



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10**

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WATER  
DIVISION

February 11, 2022

Mr. Gregory Mazer  
Project Manager  
U.S. Army Corps of Engineers, Alaska District  
Fairbanks Field Office  
Regulatory Division (1145)  
CEPOA-RD  
PO Box 35066  
Fort Wainwright, Alaska 99703

Dear Mr. Mazer:

The U.S. Environmental Protection Agency has reviewed the U.S. Army Corps of Engineers (Corps) Public Notice (PN) POA-2013-00286 dated January 13, 2022, for compliance with the restrictions on discharge contained in the Clean Water Act Section 404(b)(1) Guidelines (Guidelines). The PN describes a proposal by Peak Gold LLC to “produce gold from land owned by the Native Village of Tetlin utilizing open-pit mining methods and existing proven recovery processes.”<sup>1</sup> The proposed work would impact 5.2 acres of waters of the United States to extract gold-laden ore, deposit waste rock, and develop the infrastructure necessary to operate the mine and haul the ore to Fort Knox.

The Guidelines are the substantive environmental criteria that must be met in order for the Corps of Engineers to issue a Section 404 permit for the activity. Based on EPA’s review of the PN and the Permittee-Responsible Mitigation plan submitted, we recommend that the applicant provide additional information to demonstrate that the proposed project complies with the restrictions on discharge contained in the Guidelines. Specifically, EPA has identified issues associated with the potential impacts to aquatic resources due to road construction and increased road traffic, including the potential for secondary impacts to WOTUS from fugitive dust, and the cumulative impacts of the area’s mining development over time. The enclosure provides our detailed comments and recommendations, as well as additional information that we have compiled.

EPA understands there is a high level of public interest in this project due to the plan to transport mined ore to a separate location for processing and expects that decision processes related to this proposal may be controversial and believes this project would greatly benefit from a more thorough review of the facility’s Plan of Operations, including construction and operation, and an ore transportation plan. Such a review would allow for a more accurate characterization of the direct, secondary, and cumulative impacts occurring within and nearby the proposed project area.

Thank you for the opportunity to review this project. We appreciate the coordination you and your staff have provided on this project and look forward to continued engagement. If you have questions about our review, please contact me at [jensen.amy@epa.gov](mailto:jensen.amy@epa.gov) or have your staff contact Kelly McDonald at 907-271-1208 or by email at [mcdonald.kelly@epa.gov](mailto:mcdonald.kelly@epa.gov).

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<sup>1</sup> U.S. Army Corps of Engineers, Alaska District. (2022, January 13). Public Notice POA-2013-00286. p.2.

Sincerely,

Amy Jensen  
Regional Wetland Coordinator

Enclosure

cc: DEC-401Cert@alaska.gov

## **Enclosure to EPA's Comment Letter on Public Notice POA-2013-00286**

The following are detailed comments submitted by the U.S. Environmental Protection Agency in response to the U.S. Army Corps of Engineers Public Notice (PN) POA-2013-00286, issued January 13, 2022, and applied for by Peak Gold, LLC. In addition to the PN, we have reviewed the applicant's Permittee Responsible Mitigation (PRM) Plan provided by the U.S. Army Corps of Engineers.<sup>1</sup>

### **I. Project Description**

The PN indicates Peak Gold LLC has applied for a Department of Army permit under Clean Water Act (CWA) Section 404 "to profitably produce gold from land owned by the Native Village of Tetlin utilizing open-pit mining methods and existing proven recovery processes."<sup>2</sup> The stated project site is located near the Native Village of Tetlin, Alaska.

The proposed project would excavate and extract gold-laden ore and waste rock for approximately 4.5 years. All extracted ore would be hauled to Fort Knox Mine for processing, including milling and tailings disposal. Fort Knox mine is approximately 250 miles northwest of the proposed mine, and the ore would be transported on public highways and roads via trucks.

In this PN, the applicant is proposing to:

- Construct two new gravel mine access roads with culverts:
  - The Manh Choh Twin Road would be built parallel to the Tetlin Village Road from the Alaska Highway intersection to approximately 5 miles southward where it would meet the Manh Choh Site Road.
  - The Manh Choh Site Road would be built to two designated mine sites in the Tetlin Hills, approximately 12 miles west of the Native Village of Tetlin.
- Establish several material sites along the new gravel roads to extract sand and gravel to construct project roads and pads.
- Re-align a section of the Tetlin Village Road, which would not be used to service mine operations.
- Extract ore for 4.5 years and haul the ore to Fort Knox for processing; no milling or tailings disposal would occur at the project site.
- Commence reclamation immediately after mining is complete.<sup>3</sup>

The proposed project would result in the permanent loss of approximately 5.2 acres of waters of the United States (WOTUS), including predominantly wetlands, but also a small part of a pond and very small part of a non-fish bearing stream.

### **II. Comments Related to Clean Water Act Section 404(b)(1) Compliance**

The Clean Water Act Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material are the substantive environmental criteria used to evaluate proposed discharges of dredged or fill material.<sup>4</sup> The Guidelines require the Corps to make written factual determinations of the potential short-term or long-term effects of a proposed discharge on the physical, chemical, and biological

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<sup>1</sup> Stantec Consulting Services Inc., prepared for Kinross. (2021, December 30). Manh Choh Project Permittee Responsible Mitigation Plan. 14 pp.

<sup>2</sup> U.S. Army Corps of Engineers, Alaska District. (2022, January 13). Public Notice POA-2013-00286. p. 2.

<sup>3</sup> Id.

<sup>4</sup> 40 C.F.R. § 230.10; 40 C.F.R. § 230.12.

components of the aquatic environment and “[s]uch factual determinations shall be used in 40 CFR § 230.12 in making findings of compliance or non-compliance with the restrictions in 40 CFR § 230.10.”<sup>5</sup>

The purpose of the Section 404(b)(1) Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment. The burden to demonstrate compliance with the Guidelines rests with the permit applicant. The Guidelines contain four main requirements each of which must be complied with to obtain a Section 404 permit.

1. Section 230.10(a) prohibits a discharge if there is a less environmentally damaging practicable alternative to the proposed project. These alternatives are presumed for non-water dependent activities in special aquatic sites.
2. Section 230.10(b) prohibits discharges that will result in a violation of the water quality standards or toxic effluent standards, jeopardize a threatened or endangered species, or violate requirements imposed to protect a marine sanctuary.
3. Section 230.10(c) prohibits discharges that will cause or contribute to significant degradation of the waters of the United States. Significant degradation may include individual or cumulative impacts to human health and welfare; fish and wildlife; ecosystem diversity, productivity and stability; and recreational, aesthetic or economic values.
4. Section 230.10(d) prohibits discharges unless all appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Furthermore, the Guidelines require the prediction of cumulative effects to the extent reasonable and practical.<sup>6</sup> These factual determinations include potential impacts on physical and chemical characteristics of the aquatic ecosystem such as substrate; suspended particulates/turbidity; current patterns and water circulation; normal water fluctuations; salinity gradients; potential impacts on biological characteristics of the aquatic ecosystem such as threatened and endangered species, fish, other aquatic organisms in the food web, and wildlife; potential impacts on Special Aquatic sites including sanctuaries and refuges, wetlands, mud flats, and vegetative shallows; and potential effects on human use characteristics such as recreation and commercial fisheries, water related recreation, aesthetics, wilderness areas, and research sites.<sup>7</sup>

The Guidelines recognize that the level of required analysis and documentation are scaled to reflect the significance and complexity of the proposed discharge activity.<sup>8</sup> EPA believes the proposed discharges and the associated on-going operations of this project have the potential for adverse direct, indirect, and cumulative impacts to WOTUS, including wetlands, and thus require more detailed information, evaluation, and documentation to demonstrate compliance with the Guidelines. Sections A-D provide our comments regarding information and evaluation relevant to each requirement and recommendations regarding the areas where we believe the proposal has yet to demonstrate compliance with the Guidelines.<sup>9</sup>

## **A. Aquatic Resource Information**

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<sup>5</sup> 40 C.F.R. § 230.11.

<sup>6</sup> 40 C.F.R. § 230.11(g)(2).

<sup>7</sup> 40 C.F.R. § 230 (Subparts C-F).

<sup>8</sup> 40 C.F.R. § 230.6(b).

<sup>9</sup> 40 C.F.R. § 230.6(b); 40 C.F.R. § 230.11; and 40 C.F.R. § 230.12(b).

EPA has compiled some additional information regarding the area to better understand the potential effects of the proposed project, and we provide this information herein to support the Corps' analysis.

The Tanana and Tok Rivers have their headwaters in mountain streams in eastern Alaska near the Yukon border. The Tanana River flows northwest to meet with the Delta River, a Wild and Scenic River, before joining the Yukon River across the state. The upper Tanana River is a critical reach of the river system, along with the confluence with Tok river, and Tetlin Lake as they serve important functions for wildlife, fisheries, subsistence, and recreation. This reach is where fish and wildlife migrate to reproduce seasonally. The areas of the Upper Tanana River Valley through the Tetlin National Wildlife Refuge (TNWR) are known for being a migratory corridor from numerous species of protected birds, including but not limited to the Bald Eagle, Golden Eagle, Hudsonian Godwit, Lesser Yellowlegs, and Olive-sided Flycatcher.

Alaska recognizes any fish-bearing waterbody as essential fish habitat regardless of species and life stage. National Marine Fisheries Service (NMFS) considers all freshwaters classified anadromous waters as essential fish habitat but defers to the Alaska Anadromous Waters Catalog (AWC) for classifications. According to the AWC, the Tanana River in the vicinity of Tok and Tetlin supports Coho salmon.<sup>10</sup> The Upper Tanana River has known populations and subsistence fishing of Arctic Grayling, Burbot, Lake Trout, Northern Pike, and Whitefish.<sup>11</sup> Furthermore, the TNWR is a highly used area for numerous protected species, some which are highly migratory. Humpback Whitefish have been observed moving between the TNWR and downstream areas of the Tanana River to spawn. While there are no significant salmon runs in the upper Tanana River drainage, the TNWR has recorded small runs of chum salmon and an occasional chinook and coho.<sup>12</sup> Based on the life histories of salmonid species, it is logical to presume these species use the downstream reaches of the Tanana River as well.

## **B. Alternatives Analysis– 40 CFR 230.10(a)**

The Guidelines require that no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge, that meets the project purpose, which has less adverse impacts on the aquatic ecosystem.<sup>13</sup> The Corps is therefore only able to issue a permit for the least environmentally damaging practicable alternative (LEDPA).<sup>14</sup> Identification of the LEDPA is achieved by performing an alternatives analysis that evaluates the direct, secondary/indirect, and cumulative impacts to jurisdictional waters resulting from each alternative considered. Project alternatives that are not practicable and do not meet the project purpose are eliminated. The LEDPA is the remaining alternative with the fewest impacts to aquatic resources, so long as it does not have other significant adverse environmental consequences.

Based on the information provided in the PN and PRM, EPA believes other potentially practicable alternatives should also be evaluated to respond to the Guidelines requirements related to determining the LEDPA. The following comments highlight information relevant to the LEDPA analysis that the Corps should consider.

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<sup>10</sup> ADF&G. (2008, December 12). Anadromous Waters Catalog: USGS Quad: Tanacross A5. Retrieved February 2022 from: <https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=nomSearch.nomDetails&NomID=09-183>

<sup>11</sup> Halpin, L. (1987). Living off the Land: Contemporary Subsistence in Tetlin, Alaska. Technical Paper No. 149. U.S. Fish and Wildlife Service. Anchorage, Alaska. 132 pp.

<sup>12</sup> USFWS. (2012). Fish. Tetlin National Wildlife Refuge Webpage. U.S. Fish and Wildlife Service. [https://www.fws.gov/refuge/Tetlin/wildlife\\_and\\_habitat/fish.html](https://www.fws.gov/refuge/Tetlin/wildlife_and_habitat/fish.html)

<sup>13</sup> 40 C.F.R. § 230.10.

<sup>14</sup> Provided that it complies with the other portions of the Guidelines.

Based on our review of the PN, the proposed project may impact additional WOTUS along the haul route that have not been disclosed. The PN indicates the applicant plans to transport the excavated ore approximately 240 miles to an existing gold mill for processing at Fort Knox. EPA estimates the project would require the transport of more than 70,000 trucks per year (up to 8 trucks per hour- 4 loaded, 4 empty, every hour) and may even operate 24 hours a day.<sup>15</sup> The PN also indicates that the Manh Choh Twin Road would be built parallel to the Tetlin Village Road for approximately 5 miles from the Alaska Highway intersection to where it would meet the Manh Choh Site Road. The need to construct an entirely new road parallel to the existing Tetlin Village Road has not been disclosed in the PN or as part of the project purpose, but EPA assumes this road is needed for safety given the heavy truck traffic expected.

The LEDPA should be determined based on an evaluation of the combination of alternative sites with a site design that provides the least impacts to WOTUS. The distance and route taken to the processing facility is a critical aspect in siting this project, and the project purpose does not appear to be water-dependent; therefore, alternative sites (i.e., processing at the extraction location) are presumed to be available, unless clearly demonstrated otherwise by the applicant.<sup>16</sup> If the applicant has already evaluated alternative sites that do not impact aquatic resources, such as alternative locations for the Manh Choh Twin Road, it would be beneficial to provide that analysis. Other alternatives to be considered in the alternatives analysis may include analyses of alternate haul routes, alternate ore processing locations, and building additional culverts into constructed gravel roads to allow for maintenance of wetland equilibrium and function adjacent to the road.

### **C. Compliance with other Environmental Standards – 40 CFR 230.10(b)**

The Guidelines specify that no discharge of dredged or fill material shall be permitted if it causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable water quality standard or violates any applicable toxic effluent standard or prohibition under section 307 of the CWA.<sup>17</sup> This project has the potential to result in indirect and cumulative impacts to water quality in the Tok and Tanana River watersheds from the additional haul traffic, potential accidents involving mine ore, and fugitive dust from trucks, etc, which may contribute to exceedances of water quality standards related to metals. EPA recommends the applicant evaluate the risk of potential spills from trucks to wetlands and other WOTUS along the entire transportation network. We believe a project of this scale should include a thorough emergency response plan, complete with training, preparedness, and complete cleanup capabilities.

EPA expects the NEPA document for the project will evaluate information on impacted waters in the planning area, the nature of the impacts, and specific pollutants likely to affect those waters; how the proposed project will coordinate with on-going protection efforts; any mitigation measures required to be implemented to avoid degradation of waters; and how the project will meet the antidegradation provisions of the CWA. The Guidelines also prohibit degrading water quality within water bodies that are currently meeting water quality standards. Harmful compounds like mercury, arsenic, and acid can be present in mined rock and present risks for human health and environmental degradation. Geochemical testing of ore and waste rock should be used to identify potentially harmful compounds, and if present, these compounds should be managed to reduce risk to human health and the environment. Similarly, acid-base accounting should be completed to evaluate the acid generating potential of waste rock. Proposed waste rock piling is

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<sup>15</sup>Kinross. (2021, April 6). Introduction to the Kinross Manh Choh Project. <https://deltajunction.us/wp-content/uploads/20210406-Kinross-Manh-Choh-Project.pdf>

<sup>16</sup> 40 C.F.R. § 230.10(a)(3).

<sup>17</sup> 40 C.F.R. § 230.10(b)(2).

likely to result in weathering and leaching of harmful compounds into WOTUS. These toxic chemicals may pose a risk to human health by cumulatively biomagnifying throughout the food web and eventually affecting humans through consumption of subsistence foods. Ultimately, the project evaluation will need to clearly demonstrate that the project would not cause or contribute to further exceedances of water quality standards to comply with the Guidelines.

We note that the Corps has served as the lead federal agency for several proposed hard rock mine projects in Alaska. These projects include, but are not limited to, the following: Pebble Project, Donlin Gold Project, Greens Creek Mine, Red Dog Mine Extension – Aqqaluk Project, Pogo Gold Mine Project, and the Kensington Gold Project. The NEPA evaluations completed for these major federal actions established a precedent, which we recommend be considered in determining the appropriate level of NEPA review and documentation to evaluate the Clean Water Act Section 404 permit application for the proposed Manh Choh Mine.

#### **D. Significant Degradation -- 40 CFR 230.10(c)**

The Guidelines prohibit issuance of a CWA Section 404 permit if project activities will cause or contribute to significant degradation of the Nation's waters including degradation to: (1) human health and welfare; (2) aquatic life and other wildlife; (3) aquatic ecosystem diversity, productivity, and stability; and (4) recreation, aesthetic, and economic values. The Guidelines require the prediction of cumulative effects to the extent reasonable and practical.<sup>18</sup> The Guidelines also require that information about secondary effects on aquatic ecosystems be considered. Secondary effects are the effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials but do not result from actual placement of the materials.<sup>19</sup>

As mentioned previously, the PN does not disclose the impacts on WOTUS from the operation of the facility, notably the effects from the facility operating potentially 24 hours a day, with constant transport of ore via truck on gravel roads. EPA has concerns that the future and cumulative impacts of relying on public highway transit has not been evaluated for potential negative impacts. The PN does not mention the planned haul route or provide details for the transportation of ore being hauled to Fort Knox for processing. EPA recommends including details related to the current traffic load and predicted mine traffic on the public highways between the mine and processing sites for both the near-term construction and long-term operation and maintenance. Increased traffic with mine haul trucks would increase noise for residents and migratory birds, the potential for vehicle accidents, and impacts to WOTUS near the roads from fugitive dust. Additionally, the highway infrastructure would require maintenance and potentially upgrades during operation, which may increase in frequency and need due to the proposed hauling. The applicant's current proposal does not reflect these expected connected actions.

EPA recommends that additional analyses of these potential impacts be conducted to determine the significance of the direct and secondary impacts on the natural and human environment. At a minimum, an appropriate analysis of the cumulative effects of increased highway traffic and WOTUS near the haul route in the project area should be performed to assess the significance of their effects in this section of Tok and Tanana River watersheds. Given the potential for water quantity and quality impacts to occur to the nearby aquatic systems (e.g., effects on in-stream water quality parameters from fugitive dust such as turbidity, dissolved oxygen, removal of foraging habitat, etc.), impacts to listed salmonids and other aquatic organisms that utilize the area should be evaluated and disclosed.

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<sup>18</sup> 40 C.F.R. § 230.11(g)(2).

<sup>19</sup> 40 C.F.R. § 230.10(b)(2).

EPA also has concerns about the impacts related to the construction of the two new gravel roads to access the mine site. Based on our review of the PN, it is unclear if the applicant has identified or addressed potential impacts from periodic maintenance activities or how many culverts will require construction and maintenance to maintain hydrology of the area. The long-term analysis of such an action should include contingencies for any repair or emergency activities within regulated aquatic environments.

*Executive Order 13990, Section 5. Accounting for the Benefits of Reducing Climate Pollution* requires federal agency actions to evaluate the full cost of GHG emissions by accounting for global damages to facilitate sound decision-making, which directly relates to the NEPA compliance process. On February 26, 2021, the Interagency Working Group (IWG) on the SC-GHG published the *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide*, which identified the interim social cost of carbon to be \$51.00.<sup>20</sup> This interim value should be used by agencies when monetizing the value of changes in GHG resulting from federal actions. EPA recommends that the Corps provide estimates of the monetized damages associated with incremental increases of GHG emissions to include the SC-GHG consistent with this technical support document for this project in the NEPA analysis. We recommend discussing the effects that the project may have on its local environment regarding climate change, whether the project will exacerbate or protect local resources from the future effects of climate change. Predictions of GHG emissions during operations should include the entire transportation network, including, trains, trucks, etc. travelling to and delivering ore and fuel and other materials to and from the facility.<sup>21</sup>

EPA recommends that the NEPA document for this project include a discussion of effects that changes in the climate may have on the proposed project and the project area, including its long-term infrastructure. Such an analysis could help inform the development of measures to improve the resilience of the proposed project. If projected changes could notably exacerbate the environmental impacts of the project, EPA recommends these impacts also be considered as part of the NEPA analysis. Wetlands that rarely dry out are expected to shift to more frequent drying in some areas, and wetlands that currently are frequently dry may be lost in some areas.<sup>22</sup> In other areas where precipitation is expected to increase or the timing is expected to change, wetlands that occasionally dry out may become wetter.<sup>23</sup> It is important to evaluate how the mitigation area and associated wetlands will be constructed with respect to localized climatic changes over time.

#### **E. Mitigation Sequence -- 40 CFR 230.10(d)**

The 1990 Memorandum of Agreement regarding Mitigation under CWA Section 404(b)(1) Guidelines between EPA and the Corps (1990 EPA/Corps MOA) established a three-part process, known as the mitigation sequence (avoid, minimize, and compensate), to help guide mitigation decisions and determine the type and level of mitigation required. This sequence is also embedded in the requirements of the 2008 Final Rule on Compensatory Mitigation<sup>24</sup> and should be followed in that order. All three

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<sup>20</sup> Accessible at [https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf?source=email](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf?source=email).

<sup>21</sup> E. O. 13990 Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (2021, January 25); EO 14008. Tackling the Climate Crisis at Home and Abroad (2021, February 1).

<sup>22</sup> Halabisky, M. (2017). *Reconstructing the Past and Modeling the Future of Wetland Dynamics Under Climate Change* (Doctoral dissertation). University of Washington, Seattle, WA. p. 14.  
[https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/40585/Halabisky\\_washington\\_0250E\\_17613.pdf?isAIlowed=y&sequence=1](https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/40585/Halabisky_washington_0250E_17613.pdf?isAIlowed=y&sequence=1)

<sup>23</sup> Id.

<sup>24</sup> 33 C.F.R. Parts 325 and 332 and 40 C.F.R. Part 230.



steps of the sequence are mandatory, and one step may not substitute for any other. The first step in the sequence requires impacts to the aquatic ecosystem be avoided whenever practicable. Compensatory mitigation is intended to offset unavoidable impacts that result after avoidance and minimization has been applied. Appropriate and practicable steps used to avoid, minimize, and compensate for any unavoidable impacts must be outlined prior to issuance of a permit, in accordance with both the Guidelines and the 1990 EPA/Corps MOA regarding mitigation.<sup>25</sup>

EPA appreciates that the applicant has proposed compensatory mitigation within the same watershed as the project impacts, the Upper Tanana River watershed. The applicant has submitted a Permittee-Responsible Mitigation (PRM) Plan, which states the long-term goal of the PRM Plan is “establish productive wildlife habitat upon completion of mining and reclamation at the mine site that aligns with the goals and land use objectives of the Native Village of Tetlin.”<sup>26</sup> The Applicant plans to replace two culverts near the proposed mine site for the benefit of the Native Village of Tetlin. The PRM Plan states that the applicant would restore hydrology of degraded stream channels and enhance wetlands but does not quantify the functional lift of specific acreage or linear feet of stream that would be impacted by proposed actions.

There does not appear to be any accounting for the loss of wetland and stream function of the temporarily affected WOTUS, or the temporal lag associated with the enhanced wetlands. The Guidelines require that “the district engineer shall require, to the extent practicable, additional compensatory mitigation to offset temporal losses of aquatic functions that will result from the permitted activity.”<sup>27</sup> Temporal loss is defined in the Guidelines as, “the time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site. Higher compensation ratios may be required to compensate for temporal loss.”<sup>28</sup> Although the applicant intends to construct the wetland mitigation area concurrently, to account for the temporal lag of regrowth EPA recommends construction of the mitigation area in advance of the project area.<sup>29</sup>

The PN states that proposed mine activities are expected to last 4.5 years, and the PRM states the mitigation construction would occur concurrently. Full reestablishment of native vegetation is not expected for at least five years post project completion, as even rapid-growing subarctic perennials do not reach mature size until after year 3.<sup>30</sup> Section 2.10 of the PRM indicates seasonal monitoring will occur for two successive years to determine if changes are recommended.<sup>31</sup> Because projects involving channel construction are far more challenging to effectively implement, we recommend continued monitoring of performance standards for a minimum of seven years.

The Guidelines identify that “Compensatory mitigation requirements must be commensurate with the amount and type of impact that is associated with a particular DA permit.”<sup>32</sup> They also identify that: “the amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. If a functional or condition assessment or other suitable metric is not used, a

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<sup>25</sup> 40 C.F.R. § 230.10(d).

<sup>26</sup> PRM Plan, p. 2.

<sup>27</sup> 40 C.F.R. § 230.93(m).

<sup>28</sup> 40 C.F.R. § 230.92 (Sub Part J Compensatory Mitigation for Losses of Aquatic Resources).

<sup>29</sup> 40 C.F.R. § 230.93(m).

<sup>30</sup> Densmore, R.V., M.E. Vander Meer, and N.G. Dunkle. 2000. Native plant revegetation manual for Denali National Park and Preserve. U.S. Geological Survey, Biological Resources Division, Information and Technology Report USGS/BRD/ITR-2000-0006. 42 pp.

<sup>31</sup> PRM Plan, p. 12.

<sup>32</sup> 40 CFR § 230.93(a)(1).

minimum one-to-one acreage or linear foot compensation ratio must be used.”<sup>33</sup> The proposed mitigation does not appear to provide sufficient offset of the proposed impacts to WOTUS.

EPA recommends that the applicant complete functional wetland and stream assessments to determine the existing aquatic resource function and the potential for functional lift. EPA also recommends that the applicant further consider other permittee-responsible mitigation opportunities along the Tetlin to Fort Knox Corridor, as well as the possibility of restoration of previously mined streams and wetlands in the local Tetlin and Tok areas that could be rehabilitated. EPA believes compensation credits could potentially be generated by replacing stream and wetland crossings if the enhancement of aquatic resource function could be quantified, but such compensation can only be generated through actions that would otherwise be unaffected by the project.

## **F. Conclusion**

Our comments identified several potential significant direct, indirect, and cumulative impacts regarding the entire scope of the project that warrant detailed evaluation during the permit decision process. We recommend that the Corps request additional information from the applicant regarding mine construction, operations, maintenance, and reclamation, such as a Plan of Operations, Reclamation Plan, Transportation Plan, baseline water quality results, acid-base accounting, and other technical studies and reports. These information are necessary to address concerns regarding potential significant degradation to WOTUS, such as the Tanana River, Tok River and Tetlin Lake, resulting from potential discharges of mine contact wastewater, which may transport elevated levels of mercury, arsenic, and other toxic pollutants to these receiving waters.

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<sup>33</sup> 40 CFR § 230.93(f)(1).