UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

August 19, 2004

Colonel Timothy J. Gallagher
District Engineer, Alaska District
Army Corps of Engineers
P.O. Box 6898
Elmendorf AFB, Alaska 99506-6898

Re: Lynn Canal 31
POA-1990-592-M

Attn: John Leeds

Dear Colonel Gallagher:

The National Marine Fisheries Service (NMFS) has reviewed the project plans for Coeur Alaska, Incorporated's proposal to discharge approximately 5,451,700 cubic yards of fill material in approximately 91.7 acres of waters of the United States, including wetlands, deep-water habitat, and in navigable waters. Proposed project components include:

1. Marine terminal facilities: galvanized metal piling, floats, docks, and fill into approximately 3.6 acres of waters and navigable waters.

2. Process Area: discharge fill into approximately 5.3 acres of water to construct building pads for milling facilities, administrative, and support facilities.

3. Tailing Dam: discharge 145, 000 cubic yards of fill into 1.4 acres of water, riffle-pool complexes and deep water.

4. Tails Placement Facilities: discharge about 15, 000 cubic yards of fill into 8.9 acres of waters associated with tails pipeline, access roads, discharge pipe, and a pump-back sump.

5. Mine Tailings Disposal Facility: discharge about 4, 800, 000 cubic yards (4.5 million tons) of fill (solid component of a slurry) into 45.5 acres of waters, including wetlands and deepwater of the U.S. This action would result in the development of a 20-acre lake and would raise the level of the lake about 74-feet.

6. Topsoil Stockpile: discharge approximately 33, 000 cubic yards of fill into about 1 acre of waters (wetlands) to be stored for use in concurrent and closure reclamation activities.

7. Settling/Storage Ponds: About 500 cubic yards of fill would be discharged into 2 acres of water.

This proposed project would impact wetlands in the vicinity of Sherman Creek, along the shore at Slate Creek Cove, result in the loss of the natural streambeds (riffle and pool complexes) in Johnson Creek and other drainages that occur from Slate Creek Cove to the processing area. The proposed dam and tailings impoundment would result in the loss of the Dolly Varden char habitat in Lower Slate Lake for the duration of mine operations and result in the loss of the entire Dolly Varden population in Lower Slate Lake.

The potential for future restoration or amelioration of Lower Slate Lake is uncertain due to the presence of metals and the potential for unknown toxic compounds to exist in the leachable substrates.

Dam failure on the impoundment area could produce catastrophic losses of marine life and habitat degredation in Lynn Canal and Berners Bay. Sherman Creek, an anadromous stream, provides habitat for chum and pink salmon, Dolly Varden char, rainbow, and cutthroat trout. Ophir Creek provides habitat for Dolly Varden char, rainbow, and cutthroat trout. The Dolly Varden char and cutthroat trout are indigenous populations, and are considered to be genetically distinct from other isolated and anadromous populations.

The construction of a marine terminal at Slate Creek Cove requires driving piles. Pile driving can generate intense underwater sound pressure waves that may adversely affect aquatic resources. These pressure waves have been shown to injure, and kill fish (e.g., CalTrans 2001, Longmuir and Lively 2001, Stotz and Colby 2001). Injuries associated directly with pile driving include rupture of the swimbladder and internal hemorrhaging (CalTrans 2001; Abbott and Bing-Sawyer 2002). Sound pressure levels 100 decibels (dB) above the threshold for hearing is thought to be sufficient to damage the auditory system in many fishes (Hastings 2002). This proposal can potentially impact locally important fish and shellfish habitat. Hollow steel piles as small as 14-inch diameter have been shown to produce sound pressure levels that can injure fish (Reyff 2003).

Driving hollow steel piles with impact hammers produce intense, sharp spikes of sound which can easily reach levels that injure fish. Vibratory hammers produce sounds of lower intensity, with a rapid repetition rate. A key difference between the sounds produced by impact hammers and those produced by a vibratory hammer is the responses they evoke in fish. When exposed to sounds similar to those of a vibratory hammer, fish consistently displayed an avoidance response (Enger et al.1993; Dolat 1997; Knudsen et al.1997; Sand et al.2000), and did not habituate to the sound, even after repeated exposure (Dolat, 1997; Knudsen et al.1997). Fishes may respond to the first few strikes

of an impact hammer with a "startle" response. After these initial strikes, the startle response wanes and the fishes may remain within the field of a potentially harmful sound (Dolat 1997; NOAA Fisheries 2001). The differential responses to these sounds are due to the differences in the duration and frequency of the sounds. When compared to impact hammers, the sounds produced by vibratory hammers are of longer duration and have more energy in the lower frequencies (15-26 Hz vs 100-800 Hz) (Wursig et al. 2000; Carlson et al. 2001). Impact hammers may be more harmful than vibratory hammers for two reasons: first they produce more intense pressure waves, and second, the sounds produced do not elicit an avoidance response in fishes, which will expose them for longer periods to those harmful pressures.

NMFS is concerned that the underwater sound waves generated during pile driving could be lethal to fish and potentially dangerous to marine mammals. The driving of steel piles results in high underwater sound pressures that are lethal to fish and can potentially impact marine mammals (Illingworth Rodkin 2001). The California Department of Transportation (Caltrans) recently conducted studies on the impacts of pile driving on fish. Caltrans concluded that pressure waves generated from pounding the pilings into the ground "bloat the air bladders in the fish, which presumably crushes some of the other internal organs and kills the fish" (Caltrans 2001). Data from several sources have shown that damage to the air bladder and often to internal organs of fish from explosions or other pressure excursions can be related to several different parameters. These include peak (maximum positive) pressure (Linton et al. 1984), impulse strength (the range between peak pressure and subsequent under pressure (Yelverton et al. 1975)), and energy flux density (the integrated total energy under the positive and negative pressure curves (Goertner 1978, Wiley et al. 1981; see also Houghton and Munday 1987)).

Approximately 92 acres of waters (including forested wetlands and deep-water habitat) would be eliminated without direct mitigation for habitat losses. The aquatic habitat areas are Special Aquatic sites for which the availability of lower impact alternatives is presumed (40 CFR 230.10 (a) (3)).

The applicant has incorporated mitigation efforts to minimize and reduce impacts to the aquatic resources but does not specify mitigation for the loss of approximately 92 acres of important habitat. NMFS concurs with the proposed mitigation and recognizes the practical limitations associated with the further on-site mitigation of aquatic resource losses. Therefore, we recommend the applicant consider off-site mitigation by the purchase of wetlands such as those near the Mendenhall Wetlands State Game Refuge. Mitigation property would then be retained in its natural state and managed in perpetuity for fish and wildlife habitat. NMFS offers to assist the applicant and interested agencies to achieve practicable mitigation for the otherwise unmitigated loss of approximately 92 acres.

Marine mammals known to use Berners Bay include the humpback whale, killer whale, harbor porpoise, harbor seal, and Steller sea lion. The humpback whale and Steller sea lion are listed as endangered and threatened species, respectively, under the Endangered Species Act.

NMFS has reviewed the currently proposed project relative to additional recent scientific information and finds again that the currently proposed project may adversely affect EFH and may effect endangered humpback whales, threatened Steller sea lions which are protected from harm under the Endangered Species Act, and may harm other marine mammals that are afforded protection from harm under the Marine Mammal Protection Act. NMFS requests the Corps to prepare an EFH assessment in accordance with the requirements of 50 CFR 600.920(e) and begin consultation under Section 7 of the Endangered Species Act.

We find the public notice lacking in specific information needed to assess the effects of the proposed project on fish and wildlife resources. Relocation of the major mine components for the Kensington Mine site at Comet Beach on Lynn Canal to the Jualin Mine site (southeast approximately 2 miles) to access the ore body from the Jualin side of the peninsula will affect EFH and may harm marine mammals and endangered and threatened species. Kensington also proposes to use a dock built at Cascade Point on property held by Goldbelt, Inc. Goldbelt's plan for the development of a moorage facility at Cascade Point depends heavily on the Kensington Gold Mine Project. This permit does not address the cumulative effects the project will have on the living natural resources. The fundamental purpose of NEPA is to have an agency (Corps of Engineers in this case) consider and inform the public about the environmental impacts of a federal action which may significantly affect the environment.

Project effects on Pacific herring habitat are a major concern to NMFS. The Lynn Canal herring stock has been severely depressed since the early 1980's and the commercial fishery on those stocks curtailed since 1982. In many areas, encroachment upon documented herring spawning habitat resulted in the cessation of spawning activities. Such occurred as a result of the development near Auke Nu Cove, Auke Bay, Long Island, and Port Frederick.

Pacific herring could also be affected by the proposed project due to exposure to hydrocarbons from spills and leaks associated with vehicle and vessel operations. Pre-spawning adult herring exposed to oil experienced suppression of their immune systems and increased disease. In addition, exposure of herring eggs to weathered oil at levels as low as 0.7 ppb showed likely lethal chromosomal abnormalities (Carls et al. 1997). These studies indicate that extremely low levels of hydrocarbons may cause mortality of herring eggs and larvae.

In order to avoid or mitigate for the unnecessary loss of aquatic resources and their habitat, NMFS recommends that the following stipulations be included as conditions to the permit.

1. In-stream activities will be limited to work windows recommended by the Alaska Department of Fish and Game and the Department of Natural Resources. Work windows are necessary to protect migrating juvenile salmonids, rearing salmonid smolts, and other fish.

2. Conduct the installation of steel piles with a vibratory hammer. Under those conditions where impact hammers are required for reasons of seismic stability or substrate type, we recommend that the piles be driven as deep as possible with a vibratory hammer prior to the use of the impact hammer. The impact hammer should be used at a time of year when larval and juvenile stages of fish species are not present. In-water work may occur during work windows recommended by appropriate resource agencies. This stipulation is necessary to protect migrating juvenile salmonids, rearing salmonid smolts, spawning and rearing herring.

3. Drive piles when the current is reduced (i.e., centered around slack current) to minimize the number of fish exposed to adverse levels of underwater sound.

4. Use a block of wood between the impact hammer and the pilings or use a bubble curtain to attenuate the sound.

5. Reasonable precautions and controls must be used to prevent incidental and accidental discharge of petroleum products.

6. Material such as sorbent pads must be available on-site, and must be used to contain and clean up any petroleum product spilled as a result of construction activities and operation.

7. Fill in the subtidal areas would be detrimental to marine fish rearing habitat and potentially could result in the decline of fish populations in Slate Creek Cove. We recommend that the size of the fill footprint be restricted to minimize adverse environmental impacts to the Slate Creek Cove and Berners Bay ecosystem. Placing fill at low tides reduces the impacts of sedimentation on the marine ecosystem.

8. Wooden surfaces of the structures that come into contact with the water shall not be painted or otherwise surface-treated with creosote and may not be treated with a preservative that contains pentachlorophenol. Creosote and pentachlorophenol are toxic to juvenile fish in marine waters.

9. Although piling-supported structures will allow continued use of the project sites by many invertebrates and fish, much of the existing plant life is likely to be shaded and thereby lost. We recommend this loss be minimized by using metal grating as a top surface, rather than planking, as this results in greater light transmission to aquatic plants. Light penetration is needed to maintain intertidal and subtidal habitat beneath structures such as walkways, catwalks, and gangways.

10. No portion of the new float may ground at any tidal stage. This is necessary to protect water quality and aquatic habitat by minimizing disturbance and

introduction of suspended sediment, petroleum products, and toxic substances into the cove and outside waters.

11. Geographic Response Strategies (GRS) to protect sensitive coastal environments along the planned service routes have also been identified. These map-based strategies display where sensitive areas are located and where to place oil spill protection resources. We recommend that the GRS be included in the development of a Route Operational Manual (ROM) to minimize or reduce impacts from potential oil spills on seabirds, marine mammals, fish, and their important coastal environments. Information on the GRS locations is available on the Southeast Alaska GRS website www.state.ak.us/dec/spar/perp/grs/se/home.

12. An off-site mitigation package, acceptable to NMFS and other resource agencies, will be developed before construction begins on activities authorized under this permit. The development of an interest-bearing escrow account to mitigate for fish, wildlife, and water quality impacts associated with construction and operation of the project could be a component of a mitigation package. The funds in the account would be made available to a resource agency council (council) composed of JFWFO, NMFS, TNF, ADF&G, and ADNR representatives. The council would determine the type, cost, and location of mitigation projects. The escrow amount and accumulated interest would remain in escrow for the term of the project, unless jointly determined by the council and the applicant that the account may be closed. The account would be used by the council to implement fish and wildlife mitigation and enhancement. None of the monies would be used for council members' salaries or travel costs. The applicant would be notified before any funds are withdrawn from the account and shall have the right to audit expenditures to ensure compliance with its purpose. This escrow account would be readily available for mitigation projects, if there are unforeseen events that impact fish and wildlife resources as a result of the project that cannot otherwise be mitigated by making a change in project operations.

Should you decide not to incorporate our recommendations through project modifications or conditions, NMFS retains potential elevation rights under our 404 (q) Memorandum of Agreement. If you have any questions, please contact Susan Walker at (907) 586-7646 or susan.walker@noaa.gov).

Sincerely,

James W. Balsiger
Regional Administrator

cc: USFWS, Juneau, AK
ADF&G, Douglas, AK
John Leeds, COE, Juneau, AK
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