February 21, 2006

Mac McLean, Habitat Biologist IV
Alaska Department of Natural Resources
Office of Habitat Management and Permitting
1300 College Road
Fairbanks, Alaska 99701

Re: Title 41 Fish Habitat Permit Big Hurrah Creek Mine near Nome, Alaska

Dear Mr. McLean:

Alaska Gold Company proposes to improve Big Hurrah Creek floodplain function and fish overwintering habitat as part of our project to rehabilitate the 2.5 miles of existing access road along the creek.

Road improvements are needed to provide safe truck access to the proposed Big Hurrah Mine facilities located at the mouth of Little Hurrah Creek. A total of 93,000 cubic yards (cy) of material would be removed from the Big Hurrah floodplain for repairing the access road. Of that amount, 83,000 cy would be historic placer mine tailings, 10,000 cy will be excavated from 3,000 feet of the creek channel to create two pools for fish over-wintering habitat, and 10,000 cy would be excavated along the access road alignment to accommodate the typical road section.

Big Hurrah Creek is a braided system located in a broad valley with a full bank width of approximately 32 feet and floodplain width of 71 feet. The river floodplain has been frequently disturbed by placer mining since the early 1900's. Large mine tailing deposits are distributed throughout the flood plain below the confluence of Little Hurrah Creek (Sheet C-17).
Historic mine tailings have influenced the geomorphology of the Big Hurrah Creek floodplain. The deposition of these tailings and natural events are likely responsible for the formation of the braided channel morphology. The tailings have influenced creek flows resulting in a higher width to depth ratio and decreased channel sinuosity. The widening of the floodplain and a reduction in channel depth has reduced the potential availability of over-wintering habitat for Dolly Varden (Salvelinus malma).

Removal of the mine tailings from the flood plain would help stabilize the creek channel and improve creek hydrological function over a wider range of flows. Removal of mine tailings would increase flood plain width to 81 feet and increase stream width to 37 feet. Restabilizing the flood plain would improve river flows, sediment regimes, and fish habitat.

Heavy equipment will be required to operate in the active creek channel to transport mine tailings scattered throughout the flood plain and install the culverts. Equipment crossings shall be made from bank to bank in a direction substantially perpendicular to the direction of stream flow. Equipment crossings shall be made only at locations with gradually sloping banks. There shall be no crossings at locations with sheer or cut banks.

To minimize impacts to pink salmon (Oncorhynchus gorbuscha), chum (O. keta), coho (O. kisutch) and Dolly Varden, construction would occur in spring, early summer, or fall to avoid impacts to salmon. Construction equipment would avoid spawning concentrations of pink, chum, and coho. Heavy equipment would use the shortest possible route between the mine tailings and the construction site. Silt fences would be used to isolate as much of the road construction site from the creek as practicable.

The historic mine tailings and river rock should be relatively free of sediments and organic materials. Excavation and use of this material for the road project is not expected to affect water quality. Alaska Gold Company will use appropriate mitigation measures such as silt fencing to isolate the construction site from the creek and other recognized best management practices.

Installation of all culverts in the Big Hurrah Creek and Linda Vista Creek, development of two pools for fish over wintering habitat, operation of heavy equipment in the creek, crossing the creek with equipment, and the discharge of historic mine tailings for road embankment below the ordinary high water mark will require a Title 41 fish habitat permit.

The channel will be excavated to create two pools with depth ranging from five to ten feet in depth at the head or deep end of the pool and two feet deep at the shallow or tail out. The pools will be designed and constructed to prevent fish entrainment especially under low flow conditions.
Big Hurrah Creek

The proposed Big Hurrah Mine facilities will be located in Little Hurrah Creek which is located approximately 2.5 miles upstream from the confluence of Big Hurrah Creek and Solomon River in Township 10 S, Range 28 West, Kakea River Meridian (Sheet T1). Three anadromous fish streams are located along the access road and at the mine site, Big Hurrah Creek, Linda Vista Creek, and Little Hurrah Creek. The mine would require reconstruction of the access road located in the State right-of-way parallel to Big Hurrah Creek. The road would begin along an existing road spurting off the Nome-Council Highway at approximately Milepost 40. The access road would continue along the north bank of Big Hurrah Creek and cross the stream approximately 400 feet into the route (Sheets C-1 through C-11).

The proposed access road would then travel in a westerly direction along the south side of the Big Hurrah Creek bed for approximately two miles. In this two mile stretch the road crosses Linda Vista Creek. Culverts would be installed to allow for fish passage and/or to prevent ponding of water. A 16'7" by 10'1" corrugated steel pipe arch culvert would be installed in Big Hurrah Creek approximately 200 meters from the confluence with Solomon Creek. A culvert would also be placed in Linda Vista Creek to allow for fish passage and several unnamed streams to prevent ponding. Embankment materials would consist of rock and gravel abutments on either side of the Big Hurrah Creek stream channel.

The route would then continue west to Little Hurrah Creek where the route would veer south for approximately 800 feet and enter the mine site (Sheet C11 through C-16). The mine site would be located on the west and east banks just upstream of the mouth of Little Hurrah Creek.

Alaska Gold is prepared to complete a fish habitat permit for the culvert crossing for Big Hurrah and Linda Vista Creeks, however not for Little Hurrah Creek because although it is listed as an anadromous stream, the observed fish habitat as noted by the Office of Habitat Management and Permitting is outside of the proposed area of development and disturbance.

Rock Creek

The Proposed Rock Creek Mine Facilities would be located on the north side of Glacier Creek Road at Township 10 South, Range 24 West, Sections 14, 15, 22, 25, 25, 26, and 33, Kakea River Meridian (Figure 1). Three anadromous fish streams are located in the project area, Snake River, Glacier Creek, and Rock Creek. The Rock Creek Access and Haul Road would utilize at least two culverts for crossing Rock Creek. The stream crossing additions would not affect fish habitat at the crossing locations as the fish habitat terminates where Rock Creek intersects Glacier Creek Road. Alaska Gold concludes the development at Rock Creek, including the access and haul road does not need the Title 41 permit from ADNR Office of Habitat Management and Permitting.
If you have any questions please contact me at (907) 743-9366 or by e-mail at cmaccay@bristol-
companies.com (please note the recent change in e-mail address).

Sincerely,

Charlotte MacCay
Environmental Manager

Enclosures:

Big Harris Location and Vicinity Map (Sheet T-1)
Big Harris Mine Access Road Design (Sheets C-1 to C-17)
Rock Creek Location and Vicinity Map (Figure 1)
Title 41 Fish Habitat Permit Application
GENERAL WATERWAY/WATERBODY APPLICATION
ALASKA DEPARTMENT OF NATURAL RESOURCES
Office of Habitat Management and Permitting
Office Locations

A. APPLICANT
1. Name: Alaska Gold Company
2. Address (Mailing): PO Box 640 Nome, Alaska 99762
   Email Address: 
   Telephone: (907) 443-5272 or (907) 743-9366 Fax: (907) 443-5472 or (907) 563-6713
3. Project Contractor: Name: Alaska Gold Company
   Address: P.O. Box 640 Nome, Alaska 99762
   Email Address: 
   Telephone: (907) 443-5272 Fax: (907) 743-9366

B. TYPE AND PURPOSE OF PROJECT: Fish Habitat Improvement/Mine Access Road Rehabilitation

C. LOCATION OF PROJECT SITE
1. Name of River, Stream, or Lake: Big Hurrah Creek or Anadromous Stream No: 
2. Legal Description: Township 10 S Range 28W
   Meridian Kakes River Section 
   USGS Quad Map Solomon C-5
3. Plans, Specifications, and Aerial Photograph: See specific instructions

D. TIME FRAME FOR PROJECT: Spring 2006 TO Fall 2007 (m/d/yy)

E. CONSTRUCTION METHODS:
1. Will the stream be diverted? ☐ Yes ☒ No
   How long? Permanently
2. Will stream channelization occur? ☐ Yes ☒ No
3. Will the banks of the stream be altered or modified? ☒ Yes ☐ No

Describe: Approximately one mile of the north bank of Big Hurrah Creek will realigned to direct the creek flow to the south side of the channel to allow the rehabilitation of the mine access road. Historic mine tailings will be removed from the floodplain. The material for altering the stream...
banks would consist of mine tailings and material from the channel. A total of 93,000 cubic yards (cy) of material would be removed from the Big Hurrah floodplain for repairing the access road. Of that amount, 83,000 cy would be historic placer mine tailings. 10,000 cy will be excavated from 5,000 feet of the creek channel to create pools (5-10 feet in depth) for fish over-wintering habitat, and 10,000 cy would be excavated along the access road alignment to accommodate the typical road section.

A 16 ft. 7 inch by 10 ft. 1 inch corrugated steel pipe arch culvert will be installed near the mouth of Big Hurrah Creek. On either side of the culvert, road embankments would extend from the stream banks into the existing channel. A culvert would also be installed in Linda Vista Creek to provide fish passage and several other unnamed creeks to prevent ponding. Road improvements are needed to provide safe truck access to the proposed Big Hurrah Mine facilities located at the mouth of Little Hurrah Creek.

4. List all tracked or wheeled equipment (type and size) that will be used in the stream (in the water, on ice, or in the floodplain): **ATV, pick-up truck, loader, dump truck, dozer, tracked excavator, Lowboy Truck.**

   How long will equipment be in the stream? 4 to 6 weeks

5. a. Will material be removed from the floodplain, bed, stream, or lake? Yes No

   **Type:** Mine Tailings, Cobble, and Gravel

   **Amount:** 93,000 cubic yards

   b. Will material be removed from below the water table? Yes No

   If so, to what depth? Two pools would be excavated to a depth between five and ten feet in the channel to collect ground water in the winter and provide over-wintering habitat. A channel would be constructed to the pools to allow for fish movement and to prevent fish entrapment under low flow conditions.

   Is a pumping operation planned? Yes No

6. Will material (including spoils, debris, or overburden) be deposited in the floodplain, stream, or lake? Yes No

   **Amount:** 10,000 cubic yards

   **Disposal site location(s):** North Bank Big Hurrah Creek

7. Will blasting be performed? Yes No

   **Weight of charges:**

   **Type of substrate:**

8. Will temporary fills in the stream or lake be required during construction (e.g., for construction traffic around construction sites)? Yes No
9. Will ice bridges be required? ☑ Yes ☐ No

F. **SITE REHABILITATION/RESTORATION PLAN:** On a separate sheet present a site rehabilitation/restoration plan. See specific instructions

G. **WATERBODY CHARACTERISTICS:**

- Width of stream: **32 Feet**
- Depth of stream or lake: **Approximately 2.6 Feet**
- Type of stream or lake bottom (e.g., sand, gravel, mud): cobble, boulders, sand, and gravel
- Stream gradient: Shallow to Moderate

H. **HYDRAULIC EVALUATION:**

1. Will a structure (e.g., culvert, bridge support, dike) be placed below ordinary high water of the stream? ☑ Yes ☐ No

   If yes, attach engineering drawings or a field sketch, as described in Item B.

   For culverts, attach stream discharge data for a mean annual flood (Q=2.3), if available.

   If applicable, describe potential for channel changes and/or increased bank erosion:

   Installation of a culvert for a road crossing of the Big Hurrah Creek will reduce erosion at forces and the introduction of sediments caused by truck traffic crossing the creek bed. The approaches to the culvert crossing will direct river flows through the culvert resulting in a more defined channel and consolidation of the braided creek morphology.

2. Will more than 25,000 cubic yards of material be removed? ☑ Yes ☐ No

   If yes, attach a written hydraulic evaluation including, at a minimum, the following: potential for channel changes, assessment of increased affluents (glaciering) potential, assessment of potential for increased bank erosion.

I HEREBY CERTIFY THAT ALL INFORMATION PROVIDED ON OR IN CONNECTION WITH THIS APPLICATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

[Signature of Applicant] [February 11, 2006]