribe is committed to preventing these harms from ever again revisiting our people. When Midas Gold arrived from Canada, pursuing mining claims at the Stibnite site within our aboriginal homeland and branding itself as an environmentally-friendly mining company with promises to “restore the site” by re-mining it for gold and other minerals, the Tribe was skeptical of this dubious claim. As the original inhabitants and stewards of this land, we are widely recognized for our commitment to restoring salmon, steelhead, and lamprey, and as a co-manager and partner, for our active implementation of habitat restoration and hatchery actions in the Snake and Salmon river basins. Honoring our relationship to the fish, and all animals and plants inhabiting our cherished lands and waters, is fundamental to our identity and survival as *Nimiipuu*—and will always remain our sacred and privileged duty.

The Tribe has committed thousands of hours and substantial resources evaluating the Project. The Tribe reviewed Midas Gold’s Plan of Restoration and Operations (“PRO”) and submitted scoping comments on July 20, 2017. In October 2018, the Tribe passed a resolution opposing the Project based on existential threats to our treaty rights and resources, cultural resources, and other interests. We have since continued to closely monitor the Project through formal and informal consultation with the Forest, emphasizing at every opportunity the Agency’s obligations to protect the Tribe’s treaty rights. We have also consistently urged the Forest and other reviewing agencies to provide accurate, complete, and transparent information and analyses to the Tribe and public that the National Environmental Policy Act (“NEPA”) and other federal laws require for the Project.

The Tribe has carefully examined the DEIS and documents our numerous concerns with the draft in our accompanying comments. Many of the Tribe’s comments, despite repeated expression and dialogue throughout this process, correlate to the Forest’s refusal to acknowledge the primacy of

³ U.S. CONST. art. VI, cl. 2.

⁴ Treaty with the Nez Percés, June 9, 1863, 14 Stat. 647.

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the 1855 Treaty as applied to this Project and take action to safeguard our treaty-reserved rights. As an agency of the United States, the Forest has a treaty-based duty, enshrined in the U.S. Constitution and supported by numerous U.S. Supreme Court decisions, to ensure that its actions, including approving the Project, do not result in harm to our rights reserved in the 1855 Treaty.

Yet, as evident throughout the DEIS, the Forest's and Corps' analysis reflects an outrageous and deeply erroneous presumption that the Tribe's treaty-reserved rights must yield to Midas Gold's Project, even if the Project results in substantial, irreparable, and lasting harm to the Tribe's treaty rights and resources for decades and perhaps longer. These unacceptable harms to our people are undisputed. The Forest arrived at these determinations in its own analysis for each action alternative in the DEIS.

Given the Forest's deference to—and as described in the Tribe's accompanying comments—inadequate evaluation of Midas Gold's Project, the DEIS is fundamentally flawed. As a result, the range of alternatives, effects, and analysis must undergo foundational revisions to comply with NEPA. Without these foundational changes, the Project will also result in violation of numerous forest plan standards under the National Forest Management Act that protect treaty-reserved fish and habitat and other values important to the exercise of the Tribe's treaty rights and protection of cultural resources. Moreover, the Corps' decision to rely on the DEIS to support a permit decision pursuant to Section 404 of the Clean Water Act for the Project without a completed application from Midas Gold or adequate notice to the public, is also premature and inadequate.

We urge the Forest and Corps to prepare a Supplemental Environmental Impact Statement ("SEIS") to address the numerous defects described in the Tribe's comments and to provide further Tribal and public comment to address the foundational defects in the DEIS. The Tribe also requests government-to-government consultation with the Forest, including an opportunity to review the Forest's written responses to all the Tribe's comments, prior to the issuance of any revised DEIS or SEIS, final environmental review, or draft decision on the Project. Please contact Marie Baheza, Executive Assistant to the Nez Perce Tribal Executive Committee, at (208) 843-2253 to schedule a consultation. In the meantime, we look forward to the Forest making the requested foundational changes to the DEIS. If you have any other questions, please contact Michael Lopez, Senior Staff Attorney, Nez Perce Tribe Office of Legal Counsel, at (208) 843-7355.

Sincerely,



Shannon F. Wheeler
Chairman

Enclosures

NEZ PERCE TRIBE COMMENTS
STIBNITE GOLD PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT
October 27, 2020
(Submitted with Nez Perce Tribe's October 27, 2020 Transmittal Letter and References)

NEZ PERCE TRIBE'S INTEREST

Since time immemorial, the Nez Perce Tribe ("Tribe") has occupied and used over 13 million acres of lands now comprising north-central Idaho, southeast Washington, northeast Oregon, and parts of western Montana. Tribal members engaged in fishing, hunting, gathering, and pasturing across their vast aboriginal territory, 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").⁵ In its 1855 Treaty, the Tribe explicitly reserved, and the United States secured, among other guarantees, a permanent 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."⁶

The lands and waters of the Forest are part of the vast aboriginal territory ceded by the Tribe and over which the Tribe has treaty-reserved rights. The Project is located on the Krassel Ranger District of the Forest and thus is located on 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.⁷

The Tribe's treaty-reserved rights to fish, hunt, and gather presumes access to, and the continued existence of, those resources.⁸ 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.⁹ 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

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 threatened resources within its treaty territory, including on the Forest. The Tribe's Natural Resources Department

⁵ Treaty with the Nez Percés, June 11, 1855, 12 Stat. 957.

⁶ *Id.* at art. 3.

⁷ *Nez Perce Tribe v. United States*, Docket #175, 18 Ind. Cl. Comm. 1.

⁸ See *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 678-79 (1979).

⁹ 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).

and Department of Fisheries Resources Management (“DFRM”) assist the Tribe’s leadership in protecting treaty-reserved resources 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.

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.¹⁰ 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.¹¹ Impacts can be especially harmful to at-risk ecosystems¹² and especially harmful for sensitive human populations such as asthmatics, children, the elderly, people with diabetes, and people with heart or lung disease.¹³

Wildlife

The Forest provides a range of habitats suitable for bighorn sheep and gray wolf 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, and the Tribe’s ongoing advocacy for the population, has led to the Forest phasing out domestic sheep grazing on 70,000 acres of bighorn sheep habitat. Because this was a vital step for bighorn sheep recovery, the Forest must protect all bighorn sheep habitat on the Forest.

Gray wolves, extirpated in Idaho in the 1930s, gained federal protection in 1967 and were listed as endangered under the Endangered Species Act (“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

¹⁰ 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 (last visited Oct. 9, 2020).

¹¹ *Id.*

¹² Industrial Economics, Inc., *Effects of Air Pollutants on Ecological Resources: Literature Review and Case Studies*, (Mar. 2011), <https://www.epa.gov/sites/production/files/2016-01/documents/ecofinalreport.pdf>.

¹³ U.S. Environmental Protection Agency, *Patient Exposure and the Air Quality Index*, (Aug. 2017), <https://www.epa.gov/pmcourse/patient-exposure-and-air-quality-index>.

delisting of gray wolves is one of the nation's greatest conservation achievements. Protection of wolf habitat, which includes minimizing human disturbance, needs the utmost attention from the Forest.

Fisheries

Forest lands and waters provide irreplaceable habitat for tribal resources, including imperiled stocks of spring/summer Chinook salmon, steelhead, bull trout, and Pacific lamprey. 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 mission of the Tribe's DFRM is to protect and restore aquatic resources and habitats. Our mission will be accomplished consistent with the *Nimípuu* 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. Our mission will be consistent with the reserved rights stated within the 1855 Treaty.¹⁴

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) flow through the Project site 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 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. Pacific lamprey are critically imperiled in the Snake River basin and considered endangered by the state of Idaho and a 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 boundary. 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. 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

¹⁴ DFRM, Management Plan 2013-2028.

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 (including the EFSFSR).

DEIS TECHNICAL COMMENTS

National Environmental Policy Act ("NEPA") Framework

Section 101 of 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.¹⁵

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.¹⁶

The statutory requirement that a federal agency contemplating a major action prepare such an Environmental Impact Statement ("EIS") serves NEPA's "action-forcing" purpose in two important respects.¹⁷ It ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it

¹⁵ 42 U.S.C. § 4321.

¹⁶ 42 U.S.C. § 4332(C).

¹⁷ *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).

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.¹⁸

CHAPTER 1 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."¹⁹ The statement of purpose and need is critical because it dictates the range of reasonable alternatives to the proposed action.²⁰ The purpose and need statement cannot be so narrow as to limit the range of reasonable alternatives.²¹

Invalid Purpose and Need

- The DEIS fails to address the basic question of whether there is a valid purpose and need for the Project. There is not a clear need to support the purpose relative to the site-specific nature of the proposal. There are other places in the world where gold, silver and antimony may be mined with far less environmental impact than in the proposed location. In addition, the DEIS does not address whether there is current or future demand for gold, silver and antimony.
- The DEIS does not take into account the need for the type of proposed development. This section demonstrates neither a need for the Project in Idaho nor in the United States. The United States is currently, and for the foreseeable future, a global supplier of gold and silver. The country's current and future planned production exceeds demand, and domestic production is diverse. With respect to the Forest's or Corps' Project purpose, there is no apparent need in the United States, including Idaho, for an additional gold, silver or antimony mine to meet current or future domestic demand. The role or responsibility of the Forest or Corps is not to address global demand or to speculate on future global demand for these metals. Since the need for this Project as described in the DEIS is predicated only on the production of gold, silver and antimony, and because the environmental impacts are significant, more factual information is necessary to support the assertion that the proposed Project is necessary to meet United States or global requirements for these minerals. In the context of the DEIS, simply discussing whether there is adequate supply of such metals is insufficient; the DEIS also needs to address whether there are other practicable alternatives for meeting this apparent demand that would be less environmentally damaging. The Forest Service and Corps should also include other alternatives both nationally and globally for meeting this demand and

¹⁸ *Id.*

¹⁹ *Id.* § 1502.13.

²⁰ *City of Carmel-By-The-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997).

²¹ *Id.* at 1155 ("The stated goal of a project necessarily dictates the range of 'reasonable' alternatives and an agency cannot define its objectives in unreasonably narrow terms."); see also *Nat'l Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070 (9th Cir. 2010).

evaluate these alternatives in an SEIS. Such alternatives would include other projects throughout the world that would produce gold, silver or antimony and are already under development or being proposed.

- 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, and once adversely impacted or destroyed, these cultural lifeways are also irreplaceable. 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 DEIS the potential conflict between current and future uses of natural resources, including the Tribe's treaty-reserved rights and resources, and the loss of or harm to these rights and resources to accommodate the mine and facilities of the Project. The Forest and Corps should consider whether there is in fact a legitimate need for the proposed Project that outweighs the significant impacts to and permanent and irreversible loss of treaty-reserved rights and resources that would be caused if the proposed Project is permitted, constructed, and operated.
- The Forest's purpose and need statement is flawed because it assumes a "statutory" right to extract minerals, without evidence that Midas Gold has met the statutory criteria for such "right." According to the DEIS:

The Forest Service purpose and need for action are established by the agency's responsibilities under the Organic Administration Act of 1897 (16 United States Code 478, 482, and 551) and the locatable minerals regulations at 36 Code of Federal Regulations (CFR) 228, subpart A, which set forth rules and procedures through which use of the surface of NFS lands in connection with operations authorized by the United States Mining Laws (30 United States Code 21-54), which confer a statutory right to enter upon the public lands to search for minerals, shall be conducted so as to minimize adverse environmental impacts on NFS surface resources.²²

This assumption improperly skews the Forest's analysis and permitting authority. When Project lands have not been verified to contain, or do not contain, valuable minerals under the 1872 Mining Law, no right exists. There is inadequate evidence in the DEIS that the unpatented mining claims proposed for use and occupancy in the Project have met the requirements of the 1872 Mining Law, the Organic Act, and the Forest's mining

²² DEIS at ES-5.

regulations and are therefore valid claims. On July 31, 2019, U.S. District Judge James Soto issued an order enjoining approval and construction of the Rosemont mine, a massive copper mine in Arizona's Coronado National Forest.²³ He determined that the Forest Service "[a]bdicated its duty to protect the Coronado National Forest"²⁴ when it failed to consider whether the mining company held valid unpatented mining claims. Judge Soto held:

[H]aving a piece of paper reflecting that one has unpatented mining claims does not show that one actually has *valid* unpatented mining claims. If there is no valuable mineral deposit beneath the purported unpatented mining claims, the unpatented mining claims are completely *invalid* under the Mining Law of 1872, and no property rights attach to those invalid unpatented mining claims.²⁵

The DEIS suffers from the same flawed approach as the Forest's analysis of the Rosemont mine in *Ctr. for Biological Diversity*. The DEIS provides inadequate evidence supporting Midas Gold's assertion of rights containing the requisite discovery of a valuable mineral deposit on all federal lands within the Project area. Moreover, DEIS Section 3.15 Land Use and Land Management, does not address the validity of the unpatented mining claims as to their intended purpose in terms of whether mining claims will be used to locate waste rock piles and tailings, which is inconsistent with their being claimed for mining purposes, or whether those areas are covered by millsite claims as required by law. As shown by DEIS Figure 3.15-1, several proposed Project features such as the Fiddle Creek waste rock piles, Meadow Creek tailings storage facility ("TSF") and waste rock pile, would be located on unpatented mining claims. Based on the information contained in the DEIS, which appears to assume that all the unpatented area exists as mining claims as opposed to specific mention of millsite claims, the Project must be assumed to include waste rock piles and TSFs located on unpatented mining claims intended for the purpose of mining, rather than waste disposal.

Use and occupancy of mining claims for ancillary development activities on lands not covered by valid claims, like all other uses of public land, are not governed by the 1872 Mining Law. Rather, these uses are governed by the full range of public land statutes applicable to the appropriate agency. Unless a specific operation is authorized under the 1872 Mining Law, it must be regulated under the Forest's special use regulations at 36 C.F.R. Parts 251 and 261 - not the Agency's implementing regulations at 36 C.F.R. 228 Subpart A.

The DEIS lacks factual support that the Forest has validated Midas Gold's asserted statutory rights under the 1872 Mining Law and related federal mining laws to any of the federal public lands proposed for mineral activities under the

²³ *Ctr. for Biological Diversity v. United States Fish & Wildlife Serv.*, 409 F. Supp. 3d 738, 766 (D. Ariz. 2019).

²⁴ *Id.* at 757 (emphasis omitted).

²⁵ *Id.* at 747-48.

Project. Without this independent verification, the Forest's evaluation of the Project cannot proceed under its mining laws and implementing regulations.

CHAPTER 2 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.”²⁶ “In order to be adequate, an environmental impact statement must consider not every possible alternative, but every reasonable alternative.”²⁷ “The stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives.”²⁸ An agency need not consider alternatives that are “unlikely to be implemented or those inconsistent with its basic policy objectives.”²⁹

As noted in the DEIS Section 2.1, 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.³⁰ 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”³¹ Moreover, under the Clean Water Act Section 404(b)(1) Guidelines, the Corps may only permit the least environmentally damaging practicable alternative.³² 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.”³³ NEPA regulations³⁴ and the Forest Service Handbook³⁵ also require consideration of a no action alternative in an EIS.

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”³⁶ 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

²⁶ *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).

²⁷ *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985).

²⁸ *City of Carmel-By-The-Sea*, 123 F.3d at 1155.

²⁹ *Seattle Audubon Soc. v. Moseley*, 80 F.3d 1401, 1404 (9th Cir. 1996).

³⁰ 40 C.F.R. § 1502.14.

³¹ Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (March 23, 1981).

³² 40 C.F.R. § 230.10(a).

³³ 40 C.F.R. § 230.10(a)(2).

³⁴ 40 C.F.R. § 1502.14(c).

³⁵ Forest Service Handbook 1909.15, Chapter 10, Section 14.2.

³⁶ 40 C.F.R. § 1502.15.

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.”³⁷

- The DEIS does not completely and accurately describe the no action alternative which the DEIS 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 does 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. DEIS Section 3.2.3.3 Legacy Mine Features identifies the Bailey Tunnel, Monday Tunnel, North Tunnel, and Cinnabar Tunnel as legacy mine features. The DEIS does not identify the Bonanza Adit or DMEA adit as mine features. The Meadow Creek Mine adit is identified as a seep in Table 3.9-7. 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

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).

Mancamp Dumps; and (3) Bradley Northeast Oxide Dumps. DEIS Section 3.17.3.1.3 identifies the Bradley Dumps in their historic context and Section 3.9.1.2.3 mentions the Bradley Dumps were also included in an assessment of historic mine waste rock to evaluate their suitability as construction material. 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 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. Section 3.9.3.3.2.1 Surface Water 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 3.9-3) to 6.1 µg/L at YP-T-27 below Keyway Marsh and Section 3.9.3.3.2.2 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 Section 3.2.3.7.1 and Section 3.18.3.3.1 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 DEIS identifies the Meadow Creek Mill in Section 3.7.3.3 Past Releases, Remediation and Mitigation as a site where past remedial activities have occurred. 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 baseline water quality.
- The environmental baseline described in the DEIS accounts for neither the Tribe's existing Clean Water Act lawsuit against Midas Gold nor EPA's ongoing discussions with Midas Gold 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 DEIS 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 DEIS. The DEIS 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 DEIS.

Inadequate No Action Alternative

- As the Tribe stated in its scoping comments, a true no action alternative is not that the site will remain polluted/degraded, since Midas Gold 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 DEIS provides no such acknowledgement, and instead offers a vague, incomplete, and narrow description of the site. The DEIS notes, “[t]he mining ore processing, and related activities under the action alternatives would not take place.”³⁸ Thus, in the no-action alternative, the Forest needs to fully review Midas Gold’s current liabilities and the extent of remediation that would be accomplished if Midas Gold 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 should include in the DEIS (a revised DEIS or SEIS) 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 DEIS 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 DEIS and supporting documents do not provide a rationale for not addressing the Tribe’s scoping 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 DEIS, an SEIS is required to allow for that comparison, further Forest evaluation and disclosure of effects, as well as Tribal consultation and public review.

³⁸ DEIS at ES-21.

Inadequate Range of Reasonable Alternatives

Treaty Rights

- As part of the purpose and need, the DEIS identifies as one of the needs to “[e]nsure that the selected alternative would comply with other applicable federal and state laws and regulations.”³⁹ The 1855 Treaty, as the supreme law of the land, is identified in the DEIS as an applicable federal law to which compliance is required to meet the Project’s purpose.⁴⁰ The Forest must develop and include in the DEIS all reasonable alternatives that protect Nez Perce treaty rights and resources. In fact, no alternative in the DEIS fulfils these requirements despite the Forest concluding in the DEIS that the Project will harm treaty rights and resources and under all action alternatives. For example, construction and operation of the mine would directly and indirectly harm tribal resources. Tribal access to areas would be restricted during the Project’s construction, operation, and closure and reclamation phases, preventing tribal members from exercising their off-reservation rights to fish, hunt, gather, and pasture, for a period of 20 years. The Project would also impact salmon and other aquatic species and essential fish habitat that would in turn impact availability and harvestability of these 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 existing alternatives in the DEIS are unreasonably narrow because none avoid or minimize harm to the Tribe’s treaty rights and resources.

No Forest Plan Amendments

- The DEIS 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.”⁴¹

The Forest’s discretion to exercise any of these options to achieve Forest Plan consistency, however, is not unbounded. The Agency’s action is expressly “subject to valid existing rights.”⁴² 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,

³⁹ DEIS at ES-5.

⁴⁰ DEIS at 3.24-5.

⁴¹ DEIS at A-1-2.

⁴² 36 C.F.R. § 219.15(c)(3)

terrestrial, and watershed resource conditions from beyond three years. These standards, 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.

Alternatives 1 and 2

- According to DEIS Section 2.4.1 Overview, Alternative 2 includes the Forest's and Midas Gold's proposed modifications to Alternative 1 developed to address potential issues associated with surface water and groundwater, wetlands and riparian areas, and federally-listed fish species. This alternative also includes modifications that could minimize effects to other resources such as cultural resources, recreation, and public health and safety. Midas Gold has adopted these additions and modifications in the 2016 PRO described in Alternative 1.⁴³ If an adequate review of the PRO had been performed by the Forest prior to the initiation of the NEPA process the potential issues addressed in Alternative 2 would not have existed, as the PRO would have been modified accordingly before being accepted by the agencies. However, this was not the case, and instead Midas Gold submitted what is clearly a technically and regulatorily deficient plan that is presented in the DEIS as Alternative 1. While improvements to the PRO are not unusual during the NEPA process, re-writing the PRO altogether and couching it as an alternative, such as is the case with Alternative 2, is troubling. The Forest should have required Midas to modify the PRO to, at a minimum, meet regulatory requirements as a part of their submittal of the Mining Plan of Operations. Submittal of the Mining Plan of Operations initiates the permitting process for the proposed Project and provides supporting data and analysis for an EIS. To determine if the Mining Plan of Operations provides the necessary supporting data and analysis for the EIS, regulatory agency review of the application for technical and administrative completeness prior to formally initiating the EIS process is customary. As Alternative 2 is the result of that process, the DEIS should be revised to eliminate Alternative 1 and use Alternative 2 as the proposed action.

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

⁴³ Brown and Caldwell 2019. Technical Memorandum Stibnite Gold Project DEIS Modified Proposed Action – Chapter 2. May 3, 2019.

development activities.”⁴⁴ 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 DEIS. The DEIS 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

- The U.S. Geological Survey produced a recent report on antimony⁴⁵ 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 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.”⁴⁶

⁴⁴ AECOM Technical Services, Inc. 2018 Stibnite Gold Project EIS Scoping and Issues Summary Report and Errata.2020 Stibnite Gold Project at 60.

⁴⁵ 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>.

⁴⁶ *Id.* at C5.

- 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 Midas Gold 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.”⁴⁷ 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”⁴⁸ and that antimony could be recovered from existing mines in Idaho and Nevada.⁴⁹
- Information on antimony mine waste related to the environment is extremely limited. Limited data are available on the acid-generating potential of antimony 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 (Sb³⁺) is more toxic than pentavalent antimony (Sb⁵⁺). 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 genotoxic. The EPA⁵⁰ 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.⁵¹ National ambient-water-quality criteria

⁴⁷ *Id.* at C9.

⁴⁸ *Id.*

⁴⁹ *Id.* at C10.

⁵⁰ EPA 2009.

⁵¹ World Health Organization, 2008. The World Health Report 2008 - Primary Health Care (Now More Than Ever) https://www.who.int/whr/2008/08_contents_en.pdf?ua=1 (last visited October 19, 2020).

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 (Sb_2S_3). 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 disturbances.
- 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 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 2014 (as amended in 2019) Stibnite Gold Project Prefeasibility Study Technical Report ("Prefeasibility Report")⁵² was based on producing a by-product antimony concentrate with sale of the concentrate to an antimony smelter, with the report noting that "all suitable currently operating antimony smelters are located in Asia."⁵³ 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. This approach was considered appropriate given the estimated cost and perceived complexity of building and operating a secondary antimony processing plant.
- The Prefeasibility Report also considers secondary antimony processing using a caustic leach and electrowinning process to recover antimony. The antimony processing, which could be conducted off-site with the residues returned to the site for re-processing, would require an estimated capital cost estimate of \$33 million and have an operating cost of about \$0.56 per pound of antimony metal produced, which appears to offer a financial

⁵² M3 Engineering and Technology Company. 2019 *Stibnite Gold Project Prefeasibility Study Technical Report*, https://www.midasgoldcorp.com/site/assets/files/2119/amended_techreport.pdf.

⁵³ *Id.* at 24-7.

advantage over the base case which assumes the antimony concentrates are shipped to Asia for processing.⁵⁴ The information in the Prefeasibility Report on secondary antimony processing is identical to that of the 2014 Prefeasibility Report suggesting the costs have not been updated.

- The Prefeasibility Report includes the recovery and production of antimony as a saleable commodity, and according to the 2016 PRO, “[a]n important aspect of the Project will be the recovery and sale of domestically sourced antimony to U.S. markets.”⁵⁵ However, unless the Project commits to secondary antimony processing, which has not been included in the PRO or considered in the DEIS, any production will in fact have to go through China, at which point there can be no assurances that antimony metal in return supplied to the United States market will have been sourced from the United States.
- The importance of antimony as a matter of Project economics is overstated. As shown in Table 1, from the Prefeasibility Report base case, the revenue from the production of antimony is only expected to earn \$306M over the Project life, or 5% of total revenue, while gold is expected to earn \$5.4B over the Project life, or 94% 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. Finally, a price of \$4.50/lb for antimony is speculative based on current metal prices of \$2.54/lb.⁵⁶ This suggests that there are multiple factors making antimony production economics from the Project marginal, and potentially revenue negative.

**Table 1 - Stibnite Gold Project Prefeasibility Report
Summary of Metals Revenue**

Product		Total Payable Metals		Metal Price	Revenue	
					\$M	% of Total
Dore Bullion	Gold	oz	4,006,000	\$1,350.00	\$5,408	94%
	Silver	oz	1,467,000	\$22.50	\$33	1%

⁵⁴ *Id.* at 24-8.

⁵⁵ PRO at 6-20.

⁵⁶ Argus, 2020 Antimony Prices 10/19/2020, <https://www.argusmedia.com/metals-platform/metal/minor-and-specialty-metals-antimony>.

Antimony Concentrate	lb	67,900,000	\$4.50	\$306	5%
Total				\$5,747	

- 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 DEIS.
- The DEIS should also address the potential for antimony production to not occur at any point in the project life cycle. The DEIS 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 DEIS 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 DEIS 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 Figure 1.4 District Ore and Waste Movements and Ounces of Contained Gold Mined by Year in the Stibnite Gold Project Prefeasibility Report as referenced in the DEIS, gold production peaks in year two of the project life and then steadily declines to approximately 40% over the remaining project life.⁵⁷ 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 DEIS should include

⁵⁷ M3 Engineering and Technology Company. 2019a. Prefeasibility Study Technical Report. <https://midasgoldidaho.com/wp-content/uploads/2019/10/midas-gold-stibnite-gold-project-2014-pfs.pdf>

as an action alternative the possibility of early closure and address what impacts and mitigation specific to that action would occur. The DEIS 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 2.8 frequently cites various alternatives in this section as not being either “technically feasible” and/or “economically feasible” however, nowhere in the DEIS are these terms defined. Similarly, the basis for the alternatives provided in AECOM 2020b does not define technical or economic feasibility. Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study⁵⁸ 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.”⁵⁹ 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.”⁶⁰ Midas Gold’s input as the basis for technical or economic feasibility should not have been used as the basis for the Project DEIS, however lacking further definitions, and analysis and consideration of the alternatives relative to those definitions, it would appear the DEIS relies entirely on Midas Gold’s input.
 - As an example, according to Midas Gold’s Project Prefeasibility Study Technical Report⁶¹ referenced elsewhere in the DEIS, “Using the Base Case economic factors detailed in Section 22, the financial model yields a pre-tax net present value at a 5% discount rate of \$1,093 million and an after tax net present value at a 5% discount rate of \$832 million. As currently designed, the Project’s Internal Rate of Return (“IRR”) is 19.3% with a payback period of approximately 3.4 production years.” The Base Case in the study is based on a gold price of \$1,350/oz, and the study suggests for \$1,650/oz gold, the highest gold value considered by the study, the IRR would be 27%. With the current gold price being approximately \$1,900, the expected IRR would be even higher.”⁶²

⁵⁸ AECOM Technical Services, Inc. 2020b. Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study. July 2020 at 2-3.

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

⁶⁰ AECOM Technical Services, Inc. 2020b. Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study. July 2020 at 3.

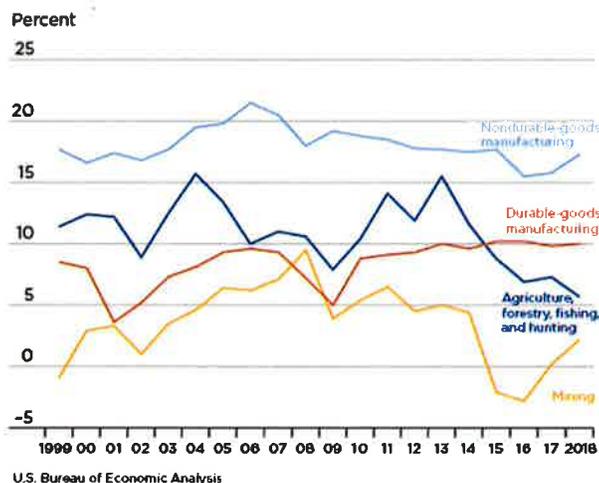
⁶¹ M3 Engineering and Technology. 2019. Prefeasibility Study Technical Report.

<https://midasgoldidaho.com/wp-content/uploads/2019/10/midas-gold-stibnite-gold-project-2014-pfs.pdf>.

⁶² DEIS at. 1-2.

- 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 figure⁶³ (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 DEIS 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 of gold prices including the current gold price. Technical feasibility also should not be based on what Midas would prefer to do, but rather, what can be done.
- Section 2.8.1 Mine Production/Processing Component Alternatives does not address underground mining as an alternative to open pit mining. According to the DEIS,

⁶³ Survey of Current Business, 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>.

speaking of the other alternatives considered, “These component options each met the purpose and need but none were economically feasible, and none offered environmental advantages over Alternative 1.”⁶⁴ However, underground mining would be environmentally advantageous because it would significantly reduce the impacted area both as a result of not creating an open pit, but also because it would likely result in significantly less low-grade ore and waste material being generated by the mine.

- Section 2.8.4 of the DEIS refers to Development Rock Storage Facility Alternatives, “Backfilling the Hangar Flats and West End pits at reclamation is not economically feasible and did not offer an environmental advantage over Alternative 1.”⁶⁵ This alternative includes filling Hangar Flats and West End pits with development rock during final reclamation. This AECOM 2020b report cites double-handling and temporary storage requirements as reasons for the alternative not being economic or having an environmental advantage. The DEIS should consider the alternative of changing the mine plan to sequential mining and backfilling of the various mine pits in a manner so as to eliminate the need for the Fiddle waste rock pile. By sequentially mining and backfilling it may be possible to accomplish the backfill of the majority of the pits, limit the need for double handling, and avoid the need for temporary storage areas.
- Section 2.8.3 TSF Alternatives states, “The use of the dry stack method of tailings disposal was evaluated and determined to be technically and economically infeasible. Paste tailings disposal was evaluated and determined to be technically feasible but not economically feasible and did not offer environmental advantages over Alternative 1.”⁶⁶ The determination as to the inclusion of dry stack tailings is based on AECOM 2020c 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.”⁶⁷ 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 Project⁶⁸ referenced by AECOM, as well as the Twin Metals project.⁶⁹ Clearly, if filtered (aka dry stack) tailings are desirable, it can be achieved.

⁶⁴ DEIS at 2-141.

⁶⁵ AECOM Technical Services, Inc. (AECOM). 2020b. Stibnite Gold Project EIS Draft Alternatives Considered, Carried Forward, or Eliminated from Further Study. July 2020.

⁶⁶ *Id.* at 2-143.

⁶⁷ AECOM Technical Services, Inc. (AECOM). 2020c. 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.

⁶⁸ Hubday 2017. 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.

⁶⁹ Twin Metals Minnesota Project Mine Plan of Operations, December 18, 2019.

Rather than subjectively address the technical and economic feasibility of dry stack tailings, the DEIS instead should have addressed whether dry stack tailings would provide an environmental or safety advantage over the Alternatives examined in the DEIS. 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 DEIS.

Closure and Reclamation 2.3.7.2

The DEIS states under Alternative 1, “[c]losure and reclamation activities would be intended to achieve post-mining land uses of wildlife and fisheries habitat and dispersed recreation at the mine site.”⁷⁰ The DEIS 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.

CHAPTERS 3 AND 4 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

“NEPA imposes procedural requirements designed to force agencies to take a ‘hard look’ at environmental consequences”⁷¹ 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.’”⁷²

Significant and Necessary Information Missing in the DEIS

- 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 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

⁷⁰ DEIS at 2-70.

⁷¹ *League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton*, 752 F.3d 755, 763 (9th Cir. 2014).

⁷² *Alaska Ctr. for Env’t v. Armbrister*, 131 F.3d 1285, 1289 (9th Cir. 1997)(quoting *Oregon Envtl. Council v. Kunzman*, 817 F.2d 484, 493 (9th Cir. 1987)).

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.

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

- According to DEIS Section 2.3.5.6 Ore Processing Facilities, “[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.”⁷³ 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 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 DEIS should clarify the statement with regards to tailings processing and neutralization and if the option to process the full stream is planned, then the DEIS 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 the DEIS. The DEIS 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 DEIS should identify the pros and cons of this approach with respect to removal and sequestration of mercury.
- DEIS Section 2.3.5.6, Ore Processing Facilities the language 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 Tailings Storage Facility (“TSF”). The DEIS 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 WAD cyanide should be included and analyzed as a real and foreseeable event in the DEIS.
- The DEIS provides four paragraphs in Section 2.3.5.7 on the TSF with respect to the technical facets of the facility. No basis for the information is provided or referenced. In

⁷³ DEIS at 2-31.

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 TSF a 90% completion level should have been performed if third-party review is intended.⁷⁴ 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.

An SEIS should provide the following for the TSF:

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

⁷⁴ Tetra Tech, Inc. (Tetra Tech). 2019a. RCP, Stibnite Gold Project – Errata. Valley County, Idaho. Prepared for Midas Gold Idaho, Inc. July 26, 2019.

- According to Section 2.3.5.13 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 and that for the other alternatives considered in the DEIS do not identify the actual quantities of borrow materials for reclamation and closure that would be required. For example, although the amount of borrow material for reclamation would increase significantly for Alternative 2 as a result of increased cover depth from 6 inches to 12 inches over the waste rock piles and TSF, this was not identified in the DEIS description of Alternative 2 in Section 2. This also serves as a good example of the confusion between what is incorporated in the various Alternatives in the DEIS. According to DEIS Section 4.5.2.1.3.2 Quality and Suitability of Available Reclamation Cover Materials, there would be a 34,000 bank cubic yards growth media deficit at the mine site according to the balance calculations in the RCP. Thus, there is presently some uncertainty regarding the specific source of material to meet the identified growth media/seed bank materials deficit under Alternative 1. Somewhere along the way it appears that Alternative 1 with respect to soil volume has either been modified as per the RCP, or the analysis is not taking into account the additional materials required for reclamation as suggested by the RCP by Tetra Tech.⁷⁵
- The DEIS does appear to recognize the challenges associated with reclamation materials in DEIS Section 4.5.2.1.3.2 Quality and Suitability of Available Reclamation Cover Materials by 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 Midas Gold 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 DEIS.
- 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

⁷⁵ Tetra Tech, Inc. (Tetra Tech). 2019a. RCP, Stibnite Gold Project – Errata. Valley County, Idaho. Prepared for Midas Gold Idaho, Inc. July 26, 2019.

chemically characterized and analyzed in the DEIS 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 DEIS are actually available as otherwise additional borrow sources, not addressed in the DEIS, 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 DEIS Section 2.3.5.20 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 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 DEIS.
- DEIS Section 2.3.6 Surface and Underground Exploration proposes 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 DEIS. The DEIS should be supplemented to either remove this proposal or alternatively to provide additional details such as RCPs for the exploration areas.

- The information contained in the DEIS with respect to a reclamation and closure plan (“RCP”) (the DEIS use of the term closure and reclamation is not typical and does not recognize that, in practice, reclamation is described prior to closure activities) is difficult to understand given the descriptions provided for the proponents proposed alternative (e.g. Alternative 1) are significantly changed by Alternative 2. It is clear that the proponent’s proposed alternative with respect to various design aspects and reclamation and closure planning had significant flaws/deficiencies that render the proponent’s alternative to not be permissible, as it would certainly result in significant damage to the existing environment and unaddressed in-perpetuity environmental liabilities. This could have been avoided had the agencies conducted a thorough technical completeness review prior to accepting the applicant’s proposal and initiating the NEPA review process. The inclusion of Alternative 1 for NEPA analysis makes the DEIS very confusing and all parties would be better served if it were not included in the analysis.
- As an example, while the DEIS relies on Alternative 2 to describe an improved RCP, unlike the plan for Alternative 1 which references a detailed plan, there is no detailed plan referenced for Alternative 2; so the reviewer is dependent, with some notable exceptions, on analyzing the alternative based on only high-level conceptual information provided in the DEIS.⁷⁶ Given that the agencies apparently identified a need for the proponent to provide more detailed information on their plan for the DEIS, it only makes sense that there should be similarly more detailed information for Alternative 2 as it essentially describes the agencies proposed plan. This lack of information that should be provided in a detailed RCP for Alternative 2 is further described in comments that follow.
- The DEIS should be supplemented to eliminate Alternative 1 and include a detailed RCP for Alternative 2 including addressing the significant deficiencies noted in these comments. The DEIS should be re-issued for public comment due to this deficiency.
- According to Section 2.3.7.4 Fiddle Disposal Rock Storage Facility (“DRSF”), toe seepage would be expected to continue from the Fiddle DRSF in perpetuity. This water would be collected in the operational contact water pond at the toe of the Fiddle DRSF, and then discharged to a passive treatment system before being discharged via an Idaho Pollutant Discharge Elimination System (“IPDES”) outfall to the EFSFSR. However, review of Section 2.3.4 Site Preparation and Construction Phase and Section 2.3.5.4 Development Rock Production and Storage does not provide information on how seepage

⁷⁶ Tetra Tech, Inc. (Tetra Tech). 2019a. RCP, Stibnite Gold Project – Errata. Valley County, Idaho. Prepared for Midas Gold Idaho, Inc. July 26, 2019.

would be collected from the Fiddle DRSF. Only in DEIS Section 2.3.5.9 Surface Water and Groundwater Management Groundwater Spring and Seep Control can be found the descriptions of any underdrains for the DRSFs where it is described the underdrains would be designed to follow major drainages, under each facility and would run the length of the DRSFs and TSF. The DRSF underdrains would be constructed of pipe or gravel wrapped with geotextile. Only inert materials, with limited potential to generate acid or leach metals would be used in the underdrain construction. The underdrains would convey spring and seep flows beneath the facilities to a collection sump at the DRSF toe where the flows would be monitored for water quality prior to release into the stream system or capture for use in the processing circuit, depending on water quality. Sampling would be from a dedicated sump (manhole) in line with the underdrain pipe upstream of the outlet.

- Waste rock toe seepage is recognized in the DEIS as a significant discharge with the potential for degradation of water resources. As described in the DEIS, there is no assurance that all seepage from the waste rock piles will be captured by the underdrain systems and report to the toe, and instead enter surface water as hydrologically connected groundwater. Furthermore, even if a liner/underdrain system is installed, it will not be 100% effective at avoiding discharges to groundwater that are hydrologically connected to surface water.
- The DEIS should describe the underdrains when describing the site preparation and construction as they would be constructed prior to development rock placement. The DEIS should include consideration of a liner system or systems below the waste rock piles similar to and with the same limitations (e.g. liner defects) that the DEIS describes for the TSF underdrain system in DEIS Section 2.3.5.7. The DEIS 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 in perpetuity, and address/include mitigation in the event of the failure of the underdrain system.
- According to Sections 2.4.6.1 and 2.4.6.2 which describe the reclamation of the waste rock piles under Alternative 2 states that, “Upon completion of final grading of the waste rock piles, a low permeability geosynthetic cover would be placed on the top of the waste rock piles, which would be designed to limit infiltration through the waste rock piles. The geosynthetic liner would be overlain by placement of an inert soil/rock layer and growth media and revegetated.” No further description of the geosynthetic liner is provided in the DEIS or any referenced RCP.
- The DEIS should describe the details of the cover system in order that its effectiveness and other characteristics can be assessed. The DEIS 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 DEIS describes the process of TSF closure in Section 2.3.7.7 TSF and Hangar Flats DRSF as follows, “When tailings consolidate sufficiently to allow for equipment traffic, although consolidation would continue for decades at diminishing rates, Midas Gold would conduct minor grading of tailings and begin to spread development rock over the top of the tailings surface to enable equipment access and drainage from the facility. The soil-rock cover and material from the adjacent Hangar Flats DRSF and growth medias would be placed atop the TSF and revegetated.” DEIS Figure 2.3-3 showing the timeline suggests that the TSF closure would be performed in five-years with one year of post-closure monitoring.
- 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. 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. The four phases are summarized below:^{77 78}
- The DEIS 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 DEIS 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 DEIS description in Section 2.3.7.14 Contouring, Grading, Growth Medium Placement, and Seeding is potentially the most minimal description of land reclamation activities ever provided in the history of NEPA documentation dealing with hardrock mines. The DEIS only references an RCP in the context of not describing a reclamation seed mix and rates.⁷⁹ No information is provided specific to the reclamation schedule.
- The details of reclamation, particularly in terms of the cover characteristics of each facility, are critical to the evaluation of performance in terms of infiltration of meteoric water through the waste rock and tailings piles and estimation of the resulting water quality impacts. Reclamation details are also important in terms of estimating revegetation characteristics, assessing the impacts of revegetation being impacted by fire,

⁷⁷ Independent Expert Engineering Investigation and Review panel. 2015. Report on Mount Polley TSF Breach. <https://www.mountpolleyreviewpanel.ca/final-report>.

⁷⁸ CDA Mining Dams Bulletin, BC MEND ML/ARD Workshop, December 5, 2013, Vancouver. <http://bc-mlard.ca/files/presentations/2013-5-SMALL-cda-mining-dams-bulletin.pdf>.

⁷⁹ Tetra Tech, Inc. 2019a. RCP, Stibnite Gold Project – Errata. Valley County, Idaho. Prepared for Midas Gold Idaho, Inc. July 26, 2019.

insects and drought, and assessing other impacts on the ecosystem as a whole, including as might impact the site forever, versus during the short period of mining. The need for this information in terms of reclamation is made clear in the Forest Service's 2004 Reclamation Bond Estimation and Administration Guide.⁸⁰ This must have become apparent to the agencies involved in the development of the DEIS in that an RCP was developed late in the process (July 26, 2019).

- The only way a reviewer can understand and evaluate the impacts of the Project is by reviewing the Tetra Tech Project RCP. However, the RCP itself raises questions relevant to the detail that should be expected for the DEIS. As stated in the plan, this RCP therefore presents closure and reclamation plans commensurate with available mine plans, which are defined currently at a preliminary feasibility or Association for Advancement of Cost Engineering Class 4 level of detail. Accordingly, mining and reclamation methods have been established based on reasonable assumptions of technical, engineering, legal, operating, economic, social, and environmental factors to support the assessment of environmental effects related to proposed mining and reclamation activities under NEPA. Site characterization, reclamation plans, and project financial estimates will be advanced to a Canadian National Instrument 43-101 Feasibility-level or Association for Advancement of Cost Engineering Class 3 level of detail⁸¹ during the effects-analysis and will be completed concurrent with the DEIS. The final EIS ("FEIS") and Feasibility Study will be used to support development of the state closure and reclamation plans, financial sureties (bonds) and permits to the level of detail required in the Idaho Administrative Procedures Act ("IDAPA") 20.30.02 regulations.
- While the RCP focuses on land disturbance from on-site and off-site activities, facilities, and infrastructure associated with the PRO; refinements of several of these features have occurred as a result of public comment, agency inquiry, and additional baseline data collection. As an example, in Table 1-1 they compare the PRO (Alternative 1) and changes in the RCP. According to the table, in Alternative 1 Midas had originally proposed six inches of growth medium on all reclaimed facilities. Anyone involved in mined land reclamation knows that six inches of growth medium is considered inadequate and inconsistent with regional reclamation techniques, particularly with respect to high-altitude reclamation. Twelve inches would be considered by most to be a minimum depth of cover to support a sustainable ecosystem, and depths to 24 inches or more are preferred where possible. In terms of technical feasibility, it is not possible to effectively produce a cover with only six inches of depth, which as described would be an average, and inevitably the cover would not be consistent and in some areas would not be present. This aspect is questionable even with 12 inches of growth medium proposed for the TSF and waste rock piles in the RCP. A similar point of discussion could be made for other aspects of the changes made by Tetra Tech in the RCP with respect to Midas Plan (Alternative 1). However, all this begs the fundamental question as to whether the DEIS Alternative 1 effects-analysis is based on Midas Plan, or the Tetra Tech Plan? Also, what from the Tetra Tech RCP is intended to carry over to Alternative 2, or the Agency

⁸⁰ USDA Forest Service, *Training Guide for Reclamation Bond Estimation and Administration For Mineral Plans of Operation authorized and administered under 36 CFR 228A* (Apr. 2004).

⁸¹ *Id.*

Alternative? If some level of detail had been carried forward into the DEIS this might be easily discernible, but as presently written and supported, it is not.

- The DEIS should have more completely described the RCPs and provided important details such as the proposed cover design. As suggested by Tetra Tech, the RCP should have been further developed to a Association for Advancement of Cost Engineering Class 3 level of detail during the effects-analysis so the results could be incorporated into the DEIS.⁸² Also, the additional level of detail for the plans is necessary to conform with Forest Service regulations and guidance which is the subject of the DEIS, 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 DEIS, 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 DEIS should be supplemented to include this information, including as it pertains to the effects-analysis, and the DEIS re-issued for public review. In order to perform the effects-analysis for all Alternatives, it will be necessary to develop similar levels of reclamation and closure details across all alternatives, particularly those where cover details are significantly changed such as the Project Alternative 3 Agency alternative that proposes an engineered cover to reduce infiltration and water quality impacts.
- Midas Gold did not specifically address long-term monitoring and maintenance in the PRO and similarly it is not described and addressed in the DEIS. According to DEIS Section 2.3.8.2 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. We assume “designations” to mean a report on the observations of soil and slope stability, but the DEIS should clarify in a revised DEIS or SEIS. The DEIS also 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 DEIS or SEIS 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 DEIS does include a description of maintenance activities 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

⁸² Tetra Tech 2019a. RCP.Stibnite Gold Project – Errata. Valley County, Idaho. Prepared for Midas Gold Idaho, Inc. July 26, 2019.

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 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 DEIS 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 DEIS 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 DEIS 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.⁸³
- 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 be performed in perpetuity, and should be described in the DEIS in detail.
- According to DEIS Section 2.3.7.16 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

⁸³ U.S. Army Corps of Engineers. 2018. Donlin Gold Project Final EIS April 2018. <http://dnr.alaska.gov/mlw/mining/largemine/donlin/pdf/dgfeis.pdf>.

in taking over operations because of operator default.”⁸⁴ The DEIS 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 DEIS; 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 DEIS 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 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 DEIS 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.

⁸⁴ USDA Forest Service, *Training Guide for Reclamation Bond Estimation and Administration For Mineral Plans of Operation authorized and administered under 36 CFR 228A* (Apr. 2004).

- 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 DEIS. The DEIS 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.
- As noted in Section 1 and Section 2 of the DEIS, in part the purpose of the project, and therefore the assumed basis for the project, is the production of antimony as a byproduct of gold and silver production. According to Section 2.3.5.6 an estimated one to two truckloads of antimony concentrate, containing up to 20 super sacks per truckload, would be hauled off site each day. The antimony concentrate would be transported via Burntlog Route to State Highway 55, and then to a commercial barge or truck loading facility depending upon the refinery location. It is assumed that the concentrate, when sold, would be shipped to facilities outside of the United States for smelting and refining because there are currently no smelters in the United States with capacity for refining the antimony concentrate. In turn, this same underlying assumption, that antimony concentrate will be produced, exists across all action alternatives and environmental effects analysis, including with regards to tailings and waste rock chemistry wherein antimony rich ore would be mined rather than potentially regarded as waste rock, and removal of most of the antimony in tailings has been assumed. However, the DEIS does not address the reasonable potential that antimony production might be removed from the project proposal, or be discontinued at some point during operations.
- As noted in the Stibnite Gold Project Prefeasibility Report, as referenced in the DEIS, in addition to the 98 metric tons of Mineral Reserves which form the basis of the projected mine plans, approximately 11 metric tons of Mineral Reserves have been excluded that are Inferred Mineral Resources.⁸⁵ Also noted in the Prefeasibility Report, while inferred mineral resources are considered too speculative to have economic considerations to categorize them as Mineral Reserves, “It is reasonably expected that the majority of Inferred mineral resources could be upgraded to Indicated” and therefore will ultimately become part of the mine plan.”
- Additionally, as noted in DEIS Section 2.3.6 Surface and Underground Exploration, the company plans to explore and potentially develop potential mineralized areas outside of the proposed mining areas. The DEIS should address the potential for the mineral resources excluded from the mining plan to become part of the mine ore and waste that will need to be accommodated by the mine facilities. The DEIS should also recognize and address future mining expansion as a reasonably foreseeable effect of permitting the initial mine proposal, and therefore analyze it in the DEIS, rather than only defer that consideration if/when such a proposal is made.

⁸⁵ Ibid.

- Actions within the DEIS project area and transportation of extraction materials have potential to effect these downstream areas, expanded effects analysis is needed. The DEIS projected elevated water temperatures effects within the DEIS project areas will have chronic cumulative effects to downstream habitats and biota and should be analyzed relative to 401 WQS and ESA suitable habitat conditions. Impacts of stochastic events within DEIS project areas that would result in transport of fine sediment and toxins to downstream environments must be analyzed relative to impacts and suitable habitat of ESA listed populations of spring/summer Chinook and steelhead that inhabit lower reaches of the EFSFSR, SFSR, and Salmon River. The affected environment should also include risk of antimony spills along the entire transportation (truck and barge) corridor.

Access Routes

- The proposed Burntlog Road will damage cultural resources significant to the Tribe. The 100 meter wide archaeological survey corridor is not sufficient to identify all archaeological resources that could be disturbed by the road construction and maintenance, or the expected increase in public access to currently “inaccessible” areas. The 100 meter wide corridor is woefully inadequate for noise and visual impacts, especially with dozens of truck trips per day and increased access for UTVs and snowmobiles. The assertion that this increased access would be a net benefit to tribal members (Table ES4-1, page ES36) is contrary to the oral and written comments provided by the Tribe to the Forest and Midas Gold.

Geologic Resources and Geotechnical Hazards

- The DEIS Section 4.2.2.1.2 Geotechnical Stability of Proposed Mine Site Structures analysis made by Tierra Group⁸⁶ is helpful in understanding and evaluating the static and dynamic (seismic) geotechnical stability of the different mine features. However, it is compromised by its being based on a seismic risk report⁸⁷ and a subsequent geotechnical analysis⁸⁸ that have both been deemed “confidential” and not made available for public review. This is highly unusual and creates speculation as to the contents of those reports and validity of the Tierra Group’s 2017 analysis. The URS 2013 and Tierra Group 2018 reports should be made available for public review.

Air Quality

- Assessment of potential air quality impacts and adverse impacts to the environment relies on thorough characterization and quantification of emissions from the construction, operations and closure phases of the action alternatives, however, the Forest has not

⁸⁶ Tierra Group International, Ltd. 2017 TSF-DRSF Slope Stability Analyses Technical Memorandum. Prepared for Midas Gold Idaho, Inc. September 1, 2017.

⁸⁷ URS. 2013 Site-Specific Seismic Hazard Analysis for the Golden Meadows Project, Idaho. Prepared for Midas Gold Inc. June 3. [Confidential; Not available to the public].

⁸⁸ Tierra Group International, Ltd. 2018 Stibnite Gold Project Geotechnical Investigations Summary Report and Appendices. Prepared for Midas Gold, Boise, Idaho. Prepared by Tierra Group International, Ltd., Salt Lake City, Utah. [Confidential; Not available to the public].

adequately quantified or characterized these emissions. The Tribe cannot compare alternatives with the inadequate emissions inventory information provided in Appendix F. While DEIS Alternative 1 and DEIS Alternative 2 are comparable in Appendix F1, what is included or omitted is impossible to figure out. The Forest should submit revised (and more completely characterized) emissions inventory data comparable by alternative.

- The Forest states that “Midas Gold would design, construct, and operate Project facilities with air pollution controls stipulated in applicable regulations and the air quality permit issued by IDEQ. The PTC would include stipulations that are based on applicable state and federal regulations, and that are consistent with best available control technology for new surface mining and processing operations.”⁸⁹ The Forest cannot simply reference outside permitting requirements that have not yet been finalized as a proxy for the Forest clearly identifying mitigation strategies in the DEIS that are necessary to minimize the Project’s adverse impacts to the environment. All control measures contributing to emission controls for all emission sources should be clearly identified in the DEIS.
- The air emissions inventories assume off-highway diesel engines with EPA Tier 4 emission standards or better, and dust suppression methods with a control efficiency for the Alternative 2 New Source Review inventory, or for the Alternative 2 EIS inventory, whichever is greater, would be included as required mitigation measures. However, all emissions, including the emissions the Tribe has identified as inadequately characterized, should be characterized and modeled with and without control measures. Further, the Project potential to emit rates as identified by the Idaho Department of Environmental Quality (“IDEQ”) New Source Review permit inventory for a maximum production and operations case for mining operations production levels and emissions scenarios should be used.
- The Forest states that tailpipe emissions of nitrogen oxides from Project operations are 219 tons per year.⁹⁰ Modeled nitrogen deposition is significant and reaches 4.73% even beyond the Project area in the Frank Church-River of No Return Wilderness.⁹¹ Nitrogen deposition has adverse impacts to the environment, and the Forest must prevent this. The Forest must require Midas to minimize nitrogen oxide emissions by requiring EPA Tier 4 emission standards for all non-road engines used for the Project. Further, the potential for increase in ozone due to Project construction and operations should be more accurately characterized relative to nitrogen oxide emissions, due to the potential for adverse impacts to the environment.
- Mercury emissions are inadequately characterized. Information presented in 4.3.2.1.2.5 Mercury Deposition Screening Results suggests that total mercury deposition predicted by the model is likely biased low. The Forest should provide a correction factor to more accurately represent mercury emissions and deposition.

⁸⁹ DEIS at 4.3-22.

⁹⁰ *Id.* at Appendix F-1, p. 38, p. 51, and p. 53.

⁹¹ *Id.* at 4.3-38 and 4.3-55.

- Mercury emissions from the lime kiln are not quantified. Table 4.3-21 “Maximum Annual HAP and Air Toxics Emissions Summary – Alternative 2 [New Source Review] Inventory” has no estimate of the mercury from lime production, and there are no mercury emissions calculated for the lime kiln (see Appendix F table on p. 96 and p. 193). However, the limestone at the site contains mercury. The mercury concentration for limestone in Appendix F (0.02 ppm, p. 173) is far below carbonate rock at the Stibnite site.⁹² There are discrepancies in the mercury concentrations in Appendix F between the two DEIS emissions inventories and the New Source Review emissions inventory (0.6 ppm versus 0.96 ppm). The reference for Midas Gold 2018i and Midas Gold 2017c are missing from references available from the Forest “Box” site to understand why. Mercury concentration for limestone in the DEIS emissions inventory is much lower than what was used in the New Source Review emissions inventory and does not match with 2017 reported values.⁹³ The most conservative concentration (highest concentration value) should be used.
- The Forest also states that “Exhaust gases from the kiln would pass through a filter to abate particulate emissions.”⁹⁴ Identification of what happens to mercury vapors and any hazardous air pollutants should be characterized, and controls should be identified for the mercury vapor and hazardous air pollutants emissions from the lime kiln (regardless if the lime kiln is exempted from the mercury emission standard as specified in IDAPA 58.01.01.215.01). Mercury and hazardous air pollutants emissions need to be controlled to prevent adverse environmental impacts, and those controls need to be clearly identified.
- Fugitive dust emissions from Project construction, operations, and closure are significant and not adequately characterized. The Forest must revise fugitive dust emission calculations and modeling to more adequately characterize emission and potential adverse impacts to human health and the environment. Modeling should be conducted both without any emissions controls and with emissions controls. Further, fugitive dust emissions calculations likely used soil dryness baselines/assumptions not adequately updated for average annual increases in soil dryness in the proposed project area due to climate change (increasing temperatures, less precipitation, less soil moisture) and thus underestimate the level of fugitive dust emissions.
- Fugitive emissions are significant for Alternative 2 and by the Forest’s own modeling are expected to exceed the PM10 National Ambient Air Quality Standards (“NAAQS”).⁹⁵ Additionally, fugitive dust generated by the Project will have significant toxics; stibnite rock has higher than average crustal concentrations of arsenic, antimony, and mercury and this will be a greater threat to human health and the environment.

⁹² SRK Consulting, Inc., *Stibnite Gold Project Baseline Geochemical Characterization Report*, (May 2017), <https://usfs-public.app.box.com/s/4r3aeu4waxlvu1r7aew2ydpqpiq1pkpj/file/705023399306>.

⁹³ *Id.*

⁹⁴ DEIS at 4.3-45.

⁹⁵ *Id.* at 4.3-52.

- Seeing fugitive emissions from the mine will detract from the wilderness character in the Frank Church-River of No Return Wilderness. VISCREEN modeling showed visibility impacts to the Wilderness area.⁹⁶
- Midas must maintain 93.3% control of fugitive dust emissions to not violate the NAAQS for PM10, and it is unrealistic to assume Midas will achieve this level of fugitive dust emissions control 365 days of the year for twenty-plus years. The Forest should require rigorous, ongoing monitoring to ensure Midas is controlling fugitive dust at the 93.3% level so that PM10 NAAQS are met and human life, animal life, and vegetation, and the Tribe's Treaty-reserved resources are not injured or unreasonably affected. 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 Project is meeting permit conditions and not violating the NAAQS. The minimum inspection frequency required of a New Source Review 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 challenging,⁹⁷ a once every five years inspection frequency is woefully inadequate to ensure NAAQS compliance. Compliance monitoring and enforcement resources for the Project should, at a minimum, include weekly on-site inspections, establish a multi-site, continuous ambient emissions monitoring network, and install web-camera monitoring, and Forest personnel should be co-managers in compliance assurance and monitoring with IDEQ, so the Forest can ensure no violation of the NAAQS. Robust monitoring (PM10 and PM2.5 monitoring, publicly accessible webcams, site visits, Method 22 evaluations) must be in place.
- Fugitive dust emissions and dust controls on the roads leading to the mining operations (outside of the Project boundary) are not adequately characterized and should be. Fugitive dust on roadways may lead to NAAQS violations and sedimentation of adjacent waterways, adverse impacts to human health and the environment. Annual use of Magnesium Chloride for fugitive dust control is listed as 250,000 gallons,⁹⁸ which seems insufficient for 55 miles of haul truck routes within the mining operations boundary and the access roads. The Forest should clearly document fugitive dust control efficiency requirements for mitigation of adverse environmental impacts to the same level of efficiency identified in the Idaho New Source Review permit (93.3%), as well as demonstrate the sufficiency of fugitive dust mitigation controls and monitoring requirements to ensure control efficiency requirements are met.
- Fugitive emissions from the TSF during operations through to closure and monitoring are inadequately characterized both for particulate matter emissions and air toxics (arsenic, antimony, mercury, and cyanide). While taking an aerial tour of the Project area and the Thompson Creek Mine in 2018, the Tribe saw significant fugitive emissions from the

⁹⁶ *Id.* at 4.3-33 to 4.3-34.

⁹⁷ IDEQ, *Statement of Basis Permit to Construct No. P-2019.0047 Project ID 62288 Midas Gold Idaho, Inc. Stibnite, Idaho Facility ID 085-00011* (Sept. 2020) at 20 and 40, <http://www.deq.idaho.gov/media/60184739/midas-gold-ptc-statement-of-basis-0920.pdf>.

⁹⁸ DEIS at 4.7-7.

TSF of the Thompson Creek Mine, and the Tribe expects similar emissions from the Project. In addition to PM10 emissions, fugitive tailings would have higher metals and cyanide concentrations than other fugitive emissions at the mine and would thus be more injurious to the environment. Clearly identified control and monitoring measures for fugitive emissions at the TSF through operations, closure and monitoring are not included and should be identified.

- Emissions of volatile organic compounds will increase from Project construction and operations and are not accurately characterized in the DEIS and should be due to their potential for adverse impacts to the environment.
- The Project will be operating a landfarm on the Project site,⁹⁹ and the potential for fugitive dust and volatile organic compound emissions from the on-site landfarm has not been included in the emissions inventory. As identified by the Federal Remediation Technologies Roundtable, “[l]andfarming sites must be managed properly to prevent both on-site and off-site issues with contamination. Leachate collection, fugitive dust emission control, adequate monitoring, and environmental safeguards are required.”¹⁰⁰ Landfarm emissions should be characterized and subject to facility-wide fugitive dust and volatile organic compound control requirements.
- Hazardous air pollutants emissions are not fully characterized. Regardless of whether or not the processes at the proposed mine are subject consideration for any permit requirements, if any processes will produce hazardous air pollutants that can cause harm to humans and the environment, the Forest should fully characterize these emissions for assessment of potential adverse impacts to the environment. The Tribe feels the Forest has not fully disclosed all the potential hazardous air pollutants from this Project, and should do so.
- The greenhouse gas emissions inventory for Idaho in Chapter 3 appears to be incomplete for carbon dioxide emissions from lime production. This needs to be included.
- The DEIS is missing Figure 4.3-2, controlled access road path and receptors.
- The sensor for the site-generated wind data located within the valley is representative of that valley-only topography and not representative of the entire mining operational area which has varied topographical features. The on-site meteorological data drives the models, and there is uncertainty when scaling from sensor location to the pits and DRSFs used in the models. Multiple-sensor data should be gathered from more accurately representative topographical locations across the Project site and access roads in and out of the site and data used to rerun the models.

⁹⁹ *Id.* at 2-55.

¹⁰⁰ Federal Remediation Technologies Roundtable, *Landfarming*, <https://frtr.gov/matrix/Landfarming/#Description> (last visited Oct. 9, 2020).

- In Appendix F pp. 67, 164, & 254, IDEQ recommended CY14 meteorological data be used. The Tribe questions why the Forest used data for the wind erosion inventory from August 2014 to August 2015.
- For Alternative 2, a controlled public access road through the mine site would be provided to serve as a connection between McCall-Stibnite Road (CR 50-413) to Thunder Mountain Road (National Forest System Road [FR] 50375). By the Project controlling the public access road, the Forest is considering the public as visitors who would be considered guests of the mine and therefore the route would be excluded from the designation of ambient air and not be subject to the NAAQS. The Tribe asserts that the Forest has erred in identifying that the public access road is not ambient air. As the Forest has identified in the DEIS.

The term “ambient air,” for modeling purposes, refers to a defined area **where the public has access** that is subject to the NAAQS. The NAAQS are promulgated to protect public health and welfare. Long-standing EPA policy has defined “ambient air” as:

‘[T]hat portion of the atmosphere, external to buildings, to which the general public has access,’ and further that ‘the exemption from ambient air is available only for the atmosphere over land owned or controlled by the source **and to which public access is precluded** by a fence or other physical barriers’ (EPA 2018c). More recent EPA policy expanded the range of measures that could be implemented **to exclude the public** from access, such as signage, monitoring of access, security surveillance, and similar effect measures (EPA 2019).¹⁰¹

The road between Stibnite Road at Sugar Creek and Thunder Mountain Road at Meadow Creek is to be used as a public access road. The public is accessing the road and is not being excluded. Therefore, the road must be considered ambient air. The Project’s controlling public access is irrelevant. The relevant factor is that the public is not excluded; the only way to make the road meet the EPA’s ambient air definition is to exclude the public from accessing the road. As the public access road is ambient air, all emissions, modeling, and controls must be characterized and considered, and subject to the NAAQS.

- The Forest has inadequately characterized the scope of air quality analysis necessary in the DEIS. As identified by EPA:

The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act identifies two types of national ambient air quality standards. ***Primary standards*** provide public health protection, including protecting the health of “sensitive” populations such as asthmatics, children, and the elderly.

¹⁰¹ DEIS at 3.3-1 to -2 (emphasis added).

Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.¹⁰²

The Forest has not adequately identified the secondary standards in the affected environment. The Tribe suggests the following change to Section 3.3.1 Introduction and Scope of Analysis (addition identified by underline/bold and deletions with strikethrough):

*Air quality is the degree to which the ambient air is pollution-free and protective of public health **and the environment**, and is assessed by measuring a number of indicators of pollution. Air quality conditions are important from a human health and **welfare aesthetic** (i.e., ~~visual impacts~~ **to visibility, animals, crops, vegetation & buildings**) perspective, and they also are subject to specific regulations, which are enforced to protect this resource. Local and regional air quality may be affected by the Stibnite Gold Project (Project).*

- The Forest has erred in assessment of “Potentially Affected Resources and the Possible Impact on Public Health” identified in Table 3.18-1.¹⁰³ Claiming that there are “no injury” impacts from “localized impacts to air quality from fugitive dust and particulate emissions during mining operations, diesel emissions from vehicle traffic and machinery” is erroneous. Modeling showed NAAQS violations, which shows injury to human health and the environment. Claiming that there are “no injury” impacts from “aerial deposition impacts to soil from proposed mining emissions or uptake of contaminants (i.e., metals) from soil into subsistence foods (plants, berries)” is erroneous. As emissions have not been adequately characterized, this conclusion is not reliable. Further, claiming positive well-being, psychosocial, and improved environmental quality effects from “Remediation of residually contaminated soils; removal of legacy tailings piles” should not be included or considered at all. The Project alternatives are mining alternatives, legacy tailings piles will be mined, processed, and put in a TSF. Any sort of credit for “removal of legacy tailings piles” would only be considered under the “no-action/ cleanup only” alternative.

Climate Change

- Section 3.4.1 Introduction and Scope of Analysis: The best available science should be used to analyze the proposed action on climate change.
- The Forest’s statement that “[f]rom 1880 to 2012, the global average combined land and ocean surface temperature data show a warming of 0.85 degrees Celsius (°C) (i.e., 1.5 degrees Fahrenheit [°F])(IPCC 2014)”¹⁰⁴ is from the Intergovernmental Panel on Climate Change (“IPCC”) 2014 Fifth Assessment Report. The IPCC has produced three special reports since the IPCC Fifth Assessment Report and is in the midst of producing the Sixth

¹⁰² NAAQS Table, Criteria Air Pollutants, (Dec. 20, 2016). <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

¹⁰³ DEIS at 3.18-6.

¹⁰⁴ *Id.* at 3.4-1.

Assessment Report. The Climate Change and Land Report demonstrated that the observed mean land surface air temperature has risen more than global mean temperature. “Warming over land has occurred at a faster rate than the global mean and this has had observable impacts on the land system (high confidence). The average temperature over land for the period 2006–2015 was 1.53°C higher than for the period 1850–1900, and 0.66°C larger than the equivalent global mean temperature change. These warmer temperatures (with changing precipitation patterns) have altered the start and end of growing seasons, contributed to regional crop yield reductions, reduced freshwater availability, and put biodiversity under further stress and increased tree mortality (high confidence).”¹⁰⁵ In addition, the IPCC 1.5 report demonstrates that keeping global warming below 1.5 degrees on average is required to avoid some of the worst effects of global warming and that faster reductions in emissions will result in a higher probability of limiting warming below 1.5 degrees.¹⁰⁶ While Section 3.4.3.2. provides local climate change trends, the introductory statements fail to convey the urgency of the climate crisis per the more recent IPCC reports.

- Forest Service guidance from 2009 regarding NEPA analysis of greenhouse gas emissions and climate change has been updated multiple times. In 2016, the Forest Service issued guidance that there are three ways that climate change could be considered at various stages in the NEPA Process:
 - “The effects of a proposed project on climate change through greenhouse gas (GHG) emissions and sequestration. Examples include short-term GHG emissions and alteration to the carbon cycle caused by hazardous fuels reduction projects; GHG emissions from the extraction of fossil fuels and minerals; or avoiding large GHG emissions pulses and effects to the carbon cycle by thinning overstocked stands to increase forest resilience and decrease the potential for large scale wildfire.
 - The effects of climate change on a proposed project. That is, will climate change influence the affected environment in such a way that it will affect the purpose and need of a project? Examples could include current or projected influences of climate change on habitat suitability for target species or ecosystems in restoration projects; effects of increased flooding on site selection for recreation areas; or effects of decreased snowfall on a ski area expansion proposal at a marginal geographic location, such as a southern aspect or low elevation.

¹⁰⁵ IPCC, 2019: Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

¹⁰⁶ IPCC, 2018: Summary for Policymakers. In: 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.)]. In Press.

- The implications of climate change for the environmental effects of a proposed action. In addition to consideration of emissions and sequestration caused by the project, it may be necessary to consider the effects of a project on a particular resource in combination with those caused by climate change. Will the action and climate change combine to create increased impacts on a resource? Will other reasonably foreseeable actions add further impacts creating cumulative effects? Examples include the potential for climate change and habitat fragmentation caused by the project and outside the project area to lead to jeopardy or listing under the ESA Act for a Regional Forester's species of conservation concern, or the potential for climate change and project activities to foster the spread of non-native invasive species. Some projects may not require detailed analysis of all or any of these effects. Which effects to analyze, and the depth of analysis, will vary by the nature of the proposal, the needs of the decision-maker, the intensity of the effects, scientific uncertainty or controversy, and public interest as determined from scoping.”¹⁰⁷
- In addition, socioeconomic risk assessments and vulnerability assessments have been completed by the mining industry that provide data about gold’s greenhouse gas intensity, mitigation measures to transition to a net zero carbon future in gold mining by 2050, risks to investors, and risks that climate change poses to mining operations such as extreme precipitation causing contamination of local waterways due to containment failures.^{108, 109, 110, 111, 112}

This information does not appear to be included in the analysis of effects or risks, or in the mitigation measures.

- For example, the impacts of wildfire events and landslides on the Project and surrounding access roads have not been adequately characterized within the context of climate change. The DEIS should assess the risk of more wildfire events and more extreme wildfire events (hotter, faster, wider area of destruction) increasing due to climate change forecasts in the Project Area and access roads. Correspondingly, the DEIS should assess increased landslide risk to the Project and access roads due to wildfire event-caused slope vegetation obliteration and triggered by water saturation from more extreme precipitation events or an earthquake. The DEIS should also assess the risk of an extreme wildfire

¹⁰⁷ Brandt, Leslie; Schultz, Courtney (June, 2016). Climate Change Considerations in NEPA Analysis. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. www.fs.usda.gov/ccrc/topics/nepa.

¹⁰⁸ Azadi, M., Northey, S.A., Ali, S.H. et al. 2020. Transparency on greenhouse gas emissions from mining to enable climate change mitigation. *Nat. Geosci.* 13, 100–104. <https://doi.org/10.1038/s41561-020-0531-3>.

¹⁰⁹ Mavrommatis, E.; Damigos, D.; Mirasgedis, S. Towards a Comprehensive Framework for Climate Change Multi-Risk Assessment in the Mining Industry. *Infrastructures* 2019, 4, 38.

¹¹⁰ Nelson, J., and R. Schuchard. 2011. Adapting to Climate Change: A Guide for the Mining Industry. BSR. <https://www.bsr.org/en/our-insights/report-view/adapting-to-climate-change-a-guide-for-the-mining-industry>.

¹¹¹ Sparling, E., P. Byer, P. Cobb and H. Auld. (2017c) Best Practices for Consideration of the Effects of Climate Change in Project-Level Environmental Assessments. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR) and Risk Sciences International (RSI).

¹¹² World Gold Council: 2019. Gold and Climate change: Current and Future Impacts. Accessed online at <https://www.gold.org/goldhub/research/gold-and-climate-change-current-and-future-impacts>.

event that cannot be contained, or a landslide, or an earthquake causing or contributing to a spill, explosion, and/or incineration of hazardous materials and heavy machinery thereby adversely affecting the environment. In addition, mercury in vegetation near the mine would be released during any wildfire events, and the Forest should more accurately characterize this adverse environmental risk as well. In addition, mitigation measures to contain sediment in light of extreme precipitation risks, to stabilize slopes after fires, or to prevent fires during heatwaves are not mentioned. The two mitigation measures presented specific to climate change are woefully inadequate.

- 3.4.3.3.18 Environmental Justice: Disproportionate effects to tribal communities are mentioned in this section including health threats, economic disadvantages, and social inequity, but impacts are focused on health and economic disadvantages. Cultural survival requires access to lands to hunt, fish, and gather, and that species of cultural significance, such as salmon, are extant. Climate change is a threat to many native species within the usual and accustomed areas of almost every tribe in the United States, including the Nez Perce. Anadromous fish are a core part of tribal culture in the Pacific Northwest, and the continued existence of cold-water fish is of utmost importance to tribes in this region. The Salmon River Watershed will be one of the coldest watersheds in the Inland Northwest in the future and a critical climate refugia according to data produced by the U.S. Forest Service.¹¹³ The Snake River was formerly one of the largest salmon runs in the world, and the Tribe has worked tirelessly to restore fish to their aboriginal territory which includes this run. This paragraph is woefully inadequate for describing the environmental justice issues that climate change, and projects that exacerbate impacts to fish, pose for tribes.
- Section 4.4.1.5 Emissions Monetization Policy: The statement summarized as: *GHG emissions in Idaho are not regulated, therefore there is no mechanism that currently exists to quantify a monetized CBA for GHG*. The latter should have no direct relation to the former as there are mechanisms to conduct a CBA with regards to the Social Cost of Carbon as presented by the EPA in *Technical Support Document: -Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis -Under Executive Order 12866 -Interagency Working Group on Social Cost of Greenhouse Gases, United States Government*, which purpose is to “incorporate the social benefits of reducing carbon dioxide (CO₂) emissions into cost-benefit analyses”¹¹⁴ With a federal regulatory agency framework that provides a means to conduct a Social Cost of Carbon Cost Benefit Analysis, how is it possible that quantifying the relative costs and benefits of the alternatives is not practically feasible and would be subject to high uncertainty. Consequently, a social cost of carbon calculation has not been conducted for this analysis.

¹¹³ Isaak, D., M. Young, D. Nagel, D. Horan, and M. Groce. 2015. The cold-water climate shield: Delineating refugia for preserving salmonid fishes through the 21st Century. *Global Change Biology*. 21:2540-2553.

¹¹⁴ Interagency Working Group on Social Cost of Carbon, United States Government., 2010. *Technical Support Document: - Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866*. Accessed online at https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf.

- Section 3.4.2.1, 4.4.1.6 Assumptions and uncertainties, and Section 4.4.4 Cumulative Effects: What is it about the assessment of baseline climate conditions that is uncertain? Why can't the uncertainty be quantified, and what is meant by accurately represent the Project? Baseline climate is historic climate and the variability of observed measurements is quantifiable. What about this information when applied to the Project area renders it uncertain? Thus, using a qualitative approach appears to be insufficient considering historic (i.e., baseline) climate variability of an area is quantifiable. In addition, the analysis: qualitatively describe the type and extent of potential climate change impacts on the physical, social, and biological resources because information is not available to address such effects with quantitative certainty. What level of quantitative certainty would have been necessary within each of those three categories for each element/species evaluated to meet a quantitative vs qualitative approach? There are quantifications of the range of responses for physical, social, and biological resources that provide a degree of certainty of response.
- Generally, there is a large description of what may be uncertain, with very little explanation of the approach to quantifying uncertainty, instead it appears the idea of uncertainty was used as a justification to provide qualitative assessments.
- According to DEIS Section 4.4.1.6 Assumptions and Uncertainties Assessment of current baseline climate conditions that, in theory, could be compared to future trends in regional climate is subject to uncertainty that these baseline conditions accurately represent the Project area. Therefore, discussion of climate conditions in Idaho and surrounding states was generally qualitative in this analysis. Information regarding the recent climatological conditions for Idaho and the Northwest is summarized in Section 3.4.3.2, Climate Change Trends. In the same manner, this analysis will qualitatively describe the type and extent of potential climate change impacts on the physical, social, and biological resources in the analysis area, since information is not available to address such effects with quantitative certainty.
- According to DEIS Section 3.4.3.2 Climate Change Trends, General precipitation trends in Idaho and the Pacific Northwest have been observed to be both increasing and decreasing among various locations, seasons, and time periods of analysis. Statewide precipitation is highly variable and showed no overall trend in annual average precipitation during the last century. However, the frequency of extreme precipitation events in Idaho has been above average over the past decade. Statewide winter and spring precipitation is expected to increase during the twenty-first century, while precipitation in the summer is expected to decrease.¹¹⁵ Overall, precipitation is projected to increase by 5 to 8 percent by the year 2100 under RCP 8.5.¹¹⁶ Prolonged drought conditions, common throughout the 1920s and 1930s, have not been observed in recent decades;¹¹⁷ however,

¹¹⁵ Runkle, J. and K. Kunkel. 2017. NOAA National Centers for Environmental Information. Idaho State Summary 2017. <https://statesummaries.ncics.org/chapter/id/>.

¹¹⁶ Halofsky et al. (2018). Assessing vulnerabilities and adapting to climate change in northwestern U.S. forests. *Climate Change*. 146(1-2):89-102. DOI: 10.1007/s10584-017-1972-6.

¹¹⁷ University of Idaho. 2011. Indicators of Climate Change in Idaho Report Summary. Understanding climate change and its impact through indicators.

increased intensity of drought events is expected to occur throughout the 21st Century.¹¹⁸ Future projections show a highly variable change in annual average precipitation throughout the northwest region of the United States, within a range of an 11% decrease to a 12% increase for 2030 to 2059 and a 10% decrease to an 18% increase for 2070 to 2095.¹¹⁹

- While it is not possible to quantify the future effects of climate change on flood flows with any confidence, in engineering practice an uplift of 10% to 20% is often applied to design storms or peak flows in response to this uncertainty¹²⁰. If Midas Gold and the Forest Service and Corps were to address this matter conservatively, they would adopt the use of a 200-yr 24-hr flood event as the stormwater design standard. Because an increase in stormwater intensity is reasonably foreseeable, adoption of conservative engineering measures should be included as a mitigation measure to the proposed design standard for stormwater and other climate susceptible aspects both during operations and as part of the reclamation and closure design. Section 4.4.2: This statement from 2009 is dated and no longer applies: “it is not currently feasible to quantify the effects of individual or multiple projects on global climate change.” This argument in this context and at this stage of knowledge about climate change, its causes, and effects, is fatally flawed, as every action impacting global climate change happens at some local scale repeated over the entire globe. Just because any one action is a fraction of the whole, doesn’t mean that one action should not be mitigated. Hence the argument for the social cost of carbon analysis, which is how these costs are evaluated across multiple domains.
- DEIS Section 4.4.2.1.1.1: The idea of uncertainty is also being used as justification for discounting the contribution of the project to regional trends or the larger global phenomenon of climate change. The proposed action has a timeframe, and occurs in a place for which baseline data and climate projections are available, so it is possible to connect the alternatives to local effects.
- DEIS Section 4.4.2.1.4.5 Surface Water and Groundwater (Quality and Quantity): No data ensuring the safety or suitability for aquatic organisms of using water recycled from the ore processing facility or from pit lakes to mitigate potential effects to instream flows is provided in this section; nor is information provided about how temperature effects will be mitigated from recycled waste water.¹²¹ Also, it seems that the proponent is arguing that utilizing water from the TSF and runoff to process ore, and then putting 80% of it back into the streams will improve baseflows. Wouldn’t diverting run-off decrease baseflows? The characterization of climate related impacts to surface water and

¹¹⁸ Runkle, J. and K. Kunkel. 2017. NOAA National Centers for Environmental Information. Idaho State Summary 2017. www.NCEI.NOAA.gov.

¹¹⁹ Halofsky et al. (2018). Assessing vulnerabilities and adapting to climate change in northwestern U.S. forests. *Climate Change*. 146(1-2):89-102. DOI: 10.1007/s10584-017-1972-6.

¹²⁰ Engineers and Geoscientists British Columbia (EGBC). 2018. Legislated Flood Assessments in a Changing Climate in BC, Professional Practice Guidelines. August 28. Version 2.1. British Columbia.

¹²¹ Blanchette, M. L., & Lund, M. A. (2016). Pit Lakes are a global legacy of mining: an integrated approach to achieving sustainable ecosystems and value for communities. *Current Opinion in Environmental Sustainability*, 23, 28 – 34, Elsevier.

groundwater quality and quantity is vague, and the embedded potential mitigation measures are speculative.

- Why have additional mitigation measures to address impacts to water quality from climate change not been developed? Only two potential mitigation measures are provided, with limited information about their efficacy or safety. In addition, mitigation measures for potential water temperature increases in local reaches are not provided.
- DEIS Appendix D, Mitigation Measures: Given that it is evident that the proposed project could exacerbate the effects of climate change on listed species of fish, water quality, and air quality, and there are climate change related risks to the proposed containment and mitigation measures such as extreme precipitation, anomalous wind events, drought, and wildfire, climate risks have not been adequately characterized, and the mitigation measures are inadequate. Containment during extreme events, contingency plans in the event of extreme flooding, wildfire, etc., and erosion control efforts that reduce risk of water contamination in the event of flooding, mudslides, etc., due to heavy precipitation are either not clear or are not mentioned. Supplemental protection measures to ensure stability of waste rock and tailings covers, and prevent tailings containment failures are not described.

In addition, given that the lifespan of the project is within the most critical years to reduce emissions of greenhouse gases¹²² (IPCC 2018), and industry specific reports offer mitigation measures to reduce risk and emissions, the proposed mitigation measures of using smart grid technology to reduce energy consumption, and Tier IV or better off-highway diesel engines are inadequate. The proponent has plans to upgrade transmission lines and add transmission lines. Will power be sourced from renewable sources like solar and wind? Could the project utilize off-grid solar power instead? How far will employees travel each day to the site? Will on-site housing be provided along with buses for commuting?

- DEIS Section 4.4.2.1.4.8 Fish Resources and Fish Habitat: This statement regarding the structure and function of fish habitats would need to be fully reclaimed to minimize species vulnerability suggests that the proposed actions to mitigate for climate change are inadequate, and that fish habitats will not be fully reclaimed. Please clarify if, when, and who will reclaim these habitats, or qualify whether the proposed actions will mitigate climate change effects from the proposed action on fish.
- DEIS Table 4.4-4 Current and Reasonably Foreseeable Activities Considered Regarding Cumulative GHG Emissions: Given that global GHG emissions are cumulative, and the best science available has issued dire warnings about reducing GHG emissions to zero as

¹²² IPCC, 2018: Summary for Policymakers. In: 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.)]. In Press.

soon as possible to avoid the worst effects of climate change, statements such as expected to have GHG emissions that are temporary and a very small portion of the Idaho inventory minimize the contribution of actions that add GHG to the atmosphere exacerbating the global climate crisis.¹²³ The carbon dioxide equivalents for alternatives 1 and 2 are 67,400 MT and 117,587 MT respectively. This surpasses the amount required (25,000 MT) for reporting greenhouse gas emissions for facilities in the United States by a significant margin, suggesting that these alternatives have a significant contribution to GHG emissions.¹²⁴

- In addition, it is not clear if emissions generated from staff commuting to the site, transporting materials to processing locations, or of refining materials for use were considered. These sources of emissions should be included as part of the cumulative effects as they are reasonably foreseeable sources of greenhouse gas emissions.

Soils

- 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.”¹²⁵ The Forest Service Manual directs soil resource management to focus on ecological functions with an objective of maintaining or improving soil quality on NFS lands “to sustain ecological processes and function so that desired ecosystem services are provided in perpetuity”¹²⁶ and with the policy to “[m]anage ecosystems to maintain or improve soil quality.”¹²⁷ The Forest Service Manual defines soil quality as “the capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation and ecosystem health.”¹²⁸ The Forest Service Manual identifies six soil functions: soil biology, soil hydrology, nutrient cycling, carbon storage, soil stability and support, and filtering and buffering. In order to provide multiple uses and ecosystem services in perpetuity, these six soil functions need to be active and effectively working. According to the DEIS, all alternatives, including the no-action alternative, will cause significant and irreparable impacts to soil quality within the Project area that are inconsistent with the NFMA, Payette National Forest Land and Resource Management Plan,¹²⁹ and the Boise National Forest Land and Resource Management Plan (collectively

¹²³ IPCC, 2019: Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

¹²⁴ 40 C.F.R. § 98.2.

¹²⁵ U.S. Forest Service. 1976. NFMA. (16 U.S.C. § 1600) Section 6(g)(3)(C).

¹²⁶ Forest Service Manual at 2550.2.

¹²⁷ Forest Service Manual at 2550.3(1).

¹²⁸ Forest Service Manual at 2550.5.

¹²⁹ Payette National Forest Plan, Forest Service 2003.

“Forest Plan”).¹³⁰ Even with the Total Soil Resource Commitment amendment, (an amendment which is neither explained nor addressed in the DEIS Chapters 3.5 and 4.5), the Project’s actions will leave the area with long-term, adverse impacts to soil quality, and thus, long-term limitations for these lands to achieve Forest Plan desired conditions, standards, and guidelines. The RCP even states that the primary goal of the RCP “... is not the establishment of forest vegetation throughout reclaimed areas of the SGP...”¹³¹ which seems to violate NFMA and Forest Plan policies as well.

- While the DEIS discloses uncertainty regarding reclamation success and that soil resources may take decades to recover,¹³² the cause-effect relationships between the Project’s actions (including mitigation and reclamation) and impacts to the environment are not articulated well in the DEIS. The DEIS lacks synergy. Soils provide the foundation for all living things, and yet, the DEIS falls silent on the implications of reduced soil quality on resources such as, but not limited to, vegetation, aquatics, wildlife and wildlife habitat, and treaty resources. For example, as a result of the Project’s actions, the DEIS identifies that conversion of a productive site to an essentially non-productive site for a period of more than 50 years would occur on more than 19 percent of NFS lands under all action alternatives. This is a significant adverse impact that requires an amendment, yet the DEIS does not discuss the amendment or discuss the effects of this impact to their social endpoint, i.e., the cause-effect chain of effects important to humans. The Tribe is also concerned about the high background of metals in the soil and requests that the RCP include screening levels of metals as part of the growth media suitability guidelines for plant growth. The DEIS explains that the best growth medium will be reserved for wetland restoration while poor quality medium will be used for upland reclamation.¹³³ This is unacceptable considering that soil quality will be further compromised from long-term storage in stockpiles. Sacrificing uplands for the sake of wetlands does not comply with NFMA and Forest Plan direction.
- To complicate the review, the DEIS lacks clarity on how many acres will be reclaimed. The DEIS accounts that the cumulative disturbance (also referred to as “total extent of vegetation clearing”¹³⁴) would be 3077, 2890, 3593, and 2700 acres under Alternatives 1, 2, 3, and 4, respectively¹³⁵ and that “[p]ost-closure, all disturbed areas would be revegetated under Alternative 1.”¹³⁶ However, according to the RCP, Midas Gold intends to reclaim all of the Project-related disturbance (approximately 1896 acres which is different than cumulative disturbance acres) except for 357 acres associated with Hangar Flats pit lake and high walls, the West End pit lake and high walls, and Midnight pit lake and Yellow Pine pit high walls.¹³⁷ Upon further reading, the RCP discloses that wetlands

¹³⁰ Boise National Forest Plan, Forest Service 2010.

¹³¹ RCP at 2-1.

¹³² DEIS at 4.5-9, 10, and 18.

¹³³ DEIS at 4.5-23.

¹³⁴ DEIS at 4.10-58.

¹³⁵ DEIS at 4.10-45.

¹³⁶ DEIS at 4.4-14.

¹³⁷ DEIS at 4.5-8.

on or along the Burntlog Route are not proposed for restoration.¹³⁸ The RCP addresses reclamation under one alternative and does not explain how it would differ in scale and scope under all action alternatives. Further confusion about reclamation is created with the interchangeable use of the terms “reclamation” and “restoration” throughout the DEIS and supporting materials. While these terms can overlap in practice, they have different meanings and end goals.¹³⁹ This lack of clarity about reclamation is troublesome and makes it difficult to assess the true impacts to soils, as well as to all other resources, under each alternative.

- 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 (> 18 y),¹⁴⁰ and that past reclamation efforts have not been successful.¹⁴¹ 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 concerned that there will be a deficit of reclamation cover materials to achieve reclamation objectives, such as conditions to sustain wildlife, fisheries, land, water resources, and vegetation in perpetuity.
- With respect to soils, the DEIS fails to describe the existing conditions of the Yellow Pine Route and does not identify borrow sites under Alternative 4. The DEIS also does not evaluate impacts to soils from dust abatement applications. The DEIS fails to fully incorporate and analyze components of the mitigation measures and the RCP. Mitigation measures are inadequately referenced and not analyzed for their effectiveness in the DEIS. Statements such as “...which would be further reduced by the Forest Service-required mitigation measures that target DD [Detrimental Disturbance]”¹⁴² need to be followed with an explanation about why the mitigation measures will reduce the impact and to what level. Several components of the RCP are not analyzed or considered in the DEIS for soils, including stockpile locations, conditions, and specifications (e.g. slope construction should be less steep than 2.5H:1V, more like 4H:1V or 5H:1V considering the landscape), and the impact of using alternative growth medium materials such as compost, as well as, effects of using fertilizers and herbicides, or off-site materials¹⁴³ to achieve reclamation goals.

Noise

- The Forest states that “...noise in a community can contribute to stressors that may influence health such as.”¹⁴⁴

¹³⁸ Tetra Tech. 2019. Final RCP at 4-30.

¹³⁹ Stanturf, J. A., Palik, B. J., Williams, M. I., Dumroese, R. K., and Madsen, P. (2014). Forest Restoration Paradigms. *Journal of Sustainable Forestry* 33: S161-S194.

¹⁴⁰ DEIS at 4.5-9.

¹⁴¹ DEIS at 4.5-10.

¹⁴² DEIS at 4.5-20.

¹⁴³ DEIS at 4.5-22.

¹⁴⁴ *Id.* at 3.18-18.

- 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 (U.S. Department of Transportation 2005).
- Effects on cardiovascular health via increases in blood pressure (Babisch 2011).
- Changes in hormone levels related to a stress response (Evans et al. 2001).¹⁴⁵

It would follow that noise health stressors could affect wildlife in a similar manner to humans and should therefore, be considered an affected environment.

Hazardous Materials

- The DEIS reports thirty-eight large hazardous materials incidents occurred within Idaho in 2019 attributable predominately to FedEx, U.S. Postal Service, and other freight haulers; with none attributed to mining activities.¹⁴⁶ Source cited for this data is the PHSMA dashboard and does not reference a specific report or data query. Even if this data were properly referenced, one year of data is not adequate to evaluate trends in hazardous materials spill probability. What is the nationwide trend for mining-related hazardous materials spills over the last five, ten, fifteen, twenty years compared to total hazardous materials spills in Idaho for the same time intervals?
- “Statistics for haul truck accidents on county roads and/or in mountainous terrain are very limited.” No sources cited.¹⁴⁷ Assessment of hazardous material spill risk for Alternative 1 summarizes the cumulative heavy truck traffic, estimated to be 100,740 trips over the 12 year operational period of the mine. Volume of truck traffic, specific hazards (steep road grades, three mountain passes, no runaway truck ramps), and numbers of creeks crossed are identified in the DEIS, but there is no statistical evaluation of hazardous spill risk probability across the three proposed mine access routes in Alternatives 1 through 4.
- “Dust from baghouses at ore crushing/ore reclaim facilities, etc., would be collected and disposed as appropriate. If dust has elevated metals levels, it would be disposed with the tailings.”¹⁴⁸ No specifics are given for how or at what interval baghouse dust will be sampled for metal content. No quantitative cut-offs are referenced for when metals in baghouse dust would be deemed “elevated.” No detail is given for how heavy metal-laden dust will be controlled within the tailings, i.e., reduce risk of heavy metal-laden dust escaping to the atmosphere, or how tailing covers would be used to control dust during mine operation.

¹⁴⁵ *Id.* at 3.18-19.

¹⁴⁶ DEIS at 4.7-3.

¹⁴⁷ *Id.* at 4.7-4.

¹⁴⁸ *Id.* at 4.7-9.

- The DEIS did not adequately address measures for waste containment, collection, and storage, especially with regard to the TSF. It did not adequately address which measures will be taken in the event of a system failure and what will be done to prevent a release to the environment. Leak prevention and detection measures should be discussed in more detail.
- Construction Traffic: Describe the safety measures that will be taken to prevent the release of fuel and hazardous loads in the case of an accident.¹⁴⁹ Provide a risk analysis/accident probability analysis or refer to the section where it can be found.
- Spent Ore and Legacy Tailings Removal in Meadow Creek Valley: Describe back up measures that will be taken should part of the pumping system or piping system fail. Provide details on leak detection and prevention. Describe any potential liquid waste streams and how the liquid waste will be disposed of.¹⁵⁰
- Ore Processing Facilities: Provide details on how surface runoff will be directed to a contact water pond. Provide engineering details about the contact water pond and measures to prevent release to the environment.¹⁵¹ Provide details on how the pond waste will be collected and disposed of. Provide details of the leak prevention system. Describe any other liquid waste streams and plans for disposal. Provide details on how solid hazardous wastes will be handled and disposed of.
- Antimony Flotation and Dewatering: Describe what measures will be taken to prevent a release of liquid waste to the environment. Describe liquid waste collection systems and how the waste will be disposed of. Describe the measures in place to prevent an environmental release given a system failure.¹⁵²
- Oxidation and Neutralization: Describe the secondary containment system and measures to prevent release to the environment, including piping and sumps etc.¹⁵³
- Tailings Neutralization Circuit: Provide details on leak prevention and detection. Provide details about what measures are in place should there be a failure within the system.¹⁵⁴
- Tailings and Pipeline Maintenance Pond: Provide details on how the waste in the pond will be handled and disposed of.¹⁵⁵
- Tailings Storage Facility: This section does not adequately describe the fully lined engineered impoundment and water management features. Another diagram needs to be

¹⁴⁹ *Id.* at 2-22.

¹⁵⁰ *Id.* at 2-27.

¹⁵¹ *Id.* at 2-28.

¹⁵² *Id.* at 2-31.

¹⁵³ *Id.* at 2-32.

¹⁵⁴ *Id.* at 2-33.

¹⁵⁵ *Id.* at 2-33.

inserted to better illustrate containment features. Is the TSF capable of handling liquid wastes? Provide a better description of the water collection system that will capture and store surface water. Surface water will create another waste stream; describe how this will be dealt with. The spent ore disposal area and spent heap leach ore will be an inadequate barrier to ‘minimize interaction with infiltrating surface water’; it will provide a high-porosity path to groundwater and/or surface water. “The liner system proposed does not currently meet the regulatory requirements of IDAPA 50.01.13.”¹⁵⁶ The paragraph states that IDEQ has entered into ‘rulemaking’ with IDEQ and that regulatory requirements will be met by the time of permitting. This gives the appearance that Midas is attempting to bypass measures that would protect the surrounding environment and potentially human health from toxic releases.

- 2-37 TSF Water Management: Describe how the tailings consolidate will be handled and disposed of once collected.¹⁵⁷
- Alternative 1 Water Balance Flow Diagram (Operations): Apparently the TSF will store the majority of water runoff, yet no evidence has been provided that the TSF will be able to adequately hold the liquid waste and slurry.¹⁵⁸
- On-site Landfarm: Provide evidence that overland flow containing hydrocarbons will be contained within the boundaries of the landfarm and will not enter surface waters.¹⁵⁹
- Tailings Storage Facility: The liner system is an improvement from Alternative 1; however, it still does not meet regulatory requirements and the statement gives the appearance that Midas intends to circumvent regulations. Further analysis needs to be presented that indicates that the liner will prevent contaminant releases.¹⁶⁰ Because Alternative 2 is a derivative of Alternative 1, the above comments are to be applied to the discussion of the Preferred Alternative (Alternative 2), with exception of the TSF.
- Highways: The analysis provided in this section does not pertain to the non-highway roads leading to and from the mine site. A better analysis of contaminant releases resulting from transport would be an inventory of accidents to and from similar mining sites. Given the proximity to tributaries of the EFSFSR and the river itself, a more thorough and applicable analysis should be conducted which looks at similar road conditions and similar vehicle traffic.
- Please add a section to include roads other than highways. The number of hazardous spills in the state of Idaho in 2019 without providing a background of mining activity in

¹⁵⁶ *Id.* at 2-33.

¹⁵⁷ *Id.* at 2-37.

¹⁵⁸ *Id.* at 2-49.

¹⁵⁹ *Id.* at 2-55.

¹⁶⁰ *Id.* at 2-103.

the state is not informative. In addition, one year is not representative of the time period in which mining activities will be occurring at the Project site.¹⁶¹

- Operations: There are no indications that hazardous loads will be escorted by a pilot car or that strict measures will be taken to avoid accidents during operations.¹⁶²
- Spills at Mine Site and Off-Site Facilities: State where remediation materials (i.e., absorbent material/barriers) be stored or provide a reference to the appendix.¹⁶³
- According to DEIS Section 4.7.2.3 Standards of Practice Under the International Cyanide Management Code, The International Cyanide Management Code is a voluntary initiative for the gold and silver mining industries and the producers and transporters of cyanide used in gold and silver mining.
- The DEIS should note that the International Cyanide Management Code is voluntary both as to its requirements and as to whether Midas Gold or any future operator would have to be a member. The DEIS should also note that compliance with the International Cyanide Management Code is inferred for only the operator and does not eliminate the potential for transportation accidents, and therefore it should be a requirement for transporters as well.
- 4.7-10, 4.7.2.4.2.5 Spills on Access Roads: There is no supporting documentation for the statement, “The most probable release scenario associated with truck transport would be relatively small (for example, less than 25 gallons of fuel) and attributed to mechanical failure or human error.”¹⁶⁴ Please substantiate that statement and summarize the response plan for a large contaminant release such as a tanker truck.
- Access Route Hazards: Summarize safety measures that will be taken during hazardous road conditions.¹⁶⁵

Surface Water/Groundwater Quantity

- DEIS Section 4.8 summarizes the environmental consequences of proposed mining activities to groundwater and surface water hydrology through a site-wide water balance and groundwater flow hydrologic model. The Brown and Caldwell 2018 hydrologic model only considers mine activities described under Alternative 1. No subsequent iterations of the model were run to predict changes to ground or surface water quantity under Midas’s self-proclaimed preferred alternative, Alternative 2. Nor was any consideration made in the DEIS to hydrologic impacts caused by the Project under the

¹⁶¹ *Id.* at 4.7-3.

¹⁶² *Id.* at 4.7-8.

¹⁶³ *Id.* at 4.7-10.

¹⁶⁴ *Id.* at 4.7-10.

¹⁶⁵ *Id.* at 4.7-11.

Forest Service's proposed Alternatives 3 and 4 that differ from the Alternative 1 water balance and hydrologic flow model.

- As stated in DEIS Section 2.3.5.9 Surface Water and Groundwater Management, "The water balance is an accounting of water inflows and outflows for various components of the mining and ore processing system. Actual volumes for water balance variables could vary seasonally and annually from the volumes estimated. A water balance flow diagram for the mining and ore processing operations phase is provided in Figure 2.3-8 with components of the water balance described below."¹⁶⁶ The Figure provided, and ensuing descriptions, do not include or discuss critical information to a mass balance such as average, high-year, and consecutive high-year flows.
- Recommendation: The DEIS should include information on the flows related to the water balance block diagram in Figure 2.3-8 and identify the source for the information. The mass balance should include a sensitivity analysis that considers high flows and consecutive wet years, which should also be used as the basis for analysis of potential impacts related to unintended discharges in the DEIS.
- In DEIS Section 4.8 describing Alternative 1, the groundwater flow model does not take into account historic underground workings, current exploration holes, or seismic faults (i.e. Meadow Creek fault) within, or adjacent to, the Project site. Were these landscape features included in the Project conceptual groundwater model? If so, through what means have these features been evaluated by the Forest Service and judged to have only a minimal impact on the groundwater system given the limited analysis of fault/adit hydraulic stresses by slug and packer testing in the alluvial and bedrock aquifers?¹⁶⁷ What are those minimal impacts under baseline conditions and how are those impacts to the groundwater system predicted to change due to groundwater drawdowns from open pit dewatering and Rapid Infiltration Basin ("RI basin") groundwater recharge? Where RI basins appear to be the main proposed method of disposing of excess water at the site.¹⁶⁸ Does the Forest Service assume the exclusion of these landscape features from the numerical groundwater model will not undermine the adequate characterization of baseline conditions or proper analysis of Project impacts to the groundwater system?
- The DEIS contains two sections on model uncertainty, in contrast to many sections that clearly lack adequate description and discussion, as noted elsewhere in our comments. Instead, the discussion on model uncertainty in this DEIS provides more discussion and acknowledgement of this issue than in any other DEIS for a mining project that can be identified: DEIS Section 4.8 Surface Water and Groundwater Quantity, Subsection 4.8.8 Uncertainty Associated with Model Predictions and DEIS Section 4.9 Surface Water and Groundwater Quality, Subsection 4.9.8 Model Uncertainty.

¹⁶⁶ *Id.* at 2.3-38.

¹⁶⁷ *Id.* at 4.8-2; *Id.* at 4.8-73.

¹⁶⁸ *Id.* at 4.8-11; 4.9-1; 4.9-24; 4.9-67; 4.9-113; 4.11- 12; -13; 4.11-23; 4.11-30; 4.11-32; 4.11-41; 4.11-61; 4.12-8.

- As noted in DEIS Section 4.8.8.2.3, “Groundwater modeling requires simplifying assumptions to represent a complex subsurface hydrologic regime. As a result of data limitations and simplifying assumptions, all predictive models, no matter how well constructed and calibrated, contain uncertainty.” While the sources of uncertainty are then identified, the conclusion in the DEIS is that, “Despite those sources of uncertainty, the modeling approach and data used by Brown and Caldwell are within the typical scope of modeling work done for similar projects.” According to DEIS Section 4.9.8, “Despite the overall strengths of the SWWC model, there is uncertainty inherent in the model predictions, as there would be for any model of this type.”
- However, there is uncertainty regarding whether current best practices are sufficient to provide confident predictions of water quantity or quality decades or centuries in the future.^{169 170 171} While the predictive water quantity and quality models are useful to understand the general water quality that may be present decades or centuries in the future, they are only estimates, and the level of uncertainty in the model predictions cannot be fully quantified.
- The agencies need to evaluate, and the DEIS needs to address, whether predictions made by the models had a level of uncertainty that could bear on the significance of a predicted impact. Uncertainty with respect to long-term predictions in particular needs to be acknowledged and addressed by the DEIS. The DEIS needs to address if this is even possible given the present additional uncertainty over discharge water regulations, both in terms of IPDES requirements and recent court decisions such as the 2020 U.S. Supreme Court decision, *Cty. of Maui, Hawaii v. Hawaii Wildlife Fund* concerning hydrologic connections.¹⁷²
- U.S. Geological Survey Guidelines for Evaluating Groundwater Flow Models, i.e., MODFLOW, prescribes various tools for specific modelling problems. For example, a properly calibrated model should include superposition and particle tracking for evaluating the effect of groundwater pumping on surface water bodies or forecasting the future outcomes of groundwater management systems, respectively.¹⁷³
- The anticipated volume of groundwater to be pumped from the unconfined, fractured bedrock aquifer during open pit dewatering was estimated by a single pump test from a well located near the airport in Meadow Creek valley pumping from the unconfined, alluvial aquifer. The alluvial aquifer specific storage value (1×10^{-7} ft⁻¹), calculated from the airport well pump test, was also used for the fractured bedrock specific storage

¹⁶⁹ Kempton, J.H., et al. (2000). Probabilistic quantification of uncertainty in predicting mine pit-lake water quality, *Mining Engineering*, October 2000.

¹⁷⁰ Kuipers, J.R., et al. (2006). Comparison of predicted and actual water quality at hardrock mines: the reliability of predictions in EISs.

¹⁷¹ *Id.*

¹⁷² *Cty. of Maui, Hawaii v. Hawaii Wildlife Fund*, 140 S. Ct. 1462 (2020).

¹⁷³ Reilly T.E. and Harbaugh A.W. (2004). Guidelines for evaluating ground-water flow models. US. Geological Survey. Supplemental white-paper for Office of Groundwater - Technical Memorandum No. 96.04. <https://pubs.usgs.gov/sir/2004/5038/PDF/SIR20045038part2.pdf>.

value during groundwater flow modeling, model layers 1 and 2 respectively.¹⁷⁴ This is highly suspect due to the likely differences in pore space and hydraulic conductivity between the two aquifers.¹⁷⁵ Furthermore, the specific yield for the fractured (model layer 2) and un-fractured bedrock (model layer 3) aquifers appear to be arbitrarily assigned at 1% and 0.1%, respectively. Primary research on specific yields for consolidated schist substrates found an average specific yield of 26% for unconsolidated silt, and a range of 18 to 27% for coarse gravel substrates.¹⁷⁶ These values are far greater than the 15% specific yield reported in the DEIS for the alluvial aquifer after model calibration, or the 1.0 and 0.1% arbitrary value assigned to the bedrock aquifers and should be verified through an Agency model audit.

- Ultimately, the estimated specific storage and specific yield values used as input values for the groundwater model may lead to an overestimation in fractured bedrock aquifer water quantity across the study area. This raises concerns over estimates made for the cone of depression from groundwater pumping, volume of groundwater needed to be treated and recharged through RI basins, pit lake fill rates post-closure, impacts to groundwater-dependent ecosystems, surface water flows, and surface water temperatures. Furthermore, having an accurate water balance and groundwater flow model is essential for accurate stream temperature and constituent transport model predictions (i.e. the site-wide water chemistry) which uses the groundwater flow model as a critical input parameter.
- The Project groundwater flow model should include superposition analysis to simulate aquifer pump tests from the unconfined fractured bedrock aquifer and the effect on downgradient surface water flows and groundwater dependent ecosystems (“GDEs”). The Project groundwater model should include particle tracking analysis to estimate recharge rates for RI basins, or model the effectiveness of constructed wetlands as post-closure passive water treatment in perpetuity for TSFs and Development Rock Storage Facilities; together represent the Project groundwater management systems. Lastly, the Project groundwater model must consider faults and underground workings to identify potentially unforeseen recharge and discharge points within the groundwater system.
- With regard to predicted surface water flow during closure and reclamation under Alternative 3, the DEIS states that, “Impacts vary from no predicted change on the EFSFSR above Meadow Creek and Sugar Creek to a 100 percent reduction (dry) in low flows on Meadow Creek downstream of the Hangar Flats pit in the early post closure period.”¹⁷⁷ How is it possible to predict no change in flow in the EFSFSR when the TSF and DRSF are proposed to be in the headwaters of the EFSFSR under Alternative 3 proposed actions? Especially after stating in the Construction and Operations section that,

¹⁷⁴ DEIS at 4.8-4.

¹⁷⁵ Rasmussen T.C. et al. (2003) Estimating aquifer hydraulic properties using sinusoidal pumping at the Savannah River site, South Carolina, USA. *Hydrogeology Journal* 11:466-482. DOI: 10.1007/s10040-003-0255-7.

¹⁷⁶ Johnson, A.I. (1967). Specific yield - compilation of specific yields for various materials. U.S. Geological Survey Water Supply Paper 1662-D. <https://pubs.usgs.gov/wsp/1662d/report.pdf>

¹⁷⁷ *Id.* at 4.8-62.

“[p]redicted base flow reductions at this location would result from reductions in groundwater discharge to the EFSFSR beneath the TSF and DRSF.”¹⁷⁸

- Furthermore, the DEIS also states that, “Placement of the TSF and Hangar Flats DRSF in the EFSFSR valley upstream of the Meadow Creek confluence, instead of the Meadow Creek valley, would cause reduction of groundwater recharge beneath these facilities in the upper EFSFSR valley, but at the same time would affect a smaller number of springs and seeps, compared to other action alternatives.”¹⁷⁹ First, a decrease in groundwater recharge under the facilities will in fact decrease surface water flows in the EFSFSR above Meadow Creek. Second, impacting a fewer amount of seeps and springs in the EFSFSR valley compared to the proposed Meadow Creek TSF/DRSF placement does not necessarily mean that the action is impacting less water resources, as spring and seep flows are variable. Spring and seep flows were collected and published in the Hydrology Field Survey.¹⁸⁰ Were these flows included in the water balance?
- The DEIS illustrates in Figure 4.8-29 that groundwater drawdown effects on GDEs will be minimal. Furthermore, only wetland, seep, and spring habitat-types dependent on groundwater would be affected. However, the actual risk posed to GDEs from groundwater drawdown is unknown because the DEIS states that the groundwater hydrology of GDEs (wetlands, springs, seeps) has not been characterized to-date.¹⁸¹ The DEIS recommends a risk assessment of groundwater drawdown to GDEs be made a monitoring requirement during mine operation. Per 40 C.F.R. § 1508.1, the NEPA EIS process exists to evaluate the risk posed to human health and the environment by proposed Projects before they happen, not as they are on-going. The Forest Service needs to evaluate the risk of substantial groundwater drawdown posed to GDEs in a revised DEIS or SEIS.

Surface Water/Groundwater Quality

- The DEIS Section 2.3.5.9 describes water treatment in Midas Gold’s proposed plan, Alternative 1, as, “...ongoing and would continue to be refined to include the waters that could be expected to require treatment. The conceptual water treatment system during operations would be an active treatment system at the ore processing area using either iron coprecipitation or reverse osmosis. Final treatment system selection, design, and operational throughput are under evaluation.”¹⁸²
- This aspect of the original proposal is an example of the original application, and Alternative 1 in the DEIS, being grossly inadequate upon which to even begin a NEPA evaluation. Essentially, an actual Water Treatment Plan, that should have been identified and described in the proposed action in order for it to be considered technically complete,

¹⁷⁸ *Id.* at 4.8-61.

¹⁷⁹ *Id.* at 4.8-62, 63.

¹⁸⁰ HydroGeo. (2012). Hydrology field survey for Golden Meadows Project. Midas Gold Idaho, Inc. November 2012.

¹⁸¹ DEIS at 4.8-30.

¹⁸² *Id.* at 2.3-38.

was developed as part of the DEIS process for Alternative 2 as described in DEIS Section 2.4.5.6.¹⁸³ The significance of this requirement for water treatment is revealed in that section of the DEIS which suggests that a 4,000 gpm Centralized Water Treatment Plant will be required and such as during spring runoff, contact water ponds would be used to equalize the flows through the Centralized WTP. For high water years, mine pits also could be temporarily used to hold water for treatment. A 4,000 gpm water treatment requirement is a large requirement for a hardrock mine site by any measure.

- What the DEIS should state, which is the same as Midas Gold Chairman has stated to the Nez Perce Tribe, is that Midas Gold in their PRO, and in other statements, suggested that the Project could and would absolutely not require water treatment because the geochemistry of the waste rock and tailings would be “benign.” Midas Gold should be required to resubmit a plan reflective of the actual conditions and mitigations necessary and reinitiate the NEPA process, or otherwise the agencies will have permitted the most NEPA-designed mine in history due to failings in the original proposal.
- DEIS Section 4.9 states, “Without water treatment [in perpetuity water treatment facility/passive water treatment (i.e. constructed wetlands)], surface water quality impacts from mine contact water or dewatering water recharged through [Rapid Infiltration Basins] (“RIB”s) would cause [antimony and arsenic] to be above baseline levels and/or exceed the strictest potentially applicable surface water quality standard.”¹⁸⁴ Proposed actions outlined in Alternatives 1 - 4 of the DEIS would cause surface water quality impacts above baseline conditions without in perpetuity water treatment. For example, under Alternatives 1 - 4 the Project proposes to dewater the open mining pits by pumping water to the RI basins, which will then allow the contaminated water to seep into the ground. Alternative 1 would use two RI basins to manage all dewatering operations. Alternative 2 would treat open pit contact water first, then discharge to two RI basins. Alternatives 3 and 4 are the same as Alternative 1. The amount of treatment for pit contact water prior to discharge to an RI basin is key because it will affect the in-stream water quality. Furthermore, it’s not clear from the DEIS how much of that water will reach surface waters, which will depend on flowrate into groundwater, subsurface geology and travel time to surface waters.¹⁸⁵ The lack of current understanding of RI basins form and function is noted in Table 4.1-1, which lists the “Incomplete and Unavailable Information” in the DEIS. Given the importance of these wastewaters and their potential impact on surface water quality, this represents a major failure in Project planning for the DEIS currently under consideration.
- Under the seminal 2020 U.S. Supreme Court decision, *Cty. of Maui, Hawaii v. Hawaii Wildlife Fund*, groundwater discharges within a limited distance and travel time to surface water fall under the Clean Water Act, which requires a National Pollutant Discharge and Elimination System (“NPDES”) permit for discharges of pollutants to

¹⁸³ *Id.* at 2.4-110.

¹⁸⁴ *Id.* at 4.9-23.

¹⁸⁵ *Id.* at 4.1-3.

surface waters via groundwater when certain criteria are met.¹⁸⁶ Rather than analyzing the potential need for NPDES permits for the RI basin discharges, section 4.9 of the DEIS merely states, “Per IDEQ, a determination of whether the [RI basin] discharges would qualify as discharges to waters of the United States would be made during the [IPDES] permitting process.”¹⁸⁷ NPDES permits will require treatment of some sort, which could significantly add to both the expense and practicality of using RI basins as the Project groundwater management system. Since RI basins are an integral part of the Project, it’s hard to understand how the DEIS could leave such an important item uncharacterized. First, will the RI basins even be regulated? Second, what conditions would the NPDES permit, if any, require? Would it be practical to treat metals to meet State water quality standards in that environment? These are fundamental questions left unanswered in the DEIS.

- Figure 4.8-23 shows the placement of RI basins on the west and east bank of Meadow Creek at the confluence with the EFSFSR. As noted previously, RI basins will be used to recharge the fractured bedrock aquifer as mitigation for groundwater pumping in Hangar Flats, Yellow Pine, and West End open pits. Groundwater pumped from the open pits is considered mine contact water due to presence of potentially acid-generating development rock in the open pit walls. In lieu of water treatment, distance and travel time from groundwater recharge to surface water discharge will likely be inadequate to achieve sufficient dilution of constituents, therefore, likely to exceed the strictest applicable surface water quality standards. Under *Cty. of Maui, Hawaii*, the DEIS needs to treat RI basin groundwater discharges as the functional equivalent of a direct discharge to surface water due to the limited time and distance between RI basin groundwater recharge and discharge to surface water in the EFSFSR.
- In summary, the DEIS fails to address RI basin groundwater discharges in light of *County of Maui, Hawaii*, 140 S. Ct. 1462, consider IDEQ IPDES permit requirements for groundwater discharges, secure financial assurances for post-closure water treatment, or define downstream water quality impacts above baseline conditions in lieu of in perpetuity water treatment. The lack of existing applications and at the least draft discharge permits for the proposed Project does not allow for the full determination of potential impacts from the Project. Another example is DEIS Section 2.3.5.9 Surface Water and Groundwater Management, where it is noted that, “According to IDEQ, permitting of [Rapid Infiltration Basins] may fall under a wastewater reuse permit; however, there could be potential groundwater-surface water connections. In such cases, these discharges may be permitted under an IPDES permit. IDAPA 58.01.11.150.03, Ground Water-Surface Water Interactions, requires that contaminants entering groundwater cannot impair the surface water beneficial uses.”¹⁸⁸ The discharge of open pit water, as well as any other water discharging to surface water; including those via groundwater, needs to be thoroughly vetted in the DEIS. However, this is not possible without at least draft IPDES permits.

¹⁸⁶ *County of Maui, Hawaii*, 140 S. Ct. 1462.

¹⁸⁷ DEIS at 4.9-24.

¹⁸⁸ DEIS at 2.3-38

- Midas Gold should have been required to apply for and have received a draft IPDES permit that was then analyzed in the DEIS. Without at least this level of certainty as to the discharge requirements it is not possible to identify the applicable regulatory requirements and related outcomes for the Project.
- Under Alternative 1, and assuming no treatment of TSF consolidation runoff water, the site-wide water chemistry¹⁸⁹ predicts a mass loading of arsenic, antimony, chloride, copper, mercury and sulfate during the post-closure years 5-20 in Meadow Creek, West End Creek, and Fiddle Creek downstream of TSFs and DSRFs in those respective drainages.¹⁹⁰ Predicted concentrations of arsenic, mercury, and copper would exceed the IDEQ surface water standard and the chronic aquatic life standard per the Biotic Ligand Model.¹⁹¹
- According to DEIS Section 2.3.7.15 Post Closure Water Treatment, “Evaluation of post closure water treatment is ongoing, ” of all Midas-proposed passive treatment systems for any post-closure water treatment.
- The DEIS describes a hypothetical, two-step process for TSF/DRSF passive water treatment under Alternative 1, consisting of a biochemical reactor followed by aerobic vertical flow wetlands at the toe of each tailing/development rock facility that would operate in perpetuity. No modeling of the concentration changes in Meadow Creek, Fiddle Creek, or West End Creek following treatment of TSF/DRSF consolidation water through passive systems have been completed for Alternative 1.
- Alternative 2 in the DEIS identifies sources of water to be treated and also suggests the type of treatment and for what duration. From the descriptions it appears active treatment could be required for 41 years or more followed by passive treatment. The actual type of passive treatment technology that would be employed is not specified. However, the assumption in the DEIS is that various components of influent to the 4,000 gpm centralized site *active* water treatment facility could be treated by passive rather than active treatment at the predicted times. As we have noted elsewhere in our comments on water quantity and quality predictions, there is a high degree of uncertainty of any specific predictions as to future water quality. As the timeframe for converting from active treatment to passive treatment is driven by the same predictions, those are also highly uncertain. However, in this case, there is also a question as to the scientific veracity of the proposal for passive treatment based on currently available information.

¹⁸⁹ SRK Consulting, *Stibnite Gold Project Proposed Action Site-Wide Water Chemistry Modeling Report*, (2018).

¹⁹⁰ *Id.* at 4.9-27; SRK Consulting, *Stibnite Gold Project Proposed Action Site-Wide Water Chemistry Modeling Report*, (2018).

¹⁹¹ IDEQ, *Implementation guidance for the Idaho copper criteria for aquatic life: Using the Biotic Ligand Model*. Idaho Department of Environmental Quality Water Quality Division (2017).

- As noted by Skousen et al (2017):¹⁹²

“A critical activity in passive treatment is the selection of the proper system type for a given situation. Factors to be considered in selection include the quality and quantity of waters to be treated, water treatment goals, access, and the land resources available for use in system construction.”

“At their present stage of development, passive systems work well on low volume Acid Mine Drainage (“AMD”) discharges (<400 l/min) containing moderate to high acidity and metals.”

“With careful design and construction, systems can be effective over a wide range of metal and acidity concentrations. They are subject to failure if poorly designed and constructed, particularly if not correctly scaled to the target discharge flow and acid and specific metal concentrations.

“Relative to chemical treatment, passive systems require longer retention times and larger land areas.” “Generally, larger land areas (relative to anticipated acid loads) enable more effective treatment, and essential design features for all systems include surface area and/or volume.”

“However, specialized systems that require significant initial cost and regular maintenance (e.g. [Vertical Flow Wetlands], bioreactors) are available for use where land areas are insufficient for traditional passive systems such as Anaerobic Wetlands.”

“However, active treatment is often favored in settings where discharge quality is a regulatory requirement. Passive treatment is more suited for watershed-based AMD control schemes where high standards or specific effluent limits are not required at each discharge.”

“Essentially all passive treatment systems require some degree of maintenance. “...periodic monitoring and maintenance is essential, the need is much less than in active systems. At a minimum, the systems should be inspected every few months for impediments to flow, leakage, and inadequate treatment. In addition, more extensive maintenance, such as replenishment of the alkaline reagent or organic matter substrate, and removal of accumulated metal precipitates, is occasionally required.”

“Experience suggests that rehabilitation is typically required every 5–10 years, though that time will be influenced by system size and design.”

¹⁹² Skousen J., et al., *Review of Passive Systems for Acid Mine Drainage Treatment* (Mine Water and the Environment 36:133-153) (2017).

- This suggests that with respect to the concept of passive treatment at the Project the DEIS should have considered the following points:
 - The information currently available in the DEIS and supporting documents does identify a specific passive treatment system type for the Project relative to the quality and quantity of waters to be treated, water treatment goals, access, and the land resources available for use in system construction.
 - The required treatment volumes could be up to 4,000 gpm (15,000 l/m) as compared to present low volumes typically treated by passive treatment of 100 gpm (400 l/m). Even if flows are broken into four different passive treatment streams averaging 1,000 gpm, the flows still would exceed the typical flows by an average of 10 times.
 - It is not possible to ensure the careful design and construction of a hypothetical future passive treatment system for the Project.
 - The location of the proposed Project has extremely limited land area for passive treatment systems.
 - Any passive treatment systems proposed for the Project would not in fact be “passive” but instead would require various levels of perpetual monitoring, maintenance and replacement. The DEIS has addressed how financial assurance would be obtained that would assure perpetual funding.
 - The discharges from the Project would be subject to a regulatory setting in terms of both groundwater and surface water with water quality standards applicable to each individual discharge, and not watershed based, and therefore the applicability of passive treatment to meet those requirements is highly speculative.

- Overall, this suggests that the DEIS, if it had taken a hard look at the science and site-specific features and regulatory requirements, would have assumed that passive treatment would have a high likelihood of failing to meet objectives, and should instead have assumed that active treatment would be required in perpetuity. The DEIS should therefore note that the proposal for passive treatment is speculative at best. The DEIS should be based on what is presently achievable.

- According to Section 2.3.7.4 Fiddle DRSF, “Toe seepage would be expected to continue from the Fiddle DRSF in perpetuity. This water would be collected in the operational contact water pond at the toe of the Fiddle DRSF, and then discharged to a passive treatment system before being discharged via an IPDES outfall to the EFSFSR.”¹⁹³ However, review of Section 2.3.4 Site Preparation and Construction Phase and Section 2.3.5.4 Development Rock Production and Storage does not provide information on how seepage would be collected from the Fiddle DRSF. Only in DEIS Section 2.3.5.9 Surface Water and Groundwater Management Groundwater Spring and Seep Control can be found the descriptions of any underdrains for the DRSFs.

¹⁹³ DEIS at 2.3-70.

- Waste rock toe seepage is recognized in the DEIS as a significant discharge with the potential for degradation of water resources. As described in the DEIS, there is no assurance that all seepage from the waste rock piles will be captured by the underdrain systems and report to the toe, and instead enter surface water as hydrologically connected groundwater. And even if a liner/underdrain system is installed, it will not be 100% effective at avoiding discharges to groundwater that are hydrologically connected to surface water.
- The DEIS should describe the underdrains when describing the site preparation and construction as they would be constructed prior to development rock placement. The DEIS should include consideration of a liner system or systems below the waste rock piles similar to and with the same limitations (e.g. liner defects) that the DEIS describes for the TSF underdrain system in DEIS Section 2.3.5.7. The DEIS 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 in perpetuity, and address/include mitigation in the event of the failure of the underdrain system.
- According to Sections 2.4.6.1 and 2.4.6.2 which describe the reclamation of the waste rock piles under Alternative 2 states that, “[u]pon completion of final grading of the waste rock piles, a low permeability geosynthetic cover would be placed on the top of the [waste rock piles], which would be designed to limit infiltration through the [waste rock piles]”.¹⁹⁴ The geosynthetic liner would be overlain by placement of an inert soil/rock layer and growth media and revegetated. No further description of the geosynthetic liner is provided in the DEIS or any referenced RCP.
- The DEIS should describe the details of the cover system in order that its effectiveness and other characteristics can be assessed. The DEIS 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 and the potential effects to ground and surface water quality.
- In discussing impacts to West End and Midnight Creeks during post closure and reclamation, the DEIS attributes a portion of predicted exceedances to elevated concentrations of constituents in existing bedrock groundwater.¹⁹⁵ However, there is no mention of the impacts the pit lakes will have on surrounding groundwater. The water quality in the West End and Midnight pit lakes is predicted to be very contaminated and should be expected to migrate through downgradient groundwater flows, likely eventually discharging to surface water. Was groundwater exchange and migration out of

¹⁹⁴ *Id.* at 2.4-112.

¹⁹⁵ *Id.* at 4.9-33; 34.

the pit lakes and discharges to surface water accounted for in the hydrologic, site-wide water balance, and site-wide water chemistry models?

- The site-wide water chemistry modeling report indicates that iron and manganese concentrations are predicted to be elevated above both baseline concentrations and the most stringent potentially applicable water quality standard in the EFSFSR after post closure year 10.¹⁹⁶ Presumably this information was modeled according to the proposed actions under Alternative 1; however, the DEIS does not mention these two constituents in the “Mine Closure and Reclamation” section.¹⁹⁷ Since these constituents are predicted to be elevated under the Alternative 1 proposed actions, iron and manganese need to be analyzed in the DEIS for the proposed actions in Alternatives 2-5.
- Under the proposed actions outlined in Alternatives 1-4, nearly all predicted surface water summer maximum temperatures will exceed baseline surface water temperatures at all prediction nodes, with summer maximum temperatures in Fiddle and West End Creeks effectively doubling within the modeled time period. These exceedances above baseline conditions are in violation of Section 100 of Idaho’s water quality standards¹⁹⁸ that protect cold water as a water quality parameter to maintain viable aquatic life for coldwater species, including ESA-listed migratory salmonid and char species present within the mine area.
- The predicted temperature increases during mining and post closure will have detrimental effects on bull trout, steelhead, salmon and other important aquatic resources. Unlike many other constituents, water temperature does not settle out or get used by terrestrial or aquatic biota. Since the location of the proposed mine is located within the headwaters of the EFSFSR, the predicted increased water temperature will inevitably negatively impact downstream water quality and aquatic resources in the EFSFSR downstream of the mine site, the SFSR, and the mainstem of the Salmon River. It is not clear what, if anything, is proposed to protect the resident fish population from temperature exceedances. How will these increases above baseline temperature be remedied?
- Furthermore, if the receiving waters for any NPDES-permitted activities are exceeding temperature water quality standards, then the discharge should not be allowed if it will cause or contribute to an exceedance of the water quality standards. If the discharge can not be permitted, how will the site operate? How will they ensure that receiving water quality will be protected?
- The DEIS did not include sediment constituents in the site-wide water balance or site-wide water chemistry models.¹⁹⁹ Both turbidity and total suspended solids data were collected during baseline monitoring and need to be included in the modeling.²⁰⁰ The

¹⁹⁶ SRK Consulting. (2018). Stibnite Gold Project Proposed Action Site-Wide Water Chemistry Modeling Report. Prepared for Midas Gold Idaho, Inc. December 2018.

¹⁹⁷ DEIS at 4.9-27, 36.

¹⁹⁸ IDAPA 58.01.02.100.

¹⁹⁹ DEIS at 4.9-41.

²⁰⁰ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project* (2017).

Project has the potential to cause a large amount of sediment pollution within and downstream of the mine site, as well as along the access and utility routes. Furthermore, many constituents bind to sediment particles and therefore without accounting for sediment concentrations the predictive modeling would underestimate total concentrations of constituents, such as arsenic, antimony, mercury, manganese, iron, etc. Increased sedimentation can also increase overall water temperature because of increased heat absorption by sediment particles. Not including these sediment constituents in the predictive modeling is likely underestimating the concentrations and long term impacts of all other constituents within the project area.

- In the DEIS, 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). 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 DEIS should have also applied the site class + river/stream metric, where rivers are defined as any water with stream order ≥ 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 DEIS 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 submittal 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. Instead, the DEIS should utilize EPA's National Recommended Water Quality Criteria for Human Health for the consumption of Water + Organism of 0.018 µg/L.
- The DEIS lists Aluminum as a primary pollutant of concern under the various Alternatives in the DEIS. There are no promulgated standards for aluminum in Idaho, and in the absence of a state water quality standard, the authors of the DEIS refer to the EPA Secondary Drinking Water Standard for aluminum of 0.05 mg/L as the "strictest potentially applicable surface water quality standard" (Table 3.9-2). An analysis criterion for Aluminum of 0.36 mg/L is used in the DEIS, based on "Recommended Aquatic Life Criteria" (Table 4.12-7). Rather than a static number, however, EPA's Recommended 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 criteria are calculated based on a site's pH, total hardness, and DOC.²⁰¹ 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.

²⁰¹ EPA, *Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018*, No. EPA-822-R-18-001.

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 DEIS uses 0.0015 mg/L as the strictest standard to be applied for selenium (3.9-15), 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.²⁰²
- The DEIS uses EPA's Drinking Water MCL of 2,000 µg/L for the analysis of barium.²⁰³ Instead, the DEIS should utilize EPA's National Recommended Water Quality Criteria for Human Health for the consumption of Water + Organism of 1,000 µg/L.
- The DEIS uses the narrative found in IDAPA 58.01.02 for the analysis of beryllium. Instead, the DEIS should utilize EPA's Drinking Water MCL of 4 µg/L.
- The DEIS 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 DEIS 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 DEIS 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, then EPA's Drinking Water MCL for nickel becomes the most stringent criterion and should be used for analysis.
- The DEIS uses the IDAPA 58.01.02 criterion range of 6.5-9.0 for the analysis of pH. Instead, the DEIS should utilize EPA's Secondary Drinking Water Standard of 6.5-8.5 µg/L.

²⁰² EPA, *Aquatic Life Ambient Water Quality Criteria for Selenium-Freshwater 2016*, No. EPA 822-R-16-006.

²⁰³ DEIS at 3.9-15; Table 3.9-2.

- The DEIS 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 DEIS 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.
- In the DEIS, methylmercury was calculated from model-simulated dissolved mercury concentrations using a 2.0 percent ratio method determined and published by Holloway et al. (2017).²⁰⁴ However, Holloway et al. (2017), "determined that [methylmercury] represents 1.6 to 2.0 percent of total mercury in water samples...". The DEIS addresses this inconsistency of using dissolved vs. total mercury by making the assumption that, "dissolved mercury introduced into the system from mining would be converted to methylmercury in a similar proportion [as total mercury]."²⁰⁵ Dissolved mercury typically makes up a portion, not all, of total mercury concentrations, so making this assumption underestimates predicted methylmercury concentrations. Furthermore, total mercury concentrations were collected during baseline monitoring so this assumption is completely unnecessary. Methylmercury concentrations should be recalculated and reported in the DEIS using available total mercury data collected during the baseline monitoring.
- While water column methylmercury concentration predictions are important to understanding 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 DEIS.
- Methylmercury impacts have been detected hundreds of miles downstream of mine point sources.²⁰⁶ Treaty-reserved rights to fish at usual and accustomed places are already

²⁰⁴ Holloway, J. M. et al., *Mobilization of Mercury and Arsenic from a Carbonate-hosted Ore Deposit, Central Idaho, U.S.A.* (Procedia Earth and Planetary Science vol. 17 at 610-13) (2017).

²⁰⁵ DEIS at 4.9-44.

²⁰⁶ 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, vol. 568 at 1213-26) (2016).

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 DEIS 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 alternatives, the following nitrogen components should be addressed specifically in the DEIS.
- Ammonia is highly toxic to aquatic organisms, particularly to salmonids and mussels.²⁰⁷ In high enough concentrations, ammonia can build up in the internal tissues and blood of aquatic organisms, often leading to death.²⁰⁸ Ammonia can also sorb to several metal ions and be deposited into sediments which can be toxic to benthic or surface aquatic biota.²⁰⁹ Potential sources of ammonia in the proposed action include residue from Ammonium Nitrate Fuel Oil and waste effluent from the housing facility. Water quality criteria have been established by EPA and are dependent upon pH and water temperature.²¹⁰ 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 included in the DEIS.
- 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 water quality criterion was assigned for nitrate+nitrite; EPA established ambient water quality criteria recommendations for nitrate+nitrite in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15).²¹¹ The guidance recommends a nitrate+nitrite water quality criterion of 0.02 mg/L. However, detection limits reported for

²⁰⁷ 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).

²⁰⁸ EPA, *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater* (2013), No. EPA 820-F-13-013.

²⁰⁹ Jermakka, J., L., et al., *Nitrogen compounds at mines and quarries: Sources, behaviour and removal from mine and quarry waters - Literature Study* (VVT Technical Research Centre of Finland Ltd., VVT Technology No. 226, Ser. No. 2242-1211) (2015).

²¹⁰ EPA, *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater* (2013), No. EPA 822-R-13-001.

²¹¹ 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).

nitrate+nitrite in the Surface Water Quality Baseline Study were 0.05 mg/L,²¹² 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 current conditions analysis but was not included in the site-wide water chemistry modeling report.²¹³ In addition, no water quality criterion was assigned for kjeldahl nitrogen in the Surface Water Quality Baseline Study;²¹⁴ EPA established ambient water quality criteria recommendations for kjeldahl nitrogen in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15).²¹⁵ 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 DEIS 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.²¹⁶ Why was it omitted? Also, no water quality criterion was assigned for total nitrogen in the Surface Water Quality Baseline Study;²¹⁷ EPA established ambient water quality criteria recommendations for total nitrogen in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15).²¹⁸ 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 DEIS 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

²¹² HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project, Midas Gold, Inc.* (2017).

²¹³ SRK Consulting, *Stibnite Gold Project Proposed Action Site-Wide Water Chemistry Modeling Report* (2018).

²¹⁴ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project* (2017).

²¹⁵ 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).

²¹⁶ SRK Consulting, *Stibnite Gold Project Proposed Action Site-Wide Water Chemistry Modeling Report* (2018).

²¹⁷ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project, Midas Gold, Inc.* (2017).

²¹⁸ 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).

Water Quality Baseline Study;²¹⁹ EPA established ambient water quality criteria recommendations for total phosphorus in the western forested mountains guidance (Ecoregion II, Level III ecoregion 15).²²⁰ 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 DEIS or supporting documents.

- 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 need to be reanalyzed to reflect the most current and strictest potentially applicable standards:

Parameter	Units	Surface Water Standard used in WQ Analysis ²²¹	Current strictest potentially applicable standard	Standard Source
Aluminum	µg/L	50	0.63* or less than 50	EPA Freshwater Aquatic Life - Chronic; ²²² or EPA Secondary Drinking Water Standards ²²³
Ammonia	mg/L	Not Analyzed	1.9**	EPA Freshwater Aquatic Life - Chronic ²²⁴
Arsenic	µg/L	10	0.018	EPA Human Health – Water+Organisms ²²⁵
Barium	µg/L	2000	1000	EPA Human Health – Water+Organisms ²²⁶
Beryllium	µg/L	Narrative	4	EPA Drinking Water MCL ²²⁷

²¹⁹ HDR, Inc., *Surface Water Quality Baseline Study, Stibnite Gold Project, Midas Gold, Inc.* (2017).

²²⁰ 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).

²²¹ DEIS at 3.9-15, Table 3.9-2.

²²² EPA, *Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018*, No. EPA-822-R-18-001.

²²³ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004 (2009).

²²⁴ EPA, *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater (2013)*, No. 820-F-13-013.

²²⁵ EPA, *National Recommended Water Quality Criteria 2002: Human Health Criteria Calculation Matrix*, No. EPA-822-R-02-012.

²²⁶ EPA, *Quality Criteria for Water 1986*, No. EPA 440/5-86-001.

²²⁷ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004 (2009).

Cadmium	µg/L	Hardness dependent	Hardness dependent if less than 5	IDAPA 58.01.02 - CCC, ²²⁸ or EPA Drinking Water MCL ²²⁹
Copper	µg/L	2.4	0.6	Idaho BLM Guidance – Chronic ^{***, 230}
Lead	µg/L	Hardness dependent	Hardness dependent if less than 15	IDAPA 58.01.02 - CCC, ²³¹ or EPA Drinking Water MCL ²³²
Nickel	µg/L	Hardness dependent	Hardness dependent, if less than 58	IDAPA 58.01.02 – Aquatic Life, Chronic; ²³³ or IDAPA 58.01.02 - CCC ²³⁴
Nitrate + Nitrite	mg/L	Not Analyzed	0.02	EPA Nutrient Ecoregion II, level III ecoregion 15 ²³⁵
pH	s.u.	6.5-9.0	6.5-8.5	EPA Secondary Drinking Water Standards ²³⁶
Phosphorus, T	µg/L	Not Analyzed	7.75	EPA Nutrient Ecoregion II, level III ecoregion 15 ²³⁷
Silver	µg/L	Hardness dependent	Hardness dependent, if less than 3.2	IDAPA 58.01.02 – Aquatic Life, Acute; ²³⁸ or EPA Aquatic Life – Acute ²³⁹

²²⁸ IDAPA 58.01.02.

²²⁹ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004 (2009).

²³⁰ IDEQ. (2017). Implementation guidance for the Idaho copper criteria for aquatic life: Using the Biotic Ligand Model. Idaho Department of Environmental Quality Water Quality Division. November 2017.

²³¹ IDAPA 58.01.02.

²³² EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004 (2009).

²³³ IDAPA 58.01.02.

²³⁴ IDAPA 58.01.02.

²³⁵ 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).

²³⁶ EPA, *National Primary Drinking Water Regulations*, No. EPA 816-F-09-004 (2009).

²³⁷ 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).

²³⁸ IDAPA 58.01.02.

²³⁹ EPA, *Ambient Water Quality Criteria for Silver*, No. EPA 440/5-80-071 (1980).

Zinc	µg/L	Hardness dependent	Hardness dependent, if less than 120	IDAPA 58.01.02 - CCC; ²⁴⁰ or EPA Freshwater Aquatic Life ²⁴¹
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* 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 mountains stream.

- The proposed Burntlog Route could severely degrade water quality in currently unimpacted water ways. The route is proposed to be constructed through very steep terrain with slopes that have the potential to fail and contribute to mass wasting events. Heavy traffic utilizing the roadway during the wet months will increase roadway rutting and erosion which will runoff into nearby streams, especially during spring and summer months. Road cuts made on steep slopes may increase slope instability and increase the probability of slope failure above baseline stochastic probability. The addition of stream crossings and culverts will inevitably cause increased stream velocity by confining flows, leading stream bank and bed erosion, and introduce the risk of road washouts during high water events. Additionally, road duff in dry months will increase sediment pollution to streams from settling dust in the wake of heavy traffic.
- Using the existing route could also severely degrade water quality within Johnson Creek and the mainstem of the EFSFSR. The majority of this route parallels these two water bodies which are designated as critical habitat for ESA listed Chinook, steelhead and bull trout. Increased traffic on these roads will increase sediment pollution in Johnson Creek and the EFSFSR, as well as increase the risk of hazardous material releases to the waters of the United States (“WOTUS”). In addition, to make this route suitable for the proposed increase in traffic, large lengths of the roadway will need to be widened; reducing wetland and riparian vegetation adjacent to Johnson Creek that will increase stream temperatures. Due to the topography and the close proximity of the route to Johnson Creek and the EFSFSR, large amounts of sediment and rock will likely be deposited into the water bodies during blasting.
- Major impacts of proposed Access Routes not addressed in DEIS:
 - Increased sediment loads in headwater streams and larger tributaries.
 - Decreased riparian and wetland habitats and vegetation.
 - Increased Johnson Creek water temperatures from loss of riparian vegetation.

²⁴⁰ IDAPA 58.01.02.

²⁴¹ EPA, 1995 *Updates: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water*, No. EPA-820-B-96-001 (1996).

Water Rights

- It should be noted that no water right with a junior priority date can deplete the water needed to maintain the minimum streamflow water right on the EFSFSR (Water Right 77-14190), unless allowed as a condition of approval of the proposed junior water right. All the existing water rights at the mine site predate the priority date of April 1, 2005 associated with Water Right 77-14190. Any new water rights permits would have a junior priority date, but the minimum stream right (77-14190) on the EFSFSR is subordinate to all future domestic, commercial, municipal, and industrial uses, and up to 8.2 cfs of new non-domestic, commercial, municipal, and industrial uses.
- Midas Gold does not have enough water for operations so would need more water rights and need to apply to Idaho Department of Water Resources for approximately 2.39 cfs and 1,730 acre-feet of groundwater rights. An estimated temporary seasonal withdrawal of up to 5.63 cfs over the present water right may be required to maintain ore processing operations.²⁴² The applications would include a mitigation plan to protect existing instream water rights on the SFSR and the Salmon River.²⁴³ The Forest needs to include in the DEIS an analysis of the effects of dewatering the EFSFSR at the Project site and downstream on aquatic and other resources.

Vegetation: General Vegetation Communities, Botanical Resources, and Non-native Plants

- The Tribe is concerned about irreversible and irretrievable impacts to vegetation, including the destruction and loss of whitebark pine, loss of potential habitat for special-status plant species, spread of non-native invasive plant species (on more than 2200 acres of disturbance), and likely permanent changes to the function and structure of upland vegetation that supports, for example, wildlife, nutrient cycling, and soil stability. Impacts may result in changes to the ecosystem that persist in perpetuity which is unacceptable and inconsistent with NFMA policies and Forest Plan directions.
- The Tribe requests that the Forest take a hard look at impacts to vegetation, not just special-status species and broad potential vegetation groups (“PVGs”). For example, impacts to culturally important plant species should be identified as an issue in the vegetation analysis as the DEIS fails to take a hard look at impacts to these species and associated habitat types. The DEIS lists culturally important plant species in Chapter 3.24 but they are inadequately analyzed in Chapter 4.24 and, most importantly, they lack any spatial (e.g. linked with PVGs) or temporal (e.g. phenology, gathering season) context.
- Impacts to vegetation are measured in the number of acres, however, the DEIS fails to discuss the “so, what” element of an environmental effects analysis. For example, the DEIS describes that there will be increased habitat fragmentation effects on plant populations, but fails to explain where, how, when, and why it is meaningful. Simply stating “[t]hese effects would be greater for species with low population numbers that

²⁴² DEIS at 4.8-46.

²⁴³ *Id.* at 4.8-46.

already have limited genetic variability”²⁴⁴ without clarifying what species this applies to in the Project area and without quantifying the effect (i.e. number of acres, spatial extent, habitat connectivity, patches, etc.) is meaningless. Similarly vague conclusions are drawn in the DEIS for “Alterations of Hydrology in Habitat for Hydrophilic and Wetland Plants,” “Increased Soil Erosion Effects on Plants,” and “Loss of Biodiversity and Loss or Disruption of Ecological Functions and Ecosystem Services.”²⁴⁵ The DEIS needs to interpret and support (with 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 DEIS fails to disclose that wetlands along the Burntlog Route under Alternatives 1, 2, and 3 would not be reclaimed, which may cause irretrievable and irreplaceable habitat for sensitive species, and other hydrophilic and wetland plants and wildlife, such as to Blandow’s helodium, sweetgrass, and Rannoch-rush. The DEIS also fails to consider impacts to vegetation in light of future climate shifts which may exacerbate reclamation efforts. The Project area encompasses alpine, subalpine pine forests, and riparian forests that are highly vulnerable to future, projected changes in climate,²⁴⁶ yet the DEIS falls silent on these vulnerabilities and how the action alternatives may complicate post-mining recovery and post-mining land uses.
- The Tribe is concerned that the DEIS does not contain mitigation measures or a restoration plan for the loss of whitebark pine or limber pine in the analysis area. High-elevation five-needle pines are important functional and structural components of high mountainous 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, black bears, 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 is a high-priority Candidate Species for listing under the ESA, and limber pine is only found in a few locations on the Forest. Clark’s nutcracker and red squirrel are extremely important to limber and whitebark pine conservation because they collect and disperse 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. The DEIS is silent

²⁴⁴ *Id.* at 4.10-7

²⁴⁵ DEIS at 4.10-6 and 7

²⁴⁶ Behrens et al. 2018. Chapter 6: Effects of climate change on forest vegetation. 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. pp. 112 - 164; Padgett et al. 2018. Chapter 7: Effects of climate change on nonforest vegetation. 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. pp. 165 - 197.

on impacts to limber pine and to the mutualistic relationships between five-needle pines and seed dispersers. It is also unclear in the DEIS what will happen to cut whitebark pine.

- The DEIS does not adequately analyze components of the RCP or assess effectiveness of the mitigation measures. If the Project is required to adhere to Forest Service-required mitigation measures, Midas Gold design features and resource protection measures, and procedures in the RCP,²⁴⁷ then the DEIS needs to consider these in the effects analysis and explain their effectiveness. The reclamation seed mixes, for example, are not reflective of the PVGs in the Project area. So the likelihood that these areas will comply with NFMA policies and Forest Plan directions is small. The DEIS 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.²⁴⁸ The DEIS 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 DEIS, dust abatement measures would be used during construction, operation, and closure to reduce the amount of fugitive dust. The DEIS provides a few scientific references and cites that impacts from these measures are immeasurable or unknown.²⁴⁹ The DEIS fails to summarize the references and explain why these impacts are unknown. The DEIS fails to provide 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.²⁵⁰ High MgCl₂ soil concentrations from application caused mortality of Douglas-fir, lodgepole, ponderosa, and limber pines, and aspen in just two to four years.²⁵¹ 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 DEIS fails to address and take a hard look at these actions, and requests that the Forest Service use the least environmentally damaging dust suppressant.

²⁴⁷ DEIS at 4.10-3 and 4

²⁴⁸ *Id.* at 4.10-4, 5.

²⁴⁹ *Id.* at 4.23-10, 75, and 76.

²⁵⁰ 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, 165-188) (2009).

²⁵¹ Goodrich, B. A. and Jacobi, W. R. 2012. 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: 847-862.

Wetlands, Riparian Areas, and Clean Water Act Jurisdiction

- The proposed mine will significantly rework the land and impact wetlands and surface waters at the site. In order to determine whether Clean Water Act Section 402 or Section 404 permits will be required, it will be critical to know the extent and exact locations of WOTUS, which includes both streams and wetlands. The DEIS makes many references to WOTUS without ever defining which water bodies would be considered WOTUS, or which WOTUS rule or test applies.²⁵² For example, at page ES-17, the DEIS states, “Alternative 3 was developed to evaluate the extent to which an alternative location for the TSF and a DRSF would avoid or reduce potential adverse impacts, primarily to WOTUS and federally-listed fish species.” One cannot, however, avoid impacts to WOTUS if one doesn’t know what is a WOTUS at the site.
- The introduction to DEIS section 4.11.2.1 is instructive. It states: “Wetland and riparian resources would be altered or lost under each of the action alternatives. Loss or alteration of wetland and riparian acreages would reduce the water quality, water storage/recharge, and habitat services that existing wetlands currently provide within each of the affected watersheds. These losses would be most substantial at the mine site where each action alternative would remove approximately 31 percent of the existing wetlands within the contributing basin for the EFSFWSR watershed above the Sugar Creek/ EFSFSR confluence. While some wetlands at the upper periphery of the mine site contributing basin would remain, their hydrologic connectivity to downstream waters and associated vegetation would be removed or altered.” In other words, destruction of wetlands at the site will be significant, wide-spread, and will have lasting negative environmental effects on the area. Wetlands losses in terms of total acreage range from 28 to 41 acres for each of the four Alternatives DEIS.²⁵³ Riparian area losses are much higher, with estimates from 429 to 453 acres. It is worth noting that Idaho has one of the lowest wetlands concentrations in the United States, with less than one percent of its land mass designated as wetlands. Therefore, any loss of wetlands in Idaho is significant.
- At section 3.11.3.2 (Wetlands), in table 3.11-3a, the DEIS identifies 373 acres of wetlands and open water in the Mine Site Focus Area. The DEIS appears to assume that all of these areas are jurisdictional. But if these areas turn out to not be WOTUS, they are not subject to Clean Water Act permitting, and can be filled without any compensatory mitigation being required, because Clean Water Act Section 404 would not apply. Appendix I, page 33 shows extensive impacts to wetlands in the upper reaches of the valley, where the streams tend to have lower flows trending toward ephemeral. If the Jurisdictional Determination that has not yet been performed concludes that these wetlands and accompanying streams are non-jurisdictional, that would significantly affect the anticipated environmental impact of the Project.
- Section 1.2 of the Tetra Tech mitigation report, in Appendix D-1, sets out what Jurisdictional Determination work has been done to date, but references the 2008

²⁵² 2008 Rapano Guidance, the 2015 WOTUS rule, or the 2020 WOTUS rule.

²⁵³ DEIS at 4.11-63.

Guidance, which is quite different in its assertion of Clean Water Act jurisdiction than the 2020 WOTUS rule is. Because of this, the DEIS cannot have actually considered what jurisdictional waters would be impacted by this Project.

- A key to understanding wetlands impacts is compensatory mitigation, but the DEIS pays little attention to the subject. Compensatory mitigation is important because it ensures that the functions and values of the impacted wetlands are replaced, and it is a key provision of Section 404 of the Clean Water Act. At page 4.11-7, the DEIS devotes a single paragraph to describing compensatory mitigation and makes a single reference to the existence of a Tetra Tech study that proposes wetlands mitigation. The Tetra Tech Mitigation Plan looks at avoidance of wetlands during mining and not long-term compensatory mitigation for loss of wetlands functions and values. Table 7-2 of the Tetra Tech report calculates the number of total impacted wetlands function units to be 852. That number gives a sense of the scope of compensatory mitigation, but does not detail how or where it will be achieved.
- Section 4.11.3.1.1 of the DEIS has a bit more detail, but essentially provides little real information as to what the compensatory mitigation will look like or whether it will be successful. It states that “Coordination with the [Corps] for approval of existing and predicted wetland functional assessment scores is ongoing and may result in changes relative to the totals listed in this section.”²⁵⁴ How can a mitigation plan be honestly evaluated when the outline of the plan is still in discussion with the Corps? A new jurisdictional determination should be conducted under the 2020 WOTUS rule to determine the amount of compensatory mitigation that will be required and the true environmental impact of this Project.
- The DEIS does an adequate job quantifying the total area of riparian areas to be disturbed or identifying the number of streams to be diverted via culverts during mine access road construction and operation via the proposed Burntlog Route. The DEIS briefly discusses road building impacts to water quality primarily due to increased sediment load but evades any discussion of temperature-related impacts to surface water due to road construction. The DEIS does not quantify the hydrology of, or the impacts to, groundwater dependent ecosystems (i.e. seeps, springs, wetlands) from substantial groundwater drawdown from Yellow Pine, Hangar Flats, and West End open pit dewatering. Furthermore, the DEIS does not discuss whether vegetation clearing or other activities in riparian areas would result in increased stream temperatures (e.g. reduction in riparian vegetation). Protection of wetland and riparian areas is vital to maintaining current and future large-woody debris sources habitat impacted by the Project.

Fisheries

- The Tribe’s vision 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.

²⁵⁴ DEIS at 4.11-51.

- 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 Department 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 Department, our co-managers, and the public at large.

The Tribes Fishery Restoration Efforts Disrupted by the Project

- The Project has the potential to negatively influence the ongoing efforts of the Tribe towards fishery restoration, research, and production of fish in the EFSFSR. 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 (including the EFSFSR). The Department 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 summer Chinook salmon in the EFSFSR, which may have constituted an independent population. 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. In an effort to supplement salmon returns in the EFSFSR, the Tribe has 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. The DEIS states that the Tribe's ability to harvest and manage its traditional fish resources in the Project area will be impacted.²⁵⁵ However, the DEIS does not analyze how the Tribe's ability to continue to release Chinook in Meadow Creek will be affected. The Project used Chinook salmon numbers in the project area in numerous estimates, such as predictions of fish in the

²⁵⁵ DEIS at 4.24-4.

Yellow Pine Pit, based largely on the number of progeny of outplanted Chinook. The revised DEIS or SEIS should examine the loss of outplanted fish to the recovery of Chinook salmon in the EFSFSR.

- 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 will be negatively impacted due to heavy Project traffic for the first two years (20 years under Alternative 4) 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 Johnson Creek. The JCAPE project produces up to 150,000 Chinook salmon smolts annually for direct release into Johnson Creek. The JCAPE project conducts activities at several locations, including adult trapping on Johnson Creek, smolt releases into Johnson Creek, 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 fishery 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 habitat restoration efforts. The Tribe has been actively working on watershed restoration in the EFSFSR watershed since 2007. A watershed project in the SFSR sub-basin began during the 2007-2009 Northwest Power and Conservation Council Fish and Wildlife Provincial Review.
- The Tribe submitted a project during the 2007-2009 Northwest Power and Conservation Council Fish and Wildlife Provincial Review 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.
- The revised DEIS or SEIS and 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.

Spill Risk to Aquatic Environment

- The DEIS 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 fuel²⁵⁶), the Project contains 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 DEIS 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.²⁵⁷ 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.²⁵⁸ 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.²⁵⁹ 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 DEIS 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 Middle Fork Salmon River watersheds. In fact, the Burntlog Route reaches within 0.25 miles from an unnamed tributary of Big Chief Creek, which leads into Indian Creek and eventually the Middle Fork Salmon River. Spill risk to the Middle Fork Salmon River watershed needs to be analyzed. This Middle Fork subwatershed needs to be added to the analysis area along with impacts to fisheries and other aquatic organisms.
- Spill risk on Johnson Creek Road is not adequately analyzed. The construction phase of Alternative 1 would increase the amount of traffic by 65 vehicles per day.²⁶⁰ This is an increase of five mine-related vehicles per hour.²⁶¹ However, the DEIS neglects to analyze the risk of spills from this increased traffic. The DEIS does not specify how much fuel and materials will be hauled on the Yellow Pine Route during the construction phase of the Burntlog Route. Analysis of the risks of transporting materials along this route is imperative, since it would be the primary access route to the site for the first two years of the project, under all alternatives.

²⁵⁶ DEIS at 2-60.

²⁵⁷ *Id.* at 4.7-3.

²⁵⁸ 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>.

²⁵⁹ Bury, R. Bruce, *The Effects of Diesel Fuel on a Stream Fauna, California Fish and Game* (1972) <http://www.elkhornsloughctp.org/uploads/files/1345573184Bury%201972.pdf>.

²⁶⁰ DEIS at ES-32.

²⁶¹ *Id.* at ES-34.

- The percent of access routes that are located in riparian conservation areas is insufficiently quantified. The DEIS notes that 6.5 miles or 18% of the 36-mile Yellow Pine Route is located within 100 feet of streams.²⁶² 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 NF LRMP²⁶³ 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 DEIS uses fallacious claims to qualitatively assess risk of vehicular accidents. The DEIS cites data with very low rates of large truck accidents resulting in spills of hazardous material.²⁶⁴ However, these data are assumed to be from mostly straight, multi-lane, paved highways, in stark contrast to the steep, sinuous, dirt roads associated with the Project. The DEIS acknowledges that statistics for haul truck road accidents on county roads and/or in mountainous terrain are very limited,²⁶⁵ but that does not make it appropriate to use data from paved roads to suggest that the risk of spills in the SFSR watershed is very low. Equally unacceptable is the DEIS making the assumption that transportation on these roads would be safer than highway roads because there is less traffic and lower speeds. The risk of vehicular accidents on roads in the SFSR watershed needs to be quantitatively assessed and the fallacious, qualitative suggestions removed entirely.
- The DEIS 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.²⁶⁶ A similar crash near water would be catastrophic to aquatic life. The DEIS 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 ESA-listed fish species shall be detailed.

Impact of Roads and Sediment on Aquatic Resources

- The DEIS inadequately addresses the addition of new roads and their associated disturbance. Alternatives 1, 2, and 3 develop 310 - 345 acres of new access roads for the Burntlog Route. Alternative 4 uses an existing route for mine access instead of the Burntlog Route, yet expands the road footprint with 94 acres of new access. The revised DEIS or SEIS and FEIS needs to quantify the amount of surface area changing from vegetated to unvegetated as a result of road development. The proposed 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. In addition to new access roads, the Project will add 25

²⁶² *Id.* at 4.9-85.

²⁶³ Boise National Forest Land and Resource Management Plan at B-33.

²⁶⁴ DEIS at 4.7-3.

²⁶⁵ *Id.* at 4.7-4.

²⁶⁶ *Id.* at 3.7-12.

miles of new utility access roads, as well as disturb over 250 acres through new and upgraded transmission lines.²⁶⁷ The DEIS does not detail where these new utility access roads are proposed, or where transmission lines will be created or upgraded. Maps of new and upgraded transmission lines need to be included, as well as locations of new roads and a quantification of added mileage within riparian conservation areas.

- The DEIS omits a critical Watershed Condition Indicator of Road Density/Location in its analysis. The Burntlog Route identified in Alternative 1 would require approximately 17 miles of new access road construction²⁶⁸ and 25 miles of new utility access road construction.²⁶⁹ However, the DEIS fails to describe how the Watershed Condition Indicator for Road Density/Location will be altered by the Project. An analysis of changes to the Road Density/Location Watershed Condition Indicator is needed.
- The DEIS inadequately quantifies the potential impacts of mine access and utility roads on streams. The DEIS states that mine access roads would cross 71 different streams in Alternative 1.²⁷⁰ Similarly, the DEIS states that utility Roads will cross 37 different streams in Alternative 1.²⁷¹ However, the DEIS tables only display the number of different streams that are crossed, not necessarily the number of stream crossings. For example, Johnson Creek Road, used in the Yellow Pine Route, contains 16 different stream crossings in the DEIS,²⁷² but actually crosses streams at 43 different locations.²⁷³ Subsequent to this quantification, the DEIS inappropriately uses the number of streams crossed as a metric for potential increases in erosion and sedimentation.²⁷⁴ The results of this analysis should not be considered because the number of streams crossed does not represent the actual number of stream crossings. More informative statistics for access and utility roads, such as the total number of stream crossings and a map showing where these crossings will occur need to be provided.
- The DEIS fails to analyze impacts to water quality from roads outside of the Project mine site. This omission is illuminated by the fact that the Surface Water Quality Baseline Study²⁷⁵ did not include sample locations outside of the proposed mine site.²⁷⁶ Therefore, the DEIS is neglecting to analyze surface water quality impacts from critical access roads such as the Johnson Creek Road, Yellow Pine - Stibnite Road, and newly-proposed Burntlog Route. Impacts on surface water quality from all access, haul, and utility roads associated with the Project need to be analyzed.

²⁶⁷ *Id.* at 4.13-19.

²⁶⁸ *Id.* at ES-18.

²⁶⁹ *Id.* at 4.13-19.

²⁷⁰ *Id.* at 4.9-140.

²⁷¹ *Id.* at 4.9-52.

²⁷² *Id.* at 4.9-47.

²⁷³ Boise National Forest 2010 Geomorphic Road Analysis and Inventory Package (“GRAIP”) unpublished data.

²⁷⁴ DEIS at 4.12-31.

²⁷⁵ HDR, Inc., *Vegetation Baseline Study and Addendum #1, Stibnite Gold Project* (2017).

²⁷⁶ DEIS at 3.9-45.

- The DEIS inadequately details maintenance work that will occur on roads associated with the Project. For instance, the DEIS does not describe how often access roads will be graded and maintained. A maintenance plan is critical, as the new Burntlog Route would increase the average daily traffic along the existing Burntlog Road by 68 vehicles under alternative 1.²⁷⁷ Even though the DEIS states that these roads will be graveled, a clear maintenance plan to reduce risk of ruts and sediment runoff into stream channels must be established. Appendix D states that roads will not be used if ruts greater than four inches are created, but the DEIS fails to explain how ruts, blocked culverts, and the need for maintenance will be monitored or how often maintenance will occur. 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.
- The DEIS lacks information regarding how much traffic-related dust, erosion and HDR, sedimentation would be caused by the Project. The amount of fugitive dust that will be produced under each alternative needs to be detailed. Alternative 1 is predicted to produce sedimentation and dust within the normal range of properly maintained Forest roads.²⁷⁸ However, the DEIS does not quantify the normal range of sedimentation and dust from properly maintained Forest Service roads. What is the normal range, how will dust and sedimentation be monitored, and what actions will be taken if the levels exceed the normal range? Additionally, new stream crossings, culverts, roads, and increased traffic must be included in models to quantify the increase in dust and sedimentation from the Project.
- The DEIS inadequately addresses dust abatement needs and plans. The Forest Service requires that dust abatement on access/haul roads would be applied in a 10-foot swath down the middle of any road within 25 feet from surface water.²⁷⁹ However, the Tribe does not consider this to be an acceptable dust mitigation measure, particularly on 87 foot-wide haul roads. More rigorous protocols are necessary for reducing dust and runoff from entering into streams from all roads associated with the Project. To further reduce risk of dust, the DEIS states plans to water the Burntlog Route to mitigate dust emissions during dry months.²⁸⁰ How often this will occur and from where would the water be taken?
- The DEIS does not adequately address the risk to ESA-listed fish related to major erosion events on roads associated with the Project. The DEIS includes slope stability analyses on areas such as pit slopes, the TSF dam and the Hangar Flat DRSF, but fails to include information regarding roads. 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 that travel through steep terrain. The DEIS insufficiently states that “The majority of the Burntlog Route alignment would not be impacted by significant mass

²⁷⁷ *Id.* at ES-34.

²⁷⁸ *Id.* at 4.9-140.

²⁷⁹ *Id.* at 4.9-50.

²⁸⁰ *Id.* at 4.9-50.

wasting hazards; however there is potential for slumping or rockfall in several sections which could impact road construction²⁸¹.²⁸² In the DEIS, landslides, rockfalls, and avalanche paths were quantified using Google Earth imagery.²⁸³ The Forest needs to analyze risk of landslides using more rigorous methods, such as landslide susceptibility or landslide hazard modeling. The Forest uses Stability Index Mapping for this purpose. Additionally, the location of potential mass wasting areas should be described and their risks to ESA listed-fish species addressed.

- The DEIS inadequately analyzes sedimentation associated with the Project. All of the action alternatives would deliver sediment to live water from proposed road construction, maintenance, and increased traffic use. Models of sedimentation along Johnson Creek need to incorporate increased vehicle traffic, road widening, and the impacts from blading the road and clearing ditches. Increased sedimentation rates from winter sanding also should be quantified.
- The DEIS insufficiently analyzes sediment impacts to surface water from factors other than roads and the emptying of Yellow Pine pit lake. For example, the DEIS does not analyze sediment erosion from rerouting stream channels. Additionally, the DEIS mentions limiting effects of sedimentation and erosion with mitigation strategies and control techniques, but does not adequately detail these actions. With a large amount of disturbance proposed, the FEIS needs to include more robust quantification and analysis on sediment delivery to area streams.

Stochastic Events Not Fully Analyzed

- In addition to roads, the DEIS does not adequately address climate change and blasting with explosives as it relates to stochastic events near ESA-listed fish at the Project site. The DEIS 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.”²⁸⁴ However, the DEIS omits any analysis on increased risk of erosive events in light of climate change. Furthermore, the DEIS 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.²⁸⁵ 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.

²⁸¹ STRATA, Inc., *Geologic Hazard Assessment. Proposed Burntlog Access Road Alignment Valley County, Idaho* (2016). [Confidential; Not available to the public].

²⁸² DEIS at 4.2-12.

²⁸³ *Id.* at Appendix E.

²⁸⁴ *Id.* at 3.4-10-11.

²⁸⁵ *Id.* at 3.12-90.

- There is no assessment of geologic hazards on any of the mine access roads; 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 know for decomposing easily and not being competent or well suited for road bases.

Mine Impacts to Fishery Habitat

- Recent returns of wild steelhead and Chinook salmon have declined markedly. Returns for the last four years over Lower Granite Dam for wild steelhead have been 37% of the previous 10 years returns, with the most recent two years' returns being very low at only 26% of the same 10-year average. During this same time period, the last four years of returns of wild spring/summer Chinook salmon over Lower Granite Dam have been 40% of the previous 10 years, with the most recent two years' returns being very low at only 28% of the same 10-year average. With these recent declining returns, wild anadromous fish cannot afford additional pressures on their spawning and rearing life stages or habitat.
- While the critical habitat modeling of ESA listed species is flawed and lacks validation, the assessments provided in Table 4.12-66²⁸⁶ showing comparative loss of habitat by species for each of the alternatives are not linked to population viability. Direct loss of Chinook salmon critical habitat is 20.8% for alternatives 1, 2 and 4 and 26% for Alternative 3. Direct loss of bull trout critical habitat are predicted to be 27.5 percent in alternatives 1, 2 and 4 with an astounding 69.5 percent loss in alternative 3. An incomparable change in total useable steelhead trout intrinsic potential habitat for alternative 1 and 4 is a gain of 8 percent, alternative 2 is a gain of 13 percent, alternative 3 has a gain of 0.8 km 4.4 percent.
- The Fisheries and Aquatic Resources Mitigation Plan,²⁸⁷ Fishway Operations and Management Plan,²⁸⁸ Environmental Monitoring and Management Plan,²⁸⁹ and the Conceptual Stream and Wetland Mitigation Plan²⁹⁰ 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 revised DEIS or SEIS and FEIS should look to further reduce fishery habitat loss and provide meaningful mitigation that results in a net gain of habitat for listed fish species.

²⁸⁶ DEIS at 4.12-201-205.

²⁸⁷ Brown and Caldwell, Rio Applied Science, and Engineering, and Midas Gold 2019. Fisheries and Aquatic Resources Mitigation Plan.

²⁸⁸ Brown and Caldwell, McMillen Jacobs Associates, and BioAnalysts 2019. Fishway Operations and Management Plan

²⁸⁹ Brown and Caldwell 2019c Draft Stibnite Gold Project Environmental Monitoring and Management Program. Prepared for Midas Gold Idaho, Inc. Valley County, Idaho. April 19, 2019.

²⁹⁰ Tetra Tech, *Conceptual Stream and Wetland Mitigation Plan* (2019).

- Increased water temperatures resulting from the Project pose a significant risk to ESA-listed fish species. Relevant water temperature criteria from the IDEQ are as follows:²⁹¹
 - 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

- Currently, water temperatures at the site are 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.²⁹² The DEIS documents an increase in summer maximum temperatures across all reaches and alternatives. For instance, the upper EFSFSR would increase 0.5 - 9.0 degrees Celsius [°C] and the EFSFSR downstream of Sugar Creek would increase over 4°C.²⁹³ These temperature increases have the potential to block migration and movement of adfluvial and resident bull trout and reduce spawning success of listed fish species. 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.²⁹⁴

- To further exacerbate concerns regarding increased stream temperatures on fish, the DEIS did not incorporate climate change in stream and pit water temperature modeling results across alternatives. As noted, modeled temperature results would likely be higher if climate change had been a factor in the model.²⁹⁵ In Appendix J-2 Table 5, the Stream and Pit Lake Network Temperature Model was compared to NorWeST projected climate change stream temperatures in the Project area, showing an additional 1-2°C increase in the 20-year mine life with additional increases post mine closure. The FEIS needs to include downstream direct and indirect effects of elevated stream temperatures on fish species from the Project. The FEIS must include climate change impacts in modeled 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. Nowhere in the DEIS are reductions to bull trout, steelhead, and Chinook abundances projected as a result from elevated stream temperatures.

²⁹¹ IDEQ, *South Fork Salmon River Subbasin Temperature Total Maximum Daily Loads and Revised Sediment Targets* (2012).

²⁹² 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).

²⁹³ DEIS at ES-31.

²⁹⁴ *Id.* at Appendix J-2 at 10.

²⁹⁵ *Id.* at 4.12-66.

- The Stream and Pit Lake Network Temperature Model relies on riparian shading to moderate stream temperatures.²⁹⁶ It is unclear in the DEIS how riparian vegetation shading was used and weighted in the Stream and Pit Lake Network Temperature Model. 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 Midas Gold have had trying to grow vegetation at this site. Riparian shading model inputs as they relate to stream temperatures should include empirical data based on plant growth curves from past restoration efforts specific to the Stibnite site. The Stream and Pit Lake Network Temperature Model relies on the flawed hydrologic model for input data, thereby compounding data problems into some of the DEIS conclusions.

- The EFSFSR and its tributaries are a stronghold for bull trout.²⁹⁷ 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.²⁹⁸ All alternatives found in the DEIS elevate water temperatures past this 15°C threshold and have the potential to impact bull trout occupancy, migration, and spawning behavior.

- In relation to elevated stream temperatures impacts to fish the revised DEIS or SEIS or FEIS should:
 - Document direct effect 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 numbers 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 Stibnite area continues to exhibit impaired water quality due to historic mining activities. The DEIS notes most metals analyzed in mine site streams occur at concentrations below water quality standards with the exception of arsenic, antimony and mercury.²⁹⁹ With concentrations of these metals already elevated, it is unacceptable that water chemistry at the Project continues to further degrade post mine closure. As noted in the DEIS, antimony, arsenic and mercury seasonally increase in YP-SR-4 and exceed the mercury analysis criteria for mercury for stream reaches YP-SR-2, YP-T-11 and YP-T-6.³⁰⁰ The toxic metalloids arsenic and antimony, either individually or in combination,

²⁹⁶ *Id.* at 4.9-79.

²⁹⁷ 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.

²⁹⁸ 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.

²⁹⁹ DEIS at 3.9-22.

³⁰⁰ *Id.* at ES-31.

have caused adverse environmental effects in the vicinity of contaminated mines around the world.³⁰¹ Fish tissue samples listed in Table 3.12-24 highlight that Antimony, Arsenic and Mercury are currently being incorporated into fish tissue.

- 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 is currently exceeding the analysis criteria except in the upper EFSFSR.³⁰² Antimony is predicted to increase post closure at the Project across certain alternatives.³⁰³
- 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 liver. Arsenic concentrations currently exceed the analysis criteria in all assessment nodes except the upper EFSFSR.³⁰⁴
- Mercury is harmful and biomagnifies in the aquatic food web particularly when it is in the organic form (methylmercury). Mercury currently exceeds analysis criteria at 6 of the ten nodes and is predicted to increase from baseline across certain alternatives.³⁰⁵
- The revised DEIS or SEIS and 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 once a selected alternative is chosen. 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. Some specific examples; copper levels could reach 0.01 ppm (10 ppb) in Alternative 3. Olfaction in salmon is significantly harmed when copper levels in water are 5 ppb or higher. In Alternative 3, arsenic levels could reach 0.13 ppm (130 ppb). When arsenic levels are 5 ppb or higher, algal growth and biomass are adversely impacted, with repercussions for food webs.
- In relation to water chemistry impacts to fish, the revised DEIS or SEIS and 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.

³⁰¹ Dovick MA, Kulp TR, Arkle RS, Pilliod DS. 2015. Bioaccumulation trends of arsenic and antimony in a freshwater ecosystem affected by mine drainage. Environmental Chemistry doi:10.1071/EN15046.

³⁰² DEIS at 3.12-93.

³⁰³ *Id.* at ES-25.

³⁰⁴ *Id.* at 3.12-93.

³⁰⁵ *Id.* at 4.9-36.

- 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.
 - 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 DEIS, the Project will reduce the quantity of groundwater and surface water within the analysis area. Flow predictions under each alternative for specific streams and time frames have such wide ranges (i.e. 0-100%), that it is impossible to adequately gauge flow reduction impacts to fish. However, a no-flow scenario in Meadow Creek under Alternative 1 is unacceptable. 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 DEIS 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. The impacts to fish from reduced stream flows does not seem to encompass the entire water budget needed by the Project activities.
 - The DEIS 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.
 - Details are lacking on DRSF and TSF underdrain maintenance and water treatment, and information on post operation, long term plans for these drains and associated water treatment is missing.
 - Monitoring of operations. Closure and post-closure water treatment needs to be more fully explained. For example, the passive water systems referred to in the 2020 Water Quality Management Plan section 4.2.2 does not explain what the TSF consolidation

waters passive treatment system actually is.³⁰⁶ The EPA 2014 Reference Guide to Treatment of Mine-Influenced Water lists seven different passive systems explaining the technology, what constituents are treated, operations, long-term maintenance, system limitations, costs and effectiveness.³⁰⁷

- Passive treatment with biochemical reactors and wetlands is anticipated to be phased in during post-closure, when the flows are expected to be lower, and after pilot testing is accomplished during operations.³⁰⁸ It is also stated that using biochemical reactors and wetlands is infeasible for treating the entire flow during operations due to the large area required, but no other treatment plan is offered. Therefore, the water management plan and revised DEIS or SEIS need to expand with more specific descriptions of which passive treatments are going to be used rather than just stating the modeled predicted concentrations of mine-influenced waters. For example, would this proposed BCR be a sulfate-reducing bioreactor? If so, then it would be bacterially-based and requires a carbon source, this is not as passive as it sounds since it would require a continuous carbon source, such as manure or waste plant material (e.g. corn stalks/straw), but these are consumed in a non-linear fashion, and while they may work well initially, the carbon source becomes increasingly spent and the utilization decreases in manner that will not guarantee treatment.

Flaws in Fisheries Data used in DEIS

- The DEIS 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.”³⁰⁹ 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 surveys in the DEIS,³¹⁰ 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 DEIS. The discrepancies between the fish presence data in the DEIS 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 by the Project.
- Fish density data are presented inappropriately in the DEIS. The absence of bull trout and steelhead/rainbow trout from many sites suggest that sample locations and/or dates may have been chosen with unsuitable methods. Further, fish population density is being

³⁰⁶ Brown and Caldwell. 2020. Stibnite Gold Project Water Quality Management Plan at 4-7.

³⁰⁷ EPA. 2014. Reference Guide to Treatment Technologies for Mining-Influenced Water U.S. Environmental Protection Agency Office of Superfund Remediation and Technology Innovation. EPA 542-R-14-001.

³⁰⁸ Brown and Caldwell. 2020. Stibnite Gold Project Water Quality Management Plan at 6-5.

³⁰⁹ DEIS at 4.12-3.

³¹⁰ *Id.* at Appendix J-10, Tables J.10-1 through J.10-5.

displayed comparatively by stream reach conducted in different years.³¹¹ Density is related to cohort strength and should not be compared across different years.

- The effect on surface water quality from sedimentation and erosion has been insufficiently analyzed. The DEIS notes qualitative changes in Functional Index,³¹² but predicted changes in sediment and turbidity values are not quantified. The FEIS needs to quantify changes to sediment and turbidity.
- The DEIS 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 DEIS details alterations to available habitat, streamflow and water temperature for specific stream reaches and through the full timeline of mining operations. However, the DEIS 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 DEIS 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.
- The DEIS 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 DEIS are flawed due to being fit with a dearth of empirical data; primarily relying on modeled input data that may lead to 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. The FEIS needs to include an analysis of empirical versus modeled data to ascertain what level of accuracy and precision are inherent in the modeled input data. Further, the revised DEIS or SEIS and FEIS needs to report model predictions with associated error or uncertainty (e.g., 95% confidence intervals or a range of plus/minus one standard error). 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.

³¹¹ *Id.* at Appendix J-10, Table J.10-4.

³¹² *Id.* at 4.12-4 and 4.12-9.

- The Intrinsic Potential model attempts to broadly classify the likelihood of stream use by Chinook salmon and steelhead based on coarse geomorphic stream characteristics. The intrinsic potential model may not be the most applicable or appropriate model to assess direct impacts to fish populations, because it does not indicate actual stream reach use or link explicitly to current or future fish production, capacity and productivity. For the revised DEIS or SEIS and FEIS, the Forest should consider using integrated habitat and life-cycle models which directly tie habitat conditions with potential capacity at all life-stages to assess potential impacts from mining and related activities.
- As included in the DEIS, the Intrinsic Potential analysis is 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.³¹³ However, the Intrinsic Potential 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.³¹⁴ 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 distribution 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.³¹⁵ The DEIS 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 Critical Habitat analysis is flawed, due to incomplete data used in the model. Chinook salmon and steelhead utilize different habitat types throughout their life-cycle. Identifying critical habitat using observations of a single life-stage grossly underestimates the necessary habitat needed for the species survival. For instance, the Critical Habitat model³¹⁶ does not include the locations of surveyed Chinook salmon redds. The Nez Perce Tribe and Idaho Department of Fish & Game have been spatially surveying Chinook salmon redds in the SFSR 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 missing the many Chinook salmon redds that have been surveyed in the SFSR, EFSFSR, Sugar Creek, Burntlog Creek, and Tamarack Creek. The omission of Chinook salmon redd data skews the Critical Habitat analysis, by ignoring a major component of all the habitat used by Chinook salmon.

³¹³ *Id.* at Appendix J-4, Table 3, page 10.

³¹⁴ *Id.* at Appendix J-4, Table 4 and 5, page 13.

³¹⁵ *Id.* at Appendix J-4, Tables 6-8, pages 14-15 .

³¹⁶ *Id.* at Figure 3.12-5 and Appendix J-6 Figure 2.

- The Occupancy Model is flawed because it misuses the original model that was built for a different scale, and fit with data primarily from disparate river systems and species interactions. The Occupancy Model in the DEIS uses the same model formation and parameters estimates developed by Isaak (et al. 2017).³¹⁷ However, the scale of the Isaak (et al. 2017) study was 399,000 km², which is completely incongruent with the 43 mi² (111 km²) size of the DEIS analysis area.³¹⁸ The Isaak (et al. 2017) 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 DEIS. In fact, using the exact occupancy model parameter estimates from Isaak (et al. 2017) is inappropriate for the new higher resolution and modeled input data used in the DEIS analysis. To make the analysis more ill-fitting, the Isaak (et al. 2017) model formation and parameter estimates was developed with fish occurrence data collected primarily in western Montana,³¹⁹ 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. 2017) model only included a paltry amount of the data from the SFSR watershed, it is unclear why the occupancy models were not refit to include all the available SFSR data. For instance, Idaho Department of Fish & 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 DEIS Occupancy Model. For these reasons of scale and geographic discrepancy, and missing empirical data, the DEIS Occupancy Model is fallacious. In the revised DEIS or SEIS and 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 Occupancy Model distance-weighted average occupancy probabilities are miscalculated. The DEIS states that “To produce the distance-weighted average, the occupancy probability for each mine site OM reach was multiplied by the proportion of that reach’s stream length to the cumulative stream length of each stream segment.”³²⁰ However, this cannot be true. For instance, the total distance-weighted average occupancy probability for bull trout in stream segment 5 has to be greater than 8.3%. In stream segment 5, over 70% of stream reaches are rated ‘Medium-Low’ (>25%), ‘Medium-High’ (>50%), or ‘High’ (>75%),³²¹ therefore must have an occupancy probability rated greater than 0.25. In the revised DEIS or SEIS and FEIS, the Forest should either recalculate Occupancy Probabilities correctly or clarify the methods used to calculate distance-weighted average occupancy probabilities.
- The analysis of Chinook salmon streamflow/productivity in the DEIS is flawed, by misusing an observational model developed for a different river system, different

³¹⁷ Isaak, D. J., Wenger, S. J., and M. K. Young. 2017. Big biology meets microclimatology: defining thermal niches of ectotherms at landscape scales for conservation planning. *Ecological Applications*, 27(3): 977-990.

³¹⁸ DEIS at Appendix J-7, Sections 2.0 and 3.0.

³¹⁹ *Id.* at Appendix J-7, page B-3.

³²⁰ *Id.* at Appendix J-7, Section 5.1.

³²¹ *Id.* at Appendix J-7, Table 5.

conditions, and different scale. The memorandum from the National Oceanic and Atmospheric Administration³²² only describes the basic relationship between Johnson Creek Chinook salmon and streamflow and ignores confounding variables which more accurately explain the variation in Chinook salmon productivity. Extrapolating this Johnson Creek model to the upper EFSFSR watershed is deceptive, due to the drastic differences in habitat and Chinook salmon populations between the two river systems and assuming headwater streamflow is the root driver of juvenile and adult productivity.³²³

- Additionally, the DEIS use of the streamflow/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 productivity needs to be considered with other habitat degradation incorporated into the analysis. Lastly, the streamflow/productivity model was constructed for the entirety of Johnson Creek. Using the model for dissected reaches within the Project proposal is a misuse of the model due to the different scale for which it was constructed. Overall, the DEIS Chinook streamflow/productivity analysis is a gross abuse of the original model.

Fishery Tunnel Concerns

- The proposed EFSFSR fish tunnel under Alternatives 1, 2, and 3 would provide passage for all four 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.³²⁴ This assumption of fish passage is not supported by the literature referred to in the DEIS. 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,³²⁵ not an acceptable percentage for ESA-listed fish in the SFSR watershed.
- The 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.”³²⁶ This literature is questionable for use of comparison to the effectiveness of the proposed fishway at Stibnite.
- The Midas Gold Design Feature has an alternative to the fishway in the EFSFSR tunnel Midas Gold to “provide adult passage by trap and haul if needed. 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

³²² *Id.* at Appendix J-5, Appendix A.

³²³ *Id.* at Appendix J-5, page 5.

³²⁴ *Id.* at 4.12-3.

³²⁵ Gowans, R. D. , J. D. Armstrong, I. G. Priede, S. Mckelvey. 2003 Movements of Atlantic salmon migrating upstream through a fish-pass complex in Scotland. *Ecology of Freshwater Fish* 12: 177-189.

³²⁶ Wollebaek, J., J. Heggenes and K.H. Roed. 2011. Population connectivity: dam migration mitigations and contemporary site fidelity in arctic char. *BMC Evolutionary Biology* 2011;11:207.

operations”.³²⁷ More detailed explanation and work plan is necessary to work out the details of when and how to truck adult fish.

- There is some question regarding the effectiveness and efficacy of the EFSFSR tunnel to pass fish. “[E]ven after close consultation and collaboration with [National Marine Fisheries Service] (“NMFS”), meeting applicable NMFS passage criteria and guidelines, and executing all potential adaptive management measures, there exists a reasonable probability that the project will not be able to volitionally pass fish safely, timely, or effectively”³²⁸

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 DEIS. The Tribe has worked to restore this important cultural and treaty resource since 2012, through releasing adult lamprey in the SFSR and Johnson Creek.³²⁹ The DEIS recognizes that Pacific lamprey are one of the native fish species within the analysis area.³³⁰ Nonetheless, the DEIS 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 DEIS omits analysis on impacts to Idaho giant salamanders (*Dicamptodon aterrimus*), which have been documented in the SFSR watershed.³³¹ 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.³³² Nonetheless, the DEIS 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 DEIS 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. Idaho Department of Fish & Game detected western pearlshell mussels in the EFSFSR, upstream of the Johnson Creek confluence. These mussels are particularly susceptible to degraded water quality from mining, as their life

³²⁷ DEIS at Appendix D-21.

³²⁸ US Fish and Wildlife Service. 2019. Comments on the Proposed Stibnite Gold Project – Tunnel Design, Operation, and Management. Letter dated October 3, 2019 from Christopher Swanson (USFWS) to Alan Haslam (Midas Gold) and Tawnya Brummett (Payette National Forest).

³²⁹ Brostrom et al. 2018. Pacific Lamprey Regional Implementation Plan for the Snake River Region: Lower Snake, Clearwater and Salmon Regional Management Units.
<https://www.fws.gov/pacificlamprey/Documents/RIPs/2018/2018.08.13%20SnakeRIP.pdf>.

³³⁰ DEIS at 3.12-15.

³³¹ Pilliod, D. S., Goldberg, C. S., Arkle, R. S. and L. P. Waits. 2013. Estimating occupancy and abundance of stream amphibians using environmental DNA from filtered water samples. Canadian Journal of Fisheries and Aquatic Sciences. 70: 1123-1130. [dx.doi.org/10.1139/cjfas-2013-0047](https://doi.org/10.1139/cjfas-2013-0047).

³³² Sepulveda, A. J. and W. H. Lowe. (2009). Local and Landscape-Scale Influences on the Occurrence and Density of *Dicamptodon aterrimus*, the Idaho Giant Salamander. Journal of Herpetology. 43:469-484.

span may reach as high as 100 years. The DEIS did not include any targeted surveys to detect whether western pearlshell mussels are present in or near the Project site. The DEIS also omitted any analysis on freshwater mussel populations that may occur 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.

- Aquatic macroinvertebrates need to be surveyed for inventory before and report on in the revised DEIS or SEIS and FEIS, 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 DEIS in several different sections in chapter 4.

Cumulative Effects for Fisheries

- 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.”³³³
- The existing baseline conditions of fish and aquatic habitat in and adjacent to the mine site would remain unchanged under Alternative 5³³⁴ as the Project mining operations would not occur. This is the only alternative with positive effects to fish.
- Inadequate subwatersheds are used in the cumulative effects analysis because the proposed Burntlog Route in Alternatives 1, 2, and 3 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.
- The geographic extent of the fisheries impact would be limited to the streams within the mine site and those adjacent to, or crossed by, the access roads.³³⁵ This misrepresentation of facts is found in the direct effects summary section of the DEIS by not considering downstream effects from water quality, water quantity, sedimentation, temperature or climate change into account.
- Assumptions stated in the DEIS 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

³³³ *Jones v. Nat'l Marine Fisheries Serv.*, 741 F.3d 989, 1000 (9th Cir. 2013)(quoting 40 C.F.R. § 1508.7).

³³⁴ DEIS at 4.12-196.

³³⁵ *Id.* at 4.12-24.

degree of uncertainty and can be limited in their predictive power.³³⁶ Yet many of the results in the DEIS are based on these models.

- 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.

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.
- Loss of access to traditional fishing grounds, then loss of harvest amounts to substantial and irreparable harm to Nez Perce treaty fishing rights.

Wildlife and Wildlife Habitat

- The Tribe raised several concerns over impacts to plants and wildlife in scoping comments, yet these were not identified as significant issues in the DEIS. As a consequence, none of the action alternatives were developed to minimize impacts to plant and wildlife habitat with the exception of Alternative 4 to reduce direct and indirect impacts to whitebark pine habitat. However, Alternative 4 would still pose adverse impacts to whitebark pine and to wildlife and wildlife habitat as well. To compensate for adverse impacts across all alternatives, the DEIS includes many mitigation measures. In some cases, though, the mitigation measures are not sufficient compensation for the amount of habitat loss, fragmentation, and disturbance that would occur under any alternative. Because the Forest Service has determined that the proposed actions would result in adverse effects to wildlife (e.g. wolverine³³⁷) and wildlife habitat (e.g. loss of vegetation in perpetuity),³³⁸ the Tribe requests that the Forest identify wildlife and wildlife habitat as a significant issue.

³³⁶ *Id.* at 4.12-3.

³³⁷ DEIS at 4.13-21.

³³⁸ DEIS at 4.10-5.

- For wildlife and wildlife habitat, the important differences among the action alternatives lie in the acres of habitat loss, the amount and location of the disturbance from noise and human activity, and the location of the facilities. While these indicators provide some context and degree of impacts, the DEIS analyses failed to consider other indicators or key habitat features important to species and their habitats, such as snags, down woody debris, understory vegetation, habitat connectivity, heterogeneity, vegetation diversity, edge effects, security, and species interactions (e.g., primary and secondary cavity nesters, mutualistic relationships (e.g. whitebark pine and Clark’s nutcracker)). These habitat features become glossed over because the impacted acres are lumped by tree size class and canopy cover by PVGs. This makes it difficult to understand and visualize the impacts (all the figures are in a separate document (Appendix K) and not embedded within Chapter 4) under each alternative. For example, the DEIS fails to identify the importance of spatial configuration of mature forest and openings to fisher habitat within the project area. Increasing the amount of open areas within a landscape can have adverse impacts to fisher; connectivity of mature forest is a key ecosystem characteristic of fisher habitat,³³⁹ yet the DEIS does not evaluate these habitat features. The models are also problematic in characterizing pileated woodpecker, flammulated owl, boreal owl, great gray owl in that they do not account for special habitat features, and thus, fail to adequately represent habitat and are not fully interpreted in light of the Project’s actions. Special habitat features such as large snags, hollow live trees, and large dead and downed trees for foraging are not represented in the model for pileated woodpecker.³⁴⁰ The DEIS also lacks snag estimates and whether or not they are meeting snag requirements for wildlife species, such as flammulated owls.³⁴¹ 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.³⁴² 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.³⁴³ The DEIS fails to elaborate beyond this clarification in Chapter 4.13 for great gray owls.
- The DEIS also failed to evaluate belowground ecosystems, terrestrial invertebrates, other big game (e.g. moose), and culturally important wildlife species, failed 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 DEIS failed to analyze impacts to large or medium-size class forested stands that have species composition required to achieve old forest habitat for applicable PVGs. According to the Boise and Payette National Forests Plans, management actions within large or medium-size class forested stands³⁴⁴ that have the species composition required to achieve old forest habitat for the applicable PVGs (Boise Forest Plan, Appendix E definition) shall

³³⁹Sauder, J. D. and Rachlow, J. L. 2014. Both forest composition and configuration influence landscape-scale habitat selection by fishers (*Pekania pennanti*) in mixed coniferous forests of the Northern Rocky Mountains. *Forest Ecology and Management*. 314: 75-84.

³⁴⁰ DEIS at 3.13-69.

³⁴¹ DEIS at 3.13-58.

³⁴² DEIS at 3.13-50.

³⁴³ DEIS at 3.13-61.

³⁴⁴ Boise National Forest Land and Resource Management Plan. 2010 amended. Appendix A.

contribute to or not preclude restoration of old forest habitat (Boise National Forest Plan Standard WIST 09). The DEIS failed to analyze actions that would not retain forest stands that meet the definition of old forest habitat for the applicable PVGs (Boise Forest Plan Appendix E), management actions are permitted in such stands as long as they will continue to meet the definition of old forest habitat (Boise National Forest WIST 08). The Project area provides habitat for wolverine, flammulated owl, Columbia spotted frog, fisher, and western toad that all have high climate change vulnerability scores in the Intermountain Region,³⁴⁵ yet the DEIS 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 and light, and associated impacts to wildlife and wildlife habitats. The Tribe is especially concerned about the construction and use of the Burntlog Route under Alternatives 1, 2, and 3 because of adverse impacts to wildlife and vegetation. In terms of wildlife habitat loss, Alternative 3 would have the most habitat loss (3,610 acres). Alternative 4 would have the smallest amount of habitat loss (3,219 acres), with 391 fewer acres than Alternative 3 due to the elimination of the Burntlog Route, which also would substantially reduce the magnitude and extent of impacts on most wildlife, especially wolverine, big game, and migratory birds. The DEIS relies heavily on the mitigation measures to compensate for this habitat loss, yet there is little evidence that mitigation measures were taken into consideration in the actual analysis to determine if they will minimize impacts. The DEIS fails to discuss the “so, what” element of an effects analysis. The DEIS needs to interpret and support (with 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 DEIS fails to fully incorporate and analyze components of the mitigation measures and the RCP. Mitigation measures are inadequately referenced and not analyzed for their effectiveness in the DEIS. The Forest Service needs to include project design features that protect active migratory nests that are discovered during construction, operation, and reclamation. This includes wildlife that may nest or take residence on/in mining infrastructure and nests located within the active mining zones. Midas Gold should provide training about wildlife, including migratory birds, to minimize impacts during all phases of the project. To ensure compliance with the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act, the Tribe requests that Midas develop a conservation plan that lists migratory birds of concern as a surrogate for all migratory birds potentially impacted by the Stibnite Gold 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.

³⁴⁵ Friggens et al. 2018 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. pp. 264-315.

- 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.³⁴⁶ 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 aforementioned 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 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.³⁴⁷ In contrast, many restoration projects deemed successful do not persist because one or more processes are absent.³⁴⁸ 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.³⁴⁹

³⁴⁶ 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.

³⁴⁷ Herrick, J. E., Schuman, G. E., and Rango, A. 2006a. Monitoring ecological processes for restoration projects. *Journal for Nature Conservation* 14: 161-171.

³⁴⁸ Herrick 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 278–304.

³⁴⁹ Gann et al. 2019. *International principles and standards for the practice of ecological restoration*. Second edition. *Restoration Ecology* 27: S1-S46.

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.”³⁵⁰ Permanent loss of timber resources would occur under all action alternatives. The DEIS failed to consider NFMA requirements for reforestation on lands suitable for timber production. There is no mention in the DEIS how timber would be harvested and how it would impact other resources such as soils (e.g. detrimental disturbance and Total Soil Resource Commitment), 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...”³⁵¹ which seems 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.”³⁵² The Tribe would like to know how the action alternatives comply with NFMA policies and Forest Plan directives related to timber resources.

Access and Transportation

- Public and tribal access will be restricted by the Project. Each alternative poses slightly different options for access through and around the mine site. Alternative 4 does not offer the Burntlog Route, only the Yellow Pine route is available. None of the options except for Alternative 5 are acceptable to provide access to the large 1,879 - 2,071 acre³⁵³ mine site area, most of which is on Federal Forest Service lands.
- Under the action alternatives, total closures of half-day to multiple days could occur during construction work on Stibnite Road between Yellow Pine and the mine site, part of Thunder Mountain Road, and Burntlog Road.³⁵⁴ No public or tribal access through the mine site during operations.³⁵⁵ After closure, a service road would be established over the backfilled Yellow Pine pit to allow public access through the reclaimed site and connect Stibnite Road (CR 50-412) to Thunder Mountain Road (FR 50375).
- Public access road options through the mine site under Alternative 2 would provide motorized access to Thunder Mountain Road (FR 50375) when other public access roads are blocked by mine operations.³⁵⁶ Under Alternative 4, the public would share Yellow

³⁵⁰ NFMA at Section 6(g)(3)(C).

³⁵¹ RCP at 2-1.

³⁵² Forest Service Manual 2840.3.

³⁵³ DEIS at ES -14 - 17.

³⁵⁴ *Id.* at 2-21.

³⁵⁵ *Id.* at 2-157.

³⁵⁶ *Id.* at 2-84.

Pine Route with mine related traffic transporting personnel, materials, and supplies to the mine site during operations.

Cultural Resources

- Overall, the DEIS fails to adequately discuss cultural resources or analyze the potential impacts to them from any of the proposed alternatives. This is especially striking for ethnographic resources significant to the Nez Perce Tribe. If the Forest permits the Project, the Forest needs to continue to consult and coordinate with the Tribe to identify potential impacts, and agree on ways to avoid, minimize, or mitigate these impacts.
- Section 3.17.3.1.1 Precontact Period: The authors of this section seem confused about the cultural history of this region. The regional chronologies cited by the authors focus on Southern Idaho and the Great Basin. This obscures the ethnographic and archaeological evidence that the Project area is clearly within the Columbia Plateau cultural area, not the Great Plains or the Great Basin. Highlighting Plano points and pottery that have not been found here is misleading, and diminishes the Nez Perce identity of this place.
- Section 3.17.3.1.2 Ethnographic Period: This section begins with the statement, “Ancestors of the Nez Perce Tribe, Shoshone-Bannock Tribes, and the Shoshone-Paiute Tribes were the aboriginal inhabitants of this region of Idaho.” This is factually incorrect, as the Indian Claims Commission (Docket No. 175) adjudicated the Nez Perce exclusive occupancy and use area, which includes the project area.
- The authors include postulated pre-contact population density for the three tribes in this section and in Section 3.24. It is unclear if these estimates have always been debatable, but more importantly in this context, how is this information relevant to the Project?
- Section 3.17.3.2 Cultural Resource Investigations: The discussion of cultural resource investigations only covers archaeological surveys identified in the SHPO database or conducted for the Project. It omits any discussion of built environment studies or the ethnographic resources. The remaining discussion of the archaeological surveys of the Project area is not very helpful in understanding the work commissioned by Midas Gold. Lahren (2017) inconsistently reported the number of surveys his staff completed, listing different numbers of surveys in different sections of the report. It is also unclear who exactly conducted the surveys, since none of the archaeological crew was identified, other than the lead author. AECOM’s task was largely to aggregate and complete these numerous studies.
- Section 3.17.3.2.1. Cultural Resources: The 39 cultural resources include archaeological and built environment resources, including the Stibnite Historic District, which is listed on the National Register of Historic Places. Although the authors state that the five of the cultural resources “have been destroyed through forest fires, development on private land, or dam failure.” It is unclear what these five resources are, or when the destruction occurred. Twenty-eight resources were determined not eligible for NRHP listing, and

therefore must be considered in the NEPA and NHPA analysis, but these resources are not listed or described in the DEIS, so it is difficult to comment on these resources.

- There is some irony that the DEIS states that precontact site 10VY1488 cannot be shown because resources can be damaged or destroyed by disclosure. The DEIS alternatives anticipate this site being destroyed to enable Idaho Power Company to build a transmission line to the Project, so the site will not be protected regardless of disclosure.
- Section 3.17.3.2.1.1 Stibnite Historic District: The Forest and SHPO agree that the Stibnite Historic District does not retain integrity, so is no longer eligible for the National Register of Historic Places. Although the authors acknowledge that the contributing elements of the district have been destroyed by subsequent activities. It would be helpful to describe the decisions and actions that enabled the destruction of contributing elements of the district. As it is written now, it appears that the Forest feels that the important issue is that the site has been destroyed, so no longer warrants consideration, but the Forest does not need to reflect on how this site got destroyed. This seems like a critical step; NHPA directs federal agencies to consider the effects of their actions on historic properties, and clearly this did not happen here.
- Section 3.17.3.2.2 Traditional Cultural Properties and Cultural Landscapes: The Nez Perce Tribe conducted a traditional use study of the project area to identify areas of concern that could be impacted by the Project. The Tribe identified many locations and resources that could be affected, but the study funding did not allow for formal documentation as traditional cultural properties. The Tribe recommended additional consultation on the Project and additional studies for areas that had not been previously studied, specifically the Forest Service Road NF-447 (the “Burntlog Road”) and Forest Service Road 50-375 (Thunder Mountain Road) corridors, and the areas that will be opened to winter recreation by improvement of these roads. The Idaho Power transmission lines between Warm Lake and Cascade Lake. utility corridor. Public Health and Safety.

Section 4.21 Social and Economic Conditions

This analysis is biased toward the Project and clearly fails to identify, evaluate and disclose the Tribe’s social and economic contributions to the area. As the Forest is aware, the Tribe has a DFRM office in McCall that employs tribal members and non-Indians who live in the area. The Tribe has also implemented millions of dollars of habitat restoration efforts in the SFSR watershed aimed at recovering fish runs to protect and advance the Tribe’s treaty-reserved rights. These efforts not only benefit tribal members, but the surrounding communities who not only engage in fishing and other aquatic-related activities; but also depend on recreation and tourism which generates millions of dollars for the local economy. Tribal members also engage in authorized over-the-bank treaty fish sales. In addition, the Tribe recently purchased Zim’s hot springs in Valley County which also provides jobs and attracts visitors to the area.

This section also requires substantial revisions to identify, evaluate, and disclose the social and economic impacts to the Tribe. These impacts not only include substantial loss of treaty-reserved

access to the are; but also likely include direct and indirect losses resulting from the Tribe's inability to engage in ongoing fishery co-management activities in the area; losses resulting from restricted or denied harvest opportunities and losses/harm to the Tribe's intrinsic cultural values and unique connections to the area.

Section 4.22 Environmental Justice

Executive Order 12898 requires federal agencies to identify minority and low-income populations potentially affected by a project. It also requires federal agencies to assess whether any project alternatives would cause a disproportionate adverse impact on the population(s), such as displacement, changes in existing resources or access, or community disruption. Agencies must also explore potential mitigation measures for any adverse environmental justice effects.

In light of these requirements, the Forest must describe in the DEIS its steps to: (1) fully analyze the environmental effects of the proposed Project on minority communities and low-income populations; and (2) present opportunities for affected communities to provide input into the NEPA process. The Forest should also specify whether it is meeting the requirements of the Forest's environmental justice strategy.

The Forest's environmental justice analysis is lacking. It fails to fully analyze environmental effects on the Tribe as a unique government and affected community with treaty-reserved rights to access and use, co-manage and remove resources from the area, both on public and private lands. This section also contradicts other findings in the DEIS acknowledging known impacts to the Tribe's treaty-reserved rights and resources through the use of qualifiers impacts such as "may," "likely to be impacted," and "greater potential to be disproportionately impacted."³⁵⁷ Moreover, this section does not specify whether it is meeting the requirements of the Forest's environmental justice strategy.

Special Designations: Wilderness, Wild & Scenic, Inventoried Roadless Areas, Research Natural Areas

- Johnson Creek and Burntlog Creek are eligible for designation as Wild and Scenic Rivers (recreational and wild, respectively), and the South Fork of the Salmon River is suitable for designation as a recreational Wild and Scenic River.³⁵⁸
- Preliminary mitigation measures required by the Forest include "Conduct a suitability study for the Johnson Creek eligible river corridor to its assigned Recreational classification standards prior to project implementation."³⁵⁹ Burntlog Creek is an eligible river, too, but there is no mitigation measure (aka suitability study) proposed. Why?
- All three WSRs (Johnson, Burntlog, and SFSR) each have a forest plan standard that would likely be violated:

³⁵⁷ DEIS at 4.22-8.

³⁵⁸ *Id.* at 3.20-9.

³⁵⁹ *Id.* at Appendix D-19.

- Manage the South Fork Salmon River to its recreational classification standards, and preserve its free-flowing status and ORVs until the river is formally designated by Congress or released from further consideration as a Wild and Scenic River candidate. BNF-19 #1907.
- Manage the Burntlog Creek eligible river corridor to its assigned classification standards, and preserve its outstandingly remarkable values and free-flowing status until the river undergoes a suitability study and the study finds it suitable for designation by Congress, or releases it from further consideration as a Wild and Scenic River. BNF-20 #2001.
- Manage the Johnson Creek eligible river corridor to its assigned Recreational classification standards, and preserve its ORVs and free flowing status until the river undergoes a suitability study and the study finds it suitable for designation by Congress, or releases it from further consideration as a Wild and Scenic River. BNF-21 #210.
- Will these suitability and eligibility studies be conducted through the NEPA process? Would a decision be made before project implementation and how would these designations affect the access routes into the mine?
- The DEIS does clarify how new route construction through three Inventoried Roadless Areas³⁶⁰ for mineral purposes would also authorize public access. The public will use the Burntlog Road when the Yellow Pine Road is closed during operations and blasting. “Public access allowed on Burntlog Route to Thunder Mountain Road (FR 50375) through the mine site”³⁶¹ for alternatives 1-3. Public motor vehicle use would be allowed on Burntlog Route when other public access roads are blocked by mine operations.³⁶²

Chapters 3 and 4 Tribal Rights and Interests

- Revisions are needed throughout each section of Chapter 3 Affected Environment to acknowledge and include under the “Relevant Laws, Regulations, Policies, and Plans” the Tribe’s 1855 Treaty including the following analysis areas: Fish Resources and Fish Habitat, Wildlife and Wildlife Habitat, Timber Resources, Land Use and Management, Access and Transportation, Social and Economic Conditions, and Environmental Justice.
- The Tribe’s rights are well-established. The “usual and accustomed” treaty fishing right held by the Tribe, under the 1855 Treaty, is grounded in principles dating back to the United States Supreme Court decisions in *U.S. v. Winans*³⁶³ and *Seufert Bros. Co. v. U.S.*³⁶⁴ A “usual and accustomed” fishing right, for example, is not defeasible: it is permanent and includes the right to cross private property as necessary to exercise the

³⁶⁰ DEIS at 2-19.

³⁶¹ *Id.* at 2-5.

³⁶² *Id.* at 2-19.

³⁶³ 198 U.S. 371 (1905)

³⁶⁴ 249 U.S. 194 (1919).

right when surrounding land ownership changes, and is not limited to the Tribe's ceded area. And as affirmed in *Washington v. United States*,³⁶⁵ 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.

- As applied to the Project area and SFSR watershed, the Tribe's rights are also well-established. 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. The U.S. Congress established the Indian Claims Commission in 1946 to adjudicate Indian tribes' claims against the federal government 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."³⁶⁶ 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. Any treaty right other Indian tribes purport to have within the Project area is 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.
- In addition to the Indian Claims Commission's decision, the Tribe and United States also 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, for example, included an affidavit from T. Weber Greiser, an archaeologist, who researched anthropological and historical resources and conducted interviews with Nez Perce Tribal members to determine the evidence available regarding fishing, hunting, and gathering by members of the Tribe, including the identification of the "usual and accustomed fishing places" of the Tribe.³⁶⁷ Mr. Greiser's affidavit confirms that that stream reaches within the SFSR watershed area, including stream reaches within the Project area, contain usual and accustomed fishing places.³⁶⁸

³⁶⁵ 138 S Ct. 1832 (2018).

³⁶⁶ 18 Ind. Cl. Comm. 1 at 128.

³⁶⁷ 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).

³⁶⁸ *Id.* Ex. A, at 70 (map depicting Nez Perce usual and accustomed fishing places based on known archaeological, ethnographic, and historic references).

- Section 3.24.1 Introduction and Scope of Analysis. The assertion that the analysis area is located within the “traditional subsistence range” of the Nez Perce Tribe, Shoshone-Bannock Tribes, and Shoshone-Paiute Tribes is erroneous and without support to the extent it purports to attach to the Project area any historical or legal right, title, or interest of the Shoshone-Bannock Tribes or Shoshone-Paiute Tribes.”³⁶⁹
- “Tribal rights” is imprecisely defined to mean “rights legally accruing to a tribe by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order, or agreement, and which give rise to legally enforceable remedies.”³⁷⁰ This term should be corrected to reflect, “rights held by a tribe by virtue of inherent sovereign authority...” etc.
- 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].”³⁷¹ 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.
- 3.24.2 Relevant Laws, Regulations, Policies, and Plans: The statement, “federal trust requires federal agencies to give full consideration of tribal rights and interests, particularly reserved rights, to managing the lands under their stewardship” is a distortion of the law and does not suffice.³⁷² These treaty-based assurances are not mere factors federal agencies can take into account in making land management decisions. The Tribe’s treaty rights give rise to enforceable, non-discretionary legal obligations on the part of the federal government that extend beyond “full consideration.” The point here is that meaningful and accountable action, not mere consideration, is necessary to protect the Tribe’s treaty rights.
- 3.24.2.1 Nez Perce Tribe Treaties (1855 and 1863): The first sentence should be corrected to read, “The Nez Perce Tribe Treaty of 1855 established a 7.5-million-acre reservation and reserved rights to fish, hunt, gather, and pasture.” Following the 1855 Treaty language, the next 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:

³⁶⁹ *Id.* at 3.24-1.

³⁷⁰ *Id.*

³⁷¹ *Id.* at 3.24-1-2.

³⁷² *Id.* at 3.24-2.

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.

- Section 3.24.2.2 Shoshone-Bannock Tribes Treaty (1868): The Forest references Article 4, “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 (SBT) “reserved rights outside of established reservations, including hunting rights.”³⁷³

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 by the Indian Claims Commission.

The Forest’s interpretation of the SBT’s treaty rights to encompass off-reservation rights other than hunting is not supported by any federal court determination. While the SBT often cite *State v. Tinno*,³⁷⁴ 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 SBT fishing at the Yankee Fork of the Salmon River. The United States Supreme Court’s more recent decision in *Herrera v. Wyoming*³⁷⁵ 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 States. And while the treaty hunting language at issue in *Herrera* is identical to the language in the SBT’s 1868 treaty, nothing in the Court’s decision addresses the precise legal questions of whether SBT’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 DEIS.

- 3.24.2.3 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”³⁷⁶ and which the Forest asserts “establish various rights (or do not extinguish rights), which has led to complex unresolved claims and rights.”³⁷⁷ These references and accompanying characterization lack specific or verifiable evidence. The Tribe disputes the Forest’s rationale for including this information under “relevant laws, regulations,

³⁷³ DEIS at 3.24-5.

³⁷⁴ 497 P.2d 1386 (Idaho 1972).

³⁷⁵ 139 S. Ct. 1686 (2019).

³⁷⁶ DEIS at 3.24-6

³⁷⁷ *Id.*

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)”³⁷⁸ of the Shoshone-Paiute Tribes encompasses the Project area and SFSR watershed.

- Section 3.24.3.1 Nez Perce Tribe: First sentence states, “[t]he existing conditions in the context of American Indians refers to the reserved rights tribes have in the analysis area and how these rights are being exercised.” The should be corrected to identify the treaty-reserved rights of the Tribe being exercised.
- First sentence of first full paragraph on page 3.24-9 states, “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.” 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.”

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.”

- Section 3.24.3.4 Tribal Interests: This section requires substantial revision. The narrative lumps the “tribes” together into one aggregated entity using broad language and general conclusions about tribal interests - in many instances based on Nez Perce information and references - to arrive at broad generalizations about “tribal” uses that should not and cannot be used to support SBT or Shoshone-Paiute uses in the area (the SBT, according to the DEIS, has yet to submit an ethnographic study to the Forest).³⁷⁹ For example, citing only the Tribe’s cultural resource scholarship, the Forest identifies numerous culturally important fish, plant, and wildlife species within the analysis area.³⁸⁰ Yet, the Forest then takes this Nez Perce-specific information and characterizes it as “tribal” use and management of fish, wildlife, and plant resources.³⁸¹ In another example, Nez Perce cultural resource scholarship is referenced alongside other tribal scholarship to support a generalized statement that “there are areas throughout the Payette National Forest and the Boise National forest that have traditional, cultural, and spiritual significance to the tribes.”³⁸² Again, no clarification as to what tribe. The Forest needs to rewrite this section so that the Tribe’s interests are distinguished from, accurately described, and clearly traceable to, cultural resource scholarship and material the Tribe provided to the Forest.

³⁷⁸ DEIS at 3.24-2.

³⁷⁹ DEIS at 3.24-13 (characterizing SBT ethnographic study as “pending”).

³⁸⁰ DEIS at 3.24-13-14.

³⁸¹ DEIS at 3.24-14.

³⁸² *Id.*

- Section 4.24 Effects Analysis Indicators and Methodology of Analysis: The Forest needs to revise this analysis to fully evaluate and disclose the effects on the Tribe’s treaty rights. The Tribe questions why reference to the Tribe’s 1855 Treaty appears nowhere in Section 4.24. Even the word “treaties” appears only once in Section 4.24.4 Cumulative Effects (“Mining and other activities on federal lands have impacted tribal rights and interests primarily by restricting access, but also by removing natural resources protected under treaties.”).³⁸³ Regarding the required review of all impacts to the Tribe’s treaty rights, this includes not only the direct, indirect, and cumulative impacts of what is anticipated, but also a detailed review of the impacts under scenarios in which unanticipated, but possible, events/impacts may occur. For example, NEPA requires that the possible/potential impacts resulting from spills, breaches, leakages, etc. from all facilities/activities at the site must be fully reviewed in the DEIS.³⁸⁴ The Forest did not include this information.

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 fails to acknowledge the unique nature and scope of the Tribe’s treaty and other rights as applied to the analysis area.

- Section 4.24.2 Direct and Indirect Effects: Same comment as Section 4.24 above; the Forest needs to identify and disclose the direct and indirect effects of each alternative as applied to the Tribe’s unique treaty rights and interests.
- Section 4.24.7 Summary: Same comment as Sections 4.24.2 and 4.24 above as applied to the Tribe’s unique rights and interests.
- Section 4.24.2.1: The statement, under all alternatives, “Tribal access to certain areas would be restricted during the [Project’s] construction, operations, and closure and reclamation phases, preventing tribal members from exercising their off-reservation rights to hunt, fish, gather, and pasture in usual and accustomed areas, for a period of 20 years.”³⁸⁵ These effects to the Tribe and its treaty rights are absolutely egregious and unacceptable to the Tribe and amount to a clear violation of the Tribe’s treaty rights. Under established judicial precedent, the Forest lacks authority to authorize this harm to the Tribe’s treaty right under any action alternative and therefore needs to disclose how the Project may proceed despite the Forest’s recognition of the Project’s substantial harms to the Tribe’s 1855 Treaty.

³⁸³ DEIS at 4.24-6.

³⁸⁴ See *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*, 255 F. Supp. 3d 101 (D.D.C. 2017) (agency violated NEPA by failing to fully review impacts to Treaty-protected resources from pipeline spill in reviewing/approving pipeline that would cross tribal ceded treaty lands).

³⁸⁵ DEIS at 4.24-10.

- Change the forest sentence in this section to read, “All action alternatives would cause disturbances that *will* harm tribal resources and that *will* adversely affect tribal rights and interests.”
- This section states, “Tribal access to certain areas would be restricted during the [Project’s] construction, operations, and closure and reclamation phases, preventing tribal members from exercising their off-reservation rights...for a period of 20 years.”³⁸⁶ The Forest needs to revise this statement to clarify that Tribal access would be *precluded*, not just “restricted.”
- The Forest needs to provide more detailed information about the severity and temporal scope of the changes to fish, wildlife, and plant viability/availability for Tribal treaty harvest.

Overall Cumulative Effects

- “Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency... undertakes such other actions.”³⁸⁷ “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”³⁸⁸ “[I]n considering cumulative impact, an agency must provide ‘some quantified or detailed information; . . . [g]eneral statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided.’”³⁸⁹ This cumulative impact analysis “must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects.”³⁹⁰
- Table 4.1-2 in the DEIS lists reasonably foreseeable future actions in the vicinity of the project along with a brief description and approximate dates.³⁹¹ There needs to be a description of effects by these listed projects on the proposed alternatives.
- The DEIS should evaluate all access and haul activities related to the Project, and associated effects, that extend beyond the SFSR watershed analysis area, such as 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.

³⁸⁶ *Id.*

³⁸⁷ 40 C.F.R. § 1508.7.

³⁸⁸ *Id.*

³⁸⁹ *Ocean Advocates v. U.S. Army Corps of Engineers*, 402 F.3d 846, 868 (9th Cir. 2005) (alterations in original) (quoting *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379–80 (9th Cir. 1998)).

³⁹⁰ *Id.* (quoting *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1075 (9th Cir. 2002)) (internal quotation marks omitted).

³⁹¹ DEIS at 4.1-17.

- Wildfires are mentioned in the DEIS section 4.1.5.1 within³⁹² the immediate mine footprint area, but only as a list of past fires in the headwaters of the SFSFSR and Sugar Creek along with acreage. There needs to be a description of the effects of each wildfire on the project area. The 2020 Buck fire in the lower Johnson Creek subwatershed (19,477 acres) needs to be added with special attention as to predicted sedimentation rates to Johnson Creek. Fire removes vegetation, thus destabilizes the sensitive granitics by decreasing water retention of vegetation in the SFSR. This has consequences during spring run-off and typically contributes to scouring events and removal of existing vegetation. The DEIS cumulative effects lacks analysis, especially with respect to altered hydrologic regime as an indirect effect of wildfires and has negative consequences on increased water temperatures and decreased baseflows.

Forest Plan-Specific Amendments – Appendix A

The National Forest Management Act (“NFMA”) establishes substantive and procedural standards that govern the management of national forests.³⁹³ NFMA establishes a procedure for managing National Forest System lands using “Forest Plans,” which “provide a framework for where and how certain activities can occur in national forests.”³⁹⁴ First, the NFMA directs the Forest Service to “develop, maintain, and, as appropriate, revise” Forest Plans; second, it directs the Forest Service to ensure that all “resource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System lands” - are consistent with the Forest Plans.³⁹⁵

In 2012, the Forest Service updated its Forest Planning Rule, adopting new requirements for Forest Plans.³⁹⁶ The updated requirements in the 2012 Planning Rule apply to Forest Plans developed under the 1982 rule in certain circumstances.³⁹⁷ As the 2016 Amendment to the 2012 Planning Rule clarified, a substantive requirement from the 2012 Planning Rule applies to a Forest Plan amendment if that requirement is “directly related to the plan direction being added, modified, or removed by the amendment.”³⁹⁸ If the substantive requirement is directly related to the amendment, then the responsible official must “apply such requirement(s) within the scope and scale of the amendment.”³⁹⁹ A substantive requirement is directly related to the amendment when the requirement “is associated with either the purpose for the amendment or the effects (beneficial or adverse) of the amendment.”⁴⁰⁰ Also, “[t]he responsible official must determine that a specific substantive requirement is directly related to the amendment when scoping or NEPA effects analysis for the proposed amendment reveals substantial adverse effects associated

³⁹² *Id.* at 4.1-12.

³⁹³ See 16 U.S.C. § 1604.

³⁹⁴ *Sierra Club, Inc. v. U.S. Forest Serv.*, 897 F.3d 582, 600 (4th Cir. 2018) (quoting *Am. Wild Horse Pres. Campaign v. Perdue*, 873 F.3d 914, 919 (D.C. Cir. 2017); 16 U.S.C. § 1604(a)).

³⁹⁵ 16 U.S.C. § 1604(i).

³⁹⁶ See 2012 Planning Rule, 77 Fed. Reg. 21,162 (U.S. Dep’t of Agric. Apr. 9, 2012).

³⁹⁷ See 36 C.F.R. §§ 219.8–219.11.

³⁹⁸ 36 C.F.R. § 219.13(b)(5).

³⁹⁹ *Id.*

⁴⁰⁰ See 36 C.F.R. § 219.13(b)(5)(i).

with that requirement, or when the proposed amendment would substantially lessen protections for a specific resource or use.”⁴⁰¹

- NFMA includes direction to prevent watershed conditions from being irreversibly damaged and to protect streams and wetlands from detrimental impacts. The Organic Act of 1987 recognizes watersheds as systems that need to be managed to sustain their hydrologic function.
- The Forest’s proposed amendments do not comply with the 2012 Forest Planning rule. Appendix A offers no details on the proposed amendment or any effects analysis of the amendments. The DEIS does not state the reasoning behind the amendments nor do they address impacts outside the Stibnite mining district when there will be impacts beyond the mine from the access roads, traffic, water quality downstream, as well as air quality, wildlife and aquatic life impacts because of the proposed action. “The decision document for an amendment must include a rationale for the responsible official’s determination of the scope and scale of the amendment, which requirements within §§ 219.8 through 219.11 are directly related, and how they were applied.”⁴⁰²
- How is it possible to amend Payette Forest Plan-13 #1301 (Management Areas (MA) 13, MPC 3.1), Payette Forest Plan-1306 (MA 13, MPC 3.2), Boise Forest Plan-2010 (MA 20, MPC 3.2); Boise Forest Plan-2113 (MA 21, MPC 3.2); Boise Forest Plan-1919 (MA 19, MPC 3.2); and Boise Forest Plan 2005 (MA 20, MPC 3.1) Forest-wide standards with a project specific amendment? Approving a plan of operations is a management action that would degrade aquatic, terrestrial, and watershed resource conditions for a duration that would not only exceed the timeframes prescribed in this standard and post-reclamation, but would exceed them in perpetuity. This perpetual degradation of aquatic, terrestrial, and watershed resource conditions cannot be mitigated or amended as it violates the premise of land management.
- There are additional MAs adversely affected by these proposed Project specific amendments, such as MA 12, the South Fork Salmon River and MA 14, the FC-RONR Wilderness area. These proposed amendments would affect waters and lands outside of the management areas subject to the proposed plan amendments.
- How are Payette Forest Plan-13 #1302 and Boise Forest Plan-20 #2006 not listed in the proposed amendments? Approving plans of operations are management actions. Activities associated with the Project would degrade water quality and habitat for fish, wildlife, and plant species.
- Fish Passage Diversion Project Specific Amendment: The Fish Passage Diversion Project Specific Amendment is not meeting the 2012 planning requirement in the section 219.9 for Diversity of plant and animal communities. “Under Alternatives 1, 2, and 4, the Meadow Creek diversion that would not allow for fish passage would be in place for 10

⁴⁰¹ 36 C.F.R. § 219.13(b)(5)(ii).

⁴⁰² *Id.*

to 17 years. After that time, habitat for listed fish species in upper Meadow would be *permanently blocked*⁴⁰³ Also, Fiddle Creek fish passage would be *blocked in perpetuity*.

- Payette Forest Plan SWST09 states, “In fish-bearing waters, do not authorize new surface diversions unless they provide upstream and downstream fish passage and, if needed, include either fish screens or other means to prevent fish entrapment/entrainment.” No upstream fish passage would be provided in Meadow Creek. Why isn’t Payette Forest Plan SWST09 included in the amendments? How is this related to the mitigation measure FS-7, “Fish passage will be provided at all proposed and reconstructed stream crossings of existing and potential fish-bearing streams”⁴⁰⁴
- The Fish Passage Diversion Project Specific Amendment is not meeting the 2012 planning requirement in the section 219.9 for Diversity of plant and animal communities. “Under Alternatives 1, 2, and 4, the Meadow Creek diversion that would not allow for fish passage would be in place for 10 to 17 years. After that time, habitat for listed fish species in upper Meadow would be permanently blocked.”⁴⁰⁵
- If species of conservation concern (“SCC”) “have not yet been identified for a plan area and scoping or NEPA analysis for a proposed amendment reveals substantial adverse impacts to a specific species, or the proposal would substantially lessen protections for a specific species, the responsible official must determine whether that species is a potential SCC.”⁴⁰⁶ If so, the responsible official must apply the requirements of the 2012 rule with respect to that species as if it were an SCC. The DEIS fails to determine if any adverse impact to any species would require the responsible official to treat said species as a SCC under the requirements of the 2012 Planning Rule. Clarifying language provided in 2016 states that “the 2012 rule does not give a responsible official the discretion to amend a plan in a manner contrary to the 2012 Rule by selectively applying, or avoiding altogether substantive requirements within §§219.8 through 219.11 that are directly related to the changes being proposed.” If an analysis reveals that a proposed action causes substantial adverse impacts to a specific species, such as the fishway tunnel to the cutthroat trout or the Burntlog Route to wolverine, the responsible official must determine whether that species is a potential SCC. If so, the responsible official must apply the requirements of the 2012 Rule with respect to that species. The Tribe recommends working with the Tribe, Idaho Department of Fish and Game, and stakeholders to develop this SCC list.
- In addition to the specific Forest Plan amendment-related concerns outlined above, the Forest has not adequately explained why numerous other likely Forest Plan standard violations that the Forest identified and documented in the attached Forest-developed table titled “[Appendix A_PDEISv2_ForestPlanConsistencyReviewandAmendments]” and which the Forest provided to the Tribe in or around December 2019 is not included

⁴⁰³ DEIS at Appendix A-31.

⁴⁰⁴ *Id.* at Appendix D-2.

⁴⁰⁵ *Id.* at Appendix A-31.

⁴⁰⁶ 81 Fed. Reg. 90,726 (Dec. 15, 2016).

or addressed in the DEIS. Each of these Forest Plan standard violations, and accompanying Forest-developed rationales, is still valid based on the information in the DEIS and requires explanation and analysis by the Forest as to why the Project will not violate these standards and therefore NFMA.

Clean Water Act 404 (b) (1) Analysis Framework - Appendix B

Congress enacted the Clean Water Act (“CWA”) in 1972 to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”⁴⁰⁷ The CWA establishes several goals, including attainment and preservation of “water quality which provides for the protection and propagation of fish, shellfish, and wildlife . . .”⁴⁰⁸ To further its goals, the Act prohibits “discharge of any pollutant” into navigable waters except in accordance with the CWA terms.⁴⁰⁹

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”).⁴¹⁰ 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.”⁴¹¹

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.⁴¹²

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.”⁴¹³

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.⁴¹⁴ This substantive requirement mandates the Corps to select the least environmentally damaging practicable alternative).

⁴⁰⁷ 33 U.S.C. § 1251(a).

⁴⁰⁸ *Id.* § 1251(a)(2).

⁴⁰⁹ *Id.* § 1311(a).

⁴¹⁰ 33 U.S.C. § 1344; 40 C.F.R. pt. 230.

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

⁴¹² 40 C.F.R. § 230.10

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

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

- The Forest and Corps have included in the DEIS a CWA Section 404(b)(1) analysis with neither a completed application from Midas Gold. Based on the limited information provided in the DEIS, the Corps and Midas Gold have not demonstrated that the Project will comply with the Guidelines, including fully mitigating impacts, analyzing all alternatives, and compliance with applicable water quality standards and other requirements of the CWA.
- The Forest and Corps also failed to comply with the public notice requirements of the CWA and NEPA. One of the fundamental congressional “goals and policy” in enacting the CWA is to ensure full public participation in Corps and EPA permitting decisions: “Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program . . . shall be provided for, encouraged, and assisted by the Administrator and the States.”⁴¹⁵

In line with Congress’ goals and policy, the Corps’ regulations require that all proposed discharges be subject to “Public review and comment.”⁴¹⁶ “[T]he public notice must contain a statement explaining how impacts associated with the proposed activity are to be avoided, minimized, and compensated for.”⁴¹⁷ “Public notice is the primary method of advising interested parties of the proposed activity for which a permit is sought, and of soliciting comments and information necessary to evaluate the probable impact on the public interest. The notice must, therefore, include sufficient information to give a clear understanding of the nature and magnitude of the activity to generate meaningful comment.”⁴¹⁸

Mitigation Measures – Appendix D

Under NEPA’s implementing regulations, an EIS must discuss “appropriate mitigation measures.”⁴¹⁹ The definition of “mitigation” includes minimizing environmental impacts, rectifying impacts by repairing, restoring, or rehabilitating the affected environment, reducing or eliminating the impact over time through preservation or maintenance, and compensating for the impact by providing substitute resources.⁴²⁰ While NEPA does not require a complete mitigation plan, it must be discussed in sufficient detail to fully evaluate environmental effects.⁴²¹ While a “final” mitigation plan may not be required, “[p]utting off an analysis of possible mitigation measures until after a project has been approved, and after adverse environmental impacts have started to occur, runs counter to NEPA’s goal of ensuring informed agency decisionmaking.”⁴²²

⁴¹⁵ 33 U.S.C. § 1251(e).

⁴¹⁶ 33 C.F.R. § 332.4(b).

⁴¹⁷ *Id.* § 332.4(b)(1).

⁴¹⁸ 33 C.F.R. § 325.3(a).

⁴¹⁹ 40 C.F.R. § 1502.14(f).

⁴²⁰ *Id.* § 1508.20.

⁴²¹ *Laguna Greenbelt v. U.S. Dep’t of Transp.*, 42 F.3d 517, 528 (9th Cir. 1994).

⁴²² *Great Basin Resource Watch v. Bureau of Land Mgmt.*, 844 F.3d 1095, 1107 (9th Cir. 2016).

- Section 4.24.3 Tribal Rights and Interests: Mitigation Measures: Although not in Appendix D, the Forest proposes to “negotiate a binding agreement between the Forest and the affected tribe(s) if the agency identifies impacts to applicable tribal rights. The nature of this agreement would be dependent upon the type of impact, the type of resource that is affected, and the agreed upon measures to resolve impacts to tribal rights and interests. To fulfill its trust obligations, the Forest would develop the agreement to be consistent with the Federal Government’s legally enforceable fiduciary obligation to protect tribal rights, lands, assets, and resources.”⁴²³ This vague and unilateral pledge to enter into a future agreement to mitigate undisclosed environmental and other harms to the Tribe’s treaty rights and other interests caused by the Project does not satisfy NEPA.
- The mitigation measures are not sufficient compensation for the amount of habitat loss, fragmentation, and disturbance that would occur under any alternative. How are the design criteria suggested by Midas Gold going to be incorporated into the FEIS and how will their implementation be assured?
- The Forest Service required preliminary mitigation measures to simply consist of a list of 156 common-sense design features that are supposed to reduce and minimize adverse effects, but not to actually mitigate or offset these effects. These measures have no effectiveness rating or implementation monitoring proposed to go along with these, therefore they appear to be optional, at best.⁴²⁴
- Appendix D-2 Conceptual Stream and Wetland Mitigation Plan is insufficient with respect to mitigation of wetlands.⁴²⁵ Will there be enough surface and groundwater to support wetlands to be restored for compensatory mitigation?⁴²⁶
- The DEIS should also address mitigation as an alternative to achieving a stable landform such as using intervention techniques (e.g. wick drains and loading with waste rock or borrow material) to achieve stable landform conditions.

Reclamation and Closure Plan

- There are concerns about the lack of detail in the closure and post-closure plan, which is an essential part of the proposed action. Passive water treatment systems being considered are not explained in full and raise questions as to who is responsible and what happens after the biochemical reactor’s expected 5- to 15-year service life is over. Please explain the aerobic vertical flow wetlands and the polishing required. The passive water treatment system also would require either periodic excavation and removal of accumulated contaminants, or closure in place.⁴²⁷ These are important details expected to be solidified by the FEIS.

⁴²³ DEIS at 4.24-5-6.

⁴²⁴ DEIS at Appendix D-1.

⁴²⁵ *Id.* at Appendix D-2.

⁴²⁶ *Id.* at Appendix D-2 9-7.

⁴²⁷ DEIS at 2-75.

- The DEIS 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 DEIS 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 RCP itself raises questions relevant to the detail that should be expected for the DEIS. This RCP presents closure and reclamation plans commensurate with available mine plans, which are defined currently at a preliminary feasibility or Association for Advancement of Cost Engineering Class 4 level of detail.⁴²⁸ Accordingly, mining and reclamation methods have been established based on reasonable assumptions of technical, engineering, legal, operating, economic, social and environmental factors to support the assessment of environmental effects related to proposed mining and reclamation activities under NEPA. Site characterization, reclamation plans, and project financial estimates will be advanced to a Canadian National Instrument 43-101 Feasibility-level or Association for Advancement of Cost Engineering Class 3 level of detail during the effects-analysis and will be completed concurrent with the DEIS. The FEIS and Feasibility Study will be used to support development of the state closure and reclamation plans, financial sureties (bonds) and permits to the level of detail required in IDAPA 20.30.02 regulations.
- According to Tetra Tech (2019a), While the RCP focuses on land disturbance from on-site and off-site activities, facilities, and infrastructure associated with the PRO; refinements of several of these features have occurred as a result of public comment, agency inquiry, and additional baseline data collection. As an example, in Table 1-1 they compare the PRO (Alternative 1) and changes in the RCP. According to the table, in Alternative 1 Midas had originally proposed 6 inches of growth medium on all reclaimed facilities. Anyone involved in mined land reclamation knows that 6 inches of growth medium is considered inadequate and inconsistent with regional reclamation techniques, particularly with respect to high-altitude reclamation. Twelve inches would be considered by most to be a minimum depth of cover to support a sustainable ecosystem, and depths to 24 inches or more are preferred where possible. In terms of technical feasibility, it is not possible to effectively produce a cover with only six inches of depth, which as described would be an average, and inevitably the cover would not be consistent and in some areas would not be present. This aspect is a questionable event with 12 inches of growth medium proposed for the TSF and waste rock piles in the RCP. A similar point of discussion could be made for other aspects of the changes made by Tetra Tech in the RCP with respect to Midas Plan (Alternative 1). However, all this begs the fundamental question as to whether the DEIS Alternative 1 effects-analysis is based on Midas Plan, or the Tetra Tech RCP Plan? Also, what from the Tetra Tech RCP is intended to carry over to Alternative 2, the Agency Plan? If some level of detail had been carried forward into the DEIS this might be easily discernible, but as presently written and supported it is not.

⁴²⁸ AACE. 2012. *Cost Estimate Classification System – As Applied in the Mining and Mineral Processing Industries TCM Framework: 7.3 – Cost Estimating and Budgeting, Recommended Practice No. 47R-1*, Association for Advancement of Cost Engineering (AACE) International. July 6, 2012.

- The DEIS should have more completely described the RCPs and provided important details such as the proposed cover design. As suggested by Tetra Tech (2019a), the RCP should have been further developed to a Association for Advancement of Cost Engineering Class 3 level of detail during the effects-analysis so the results could be incorporated into the DEIS. Also, the additional level of detail for the plans is necessary to conform with Forest Service regulations and guidance which is the subject of the DEIS, 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 DEIS, 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 DEIS should be supplemented to include this information, including as it pertains to the effects-analysis, and the DEIS re-issued for public review. In order to perform the effects-analysis for all Alternatives, it will be necessary to develop similar levels of reclamation and closure details across all alternatives, particularly those where cover details are significantly changed such as the Project Alternative 3 Agency alternative that proposes an engineered cover to reduce infiltration and water quality impacts.
- The RCP states “Restoration of wetlands on or along the Burntlog Route is not proposed since mitigation for their disturbance will be included in the mitigation work done on the Project site; therefore, growth media and seed bank materials are not needed for wetland restoration purposes along the Burntlog Route.”⁴²⁹ This statement makes no sense since there is inadequate mitigation for the enormous impacts incurred by the open pits followed by toxic pit lakes. The RCP relies on reference sites and a narrow set of performance standards by which to determine reclamation success. There is more to a restored site than simply plant cover, and the lack of identified reference sites is cause for concern. The reclamation seed mixes and plant materials do not reflect the PVGs of the Project area and should be revised.

Missing and incomplete DEIS information

The DEIS is missing a hard look due missing and incomplete information in the DEIS which make commenting on the following issues difficult:

- Inconclusive analysis of the mine operations affecting stream temperatures.
- Missing mine waste rock management plan.
- Fire impacts, especially since the Buck fire is currently affecting the lower Johnson Creek area.
- The Blowout Creek restoration idea putting French drains in seems to be seriously underthought due to the Meadow Creek fault running through this area.
- Development rock management plan is essential to a reasoned choice among alternatives.
- Analysis of successful constructed channels post-closure between alternatives is needed for an informed decision. What qualifies as a successful constructed channel? There are

⁴²⁹ Tetra Tech 2019a. RCP, Stibnite Gold Project – Errata. Valley County, Idaho. Prepared for Midas Gold Idaho, Inc. July 26, 2019 at 4-30.

no assurances that channels constructed over waste rock and fill would keep water on the surface.

- Borrow sources for the aggregate used for the Yellow Pine route in alternative 4 are not determined in the DEIS. The DEIS assumes that the disturbed acreage is the same for alternatives 1 and 4 without any reasoning.
- There are several circular arguments for analysis not done:
 - Such as the Burntlog Geophysical Investigation being needed for specific location determinations of stability, yet the DEIS was released without that information.
 - Specific details about the surface water management plan like the outfall locations and discharge limits need to be disclosed for the IPDES permit, but the permit is waiting for the FEIS. Thus, no comments can be formulated on these points.
 - Cyanidation rules are being revised with Idaho Department of Water Resources concurrently with this DEIS.
 - Liner systems do not meet Federal standards.
 - DRSF plan will be completed after the DEIS.
- The Biotic Ligand model for determining copper thresholds required by the National Oceanic and Atmospheric Administration for fish.
- All of the model uncertainties need to be stated up front and resolved, such as the site-wide water chemistry model and the Hydrologic model.
- Groundwater flow model does not include faults or legacy mine adits effect on groundwater system; hydrology of GDEs not characterized and impacts to GDEs from groundwater drawdown unknown.
- Incomplete lithology of exposed rock in pit walls - no EIS-stage consideration of sulfide-containing rock exposed in pit walls, associated acid mine drainage risk, and impacts to water quality.⁴³⁰
- Constituent concentrations in the consolidation water runoff changes in Meadow Creek from treating the TSF consolidation water runoff have not been modeled for Alternative 1.⁴³¹
- Air toxins, fugitive dust - currently being negotiated with IDEQ.
- Downstream effects of mining operations in the EFSFSR subwatershed and the SFSR are not revealed in the DEIS. Figure 3.12-1 shows the watersheds and subwatersheds in analysis area⁴³² but not the cumulative effects of mining operations on the rivers.
- Full references are not provided in the Pinyon Box link provided on the Stibnite web link in the Schedule of Proposed Actions. There were many abstracts or wrong connections made which puts into doubt the proper usage of the literature cited.
- Confidential references are being withheld, transparency is at issue here. Missing are confidential references such as:
 - McMillen Jacobs Associates (McMillen Jacobs) 2018 East Fork South Fork Salmon River (EFSFSR) Tunnel Design Documentation Report. November 20, 2018.

⁴³⁰ Kuipers, J. R., A.S. Maest, K.A. MacHardy, and G. Lawson (2006). *Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in [EIS]s.* Kuipers & Associates, PO Box 641, Butte, MT USA 59703.

⁴³¹ DEIS at 4.9-28.

⁴³² *Id.* at 3.12-3.

- STRATA, Inc. (STRATA) 2013 Geologic Hazard Assessment, Golden Meadows Project. December 2, 2013.
- STRATA, Inc. 2014b Preliminary Feasibility Study Slope Designs for Three Proposed Open Pits at the Golden Meadows Project in the Stibnite Mining District, Valley County, Idaho.
- STRATA, Inc. 2016 Geologic Hazard Assessment. Proposed Burntlog Access Road Alignment Valley County, Idaho.
- URS Corporation (URS) 2013. Site Specific Seismic Hazard Analysis for the Golden Meadows Project, Idaho, Prepared for Midas Gold Inc. Unpublished Company Report.
- STRATA, Inc. 2016 Geologic Hazard Assessment. Proposed Burntlog Access Road Alignment Valley County, Idaho.
- Tierra Group International 2018 Stibnite Gold Project Geotechnical Investigations Summary Report and Appendices. Prepared for Midas Gold, Boise, Idaho. Prepared by Tierra Group International, Ltd., Salt Lake City, Utah
- Tierra Group 2018 Stibnite Gold Project Geotechnical Investigations Summary Report. Prepared for Midas Gold, Boise, Idaho. Prepared by Tierra Group International, Ltd., Salt Lake City, Utah.
- Valentine, D. 2013 Idaho Power Company Line 328 SUP and Critical Maintenance. Boise National Forest Report No. BS-13-2955. February 22.
- The mitigation measures are so general as to not be very meaningful. There are no links between specific actions and individual mitigation measures, there is no effective rating. Appendix D is difficult to comment on.
- No specific detail for RCP, for example, there are no stockpiles locations.
- An Explosives and Blasting Management Plan is missing from the DEIS for commenting purposes.

THE FOREST MUST PREPARE A REVISED OR SUPPLEMENTAL DEIS

“If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion.”⁴³³ The agency must then seek public comment on the revised DEIS.⁴³⁴ An EIS that fails to enable meaningful public review and understanding of the agency’s proposal, methodology, and analysis of environmental consequences violates NEPA.⁴³⁵

Given the numerous substantial defects described in the Tribe’s comments above, the Tribe and Forest must prepare a revised or supplemental DEIS and provide that document for further Tribal and public comment.

⁴³³ 40 C.F.R. § 1502.9(a).

⁴³⁴ 40 C.F.R. §§ 1502.9(a), 1503.1(a)(4); *see also California v. Block*, 690 F.2d 753, 771 (9th Cir. 1982) (“Only at the stage when the draft EIS is circulated can the public and outside agencies have the opportunity to analyze a proposal and submit comment. No such right exists upon issuance of a final EIS.”).

⁴³⁵ *California, ex rel. Lockyer v. U.S. Forest Serv.*, 465 F. Supp. 2d 942, 948-50 (N.D. Cal. 2006) (finding a national monument management plan “incomprehensible” and that the corresponding EIS violated NEPA where it contained conflicting and confusing statements regarding applicable management standards).