



**U.S. Army Corps  
of Engineers  
Alaska District**

**Department of the Army**

**Permit Evaluation and Decision Document**

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Applicant: Alaska Gold Company  
Reference Number: POA-2006-742-4  
Waterway: Rock Creek

This document constitutes my Environmental Assessment, Statement of Findings, and review and compliance determination according to the 404(b)(1) Guidelines for the proposed work.

Rock Creek Mine Plan of Operations (which included Environmental Information Document and Appendices), ADEC Waste Management Permit, ADNR Temporary Water Use Authorization, ADNR Fish Habitat Permit, ADNR Reclamation Plan Approval, and ADNR Responses to comments on Draft Authorizations for the Rock Creek Mine were utilized during evaluation of the proposed project and in preparation of this decision document.

I. Proposed project: The location and description of work are described in the attached public notice, dated June 1, 2006. (Any modifications since the public notice are listed below).

II. Environmental and public factors considered:

A. Purpose and need: The purpose of the Rock Creek Mine is to operate a profitable open-pit gold mine.

B. Alternatives [33 CFR PART 320.4(b)(4), 40 CFR PART 230.10].

1. No action: The no action alternative entails denial of the proposed action. Under the no action alternative the project would not be constructed and there would be no disturbance to wetlands; however, fishery enhancement potential with the proposed mitigation projects would not occur. Also, the no action alternative removes the potential for economic growth associated with mine development.

For further information see Section 6.3, Rock Creek Project Environmental Information Document (EID) dated May 2006.

2. Other project designs [smaller, larger, different, etc.]: An alternative design that processed the ore without the use of cyanide was considered. It was determined that this design was unable to produce an acceptable gold recovery rate.

See EID Section 6.0 Alternative Analysis; and Rock Creek Mine Plan and Operations and Permit Applications, Appendix 1 Mitigation and Minimization of Wetland Impacts dated May 25, 2006 for information on other project designs.

3. Other Sites: Since the Rock Creek Mine and Mill Complex lies within land owned approximately 66% by the applicant and the Big Hurrah deposit lies within land owned 100% by the applicant, the project would have to occur at the proposed sites.

C. Physical and/or chemical characteristics and anticipated changes:

Substrate: The project area is comprised of approximately 414.5 acres of wetlands with a total disturbed area of 756 acres. Soil types consist of Histic Pergelic Cryaquepts with loamy or gravelly textures. The soils are poorly drained with a shallow permafrost table. The soils formed in moderately deep loamy sediment are underlain by very gravelly and stony material. The soils are formed in alluvial material and support tundra vegetation.

See EID, Section 7.4 Soils for additional information.

Currents, circulation, or drainage patterns: At the Rock Creek Mine/Mill Complex, surface water and precipitation runoff from undisturbed areas upslope of the Rock Creek facility development rock stockpiles and open pit will be diverted around the project area in a northerly flowing channel that empties into Lindblom Creek. Precipitation runoff for the South Development Rock Stockpile will filter through the vegetative mat into the surrounding area and/or be routed along a channel and re-introduced back into lower Rock Creek. A similar channel system will direct precipitation runoff from the North Development Rock Stockpile into Lindblom Creek. Water from the plant site area, along with water pumped from the open pit, seepage collected from the toe of the tailings dam, and rainfall and snowmelt within the Tailings Storage Facility (TSF) will be collected and directed to collection sumps, which will be pumped to the Mill Recycle Water Pond for recycle back to the process plant. At the Big Hurrah Mine surface water will be diverted around Big Hurrah facilities via a network of precipitation runoff channels. Precipitation runoff will filter through the vegetative mat into the surrounding area or drain into the Big Hurrah Creek drainage.

See EID Section 7.5, Hydrology and Water Quality; and EID Appendices, Water Management Reports for further information.

Suspended particulates, turbidity: No more than minimal adverse impacts to suspended particulates and turbidity are anticipated at both sites. A short term increase in suspended particulates and turbidity is anticipated during tailings removal, stream channelization and reclamation work in Big Hurrah Creek.

See EID Section 5.4 Water Management, Section 7.5 Hydrology and Water Quality; and EID Appendices, Hydrology and Geology-Geochemistry for further information.

Water quality [temperature, salinity patterns, and other parameters]: Background water quality is below State Water Quality Standards for almost all parameters at both Rock Creek and Big Hurrah. Water quality at both sites should be only minimally impacted by the project. Runoff from development rock at both site is anticipated to be benign.

See EID Section 5.4 Water Management and Section 7.5 Hydrology and Water Quality; and EID Appendices, Hydrology for further information.

Flood control functions: Some floodwater storage capacity would be lost as a result of the work in wetlands. As the project is minor in size compared to the surrounding area, this impact would be considered minor in nature.

Storm, wave, and erosion buffers: Not applicable.

Erosion and accretion patterns: Erosion and accretion would be affected by the mining work. Erosion is anticipated to increase during mining, however the area around the open mine pits would be sloped to drain into the pits and not to adjacent wetlands. Overburden stockpiles may be seeded to help prevent erosion.

Aquifer recharge: It is uncertain if the project would have any long-term effect upon any given aquifer in the area.

Baseflow: Higher runoff rate may result in a larger baseflow during rains and lower baseflow during dry periods. This is expected to be minor and would have little to no effect upon the overall baseflow within the area.

Mixing zone, in light of the depth of water at the disposal site; current velocity, direction, and variability at the disposal site; degree of turbulence; water column stratification; discharge vessel speed and direction; rate of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing: There would be no direct placement of fill into any open water body, except reclamation work, therefore this impact would not be applicable.

D. Biological characteristics and anticipated changes:

Special aquatic sites [wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries, and refuges, as defined in 40 CFR PART 230.40-45]: The proposed work would result in the conversion of approximately 414.5 acres of wetlands to non wetlands. The wetlands impacted by the project area are predominately open sedge/shrub tundra, closed willow thicket, shrub/edge tundra communities and close-flooded willow thicket, which are abundant throughout the area. Considering the proposed mitigation measures, including reclamation, and the abundance of these wetland types in the affected watersheds, the overall impact to wetlands would be minor.

See EID Section 7.7.2 Wetlands and EID Appendices, Biological Resources for further information.

Habitat for fish and other aquatic organisms: During project life the upper portions of Rock Creek will be diverted and flows to lower Rock Creek will be substantially reduced by the installation of groundwater interception wells, therefore, having a negative impacts on fish use of the area. However, after project completion, Rock Creek will be reestablished through the pit lake, which should provide over wintering habitat. Upper Little Hurrah Creek will be diverted and flows reduced due to the presence of interception wells. Since fish use of Little Hurrah Creek is minimal, the proposed work should cause no more than minimal impacts on fisheries and other aquatic organisms.

See EID Section 7.7.5 Essential Fish Habitat for further information.

Wildlife habitat [breeding, cover, food, travel, general]: A short term disruption in wildlife use patterns may occur during project activities. Wildlife typically attenuate to this type of disturbance. The proposed work would result in approximately 414.5 acres of direct wetland habitat loss. Since the habitat is abundant, no more than minimal impacts are anticipated.

See EID Sections 7.7.1 Habitat Types, 7.7.3 Mammals and 7.7.4 Avian Resources; and EID Appendices, Biological Resources for further information.

Endangered or threatened species: The proposed project was coordinated with the US Fish and Wildlife Service (USFWS). The project is within the migratory ranges of the spectacled eider and the Alaska-breeding population of Steller's eider, both listed as threatened under the Endangered Species Act. Neither species has been recently documented as breeding in the Nome area, nor do the proposed project areas constitute potentially suitable breeding, molting or resting habitats. USFWS believes the project is not likely to adversely affect these listed species. No other threatened or endangered species occur in the project area; however, Kittlitz's murrelet, a candidate species for listing, also is thought to breed on the Seward Peninsula. Under section 7 of the Act, candidate species are not assessed as part of the consultation. There are no records of breeding or occurrence of this species in the project areas. Preparation of a Biological Assessment or further consultation under section 7 of the Act regarding this project is not necessary at this time.

See EID Section 7.7.6 Threatened and Endangered Species for additional information.

Essential Fish Habitat: The proposed work has been evaluated for possible effects to Essential Fish Habitat (EFH) and coordinated with the National Marine Fisheries Service (NMFS) pursuant to the Magnuson Stevens Fishery Conservation and Management Act of 1996. [See Section III(B)(1)(a)(iii) and Section III(B)(2)(a)]. By memo dated June 12, 2006, NMFS stated the project will not result in any adverse effect to EFH. No EFH assessment is required and NMFS does not offer any EFH conservation recommendations. Further EFH consultation is not required.

See EID Section 7.7.5 Essential Fish Habitat for further information.

Biological availability of possible contaminants in dredge or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated [Section 311 of the Clean Water Act] hazardous substances; other public records of significant introduction of contaminants from industries, municipalities, or other sources:

Natural conditions at both sites do not indicate the presence of acid rock drainage and there is no indication, from any of the test work to-date, of any short or long term acid generation from the Rock Creek development rock. Metal leaching does occur naturally at the Rock Creek site and can be observed in groundwater emerging from the mineralized zone. Metals such as arsenic, antimony and molybdenum are naturally present in the geology of the area and are indicated at elemental concentrations which could, if mobilized in the environment, pose an environmental risk. Cyanide is also naturally present in the area. At the Big Hurrah site, arsenic and antimony are indicated at elemental concentrations which could, if mobilized in the environment, pose an environmental risk. Mining activities will be conducted so that runoff will not exceed water quality standards.

See EID Section 7.3 Geology and Section 7.10 Hazardous Waste; and EID Appendices, Geology-Geochemistry for additional information.

#### E. Human use characteristics and impacts:

Existing and potential water supplies; water conservation: Normal process water consumption at the Rock Creek facility is expected to be in the range of 264 million gallons per year. Process water will be provided from various sources, including water supply wells, pit seepage, precipitation on the tailings area and surface runoff. Water from the plant pump site area, along with water pumped from the open pit, seepage collected from the toe of the tailings dam, and rainfall and snowmelt within the TSF, will be collected and directed to collection sumps, which will be pumped to the Mill Recycle Water Pond for recycle back to the process plant. Pit water inflow volume is expected to exceed water consumption at Rock Creek.

See EID Sections 5.4 and 5.5; and EID Appendices Hydrology for further information

Subsistence, recreational, or commercial fisheries: Subsistence in the Nome area consists of hunting, fishing and gathering various plants and berries. Hunting, fishing and the gathering of materials are used by the residents for food, clothing and other everyday living supplies. Subsistence activities have coexisted within the presence of mining in this area throughout the last 100 years and are expected to continue uninterrupted throughout mine operation. Since there is undisturbed land around both mine sites, animal migration and movement should continue unhindered.

Reindeer herding is the only present or past commercial activity within the Snake River and Big Hurrah valleys. The Rock Creek Mine/Mill Complex is a private in-holding within the Davis grazing unit. These lands are owned by the applicant and Sitnasuak Native Corporation. No grazing permits or agreements have been established in the recent past for the use of these lands for the Davis reindeer herd. The Big Hurrah Mine is a private in-

holding within the Gray grazing unit. The land is wholly owned by the applicant and no past or present grazing permits have been established for the use of these lands for the Gray reindeer herd. Neither mine site is within a high-use grazing area. The lack of grazing land agreements at either of these sites presently or in the recent past indicates that use of these lands for mineral development does not represent a direct loss of range to the herd. The availability of open land on all sides of both mine sites adequately allows reindeer movement throughout the area.

Since the Rock Creek mining claims as with all of the applicants lands have been and remain closed to public access, subsistence, recreational and commercial activities should not be adversely impacted by the proposed work.

See EID Section 7.2 Past and Present Land Use for further information.

Other water-related recreation: Not applicable.

Aesthetics of the aquatic ecosystem: The existing landscape in the Nome area has been strongly influenced by mining. Mining was the original stimulus for economic development in the area and active mining equipment as well as historic remnants remain prominent features on the landscape. This evidence of mining is part of the tourist attraction for Nome.

The proposed Rock Creek Mine/Mill Complex would not be visible from the city of Nome, except at the western edge of town beyond the airport. The mine would not be visible from the Nome-Taylor Highway or the Nome-Council Highway. The proposed mine would be visible from the lower Snake River Valley, including from the Nome-Teller Highway where it crosses the valley. Along most of the new Glacier Creek Road and several surrounding hillsides, an observer would have a clear view of the mine.

Visual impacts from the proposed Rock Creek Mine/Mill Complex will occur. The large physical size of the alteration will make the mine stand out clearly in the landscape. After completion of mining, revegetation for the entire mined area would take many years. The magnitude and even the direction of impact (positive or negative) depend upon the viewers physical position in the region at the time of observation and upon the viewers perspective on mining in general.

The Big Hurrah mine would not be visible from the main highway system or any nearby community. The proposed mine would likely be visible from higher elevations along the surrounding slopes and mountains.

See EID Section 7.9.8 Visual; and EID Appendices, Visual for further information.

Parks, National and Historic monuments, National Seashore, Wild and Scenic Rivers, wilderness areas, research sites, etc.: There are no Parks, National and Historic monuments, national Seashore, Wild and Scenic Rivers, wilderness areas or research sites in the project area.

Traffic and/or transportation patterns: Traffic and/or transportation patterns will be impacted by the Rock Creek Mine Project. Approximately 135 individuals will be employed at the two sites and will need transportation daily to get to the sites. Also an estimated three medium trucks and two large trucks per hour would be expected to make trips to and from the mine. Traffic from Nome to the Rock Creek site will primarily follow the Nome-Teller Highway from Nome to Glacier Creek Road and Glacier Creek Road to the mine site. The Center Road and Old Glacier Road are possible alternative routes.

At the Big Hurrah Mine, a crew van will make daily round trips to the site from Nome. Also, occasional large supply trucks, unscheduled pickup trucks and emergency repair vehicles will access the site. The Nome/Council will be used from Nome to the site. Also, two tractor trailers with dual capability will haul ore from the site to the mill approximately every 90

minutes. This route will go from the Big Hurrah Mine to Nome/Council Highway to Nome Bypass to Nome/Teller Highway to the Rock Creek Mine.

See EID Sections 7.9.4 Transportation and 8.0 Transportation Corridor and EID Appendices, Socio-economics for further information.

Energy consumption or generation: Energy would be consumed throughout the life of the project and would be typical of that associated with mining activities. This would be associated with the operation of mining equipment, vehicle support and the day to day operation of the project. Typical resources include electricity and fuel, oils and grease for heavy equipment used in the operation.

See EID Section 5.6 Power and Section 5.8 Fuel Storage for additional information.

Navigation: No effects on navigation are anticipated as a result of the proposed work in wetlands.

Safety: The applicant is responsible to insure the proposed work is conducted in accordance with all applicable safety requirements, rules and regulations.

Air quality: The area surrounding the Rock Creek site has been classified as attainment or unclassifiable for all pollutants. The closest nonattainment area to the facility is the Anchorage urban particulate matter (PM) nonattainment area, which is approximately 560 miles southeast of the Rock Creek site. The region surrounding the Rock Creek site is a PSD Class II area. The nearest PSD Class I area is the Bering Sea national Wildlife Refuge, which is located approximately 370 miles southwest of the Rock Creek site.

The operation of the Rock Creek Mine and Mill Complex will result in the release of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), PM, and sulfur dioxide (SO<sub>2</sub>) to the atmosphere. However, the NO<sub>x</sub>, CO and SO<sub>2</sub> emissions will be less than the thresholds established by ADEC that could cause a significant ambient impact. Since the impacts will be less than the significant levels, compliance with the ambient air quality standards (AAQS) and PSD Class II increments will be maintained and no adverse environmental impacts should occur. The primary cause of PM emissions will be overburden removal, ore mining and milling and fugitive emissions from the movement of vehicles on unpaved roads. Potential PM emissions are expected to be greater than the ADEC threshold for potential significant ambient impact. However, the predicted maximum 24-hour ambient PM<sub>10</sub> impact and the predicted maximum annual ambient PM<sub>10</sub> increment are anticipated to be well below the AAQS and PSD Class II increments. Based on these predicted ambient PM<sub>10</sub> impacts, no adverse environmental impacts should occur.

The Big Hurrah mining operation will be much smaller than the Rock Creek operation and will have much lower potential emissions. Based on the Rock Creek ambient analysis and conclusions, the smaller Big Hurrah Mine is anticipated to be in compliance with all applicable AAQS and PSD Class II increments and is not anticipated to cause an adverse environmental impact.

See EID Section 7.6 Climate; and EID Appendices, Climate for additional information.

Noise: Major noise sources common to most areas include existing mining and exploration, snowmachines and all terrain vehicles, sled dog teams, occasional aircraft over-flights and highway vehicle traffic. Additional noise sources close to Nome include miscellaneous residential, recreational and commercial activities including: chain saws, generators, localized construction, and other associated noise sources common to populated areas in Alaska. Noise related to ongoing mining exploration and other industrial activities is anticipated to be noticeable in some locations. Other less noticeable sources include: wind, wildlife, such as birds; and water noise near moving creeks and rivers.

There are several major noise producing components of mining projects. The three main noise components for this project would be (those activities related to ore retrieval and processing), blasting and mining related traffic. Noise levels are expected to be highest during the initial construction phase. Once construction is completed, and most of the noisiest equipment is in the mine pit, noise levels for mine operation would be dominated by haul trucks, loaders, maintenance facilities and other mine related facilities. Noise from ore processing will not be a significant source when compared to the mining process.

Because most of the additional noise sources would be sporadic in nature, and would occur over a large area, it is not possible to accurately quantify and provide cumulative noise levels. Existing and future noise sources, however, when combined with noise levels from mining operations, are not anticipated to result in any significant local long term noise impact. There may be times, in certain areas, where the combined noise from different sources might result in a noise level defined as significant. Such an increase, however, most likely would be short term in nature, and would not result in more than a short term noise impact.

See EID Section 7.9.7; and EID Appendices Socio-Economic for additional information.

Historic properties [Section 301(5) National Historic Preservation Act]: Two cultural resource surveys have been conducted of the proposed sites. In January 2004 a report titled *Cultural Resources Survey of Proposed Mining Development Activities in the Rock Creek Area, Nome, Alaska* was prepared by Northern Land Use Research, Inc. In September 2005 a report titled *Cultural Resources Survey for Proposed Mining Development Activities in the Big Hurrah Creek Area, Seward Peninsula, Alaska* was prepared by Northern Land Use Research, Inc. Several historic sites were listed in these reports. After review of these reports, our recommendations were forwarded to the State Historical Preservation Office (SHPO). By letter dated July 27, 2006, SHPO concurred with our findings and agreed that a Memorandum of Agreement (MOA) be developed that would specify how the eligible properties would be avoided or mitigated, should avoidance not be possible. We are coordinating with SHPO for the preparation of the (MOA).

See EID Section 7.8 Cultural and Archaeological Resources; and EID Appendices, Archaeological and Cultural Resources for more detailed information on historic properties.

Land use classification: The proposed project is located on land historical used for mineral extraction and purchased by the applicant for a mining operation. The proposed project is consistent with this designation.

See EID Sections 7.2 and 8.2.3 Past and Present Land Use for further information.

#### Economics:

Property values: Since the Rock Creek Project is located on land owned mostly by the applicant for mining purposes, the value of the property should not change. With the arrival of new workers and possibly businesses in the community due to the project and shortage of housing, property values in the area may increase.

See EID Section 7.9 Socioeconomic and Community Impacts; and EID Appendices, Socio-Economics for further information.

Regional growth: With the addition of up to 135 jobs for the project and an estimated total new employment impact at 208 new jobs for the community, growth for the community will at least temporarily increase. Workers at Rock Creek Mine and their families that moved from other locations in the region, as well as those from outside the region, may decide to permanently reside in Nome after project completion. Also, some new businesses that started to provide service to the project may decide to stay

in Nome after project completion. It is anticipated that the project will have a positive impact on regional growth.

See EID Section 7.9.2 Economics for further information.

Tax revenues: The primary impact in the municipal financial sector would be a result of local government taxation of new residential development and increased personal spending driven by project employment and spending. It is anticipated that 27 new housing units could be constructed to accommodate the increased demand for housing due to the project. This would provide new property tax revenues for the City. Also, the economic benefit of direct wages and indirect local expenditures spent locally would be subject to the local sales tax, which would result in additional municipal tax revenue to the City of Nome.

See EIS Section 7.9.5.2 Environmental Consequences: Local Government for further information.

Employment: Total project manpower is anticipated to be around 135 individuals for the currently identified 4 to 5 year life of the mine. It is anticipated that most of the workers will come from residents of the city and outlying villages. It is estimated that 208 new jobs would be created due to the mine and mine service and support facilities.

See EID Section 7.9.2.3 Environmental Consequences: Economics for further information.

Public facilities and services: Nome is the supply, service and transportation center of the Bering Strait region. The largest contributor to the Nome economy is government services. Government services provide the majority of employment for residents for a total of 456 workers in the Nome area. Nearly 30% of Nome's workers were employed by the city, borough, state or federal government during 2000.

Health Care services; Special care facilities; Child Care, Family and Youth Services; Education facilities; Parks and Recreation facilities; Public utilities (Water and Sewer, Solid Waste, Energy, and Communication) are provided to the community. City and borough municipal governments provide services to community and regional locations.

See Sections 7.9.3 Community Facilities and Services and 7.9.5 Local Government Organization, Powers, Finances; and EID Appendices Socio-Economic for further information.

Business activity: Local businesses including fuel, food, lodging, storage, construction, transportation, flight services and other services may benefit from expenditures associated with the work.

See EID Section 7.9 Socioeconomic and Community Impacts for further information.

Prime and unique farmland [7 CFR PART 658]: Not applicable.

Food and fiber production: Not applicable.

Water quantity: Normal process water consumption at the Rock Creek facility is anticipated to be in the range of 264 million gallons per year, mainly resulting from water lost in the voids of the paste tailings deposit. Process water will be provided from various sources, including water supply wells, pit seepage, precipitation on the tailings area, and surface runoff. A minimum operating water inventory will be maintained in the recycle pond.

See EID Section 5.5; and EID Appendices Hydrology for further information.

Mineral needs: The project was designed to extract gold in an economically and environmentally sound manner. Approximately 2.75 million tons of ore will be processed yearly, with a projected mine life of 4-5 years.

See EID Section 5.0 Project Overview for further information.

Consideration of private property: Approximately 66% of land at the Rock Creek Mine and Mill Complex is owned by the applicant with the remainder within the Bering Straits Native Corporation. All land at the Big Hurrah deposit is owned by the applicant.

Community cohesion: Since mining began in the Nome area in 1865, mining has been and still is an important part of the Nome community. Today, the Nome District contains more than 17,000 acres of patented mining claims with many mining operations and local businesses involved in mining. The historic importance of mining to Nome is demonstrated by statues of the Three Lucky Swedes erected in the city center. The Three Lucky Swedes were the historic miners who started the Nome gold rush. Comments received during our public meeting held in Nome on June 26, 2006 and on our public notice issued June 1, 2006, indicated a show of public support for the project. It appears that the majority of individuals within the community are in favor of the project, however, many were concerned of the environmental consequences of the project.

See EID Section 7.9.2 Economics for further information.

Relocation of business, home, etc.: Present housing stock in Nome is in high demand and poor condition. Today, there is an extreme housing shortage in Nome. While the economic development opportunity presented by the development of the Rock Creek Mine project is substantial, new worker demand on the already stressed housing market could be significant, if not mitigated. In order to mitigate the impact that the Rock Creek workforce would have on the Nome housing market, the applicant plans on building 5 new homes for management personnel and has submitted three subdivisions for platting approval. It is anticipated that new residential development of approximately 27 homes may be needed. It is estimated that approximately 69 workers from Bering Strait Villages and 18 workers from outside the region will relocate to Nome for the project. Assuming that these workers will relocate their families to Nome, approximately 134 new residents will make Nome either their permanent or intermittent new home as a result of employment opportunities with the Rock Creek Mine. It is also estimated that 208 new jobs would be created due to the mine. The creation of new jobs and the annual economic benefit in wages and salaries of \$13.6 million, would have a significant positive effect on the region. Most of the construction materials, manufactured buildings and equipment are not currently available for purchase through the existing business entity within the region, therefore, creating an opportunity for local entrepreneurs to open new businesses to support the economy.

See EID Section 7.9 Socioeconomic and Community Impacts; and EID Appendices Socio-Economic for further information.

Other:

- F. Summary of secondary and cumulative impacts: Secondary effects of mining activity include disturbance to fish and wildlife, and possibility of sediment reaching adjacent streams during heavy rain. Use and storage of fuel raises the possibility for fuel spills and contamination of adjacent streams and wetlands. Noise levels would increase temporarily while construction is underway. These noise levels may disrupt wildlife usage of the area. Increased human activity and vehicle traffic may disrupt wildlife.

The placement of fill material into 414.5 acres of wetlands would be an incremental addition to the cumulative impacts associated with previous wetland fills within the area.

### III. Findings.

#### A. Other authorizations:

##### 1. Certificate of Reasonable Assurance [Alaska Department of Environmental Conservation]:

Date: August 9, 2006       Issued    Denied    Waived  
Special Conditions:  Yes    No

Pursuant to 33 CFR PART 320.4(d), the certification of compliance with applicable effluent limitations and water quality standards required under the provisions of Section 401 of the Clean Water Act are considered conclusive with respect to water quality considerations unless the Regional Administrator, U.S. Environmental Protection Agency, advises of other water quality aspects to be taken into consideration.

##### 2. Coastal Zone Management Consistency Determination:

Date: July 31, 2006       Concurred    Non-Concurrence  
Conditions for concurrence:  Yes    No

##### 3. State and/or local authorizations (if issued):

B. A complete application was received on May 31, 2006. A public notice describing the project was issued on June 1, 2006, and sent to all interested parties [see distribution list] including appropriate Federal and State agencies. The public notice comment period was extended at the request of EPA and USFWS. All comments received on this action have been reviewed and are summarized below.

##### 1. Summary of comments received.

###### (a) Federal Agencies:

i. U.S. Environmental Protection Agency (EPA) by memo dated June 28, 2006 requested a 30 day time extension for more coordination and possible site visit. After discussions with EPA, the public notice comment period was extended to July 20, 2006. On July 5, 2006 the applicant provided a project presentation to EPA and USFWS. By letter dated July 20, 2006 EPA stated several concerns and recommendations toward the proposed work. EPA's seven requested conditions will be incorporated as special conditions in the permit, if issued.

ii. U.S. Fish and Wildlife Service (USFWS) by letter dated June 28, 2006 requested permit issuance be delayed until further consultation with agencies can be completed and additional information was collected and analyzed. The public notice comment period was extended to July 20, 2006. The applicant provided a project presentation on July 5, 2006 to USFWS and EPA. By letter dated July 20, 2006, USFWS stated no objection to permit issuance provided 10 conditions are included in the permit. The conditions will be incorporated as special conditions in the permit, if issued.

iii. National Marine Fisheries Service by memo dated June 12, 2006 stated no objection to the project.

iv. U.S. Coast Guard did not comment.

###### (b) State and local agencies:

- i. Alaska Department of Natural Resources (ADNR), Office of Habitat Management and Permitting issued a Fish Habitat Permit for work in Big Hurrah Creek and Linda Vista Creek on August 9, 2006.
- ii. Alaska Department of Environmental Conservation (ADEC) issued the Certificate of Reasonable Assurance on August 9, 2006.
- iii. Alaska Department of Natural Resources, Office of Project Management and Permitting by letter dated July 31, 2006 concurred that the project is consistent with the Alaska Coastal Management Program (ACMP). Two conditions, related to historic properties, were included in the consistency certification.
- iv. Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology by letter dated July 27, 2006 concurred with the USACE finding that site NOM-129 is eligible for inclusion in the National Register of Historic Places (NRHP) under Criterion D, that the Big Hurrah Mine is eligible for the NRHP as a historic district (SOL-136) under Criteria A, C and D and that fourteen other sites are not eligible for inclusion in the NRHP. They did not concur with the findings that the district is eligible under Criterion B.
- v. Alaska Department of Natural Resources, Division of Mining, Land and Water, issued six Temporary Water use Authorizations on August 9, 2006 to withdraw water from ground and surface water at both mine sites.
- vii. Alaska Department of Natural Resources, Division of Mining, Land and Water, approved the Reclamation Plan for both mine sites on August 9, 2006.
- viii. Alaska Department of Environmental Conservation issued a Waste Management Permit on August 9, 2006 for the disposal of wastes from both mine sites.

(c) Organizations and individuals: Approximately 52 individuals commented to our public notice prior to the end of the comment period. Forty five individuals were in support of the project with 7 opposed to the project. Sixteen individuals plus a petition consisting of 27 individuals were received after the close of the comment period. All comments have been incorporated in the official file and were considered during our review.

2. Evaluation: I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application as well as the stated views of other interested agencies and the concerned public. In doing so, I have considered the possible consequences of this proposed work in accordance with regulations published in 33 CFR PART 320 to 330 and 40 CFR PART 230. The following paragraphs include my evaluation of comments received and how the project complies with the above cited regulations.

(a) Consideration of comments: All comments received have been reviewed and considered in this environmental assessment and decision document. It appears that all of the concerns expressed by individuals have been adequately addressed in the following documents: Rock Creek Mine Plan of Operations (including EID and Appendices), ADEC Waste Management Permit, ADNR Temporary Use Authorization, ADNR Fish Habitat Permit, ADNR Reclamation Plan Approval and ADNR Responses to comments on Draft Authorizations for the Rock Creek Mine. Conditions requested by USFWS and EPA will be incorporated in the permit as special conditions.

Several individuals that commented were concerned about adverse environmental impacts associated with the proposed work, especially the use of cyanide. A cyanide leaching and carbon recovery circuit will be used during ore processing. Leached ore from the cyanidation process will be subjected to treatment for destruction of free cyanide

and combined with the tailings from the flotation circuit. The combined tailings will be processed in a paste tailing thickener and deposited in a tailings storage facility. Cyanide would be converted to a stable, relatively non-toxic ferrocyanide complex during this process. Monitoring for cyanide would be conducted in accordance with the ADEC approved Monitoring Plan.

(b) Evaluation of Compliance with 404(b)(1) Guidelines [restrictions on discharge, 40 CFR PART 230.10]: [An \* is marked above the answer that would indicate noncompliance with the guidelines. No \* marked signifies the question does not relate compliance or noncompliance with the guidelines. An "X" simply marks the answer to the question posed.]

i. Alternative Test:

- |     |  |   |   |
|-----|--|---|---|
| (a) | Based on the discussion in II.B., are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the U.S." or at other locations within these waters? | * | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| (b) | Based on II.B., if the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?  | * | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |

ii. Special Restriction. Will the discharge:

- |     |  |   |   |
|-----|--|---|---|
| (a) | Violate state water quality standards?   | * | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| (b) | Violate toxic effluent standards [under Section 307] of the Clean Water Act?   | * | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| (c) | Jeopardize endangered or threatened species or their critical habitat?   | * | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| (d) | Violate standards set by the Department of Commerce to protect marine sanctuaries?   | * | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| (e) | Evaluation of the information in II.C. and II.D. above, indicates that the proposed discharge material meets the testing exclusion criteria for the following reasons: | * | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |

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

The levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

Acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

iii. Other restrictions: Will the discharge contribute to significant degradation of "waters of the U.S." through adverse impacts to:

- |     |  |   |                                     |                                     |
|-----|--|---|-------------------------------------|-------------------------------------|
| (a) | Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and/or special aquatic sites?  | * | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|     |  |   | YES                                 | NO                                  |
| (b) | Life stages of aquatic life and/or wildlife?   | * | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|     |  |   | YES                                 | NO                                  |
| (c) | Diversity, productivity, and stability of the aquatic life and other wildlife? Or wildlife habitat or loss of the capacity of wetlands to assimilate nutrients, purify water or reduce wave energy?            | * | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|     |  |   | YES                                 | NO                                  |
| (d) | Recreational, aesthetic, and/or economic values?   | * | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|     |  |   | YES                                 | NO                                  |
| iv. | Actions to minimize potential adverse impacts [mitigation]? Will all appropriate and practicable steps [40 CFR PART 230.70-77] be taken to minimize adverse impacts of the discharge on the aquatic ecosystem? | * | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|     |  |   | YES                                 | NO                                  |

The following conditions were included in the Alaska Department of Environmental Conservation's (ADEC) Certificate of Reasonable Assurance:

1. Petrochemical and other hazardous substance spill cleanup equipment shall be available on site. Cleanup materials such as sorbent pads and drip pans shall be available and used immediately to contain and cleanup oil, fuel, hydraulic fluid, antifreeze or other pollutant spills as a result of construction activities.
2. Reasonable precautions and controls must be used to prevent incidental and accidental discharge of petroleum products. Fuel storage and handling activities for earth moving equipment must be sited and conducted so there is no petroleum contamination of surface runoff and water bodies.

3. Dredged or fill material shall be placed so that it is stable, meaning after placement the material does not show signs of excessive erosion. Indicators of excess erosion include: gullying, head cutting, carving, block slippage, material sloughing, etc. Material shall not leach harmful or toxic substances into streams or wetlands.
4. All surface runoff from areas disturbed during the stripping of overburden or moving of existing overburden piles shall be diverted to existing mine cuts or stabilized areas, such as settling ponds, using berms, diversion channels, or brush barriers. Surface runoff containing sediment from disturbed areas shall not be discharged without treatment into any water body. All soil disturbing construction operations that would violate Alaska Water Quality Standards shall be temporarily suspended if on-site monitoring demonstrates said violations.
5. During the work on the fish enhancement/material site development construction equipment shall not be operated below the ordinary high water mark if equipment is leaking fuel, oil, hydraulic fluid, or any other hazardous material. Tracked or wheeled equipment shall not be operated in the water. Equipment shall be inspected on a daily basis for leaks. If leaks are found the equipment shall not be used and pulled from service until the leak is repaired.
6. For culverts which carry waters that are discharging or will discharge into fish-bearing waters, installation shall not occur within the flowing waters of the stream. Culvert installation techniques such as stream diversion, dam and pump, or stream fluming shall be incorporated into the installation activity to insure that silt laden water is not carried into sensitive fish habitat.
7. Any disturbance in the stream banks or streambed areas shall be stabilized to prevent erosion and resultant sedimentation of the water body during and after operations. Any disturbed areas shall be re-contoured and vegetated as soon as practicable.
8. Monitoring of the adequacy and effectiveness of Stormwater Management Best Management Practices (BMP) shall be conducted and reported with the weekly visual monitoring required in the Waste Management Permit 2003-DB0051, Section 1.8 (Monitoring). If a BMP is not working properly (such as there is sediment runoff) corrective measures shall be implemented as soon as practicable.
9. Prior to removal of new overburden, a silt fence or similar structure shall be installed on a line parallel to and within 5 feet of the toe of slope for the overburden and spoils within all wetland areas containing standing water connected to a water body or where the toe of slope is within 25 feet of a water body. The structure shall remain in place until the fill has been fully stabilized, contained in another manner, or used for reclamation of the mine site.
10. Silt and sediment from the site excavation and fill materials may not enter wetlands or waters outside the necessary working area. Site preparation, excavation, fill placement, and construction activities must be conducted to prevent, minimize and contain the generation of silt and sediment that could be carried off-site by surface runoff. If silt and sediment are evident in standing or flowing water outside the excavation and fill area, Alaska Gold Company, or its contractors, shall apply appropriate control and containment measures. These measures may include fabric fences, straw bales, other effective filters, matting, settling ponds, or avoiding work during heavy precipitation.
11. A minimum 50 foot wide, vegetated buffer zone should be maintained between a snow storage area and any surface water bodies. This distance could be decreased if adequate stormwater/sediment catchment basins, coarse gravel berms, or sediment traps/ barriers/filters are built to reduce impacts on surface water bodies that potentially run off from these sites.
12. Accumulated trash and debris need to be removed from the snow storage area in the spring as they become visible when the snow melts. This may need to be done several times over the course of the summer as the snow pile continues to melt. Wastes and litter that become uncovered as the snow melts need to be

- picked up before off-site migration of the waste becomes a problem.
13. Natural drainage patterns must be maintained, to the extent practicable, without introducing ponding or drying. Control of drainage must be provided by appropriate ditching, culverts, and other measures. Drainage ways must be vegetated to help control the transport of fine sediments.
  14. Organic overburden soil stockpiles shall be stabilized as soon as practicable after placement to minimize erosion, sediment runoff or dust generation.
  15. At permanent closure of the mill process at Rock Creek the organic overburden soil stockpiles (#1, 2 and 3) shall be revegetated after the soil is removed for the soil cover system installed on the Tailings Storage Facility and any other reclamation required for closure.
  16. Capping of the development rock dumps with topsoil/organics and revegetation, or other state approved mitigation measures, shall be required at or after mine closure on the North or South Development Dump if the water quality criteria are not met in the surface water monitoring points LNDC or LSDC or seep monitoring points described in the Monitoring Plan submitted May 31, 2006 by Alaska Gold Company, Inc. The applicant shall address this question in the updated reclamation and monitoring plans submitted in accordance with the Waste Management Permit 2003-DB0051, Section 1.12 (Permanent Closure).

In accordance with 33 U.S.C. 1341(d), all conditions of ADEC's Certification are incorporated as part of the DA permit. Therefore, they are not listed as special conditions.

The following special conditions will also be added to the DA permit:

1. All organic materials from excavation, fill, stockpile and tailings storage areas shall be removed, segregated and stockpiled for use during mine reclamation.
2. Any temporary or permanent standing water that will be created by project-related activities shall be tested and monitored on an ongoing basis over at least a ten year period (and longer, if needed) to determine whether toxicity/pollution levels exist that are harmful to fish, birds or other wildlife. If so, such waters shall be (1) removed immediately (if temporary), (2) treated so that toxicity/pollution is reduced to a level that no longer poses a threat to wildlife, or (3) enclosed by deterrent devices (fencing, netting, weirs, etc.) that prevent wildlife and fish from coming into contact with toxic substances or polluted water.
3. Where Glacier Creek Road crosses Lindblom Creek, a culvert of sufficient size and design shall be installed to accommodate the increased flows expected in Lindblom Creek as a result of diversion of Rock Creek-drainage surface waters above the mine site. The culvert should be designed to prevent downstream bed degradation from increased flows and it should allow fish passage.
4. A 50 foot vegetated buffer shall be maintained, to the extent practicable, between the active or rehabilitated Big Hurrah Creek channel and the Big Hurrah access road.
5. During Big Hurrah Creek tailings removal and channel/floodplain rehabilitation and re-contouring, the applicant shall minimize destruction of riverine tall willow vegetation. Where necessary to remove this habitat, the applicant shall salvage willows and replant or re-distribute them to increase bank or slope stability and to provide habitat for birds and shade, structure and cover for fish, including in and around newly created pools.
6. To reduce the potential for bird collisions with the proposed power line (if line burial is not feasible), bird diverter devices shall be installed and maintained within one quarter mile on either side of the new Glacier Creek Bridge. Diverters shall be spaced not more than 65 feet apart and alternate between outside wires. Power line poles and transmission lines also shall be designed to meet Avian Power Line Interaction Committee (APLIC) standards for reducing the likelihood of bird electrocution (<http://www.aplic.org>).
7. The applicant shall work with USACE, USFWS, EPA and ADNR-OHMP to identify

- additional mitigation opportunities in the project areas that will benefit birds or other wildlife.
8. All disturbed and fill areas shall be stabilized to prevent erosion. Increased water turbidity and accumulation of sediment in drainages, sloughs and other wetlands shall be evidence of insufficient stabilization.
  9. No fill or construction materials shall be stockpiled on adjacent wetlands outside the project boundary.
  10. Natural drainage patterns shall be maintained to the extent practicable by the installation of culverts in sufficient number and size, or the repair of existing culverts, to prevent ponding, diversion or concentrated runoff that would result in adverse impacts to adjacent wetlands and other fish and wildlife habitats.
  11. The applicant shall work with the Alaska Department of Transportation and Public Facilities on dust minimization, especially around subsistence areas and fish racks.
  12. A Memorandum of Agreement between USACE, SHPO and Alaska Gold Company shall be developed, prior to mining, to specify how the eligible properties shall be avoided or mitigated, should avoidance not be possible.

Special Information: Any condition incorporated by reference into this permit by Special Condition or by General Condition 5, remains a condition of this permit unless expressly modified or deleted, in writing, by the District Engineer or his authorized representative.

(c) General Evaluation [33 CFR PART 320.4(a)].

(i) The relative extent of the public and private need for the proposed work: This project is the private interest of the applicant to operate a profitable gold mining operation. The public need for the project is to provide some employment and economic support to the community.

(ii) The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work: The proposed project is located on lands owned by the applicant for mineral exploration. Processing the ore without the use of cyanide was considered as an alternative, but that process did not produce an acceptable gold recovery rate. The proposed alternative is economically viable while incorporating a wide range of environmental mitigation measures.

(iii) The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses which the area is suited: The Nome area has a long history of mining so the proposed use is consistent with past operations. There would be a loss of approximately 414.5 acres of wetlands, but the loss would be minimized by reclamation efforts. Detrimental effects would include wildlife disturbance, as well as noise, air quality and traffic impacts. The beneficial effects would include increased employment and economic support to the community.

3. Determinations.

(a) Findings of No Significant Impact [33 CFR PART 325]: Having reviewed the information provided by the applicant, all interested parties and the assessment of environmental impacts contained in Part II of this document, I find 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.

(b) 404(b)(1) Compliance/Non-compliance Review [40 CFR PART 230.12]:

[ ] The discharge complies with the guidelines.

The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions listed above [in III.B.2(b)iv.] to minimize pollution or adverse effects to the affected ecosystem.

The discharge fails to comply with the requirements of these guidelines because:

There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.

The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR PART 230.10(b) or (c).

The discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem,

There is not sufficient information to make a reasonable judgment as to whether or not the proposed discharge will comply with the guidelines.

(c) Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed project has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined the activities proposed under this permit will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR PART 93.153. This no-effect determination has been coordinated with the U.S. Environmental Protection Agency and the Alaska Department of Environmental Conservation. 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 individual permit.

(d) Public Hearing Determination: A public meeting was held at 8:00 PM on Monday, June 26, 2006 at Old St. Joe's, 407 Bering Street, Nome, Alaska. Approximately 60 individuals attended the meeting. Most in attendance were in favor of the proposed project, however, several were concerned about adverse impacts to the environment.

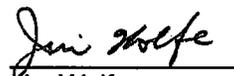
(e) Public Interest Determination: I find that issuance of a Department of the Army permit, as prescribed by regulations published in 33 CFR PART 320 to 331, and 40 CFR PART 230:

Is not contrary to the public interest.

Is contrary to the public interest.

Prepared by:

Date: August 15, 2006

  
\_\_\_\_\_  
Jim Wolfe  
Project Manager  
Regulatory Branch