MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Combined Decision Document for Permit Application POA-2016-30 (APMA 2802).

This decision document constitutes the Environmental Assessment, 404(b) (1) Guidelines Evaluation, Public Interest Review, and Statement of Findings that informed the Corps decision on the permit application described below.

1.0 Application as described in public notice, dated 3/4/2016

1.1 Applicant:
Mr. Sam Koppenberg
Koppenberg Mining and Manufacturing, Inc.
P.O. Box 109
Cantwell, Alaska 99729

1.2 Location and waterway: The project site is located within Sections 25 & 26, T. 9 N., R. 13 E., Fairbanks Meridian; USGS Quad Map Circle C-2; located at Mile Post 123.5 of the Steese Highway near Central, Alaska, on Crooked Creek.

1.2.1 Latitude 65.578° North Longitude 144.945° W West

1.3 Existing conditions: Gold mining has occurred in the Central area since the early 1900s, including the project area which is located within a heavily mined area adjacent to Crooked Creek near Central, Alaska. Currently, there is no National Wetland Inventory for the Circle C-2 Quad. However, there are also areas upstream and downstream which have not yet been mined. Unmined areas consist of black spruce dominated uplands and palustrine scrub shrub seasonally flooded, and unfrozen wetlands (PSS).

The ADNR aerial photos dated Dec. 17, 2015, and aerial photos submitted by the applicant dated Dec 30, 2015, indicate presence of palustrine scrub shrub wetlands (PSS) and palustrine emergent wetlands (PEM), although the photos do not have the resolution necessary to identify plants at the species level. The majority of the project site (approximately 64.7 acres) appears to support black spruce, (Picea mariana, FACW), which is the dominant vegetation in palustrine forested wetlands, and appears consistent with the vegetation description of the local un-mined areas. There are also flood scars that support approximately 2 acres of deciduous vegetation, which is typically comprised of alder (Alnus sp., FAC), and, over time, balsam poplar (Populus trucocarpa, FACU).
The applicant reports nearly 4 feet or more of black muck above a sand, gravel, and silt substrate which satisfies criteria for a histosol, a hydric soil. This is consistent with Alaska Exploratory Survey descriptions of Interior lowlands (soil type 174), which is defined as bordering areas of major rivers with areas interlaced with streams and creeks, shallow lakes, marshes, and slough channels. This soil type is also found in outwashes, and river valley plains and typically found in interior Alaskan areas which have long cold winters, and short warm summers with flooding in the spring and when precipitation is high, and overlay permafrost.

1.4 Project Description from Public Notice: The applicant’s proposed work is to mine gold from the 66.7 acre project site by using a mobile placer mining system consisting of an eight foot trammel with an eight foot wide sluice box and a three foot wide oversized conveyer. The project would involve placement of fill, via mechanized land clearing in 64.7 acres of wetlands. All work would be performed in accordance with the enclosed plan (sheets 1-6), dated December 28, 2015.

1.5 Avoidance and minimization statement from applicant: The applicant proposes the following mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged or fill material.

Avoidance: "The camp will be located in uplands on previously disturbed land. The access road to the project site is pre-existing, and will avoid further damage to wetlands which would occur by the creation of a new roadway. Bulk sampling of the site was completed in 2015, to provide an accurate picture of gold quantities within the cuts. Long cuts which host uneconomic gold content (including that which is wetland) will not be stripped and mined, also acting to avoid unnecessary impacts. Fuel storage will be limited to two fuel tanks kept in the upland area at the camp, and additional fuel will be purchased off site as needed. The overburden (rock, soil, and organic matter) from the stripped areas will be stockpiled in upland areas, and will be utilized to backfill, contour, and revegetated the disturbed land during the reclamation process. All sluice water will be caught in holding ponds and will be 100% recycled. The disturbed land area will be revegetated with naturally occurring plant species to prevent permanent loss of habitat and erosion".

Minimization: "The mining sequence will be located downstream from the top of the claim to minimize the impact. The overburden will be removed and stockpiled in upland areas in such a way the piles are easily accessible and will not cause additional disturbance or runoff. No discharge of fill will be placed into the creek itself or riparian area. All mining will occur well away from the creek, and no stream bypass will be utilized, which would further impair the hydrology of Crooked Creek. The applicant will utilize mobile placer mining, which acts to wash the rich alluvial deposits and leaves tailings and mined gravel in place. Additionally, the process acts to minimize impacts
by leaving the mined gravels at their natural gradient, slope, and depth, further
minimizing impacts.

During the reclamation phase, efforts are made to control water energy when re-
contouring to minimize sediment transportation. Generally a series of shallow ponds
with spillways is established to trap sediments. “The mined land will then be backfilled
over the tailings and mined gravel which has been leveled and contoured as closely as
possible to natural aspects and covered with the stockpiled organic soils and woody
debris” to quickly promote vegetation.

1.6 Compensatory mitigation proposal from applicant: “On-site minimization will be
utilized for this project. After the mining process, the overburden and organic matter will
be re-deposited, and then will revegetated the affected areas. The new growth created
during the reclamation process will provide enhanced wildlife habitat. Off creek ponds
will be created by contouring slopes, and allow for shallow littoral zones. Other such
ponds located at similar operations within the Crooked Creek watershed provide diverse
habitat and display increased visits by wildlife populations. On-site reclamation will be
on going on a yearly basis to maintain a minimal footprint”.

1.7 Project Changes Subsequent to Public Notice: None

1.8 Purpose and need

1.8.1 Project purpose and need as described by applicant: The applicant’s purpose is recovery
of gold ore.

1.8.2 Basic project purpose: The basic project purpose is mobile placer mine recovery of gold
ore.

1.8.3 Water dependency determination: Although the project depends on the use of and access
to water for processing gold ore, the proposed project is not water dependent. The water
utilized will be obtained from the ground water exposed from the excavation phase.

1.8.4 Overall project purpose: The applicant’s overall project purpose is to mobile placer mine
gold from approximately 64.7 acres wetlands of the mining claim property.

2.0 Authority

2.1 Section 404 of the Clean Water Act (33 U.S.C. Section 1344)

2.2 Does the project also require authorization under Section 14 of the Rivers and Harbors Act
(33 U.S.C. 408)? No

2.3 Jurisdictional determination information: Preliminary Jurisdictional Determination for the
parcel completed January 19, 2016. The project site consists of approximately 64.7 acres
Palustrine Scrub-Shrub Wetlands (PSS) and Palustrine Emergent Wetlands (PFO4B) scattered across the parcel with nearly 2 acres of some upland areas.

3.0 **Scope of Analysis**

The scope identified in sections 3.1 – 3.3 to ensure compliance with NEPA, ESA and NHPA Section 106 is based on the final proposed project.

3.1 **National Environmental Policy Act (NEPA):**

*Scope of determination for NEPA review is found at 33 CFR 325, Appendix B, Paragraph 7.b. The following factors are considered in determining whether sufficient federal “control and responsibility” exists:*

1. Whether or not the regulated activity comprises “merely a link” in a corridor type project.
2. Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity.
3. The extent to which the entire project will be within the Corp's jurisdiction.
4. The extent of the cumulative federal control and responsibility.

3.1.2 **Determination of scope.** Based on an examination of NEPA (33 CFR Part 325, Appendix B) and applicable program guidance (e.g. Council on Environmental Quality's (CEQ) Considering Cumulative Effects Under National Environmental Policy Act and the Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program, July 2009), we have determined that the appropriate scope for this project is: Only within the footprint of the regulated activity within the delineated water.

Explanation: The project area contains 64.7 acres of wetlands and 2.0 acres of uplands adjacent to Crooked Creek. The project site lies within a large tract which contain PSS and PFO4B wetlands owned by the State of Alaska, and does not comprise any corridor type projects. Additionally, the applicant located the mining sequence downstream from the top of the claim to minimize the impact. No discharge of fill will be placed into the creek itself or riparian area. All mining will occur well away from the creek, and no stream bypass will be utilized, which would further impair the hydrology of Crooked Creek. The use of mobile placer mining washes the rich alluvial deposits and leaves tailings and mined gravel in place, and leaves the mined gravels at their natural gradient, slope, and depth, further minimizing impacts. The Corps does not maintain jurisdiction of the entire project. The Corps claims jurisdiction only of those portions of the project which are located within the affected wetlands. This is approximately 64.7 acres. There is no other federal control of the project.
3.2 National Historic Preservation Act (NHPA) “Permit Area”:

The NHPA Scope is defined as “permit area”. The permit area for an undertaking is defined in 33 CFR 325, Appendix C. The following three (3) tests must all be satisfied for an activity undertaken outside of waters of the United States to be included within the “permit area”.

3.2.1 Tests (check all that apply):

☐ a. The activity outside of waters of the United States would not occur but for the authorization of the work or structures within waters of the United States.

☐ b. The activity outside waters of the United States is integrally related to the proposed work or structures within waters of the United States (or conversely, the proposed work or structures within waters of the United States must be essential to the completeness of the overall project or program).

☐ c. The activity outside the waters of the United States is directly associated (first order impact) with the proposed work or structures within waters of the United States.

3.2.2 Scope Determination: Activities outside waters of the United States are not included because no activities outside waters of the United States are proposed. None of the above tests applied.

3.2.3 NHPA Scope Summary and Description: The permit area for the project would be those areas of wetland placer mining. The project plans specify 64.7 acres of the 66.7 acres mine claim.

3.3 Endangered Species Act (ESA) “Action Area”:

The ESA scope is defined as “action area”. The action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action; and, is an undertaking as defined in 50 CFR 402.02, Definitions.

3.3.1 Determined Scope: The action area for the proposed project has been defined as the footprint of the proposed fill.

4.0 Public Involvement (Public Notice required by 33 CFR 325.3):

4.1 Public Notice Information
Application Received: 12/30/2015
Application Complete: 1/15/2016
Date of Public Notice Issued: 2/4/2016
End Date for Public Notice Comment Period: 3/4/2016
Additional Information: N/A
4.2 Public Meeting(s): No
Discussion/Explanation: N/A

4.3 Public Notice Comments: SHPO Concern identified

a. Comments Received From: State Historic Preservation Officer (SHPO)
   Date Received: 2/16/2016
   Comment/Issue: Additional information requested regarding the Fairbanks-Circle Historical Trail as delineated on the upper bounds of the mine claim.

b. Comments Received From: Alaska Department of National Resources (ADNR)
   Date Received: 2/29/2016
   Comment/Issue: Clarification ADNR inclusion of cultural/historical resources on mining claims.

c. Comments Received From: Alaska Department of Environmental Conservation (ADEC)
   Date Received: 3/31/2016
   Comment/Issue: Issuance of 401 Certification

d. Comments Received From: U.S. Fish and Wildlife Service (USFWS)
   Date Received: 3/10/2016
   Comment/Issue: USFWS concurrence of no effect regarding the project.

e. Comments Received From: State Historic Preservation Officer (SHPO)
   Date Received: 3/31/2016
   Comment/Issue: SHPO issuance of No Adverse Effect.

4.4 Corps acknowledgment of comments: Acknowledgement of SHPO comments. Meeting with the applicant for additional clarification regarding the historical trail delineated on the mine claim supplied.

4.5 Issues Identified by the Corps: Delineation of historical/cultural resource present within the project footprint.

4.6 Comments/Issues Forwarded to Applicant: Yes
   Date Comments Forwarded: 2/18/2016

4.7 Applicant provided response to comments: Yes
   Summary of response: The applicant provided information that the historic trail has been destroyed by previous mining operations on the project location.
4.8 Corps Purview – The following comments are not discussed further in this document as they are outside the Corp’s purview: N/A

4.9 Additional information (optional): N/A

4.10 Public Hearing Request – (33 CFR 327) Requests for a public hearing shall be granted unless the district engineer determines that the issues raised within the request(s) for a public hearing are insubstantial or there is otherwise no valid interest to be served by the hearing. The district engineer will make such a determination in writing, and communicate his reasons to all requesting parties.

Public Hearing: No public hearing was requested or held for this project.

Discussion/Explanation (if necessary): N/A

5.0 Alternatives Analysis – (40 CFR 230.10, HQ Regulatory SOP July 2009, RGL 95-1, RGL 84-09) If the project is sited in a special aquatic site (such as a wetland), and if the project does not need to be in or near the special aquatic site to fulfill its basic purpose (i.e., the project is not "water-dependent"), it is presumed that there are practicable alternatives that do not involve special aquatic sites. To overcome this presumption, the applicant must clearly demonstrate to the Corps that practicable alternatives are not available. If the presumption is not overcome, the Corps must deny the permit application. If the project is not sited in a special aquatic site and/or is water-dependent, the applicant is not required to overcome the presumption that upland alternatives are available. However, the Corps must still address whether there are any upland alternatives (or alternatives with less impact), and if any are identified, the applicant must clearly demonstrate that they are not feasible. If such a demonstration cannot be made, the Corps must deny the permit application. The Corps performed an evaluation of alternatives, as described below:

5.1 Overall Project Purpose (as independently defined by Corps): The overall project purpose is the same as the Corps determined overall project purpose (reference Section 1.8.4).

5.2 No Action Alternative (No action is defined as permit denial or alternative without impacts to waters of the United States): The no action alternative is permit denial. Mining would be delayed or eliminated from consideration with adoption of this alternative, and would not meet the purpose and need of the applicant.

5.3 Off-site locations and configurations: The permittee owns mining leases within adjacent watersheds; however, if mined, the impacts from those projects would be similar to the impacts of the proposed project, and do not, therefore, represent a less damaging, practicable alternative.

5.4 On-site configurations: The permittee conducted bulk sampling of the mining claim to avoid mining of areas where no resource is present. A limited version of this project,
avoiding impacts to wetlands would not be practicable due to the fact the entire mining claim is dominated by wetlands.

5.5 Practicable Alternatives carried forward: The project as proposed comprises the least damaging practicable alternative, as it satisfies the project purpose, while minimizing impacts to aquatic resources.

6.0 Evaluation of the 404(b) (1) Guidelines (40 CFR 230):

(40 CFR 230) For each of the below listed evaluation criterion, this section describes the potential impact, any minimization measures that would be used to reduce the level of impact, and the resultant impact level. For the purpose of this evaluation, the fill associated with this project is: Discharge of gravel fill to approximately 64.7 acres of wetlands by mobile placer mining operation.

6.1 Potential effects on physical and chemical characteristics of the aquatic ecosystem (Subpart C):

6.1.1 Substrate: Minor Effect (Long Term) – Approximately 65 acres of substrate will be removed, washed, and stripped of gold mineral ore. It will then be replaced with the removed gravel and overburden, then revegetated. Minimizing measures are utilized by storing the overburden, gravels, and removed organic matter on site for replacement during the reclamation process which allows for faster revegetation.

6.1.2 Suspended Particulates / Turbidity: Minor Effect (Long Term) – The mining operation has included a number of management strategies to reduce impacts to waters of the U.S. The project plans utilize silt fencing, corrective slope measures, and rapid revegetation of the effected lands to minimize the possibility of increased turbidity due to erosion and run off. In addition, sediment ponds constructed during the mining process will be used to catch highly loaded discharge water to settle soil and debris and contain run off.

6.1.3 Water: Minor Effect (Short Term) –The mining operation will utilize collected groundwater exposed within mining cuts during the ore extraction process. The sediment loaded water will be collected in ponds, where suspended particulates will be allowed to settle, and be reused. The proposed project will recycled 100% of water used during processing to minimize the impact to water on the site.

6.1.4 Current Patterns & Water Circulation: Minor Effect (Short Term) – No stream bypasses or diversions will be used in the proposed project. The stripping of overburden and the removal of substrates will have minor effects on current surface water patterns through elimination of the wetlands located within the project boundary. However, the reclamation of the ponds through the addition of littoral zones and the revegetation of the surrounding area will offset the disturbance.
6.1.5 Normal Water Fluctuations: Minor Effect (Short Term) – Normal water fluctuations may be effected on a short term scale as the removal of wetlands will act to increase flow from surface drainage and potentially reduce infiltration. This would be a temporary effect as the project plans call for methods of runoff capture to minimize erosion and turbidity issues, and the revegetation process along with the creation of sediment ponds will also act to minimize the effect.

6.1.6 Salinity Gradients: No Effect – The project would have no effect on salinity gradient because only fresh water exists in the area. The project site is not located near marine waters or within highly salinized land, and there will be no injection of salinized fluid, such as those used in fracking or drilling projects.

6.2 Potential effects on biological characteristics of the aquatic ecosystem (Subpart D):

6.2.1 Threatened or Endangered Species (also see section 10.1): No Effect – There are no threatened or endangered species within the project area.

6.2.2 Fish, Crustaceans, Mollusks, and Other Aquatic Organisms: Negligible Effect – The proposed project will disturb 65 acres of palustrine scrub shrub wetlands which provides habitat for aquatic organisms. This would have the potential to impacts individual aquatic organisms but is not anticipated to effect aquatic species as a whole. The project does not rely on water from the stream and will have no bearing on stream or riparian health as it is located over 600 linear feet from the stream location. Rehabilitation of the mined area would help in redeveloping some habitat for aquatic organisms.

6.2.3 Other Wildlife: Minor Effect (Short Term) – Approximately 65 acres of potential wildlife habitat will be impacted due to the proposed project. These affects will be offset by the reclamation process where revegetation and littoral zones will be added and will create better browse and habitat for wildlife.

6.3 Potential Effects on Special Aquatic Sites (Subpart E):

6.3.1 Sanctuaries and Refuges: No Effect – There are no sanctuaries or refuges located within or nearby the project area.

6.3.2 Wetlands: Minor Effect (Long Term) – The existing wetlands found within the 65 acres of the project footprint will be impacted by the action of the project. Minimization measures will include the creation of littoral zones around the sediment ponds which will help to offset the impact of loss of habitat.

6.3.3 Mud Flats: Not Applicable – There are no mud flats located within the project boundary.

6.3.4 Vegetated Shallows: Not Applicable – There are no vegetated shallows within the project.

6.3.5 Coral Reefs: Not Applicable – There are no coral reefs within the project location.
6.3.6 Riffle and Pool Complexes: Not Applicable – The project will not affect Crooked Creek, and is located 600+ linear feet away from the stream body.

6.4 Potential effects on human use characteristics (Subpart F):

6.4.1 Municipal and Private Water Supplies: Not Applicable – The project area is located in remote lands which are not used for private or public water supply.

6.4.2 Recreational and Commercial Fisheries: Not Applicable – The project will not affect recreational fishing within Crooked Creek, and there are no commercial fisheries located within the project boundary.

6.4.3 Water-related Recreation: No Effect – The project will not impact recreation in Crooked Creek.

6.4.4 Aesthetics: No Effect – The project will not have an effect on aesthetics to the surrounding lands as the project area as well as the adjacent lands have already been impacted by historical mining operations and operational mining projects.

6.5 Evaluation and testing (Subpart G):

6.5.1 General Evaluation of Dredged or Fill Material:

The gravel fill material will be from the project site itself, and does not pose a risk of contaminants or other adverse qualities.

This evaluation indicates that the proposed discharge material meets the testing exclusion criteria for the reason cited below.

Exclusion: Based on the above information, the material is not a carrier of contaminants.

6.5.2 Chemical, Biological, and Physical Evaluation and Testing:

The gravel fill does not require chemical, biological, and physical evaluation or testing. The material consists of the substrate material which will be excavated, washed, and re-deposited during the mining process, and does not pose a risk or concern to the environment of the project site.

6.6 Actions to minimize adverse effects (Subpart H):

Actions to be undertaken in response to 40 CFR Section 203.10(d) to minimize the adverse effects of discharges of dredged or fill material are incorporated into the discussion in sections 5.1 through 5.5 above. If applicable, additional actions to minimize adverse effects are discussed below, including actions concerning the location of the discharge, actions concerning the material to be discharged, actions controlling the material after discharge, actions affecting the method of dispersion, actions related to
technology, actions affecting plant and animal populations, actions affecting human use, and other actions.

The fill material will be excavated, washed in place, and re-deposited on the mining cuts in such a way by the mobile placer mining equipment to leave the landscape as close as possible to its original slope, grade, and contours which acts to minimize impacts to the landscape, and will make the reclamation process faster and more effective. The project is expected to have temporary effects to wildlife and aquatic life by loss of habitat of the footprint area. These effects will be offset by the rehabilitation of the project footprint, but in addition to this project’s impacts those impacts of previous mining operations of the landscape which were never remediated will also be completed. This will create more suitable habitat.

6.7 Factual Determinations – (Subpart B, section 230.11) The determinations below are based on the determination of effects described in detail in sections 6.1 – 6.6 above:

6.7.1 Physical substrate: Minor Effect (Long Term)
6.7.2 Water circulation, fluctuation and salinity: Minor Effect (Short Term)
6.7.3 Suspended particulates/turbidity: Minor Effect (Long Term)
6.7.4 Contaminants: No Effect
6.7.5 Aquatic ecosystem and organisms: Negligible Effect
6.7.6 Proposed disposal site: Not Applicable
6.7.7 Cumulative effects on the aquatic ecosystem: Negligible Effect – Cumulative effects are discussed in section 9 of this document.
6.7.8 Secondary effects on the aquatic ecosystem: Negligible Effect Secondary effects are discussed in section 9 of this document.

6.8 Restrictions on Discharges (Subpart B, section 230.10) (an answer marked with an asterisk indicates noncompliance with the Guidelines):

<table>
<thead>
<tr>
<th>No</th>
<th>Based on the discussion in Section 5, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that not involve discharges into “waters of the US” or at other locations within these waters?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Based on the discussion in section 5, if the project is in a special aquatic site and not water-dependent, has the applicant clearly demonstrated that there are no practicable alternative sites that do not involve SAS?</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>No</td>
<td>Will the discharge:</td>
</tr>
<tr>
<td>No</td>
<td>Violate state water quality standards?</td>
</tr>
<tr>
<td>No</td>
<td>Violate toxic effluent standards (under Section 307 of the Act)?</td>
</tr>
<tr>
<td>No</td>
<td>Jeopardize endangered or threatened species or their critical habitat?</td>
</tr>
<tr>
<td>No</td>
<td>Violate standards set by the Department of Commerce to protect marine sanctuaries?</td>
</tr>
<tr>
<td></td>
<td>Will the discharge contribute to significant degradation of “waters of the US” through adverse impacts to:</td>
</tr>
<tr>
<td>No</td>
<td>Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?</td>
</tr>
<tr>
<td>No</td>
<td>Life stages of aquatic life and other wildlife?</td>
</tr>
<tr>
<td>No</td>
<td>Diversity, productivity, and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy?</td>
</tr>
<tr>
<td>No</td>
<td>Recreational, aesthetic, and economic values?</td>
</tr>
<tr>
<td>Yes</td>
<td>Will all appropriate and practicable steps (40 CFR 23.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?</td>
</tr>
</tbody>
</table>

Remarks – The project is compliant in all aspects with Corps Guidelines.

7.0 **General Public Interest Review** – (33 CFR 320.4 and RGL 84-09) All public interest factors have been reviewed and summarized in the table below. Both cumulative and secondary impact on the public interest have been considered.
### Discussion of the public interest factor(s) relevant to the decision:

**Factor:** Please see the table below for a discussion of all factors listed above.

**Discussion:**

<table>
<thead>
<tr>
<th>Conservation</th>
<th>The project is considered detrimental as there will be a loss of the affected wetlands. Discharge of fill</th>
</tr>
</thead>
</table>
would impact 65 acres in total. The acreage and surrounding lands has been impacted by previous mining operations. These combined impacts on the landscape within the project footprint will be rehabilitated to offset conservation concerns.

<table>
<thead>
<tr>
<th>Economics</th>
<th>The project economically benefits the operator and the State of Alaska by financial benefits gained through the discovery and harvesting of the mineral deposits. The State of Alaska also benefits by the potential of producing income through its usage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
<td>The aesthetic impact of the mining activity would be negligible. The footprint of the project as proposed is considered very small, and the project location has already been impacted by mining.</td>
</tr>
<tr>
<td>General Environmental Concerns</td>
<td>The general environmental concerns are considered to be negligible. The project footprint would allow an increase of usage by providing year around activity to the area by visitors and the associated risks which comes with recreational vehicles, camping, etc. to the area.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>Some detrimental impact is anticipated on existing wetlands The discharge of fill will permanently impact approximately 65 acres of wetlands and a loss of habitat in the Crooked Creek Watershed. This is impact is comparatively negligible in relativity to the size and location of the adjacent undeveloped lands. The shallow ponds would recover function for flood attenuation and sediment capture upon construction, however, it will take several decades to regain full habitat and nutrient cycling functions. The sediment and tailing ponds will be rehabilitated and littoral zones with emergent wetlands will be created.</td>
</tr>
<tr>
<td>Historic Properties</td>
<td>Concurrence from SHPO was received stating there is no adverse effect to historical properties within the project area.</td>
</tr>
</tbody>
</table>
| Fish and Wildlife Values | A neutral, or, mitigated impact is anticipated on fish and wildlife values. The discharge of fill into 64.7 acres of wetlands will cause a loss of habitat, which is considered detrimental to fish and wildlife values. However, the on-site minimization will offset the impact. Reclamation of the project area will initiate ecosystem changes, transforming mature and ecologically homogenous wetlands and uplands to an
early seral ecological state, creating new opportunities for plant succession, new microhabitats, and different use of the area by animals. This will provide more diverse habitat than before mining, as has been observed in other reclaimed mine areas.

<table>
<thead>
<tr>
<th>Flood hazards</th>
<th>The general flood hazard concerns are considered neutral. The applicant must maintain the hydrology pattern of location. The Crooked Creek Watershed is already impacted by historical mining which was never reclamationated. The applicant’s minimization and reclamation efforts may improve the watershed’s storage and filtration capacity once completed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floodplain values</td>
<td>A neutral or mitigated impact is anticipated on floodplain values. The floodplain would be mined, and then recontoured under reclamation. Restoration activities would restore some of the floodplain functions for the 65 acres of wetlands. The remaining 2.0 acres is comprised of uplands. The Corps does not have jurisdiction over uplands. See the above comments regarding flood hazards and values.</td>
</tr>
<tr>
<td>Land Use</td>
<td>The general land use values are considered beneficial. The proposed project will increase land use for the permittee and for others by allowing increased access to the property and adjacent properties.</td>
</tr>
<tr>
<td>Navigation</td>
<td>No Effect. The project does not impact any navigable waterways.</td>
</tr>
<tr>
<td>Shore Erosion and Accretion</td>
<td>The general shore erosion and accretion of the project is considered neutral. The project may improve the impaired watershed by improving runoff and erosion problems associated with the current condition of the project (non-rehabilitated historic mining impacts) and surrounding area through the approved reclamation plan.</td>
</tr>
<tr>
<td>Recreation</td>
<td>The general recreation values are considered beneficial. The discharge of fill may increase the site’s current recreational status by allowing year around usage both to the applicant as well as other members of the public.</td>
</tr>
<tr>
<td>Water Supply and Conservation</td>
<td>A neutral or mitigated impact on water supply and conservation is anticipated. The project is not anticipated to impact water supplies, or adversely impact the conservation of the natural water source of</td>
</tr>
</tbody>
</table>
the area more than it has already been impacted by the historical mining operations. The water supply and conservation may improve due to the reclamation process after the project has been completed.

<table>
<thead>
<tr>
<th>Water quality</th>
<th>A neutral, or, mitigated impact is anticipated on water quality. This is covered under the Water Quality Certification.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy needs</td>
<td>The project is considered to have no effect on energy needs.</td>
</tr>
<tr>
<td>Safety</td>
<td>No effect. Proper signage and access measures will be posted for safety concerns as stated in the State of Alaska mining guidelines.</td>
</tr>
<tr>
<td>Food and Fiber Production</td>
<td>No effect.</td>
</tr>
<tr>
<td>Mineral Needs</td>
<td>The impacts of the project are anticipated to be beneficial by the acquisition of the mineral resources associated with the project area.</td>
</tr>
<tr>
<td>Consideration of Property Ownership</td>
<td>The impacts of the project would be beneficial with respect to property ownership. As the stated project purpose is recovery of gold ore. The properties consist of state, federal, and private mining claims which may be publically purchased at a later date once the project has been completed.</td>
</tr>
</tbody>
</table>

7.2 The relative extent of the public and private need for the proposed structure or work:

The project need is private in nature, primarily providing economic benefit to the company owners, their investors, and employees.

7.3 Are there unresolved conflicts as to resource use? No

If so, are there reasonable and practicable alternative locations and/or methods to accomplish the objectives of the proposed action? N/A

7.4 The extent and permanence of the beneficial and/or detrimental effects, which the proposed work is likely to have on the public and private use to which the area is suited:

The project impact would cause a permanent loss of approximately 65 acres of wetlands within the Crooked Creek Watershed. However; this loss is relatively small in comparison to the large undeveloped area the project site is located within. The project provides beneficial effects for public and private access for other possible mine operations and recreational uses to the surrounding public and private lands which encompass the project.
area that were not formerly available. In addition, the project provides an economic lift by the income generated associated with the mineral gain as well as employment opportunities in an area where little other employment resources are available

8.0 **Cumulative and Secondary Impacts** – (40 CFR 230.11(g) and 40 CFR 1508.7, RGL 84-9) Cumulative impacts result from the incremental environmental impact of an action when added to all other past, present, and reasonably foreseeable future actions. They can result from individually minor but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider both direct and indirect, or secondary, impacts. Indirect impacts result from actions that occur later in time or farther removed in distance from the original action, but still reasonably foreseeable.

8.1 Geographic scope: The geographic scope for cumulative impact assessment is described as the mineralized watershed located near Crooked Creek where the permittee holds mining claims. The watershed itself is located within the larger Yukon River watershed complex. The discharge of fill within an alternate area was impracticable as the operator would have to apply and purchase a new mining claim, after having invested in bulk sampling expenses of the mine claim, as well as preparations and staging of heavy equipment to the area. All practicable steps have been taken to avoid and minimize impacts from the project to the area.

8.2 Temporal scope: 100 Years

Explain selected timeframe: The impact of the project’s footprint is expected to be permanent. Secondary impacts are expected to occur due to increased use by other mine operations or the public in the surrounding area which was previously unavailable due to lack of access.

8.3 Historical conditions of the area subject to this analysis: The subject area is within the Central, Alaska historic mining area. The project area contains abandoned tailing piles, setting ponds, and vertical mine shafts from past mine operations. The project area was never reclaimed, and would benefit from the applicant’s reclamation plan which may improve the hydrology and habitat of the land area.

8.4 Major changes to the area and description of current condition: The environmental history of the subject area over the past 100 years includes periods of intermittent mining. During the past reclamation was not required by the state of Alaska until 1991, and most of the areas previously mined in the Crooked Creek locale have not been reclaimed, including the project site. The project land is comprised of mixed uplands of black spruce, white spruce, and mixed deciduous forests and wetlands. Abutting lands outside the subject area of consist of an assortment of undeveloped lands, active mining claims, and some
residential developments located along the Steese Highway near the village of Central, Alaska.

8.5 Anticipated cumulative and secondary/indirect impacts (environmental consequences) of the proposed action:

Easier access to public and private lands adjacent to the east and west of the proposed project area to existing trails may result in an increase of off road vehicle and foot traffic, which may allow impacts to the surrounding uplands and wetlands. These trails are typically only used during the winter months when the ground is frozen due to the limited accessibility of the area. Access would be much more available due to removal of overburden, and maintenance of the existing access road.

The proposed project would allow private property owners of the adjacent lands to more easily access the lands. The majority of the parcels in the review area are undeveloped, and are used for hunting and other recreational uses. Increased residential development may result from the discharge of fill for the construction of additional access roads, homes and utility installation.

The increased population would result in further loss of habitat, and increased hunting and access to the surrounding publicly owned lands. Additionally, noise from off road vehicles, heavy equipment, snow machines and ATVs could increase.

Crooked Creek drains directly into Birch Creek (a Section 10 Navigable Waterway), which is an anadromous stream hosting Chinook salmon (Oncorhynchus tshawtscha), and Chum salmon (Oncorhynchus keta), as well as other resident fish species. Several miles downstream of the project, to the southeast, is the Yukon River, also a Section 10 Navigable Waterway. The Yukon River is also an anadromous stream. Both rivers are considered Essential Fish Habitat. Increased development could result in further loss of spawning habitat, a potential introduction of heavy sediment loading, toxins from chemical or fuel spills in the vicinity of the waterways, and/or decreases in water quality from source and non-point source pollution.

8.6 Reasonably foreseeable future actions: The purpose of the proposed gold mine is increased income generated by mineral acquirement. Should the proposed development prove to increase year round accessibility to the remote parcels the result would be additional impacts to wetlands, and other waters of the U.S and wildlife habitat.

Increased traffic on the proposed access route to and from the project by abutting residential users, as well as from the public, may result in future expansion of the remote lands with additional side roads and trails, resulting in further loss of wetlands and other waters of the U.S. Potential residential or recreational development use would also cause impacts to waters of the U. S., as well as impacts to water quality, and fish and wildlife habitat.
8.7 Effect of the proposed mitigation, including avoidance and minimization, on reducing the project's contribution to cumulative effects in the region:

The permittee has proposed a package of avoidance and minimization measures to reduce the project's contribution to cumulative impacts in the area. Compensatory mitigation was not proposed.

Avoidance measures proposed by the applicant include:
- Use of existing access road in uplands, avoiding wetlands
- Exploration to delineate the pay zone, mining only where economic, avoiding unnecessary impacts
- Choice of the least damaging practicable alternative.

Minimization measures proposed by the applicant include:
- Storing stripped organic material in an upland area, reducing impacts to wetlands
- Stripping barren gravels into the previous mine cut, reducing the mine footprint,
  - 100% recycle of all process water.
- Directing captured storm runoff around the worksite to keep runoff water clean.
- Avoiding use of stream diversions and bypasses to protect and preserve the natural channel
- Locating mine cuts away from the riparian area to maintain the vegetated buffer
- Reclamation strategy to consist of constructing a series of shallow ponds with spillways, to manage water, trap sediments, and create wetland habitat.
- Redistributing stockpiled organic soils and woody debris to promote revegetation
- Restore areas of wetland by contouring some of the reclaimed areas to an elevation that will allow surface or near surface saturation of the soil.

8.8 Conclusions: The proposed project would not represent a major impairment of water resources in the aquatic ecosystem given that the project area is already disturbed land, and represents less than one percent of the landscape of that area. Landscape recovery will happen eventually in this location, regardless of reclamation, over a period of decades. Reasonable efforts at avoidance and minimization will reduce the time it takes for recovery to occur by several decades. All of the measures proposed reduce cumulative impacts. The permittee’s efforts to recontour some areas at an elevation that will allow surface or near surface saturation of the soil will allow recovery of some areas as wetlands, and reduce detrimental cumulative impacts that occur from losing wetlands. The permittee’s efforts to maintain riparian areas and to establish some form of grade control will minimize detrimental cumulative impacts to Crooked Creek.

9.1 Avoidance: In evaluating a project area containing waters of the United States, consideration must be given to avoiding impacts on these sites. Avoidance measures for this project are Section 1.5 and 5.

9.2 Minimization: If waters of the United States cannot be avoided, impacts must be minimized. Minimization measures for this project are described in Section 1.5 and 5.

9.3 Compensatory mitigation

9.3.1 Is compensatory mitigation required? No

The avoidance and minimization measures proposed were determined to be appropriate and practicable to the scope and degree of the environmental impacts of the project. Appropriate means being based on the functions of the resources impacted, and being practicable. The functions of the affected wetland areas include: floodwater storage, sediment retention, and habitat. Though the permittee will not be working in the stream, the wetland dynamics of functions of the stream which may be affected include: water transport, sediment and bedload transport, maintenance of stream morphology, maintenance of the riparian area, as well as the biogeochemical and habitat functions. Practicable means capable of being done, taking into account cost, technology, and logistics. All of the avoidance and minimization measures proposed directly related to the impacts of the proposal, are appropriate to the scope and degree of those impacts, eminently practicable, and reasonably enforceable. Therefore compensatory mitigation is not required.

9.3.2 Are the impacts to the jurisdictional aquatic resources in the service area of an approved mitigation bank? No

9.3.3 Does the mitigation bank have the appropriate number and resource type or credits available? Not Applicable

9.3.4 Are the impacts to the jurisdictional aquatic resources in the service area of an approved in-lieu fee program? No

9.3.5 Does the in-lieu fee program have the appropriate number and resource type or credits available? Not Applicable

9.3.6 Identify the selected compensatory mitigation option(s): Not Applicable

☐ Mitigation Bank

☐ In-Lieu fee Program Credits
☐ Permittee-responsible mitigation under a watershed

☐ Permittee-responsible mitigation, on-site

☐ Permittee-responsible mitigation, off-site

9.3.7 Does the selected compensatory mitigation option comply with the order of the options presented in §332.3(b) (2)-(6)? Not Applicable

9.3.7.1 The likelihood for ecological success and sustainability: The project’s reclamation plan has been used by other placer mining operations in the surrounding area as well as throughout Alaska. The process has proven to be ecologically successful, and offers a more desirable wildlife habitat to the previous non-reclamated historically mined lands. The process creates younger vegetation and the shallow littoral zones that offer a functional lift to the area when compared to abandoned tailing piles with little plant growth, deep tailing ponds with steep sides which are undesirable habitat to wildlife, and abandoned vertical shafts which can be dangerous to both the public and wildlife.

9.3.7.2 The location of the compensation site relative to the impact site and their significance within the watershed: N/A

9.3.7.3 The cost of mitigation project: N/A

9.3.8 Other mitigative actions: N/A

9.3.9 Final compensatory mitigation required by the Corps: The compensatory mitigation required by the Corps is the same as described in Section 1.6 of this document (Compensatory Mitigation proposed by the applicant).

10.0 Other Laws, Policies, and Effects

10.1 Endangered Species Act (ESA):

10.1.1 Name of Species considered: None

10.1.2 Effects Determination:

☐ No Effect

For these species: All Species Considered

For these species: Indicate Species Here

10.1.3 Basis for determination: There are no threatened or endangered species in the project area.

10.1.4 Consultation: Not Applicable

10.1.5 Consultation responses(s): N/A
10.1.6 Additional information (optional): N/A

10.1.7 Compliance with ESA: N/A

10.2 Magnuson-Steven Act – Essential Fish Habitat (EFH):

10.2.1 Name of Species considered: N/A

10.2.2 Effects Determination:

☒ No Effect
For these species: All Species Considered

10.2.3 Basis for determination: Crooked Creek is not an anadromous stream, but ADF&G has expressed concern for the Arctic Grayling population located within the waterbody. The project is located approximately 600 linear feet from the creek itself, and the plans for the project do not involve any work in the stream or near its riparian area. There will be no discharge of fill or sediment created by the project which will impact the waterway.

10.2.4 Consultation: Informal

10.2.6 Additional information (optional): NA

10.2.7 Compliance with Magnuson-Stevens Act: Yes

10.3 National Historic Preservation Act – Section 106:

10.3.1 Known sites present: Yes

10.3.2 Survey required/conducted: No

10.3.3 Effects determination:

☒ No adverse effect
For these historic properties eligible or listed in the National Register of Historic Places: All sites considered

10.3.4 Rationale for effects determination: The applicant supplied information verifying the historical trail had been destroyed within the project boundary by previous mining operations.

10.3.5 Memorandum of Agreement required: N/A

10.3.6 Date consultation complete if necessary: March 31, 2016

10.3.7 Additional information (optional): N/A
10.3.8 Compliance with National Historic Preservation Act: Yes

10.4 Corps Wetland Policy: Based on the public interest review (Section 7 of this document), the beneficial effects of the project outweigh the detrimental impacts of the project.

10.5 Water Quality Certification under Section 401 of the Clean Water Act:

10.5.1 An individual water quality certification was issued

10.5.2 Date of Water Quality Certification decision: March 31, 2016

10.5.3 Additional information (optional): N/A


10.7 Effects on Federal Projects (33 CFR 320.4(g) (4)): This project is not located in the vicinity of an authorized federal project.

10.8 Effects on the limits of the territorial seas (33 CFR 320.4(f)): This proposed project does not include any structure or work affecting coastal waters.

10.9 Safety of impoundment structures (33 CFR 320.4(k)): This proposed project does not include any impoundment structures.

10.10 Activities in Marine Sanctuaries (320.4(j)): N/A

10.11 Other Authorizations:
None

10.12 Significant issues of Overriding National Importance (33 CFR 320.4(j) (2)): N/A.

10.13 Discussion (if necessary): N/A

11.0 Final Project Description and Special Conditions

11.1 Final Project Description: The final project description is the same as the applicant's proposed project description which is indicated in Section 1.4 of this document.

11.2 Special Conditions: Rationalization: To minimize impacts to waters of the U.S, the permittee is required to follow a set of best management activities covering handling of overburden and water management, and to restore wetlands on site. 40 CFR Part 230
Section 404(b) (1) Subpart H, and 33 CFR, Actions to Minimize Adverse effects and 33 CFR Part 320.4 (r) (1) (i), minimization as a part of mitigation.

In this permit, all minimization requirements have been aggregated into one special condition covering minimization and restoration activities. Restoration is considered a form of minimization.

Special Conditions: Special Conditions: for POA-2016-30, Crooked Creek:

To minimize impacts to aquatic resources from mining operations, the permittee shall comply with the following measures:

1. Project boundaries shall be staked, flagged, or otherwise clearly delineated prior to the commencement of the authorized activity for projects that involve the placement of fill.

2. The Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the authorized work area as detailed on the enclosed plans (sheet 1-6), dated December 28, 2015. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion.

3. No stockpiling of fill materials shall occur in wetlands or other waters of the U.S. that do not have DA authorization as shown detailed on the enclosed plans (sheets 1-6), dated December 28, 2015. Overburden shall be stockpiled in a manner that facilitates reclamation, and subsequent revegetation. Organic overburden, when present, shall be stockpiled separately from non-organic, or mineral overburden.

4. Water management features shall be designed to slow, collect, and retain water at the site, to promote revegetation and restoration of aquatic resources. To provide functional lift on reclaimed mine sites, the permittee shall restore approximately 15 acres of aquatic resources of the affected wetlands. The aquatic resources may be constructed at the discretion of the permittee, to satisfy performance standards for palustrine emergent or scrub shrub wetlands, or shallow ponds with an emergent littoral zone. Natural revegetation is allowed.

   a. Irregular shorelines, to maximize the shore-to-water interface with the water depth between three (3) and six (6) feet, and the addition of six inches of organic material to promote growth of aquatic vegetation.

   b. Littoral zones (underwater shelves along the shoreline with slopes no steeper than 10H: 1V shall be at least 20-foot wide) (Slopes may be shallower, and width may be wider).
c. At least a 25-foot wide buffer of native shrub vegetation shall be allowed to re-establish on the shorelines.

5. Within 60 days of completion of the work authorized by this permit, the Permittee shall complete the attached “Self-Certification Statement of Compliance” form and submit it to the Corps. In the event that the completed work deviates in any manner from the authorized work, the Permittee shall describe the deviations between the work authorized by this permit and the work as constructed on the “Self-Certification Statement of Compliance” form. The description of any deviations on the “Self-Certification Statement of Compliance” form does not constitute approval of any deviations by the Corps.

a. Include the Department of the Army permit number on all sheets submitted.

12.0 Findings and Determinations

12.1 Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit would not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps’ continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons, a conformity determination is not required for this permit action. The project is expected to have no effect on air quality.

12.2 Relevant Presidential Executive Orders:

12.2.1 EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians: This action has no substantial effect on one or more Indian tribes, Alaska or Hawaiian natives.

12.2.2 EO 11988, Floodplain Management: Alternatives to location within the floodplain, minimization and compensatory mitigation of the effects were considered above.

12.2.3 EO 12898, Environmental Justice: The Corps has determined that this proposed project would not use methods or practices that discriminate on the basis of race, color or national origin nor would it have a disproportionate effect on minority or low-income communities.

12.2.4 EO 13112, Invasive Species: There are no invasive species issues involved in this proposed project.

12.2.5 EO 13212 and EO 13302, Energy Supply Availability: The project was not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.
12.2.6 EO 13547, Stewardship of the Ocean, Our Coasts, and the Great Lakes: The project would not adversely affect America’s stewardship of the ocean, coasts, or Great Lakes.

12.3 Finding regarding the need for an Environmental Impact Statement: Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, we find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

12.4 Compliance with the Section 404(b) (1) Guidelines: Having completed the evaluation in Section 6, the undersigned have determined that the proposed discharge complies with the Guidelines, with the inclusion of the appropriate and practicable conditions to minimize pollution or adverse effects to the affected ecosystem.

Reason for noncompliance: N/A

12.4.1 The proposed action is the Least Environmentally Damaging Practicable Alternative (LEDPA).

12.5 Public Interest Determination: We find that issuance of the Department of the Army Permit is not contrary to the public interest.

Prepared By:

Laurel A. Gale, Regulatory Specialist

Reviewed By:

Benjamin Soiseth
North Branch, Regulatory Division

Date: 5/23/2016