



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 10**  
1200 Sixth Avenue  
Seattle, WA 98101

## **RECORD OF DECISION**

### **KENSINGTON GOLD PROJECT**

#### **DECISION TO BE MADE**

This Record of Decision (ROD) documents the decision by the U.S. Environmental Protection Agency (EPA) Region 10 to issue a National Pollutant Discharge Elimination System (NPDES) permit for discharges from the Kensington portal to Sherman Creek, discharges of treated domestic wastewater to Lynn Canal, and discharges from the proposed tailings storage facility (TSF) to East Fork Slate Creek. This project is considered a new source discharge and, in accordance with Section 511(c)(1) of the Clean Water Act, is subject to the provisions of the National Environmental Policy Act (NEPA).

The ROD is issued pursuant to NEPA (42 U.S.C. §4321 et seq.), the Council of Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500-1508), and EPA's NEPA implementing regulations (40 CFR Part 6, Subpart F). EPA participated in the development of the Kensington Gold Project Final Supplemental Environmental Impact Statement (FSEIS) as a cooperating agency, with the U.S. Forest Service (USFS) as the lead agency. EPA's decision to issue an NPDES permit is based upon the analysis in the FSEIS as supplemented by the U.S. Army Corps of Engineers (USACE) Clean Water Act 404(b)(1) analysis, which identified alternative D as the least environmentally damaging practicable alternative. The Notice of Availability of the FSEIS was published in the Federal Register by the USFS on December 23, 2004. EPA issued the draft NPDES permit on June 21, 2004 for a 45-day comment period. Public hearings were held in Juneau, Alaska on July 26, 2004 and in Haines, Alaska on July 27, 2004. EPA's response to comments on the draft NPDES permit is included in Appendix A.

#### **INTRODUCTION**

The Kensington Gold Project is an underground gold mine located approximately 45 miles north-northwest of Juneau, Alaska, in the Tongass National Forest (Figure 1; FSEIS Figure 1-1). The Kensington project has undergone three iterations of environmental review and was previously permitted in 1998. In 1990, the Kensington Venture (a joint venture between Coeur Alaska, Inc. [Coeur] and Echo Bay Exploration) first submitted plans to develop the mine to the USFS. The USFS completed the Final Environmental Impact Statement (FEIS) in 1992. The 1990 plan included underground mining to recover the ore, processing the ore via flotation, cyanidation, gold refining, and disposal of the tailings in a tailings impoundment built in the Sherman Creek drainage. The impoundment would have been sized to accommodate 30 million tons of tailings. The proposal included discharging wastewater to Lynn Canal following treatment, and shuttling employees to the mine site using helicopters. The operation would have

used liquefied petroleum gas to fuel on-site generators. A marine terminal developed at Comet Beach in Lynn Canal would have handled supply deliveries and gold shipments. The Kensington Venture never obtained all the permits necessary to build the mine, and in 1995 Coeur became the sole stakeholder in the property. Coeur then, in 1995, submitted an amended plan of operations to the USFS. In June 1996 Coeur revised the 1995 plan in response to issues raised during scoping.

The 1996 amended plan, included removal of the cyanide circuit and off-site processing of the flotation concentrate, backfilling a portion of the tailings in the mine, and disposal of the remaining tailings in a 20 million ton dry tailings facility (DTF) constructed between Sherman and Sweeny creeks. Coeur's proposal also included using diesel instead of liquefied petroleum gas to fuel generators, and discharging mine water to Sherman Creek and DTF effluent to Camp Creek. The 1996 plan was analyzed in the Final Supplemental EIS and approved by the USFS in a ROD signed in August 1997. Coeur obtained all permits necessary for construction from federal, state, and local authorities, including an NPDES permit from EPA, issued on May 14, 1998 (Permit No. AK-005057-1). The permit authorized discharge of drainage from the Kensington portal, which is treated and discharged to Sherman Creek. It also authorized the discharge from the permitted DTF to Camp Creek and domestic wastewater discharge to Lynn Canal.

In November 2001, Coeur submitted another amendment to the plan of operations to the USFS. This plan, which initiated a second supplemental environmental impact statement, proposed a number of changes to the approved plan, including changing the location of the processing facilities, tailings disposal, and site access and employing a different means of transportation. The operation would also mine a smaller portion of the ore body containing higher average gold concentrations. This amendment also proposes to use a dock to be built at Cascade Point on property held by Goldbelt Incorporated, an Alaska Native corporation. The 2001 amended plan formed the basis for Alternative B for the December 2004 FSEIS. The USFS selected Alternative D in a ROD signed on December 9, 2004. Coeur revised its plan of operations to conform to Alternative D in May 2005. The USFS approved the plan of operations in June 2005.

The purpose of the proposed action is to consider changes to the previously permitted project. The changes were intended to improve efficiency and reduce the area of surface disturbance associated with the 1997 mining plan and to provide more reliable transportation and access by improving worker safety during transit to the site and eliminating shipping delays related to weather and sea conditions at Comet Beach. The improved reliability of access would allow Coeur to reduce the amount of diesel storage, as well as inventories of materials and supplies. Tailings disposal would require a smaller area of surface disturbance under the proposed action compared to the 1997 plan by utilizing a 20-acre lake for tailings storage (Lower Slate Lake).

The U.S. Forest Service was the lead agency for preparation of the Kensington Gold Project Final Supplemental EIS. EPA, the U.S. Army Corps of Engineers, and the State of Alaska Department of Natural Resources (ADNR) were cooperating agencies because of the federal and state authorizations and approvals required for this project. EPA was a cooperating agency because of a decision regarding NPDES permit issuance. In accordance with NEPA, the

FSEIS was prepared to reduce duplication, excessive paperwork and delay, and to address federal and state regulatory requirements. Through EPA's participation as a cooperating agency, we have determined that the FSEIS adequately describes the potential direct, indirect, and cumulative effects associated with the Kensington Mine Project.

Sections 301 and 306 of the Clean Water Act (CWA) require that EPA develop wastewater effluent standards for specific industries, including gold mines. These standards are established for both existing sources and "new sources". Because this project would be a new source, the New Source Performance Standards (NSPS) for gold mines and mills are applicable to the project (40 CFR 440.104). NPDES permit limits and requirements are established to ensure compliance with the NSPS and state water quality standards. The NSPS include effluent limits applicable to discharges of mine drainage; they also prohibit the discharge of process water (including mine tailings). An exception is provided for excess flows associated with net precipitation and/or co-mingled mine water where discharge of such flow is subject to the comparable effluent limits for mine drainage. In states that have not been delegated NPDES permitting authority, such as Alaska, EPA is authorized to permit point source discharges of effluent, including process wastewater and stormwater. Where EPA is the permitting agency, the regulations provide that issuance of a new source NPDES is subject to the environmental review requirements of NEPA.

The 5-year NPDES permit issued by EPA for the 1998 project expired on May 14, 2003, but was administratively extended until a new permit is issued because Coeur submitted a timely application in October 2002. Coeur submitted a revised application for an NPDES permit on March 16, 2004. The final NPDES application submittal, consistent with the proposed project revisions, was made on June 15, 2004. The application addresses the current discharge to Sherman Creek, treated domestic wastewater discharge during construction, and the proposed discharge from the tailings storage facility (TSF) in Lower Slate Lake.

## **PROPOSED MINING OPERATION**

The Kensington ore body extends from the surface to a depth of approximately 3,000 feet and is irregular in both shape and distribution of gold. After a two-year construction period, mining would be accomplished over a projected period of 10 years using a long hole, open stoping method. Ore would be mined at a rate of 2,000 tons per day targeting high-grade gold ore. Ore would be hauled by truck to the mill site located near the Jualin mining area. After crushing, the ore would be transferred to a grinding circuit. Following grinding, oversized material would be returned to the head of the grinding operation, while undersized material would be separated into coarse and fine materials using centrifugal cyclones. From the cyclones, heavy material would go to a gravity concentrator and light material would go to a conditioning tank that feeds a flotation circuit. Concentrate from the gravity concentrator and the flotation circuit would be dewatered, and approximately 700 tons per week of concentrate would be transported from the site. From 2,000 tons of ore per day, mining and processing would produce approximately 400 tons of waste rock per day and approximately 7.5 million tons of tailings over the lifetime of the proposed project.

Waste rock would be disposed in two disposal areas near the Kensington portal and near the Jualin mine area. Tailings would be separated into coarse and fine fractions. The coarse

tailings would be pumped to the mine areas that need backfill. At least 40% of the tailings would be backfilled. The fine fractions would be disposed in the tailings storage facility.

Mine drainage is currently combined with runoff from waste rock piles and other disturbed areas and discharged to Sherman Creek through Outfall 001, pursuant to the 1998 NPDES permit. Underground workings that produce mine drainage, as well as waste rock, were developed as part of exploration activities and will be expanded as active mining operations are initiated. Water from mine dewatering operations will continue to be collected, clarified, and filtered underground, if necessary, and then pumped to an above ground mine water treatment facility. Although the revised proposal includes access to the workings by tunnels from both the Kensington and Jualin sides of the property, all mine drainage would be collected and routed to Outfall 001.

Tailings slurry from the mill would flow through a 3.5 mile pipeline to the TSF, which would be formed by the natural lake basin of Lower Slate Lake and a dam constructed at the outlet of the lake. The dam would be a concrete-faced rockfill dam constructed in two phases. The TSF would be designed to hold 4.5 million tons of tailings. Mid-lake East Fork Slate Creek would be diverted around the TSF. Creek water would be removed from behind a constructed berm through a 20-inch diversion pipeline. The TSF will receive water from slurry transport of tailings as well as undiverted natural inflows from drainage areas immediately adjacent to the TSF and overflows from the berm. Water will be recycled from the TSF to the mill at a rate of approximately 100 gallons per minute (gpm). The discharge from the TSF (Outfall 002) will be treated via reverse osmosis then combined with the diverted natural flows and pumped into the East Fork Slate Creek drainage below the TSF.

## **DESCRIPTION OF PROJECT ALTERNATIVES**

NEPA requires that agencies consider alternatives to the proposed action that address the significant issues identified during the scoping process. NEPA also requires that the alternatives analysis include a No Action Alternative. Because the FSEIS is a supplement to a NEPA analysis that resulted in a permitted project (the 1997 mining plan), the No Action Alternative in this case represents no changes to the approved project. The FSEIS also includes an alternative (Alternative A1) that reflects a mining scenario that could occur if the No Action Alternative was selected, i.e., the operator could choose to lower the production rate and pursue a smaller portion of “high-grade” gold ore similar to what is proposed in the proposed action. The following discussion and Table 1 provides a summary of the No Action Alternative (Alternative A), reduced mining rate of the No Action Alternative (A1), and three action alternatives (Alternatives B, C, and D). Section 2 of the 2004 FSEIS provides detailed descriptions of each of the following alternatives for the Kensington Gold Project.

### **Alternative A – No Action**

The No Action Alternative functions as the baseline against which the effects of other alternatives are compared. As noted above, the No Action Alternative represents a previous action, which in this case is the 1997 mining plan that received agency approval and authorizations in 1998. Alternative A corresponds to the 1997 SEIS Alternative D. Alternative A includes mining the entire ore body and underground crushing of ore with aboveground

grinding and flotation. Flotation concentrate would be shipped to a processing facility off-site. There would be no on-site cyanidation circuit. Employees would be housed on-site and transported by helicopter for weekly rotations. Supplies, including fuel, would be delivered to a marine terminal constructed on Comet Beach. Approximately 25% of the tailings would be backfilled. The rest of the tailings would be dewatered before being placed in the DTF. The DTF would have the design capacity to hold 20 million tons of tailings and would include an engineered berm around each cell of the facility. Wastewater from tailings dewatering would be treated and discharged to Sherman Creek. The production rate would be 4,000 tons of ore per day and 400 tons of waste rock per day. The waste rock would be used in the construction of the DTF. Road and DTF construction would require the development of sand and gravel and till borrow areas.

### **Alternative A1 – Reduced Mining Rate, DTF**

Alternative A1 reflects a mining plan similar to that described for Alternative A but uses the same mining rate and tailings production levels consistent with Alternatives B, C, and D (2,000 tons per day and 7.5 million tons total, respectively).

Alternative A1 would result in 4.5 million tons of tailings being placed in the DTF, assuming that 40 percent of the tailings would be backfilled. The DTF would be approximately 65 percent smaller than it would be under Alternative A. The reduced mining rate presented under Alternative A1 would produce very limited amounts of waste rock. Because waste rock would not be available for use in DTF construction under this alternative, the impact analysis assumes the same number of acres of sand and gravel borrow areas would be required as under Alternative A, although the coarse and fine till borrow areas would be reduced in size. Other aspects of Alternative A1, including wastewater management and transportation of employees and materials, would be the same as those described under Alternative A.

### **Alternative B – Coeur’s Proposed Action**

Alternative B reflects a number of changes to the mine plan compared to the No Action Alternative. These changes include construction of a TSF in Lower Slate Lake for tailings disposal instead of the dry tailings facility, relocating milling operations to the Johnson Creek drainage, and eliminating the personnel camp. The operation would mine a smaller amount of ore with a higher average gold concentration compared with that proposed under Alternative A. The production rate would be approximately 2,000 tons of ore per day. Alternative B would include the development of a tunnel connecting the Kensington and Jualin areas of the mine. Access to the site would be from marine terminals built in Slate Creek Cove and at Cascade Point (Figure 2; FSEIS Figure 1-2). A daily shuttle boat service would transport employees to and from the project site. The TSF would be sized to accommodate the disposal of 4.5 million tons of tailings (Figure 3; FSEIS Figure 2-6), while approximately 3.0 million tons of tailings would be used as backfill in the mine. Borrow areas would be developed for construction of the TSF dam and roads. This alternative includes recycling water from the TSF to the mill circuit. Alternative B would require upgrading the 5-mile-long access road and constructing a 3.5-mile pipeline access road and a 1-mile cutoff road connecting the other two roads.

### **Alternative C – Dock Location and Design/Diversion**

Alternative C is the same as Alternative B except it includes surface water diversions around the TSF and a marine terminal at Echo Cove instead of Cascade Point. The dock in Echo Cove would be located approximately 0.75 mile north of the existing Echo Cove boat ramp (Figure 2; FSEIS Figure 1-2). Mine workers would use this dock to reach the shuttle boat that would transport them to the dock at Slate Creek Cove. The landing craft ramp at the Slate Creek Cove marine terminal would be eliminated, minimizing the amount of fill placed in the intertidal zone. Alternative C would not include recycling water from the TSF and the mill circuit. This alternative would include diversion channels to direct the flow from Mid-Lake East Fork Slate Creek and overland runoff from undisturbed areas around the TSF (Figure 4; FSEIS Figure 2-9). The diversion would discharge to a spillway at the top of the TSF dam. The diversion would require a dam on Upper Slate Lake to maintain water levels sufficient to reach the spillway at the TSF dam. The purpose of the diversion would be to minimize the volume of fresh water in contact with the tailings.

### **Alternative D – Modified TSF Design and Water Treatment**

Alternative D was developed to address concerns about the TSF effluent meeting NPDES permit limits for protection of downstream water quality in East Fork Slate Creek below the TSF. Alternative D is the same as Alternative B, except it also includes diversion of stormwater and surface water around the TSF, TSF outfall water treatment, and a tailings cap at closure. Alternative D includes a dam in Mid-Lake East Fork Slate Creek that would gravity-feed a pipeline diversion around the TSF (Figure 5; FSEIS Figure 2-12). Water would be treated prior to discharge from the TSF via a reverse osmosis treatment system, which would provide solids and metals removal to ensure compliance with permit limits. Effluent from the treatment system would discharge to the diversion pipeline. Alternative D also requires a cap over the tailings at closure unless the operator could demonstrate to the USFS, USACE, ADNR, and EPA that the tailings are not toxic.

## **ENVIRONMENTALLY PREFERABLE ALTERNATIVE**

The environmentally preferable alternative “ordinarily, means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources” (CEQ, 1981: Forty Most Asked Questions, no. 6a).

On December 1, 2004, at the request of the U.S. Forest Service, EPA submitted its designation of an environmentally preferable alternative for inclusion in the FSEIS. EPA’s selection of an environmentally preferable alternative was based on the record at the time, which lacked two important elements. First, the record lacked a completed ESA analysis by the National Marine Fisheries Service (NMFS) addressing potential impacts to listed species and designated critical habitat in Berners Bay. Second, the record lacked a completed Clean Water Act (CWA) § 404(b)(1) analysis from the U.S. Army Corps of Engineers, which must determine the least environmentally damaging practicable alternative and address significant degradation.

Based on information available at the time and on EPA’s comparative analysis of the alternatives, EPA concluded that Alternative A is the Environmentally Preferable Alternative.

Alternative A is the only alternative that avoids the habitat loss and the loss of natural ecological functions in Lower Slate Lake during mine operations. Alternative A also avoids impacts to critical habitat and resources in Berners Bay that would result from dock construction, operation, and vessel activities. The USFS and the ADNR identified both Alternatives A and D as environmentally preferable.

Since that time, NMFS has issued a Biological Opinion (BO) and the Corps of Engineers has issued CWA 404 permits for the project. In the BO, issued on March 18, 2005, NMFS stated that individual Stellar sea lions and humpback whales within the action area may be adversely impacted. However, the BO concluded that Alternative D, as proposed, is not likely to jeopardize the continued existence of listed species, or destroy or adversely modify designated critical habitat found in proximity to the action area. NMFS maintained its earlier recommendation to use an alternative dock location to Cascade Point, preferably outside Berners Bay, to facilitate transportation of crews to the mine. The BO also included a list of conservation recommendations to minimize adverse effects to the listed species.

The Corps of Engineers CWA 404(b)(1) analysis, issued with the Record of Decision and CWA 404 permit, on June 17, 2005, concluded that Alternative D is the least environmentally damaging alternative based on acreages of wetland impacts. The Corps also concluded that Alternative D is economically more attractive than the previously permitted project.

The USFS selected Alternative D and approved the modifications to the 1997 Approved Plan of Operations in its Record of Decision (December 2005). The State of Alaska has also issued its decisions, authorizations, and certifications for Alternative D.

However, for the reasons discussed in our December 1, 2004 letter, EPA continues to believe that Alternative A is environmentally preferable.

## **EPA DECISION**

EPA's decision regarding the Kensington Gold Project involves the issuance of an NPDES permit based on Coeur's NPDES permit application, which reflects Alternative D. The permit sets conditions on the discharges of pollutants from the mine to Sherman Creek (Outfall 001), from the TSF to East Fork Slate Creek (Outfall 002), and domestic wastewater to Lynn Canal (Outfall 003).

Outfall 001 represents the discharge from settling facilities that collect treated (metals precipitation and filtration) mine drainage from mine dewatering operations and runoff from waste rock piles and other disturbed areas in the Sherman Creek drainage. Outfall 002 will discharge water from the TSF, which includes the natural lake basin of Lower Slate Lake and a constructed retention embankment at the outlet of the lake. Outfall 003 will discharge treated domestic wastewater for the Kensington Mine camp during construction. No permanent camp is proposed to remain at the site during the operation phase of the project. The NPDES permit includes effluent limitations specific to each outfall and other requirements to ensure water quality protection in each of the water bodies mentioned above, including compliance with the Alaska Water Quality Standards (AWQS) for aquatic life and human health.

EPA made the draft NPDES permit and Fact Sheet available for a 45-day public review period on June 21, 2004. The draft permit contained effluent and receiving water (ambient) monitoring requirements as well as requirements that the permittee develop a Best Management Practices program for the control of toxic and hazardous pollutants.

The final permit and response to comments are included in this ROD in Appendix A.

## **FACTORS CONSIDERED IN THE DECISION**

### **Scope of EPA's Clean Water Act § 402 Authority**

EPA's NPDES permitting authority is limited to issuing permits based on NPDES permit applications we receive, so long as it is feasible for the project, as described in the application, to meet water-quality based limits. Coeur applied for an NPDES permit to discharge wastewater based on Alternative D. Coeur has gained approval to begin construction and operation of the Kensington Mine Project from the USFS, the USACE, and the State of Alaska, whose consent or authorization is necessary. Coeur has demonstrated their ability to implement treatment options (such as reverse osmosis for outfall 002) that will enable them to meet permit limits.

### **Receiving Waters**

The permit authorizes discharges through three outfalls. Outfall 001 discharges mine water to Sherman Creek, and is located at latitude 58° 52' 04" North and longitude 135° 06' 55" West. Outfall 002 will discharge from the TSF to East Fork Slate Creek at latitude 58° 49' 58" North and longitude 134° 57' 58" West. Outfall 003 will discharge treated domestic wastewater to Lynn Canal at latitude 58° 51' 58" North and longitude 135° 8' 28" West.

East Fork Slate Creek and Sherman Creek are designated by the State as protected for water supply (drinking, culinary, and food processing; agricultural irrigation and stock watering; aquaculture; and industrial); contact and secondary recreation; and growth and propagation of fish, shellfish, other aquatic life, and wildlife (18 ACC 70.020(2)). Lynn Canal is protected for marine water supply (aquaculture, seafood processing and industrial); water recreation (contact and secondary); growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.



## **Description of Discharges**

### **Outfall 001**

Outfall 001 represents the discharge from settling facilities into Sherman Creek. Inflows to the sediment ponds include treated mine drainage from mine dewatering operations and runoff from waste rock piles and other disturbed areas in the Sherman Creek drainage. The sediment pond has two cells. Stormwater runoff from waste rock and disturbed areas is routed to Cell 1 via a riprap lined spillway, which is sized to handle runoff from a 100-year, 24-hour precipitation event. A spillway, notched in the center berm, allows flow from Cell 1 to Cell 2. Cell 2, which is designed to treat water from mine dewatering operations and high flows from Cell 1, has been conservatively designed to hold settled solids for the life of the mine. Discharge from Cell 2 to Outfall 001 occurs through a perforated decant pipe with a design capacity to handle the 10-year, 24-hour storm event. Discharge flows from Outfall 001 will initially increase due to increased mine development area and will vary over time due to stormwater runoff.

Coeur estimates the rate of mine dewatering to generally range from 1.33 and 2.45 cubic foot per second (cfs). All of the flow will be collected in sumps within the mine where initial settling will occur. Mine drainage will be pumped to the mine water treatment system for metals precipitation and filtration. Settled solids will be added to tailings that are backfilled into the mine. Filter backwash will be recycled to the underground mine water treatment system.

### **Outfall 002**

Outfall 002 will discharge water from the TSF to East Fork Slate Creek. The natural lake basin of Lower Slate Lake and a constructed retention embankment at the outlet of the lake will form the TSF. TSF inflows include tailings slurry from mill operations, precipitation that falls onto the lake, storm water runoff from upland areas adjacent to the TSF, and flows from Mid-Lake East Fork Slate Creek (if the flows are too high for the diversion to accommodate). The upstream flow in East Fork Slate Creek will be collected and transferred to a 20-inch diversion pipeline.

Tailings slurry will flow by gravity from the mill to the TSF in a 3.5-mile pipeline. The pipeline will be double-walled high density polyethylene (HDPE) and/or steel. The tailings slurry will be discharged into the TSF through perforations in a submerged portion of the tailing delivery pipeline. The pipeline will be operated so that a portion of the perforated segment is always above the bottom of the TSF, allowing the tailings to flow freely from the pipe.

The average slurry throughput to the TSF is projected to be 354 gpm with an average solids content of 55 percent by weight (i.e., the water component of the slurry will be approximately 247 gpm). A portion of the slurry water will be entrained in the tailings and will be unavailable for recycle. Coeur will recycle an average of 100 gpm out of the TSF back to the mill.

Coeur initially proposed to discharge effluent via Outfall 002 without treatment other than best management practices (BMPs) to enhance settling. However, water quality modeling

indicated that total suspended solids (TSS) limits may not be achieved without additional treatment. In addition, background levels of aluminum in East Fork Slate Creek and Lower Slate Lake occasionally exceed the permit limits. As a result, Coeur amended its NPDES permit application to incorporate a reverse osmosis (RO) treatment system into the TSF design. The RO system will reduce levels of both aluminum and TSS to below permit limits and provide additional removal of other pollutants. A maximum total of 1,100 gpm is authorized to be discharged out of Outfall 002.

### **Outfall 003**

The discharge of treated domestic wastewater for the Kensington Mine camp was previously permitted for use during exploration, construction and production. The current project anticipates the use of the camp through exploration and construction. No permanent camp is proposed for the site during the operation phase of the project. Domestic wastewater will be treated and discharged from Outfall 003 to Lynn Canal. The average flow for the plant during construction is estimated at 30,000 gallons per day (gpd), or 20.8 gpm, based on sizing to accommodate 300 people.

### **Endangered Species Act (ESA)**

Section 7(a)(2) of the Endangered Species Act (ESA) requires Federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), as appropriate, to ensure that their actions do not jeopardize the continued existence of species listed as threatened or endangered under ESA, or destroy or adversely modify their critical habitat.

Through the NEPA process, EPA obtained a list of threatened and endangered species. On June 21, 2004, EPA sent a copy of the draft NPDES permit and Fact Sheet to NMFS and USFWS. In the Fact Sheet, EPA stated we do not expect the discharges from the facility, which comply with the requirements of the permit, to adversely affect endangered species. On November 17, 2004, the U.S. Forest Service and the U.S. Army Corps of Engineers sent a copy of the Biological Assessment/Biological Evaluation (BA/BE) to NMFS and requested initiation of formal consultation. NMFS issued a final Biological Opinion (BO) on March 18, 2005. The BO did not include any specific conservation recommendation applicable to the NPDES permit issuance.

### **Essential Fish Habitat (EFH)**

Section 305(b) of the Magnuson Stevens Fishery Conservation and Management Act of 1996 requires Federal agencies to consult with NMFS when any activity proposed to be permitted, funded, or undertaken by a federal agency may have an adverse effect on designated Essential Fish Habitat (EFH). As stated in the Fact Sheet, EPA has determined that the issuance of the permit is not likely to have an adverse effect on EFH in the vicinity of the discharge. Effluent limitations have been incorporated in the permit based on criteria considered to be protective of overall water quality in East Fork Slate Creek, Sherman Creek, and Lynn Canal.

### **National Historic Preservation Act (NHPA)**

The USFS completed a cultural resource survey of the area of potential effect (APE) for the Kensington Gold Project in 2003, in compliance with the requirements of Section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq). The USFS sent determinations of eligibility of 43 historic sites within the APE to the State Historic Preservation Office for concurrence. Additionally, Coeur, the Alaska State Historic Preservation Office, and the Tongass National Forest entered into a Memorandum of Agreement (MOA) on November 29, 2004 to ensure compliance with Section 106 of the NHPA during mine construction, operation, and closure.

### **Coastal Zone Management Act (CZMA)**

The State of Alaska, Office of Project Management and Permitting (OPMP), completed its review of the Kensington Gold Project for consistency with the Alaska Coastal Management Program (ACMP) on April 25, 2005. OPMP found the project, including the discharge of pollutants such as treated domestic wastewater and treated non-domestic wastewater from the Kensington Mine, to be consistent with the ACMP.

### **Wetlands (Executive Order 11990)**

Wetlands throughout the project area would be affected by construction and operations. Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to issue permits for activities that would result in the placement of dredge or fill material in waters of the U.S., including wetlands. Before a permit can be issued, Section 404(b)(1) Guidelines require that projects avoid impacts to the extent possible, minimize impacts that cannot be avoided, and provide compensatory mitigation for impacts that occur. Alternative D is estimated to impact a total of 61.7 acres of U.S. waters, including 41.5 acres of wetlands filled, 20 acres of open water filled, and 0.2 acres of marine waters filled (USACE ROD, June 17, 2005). The Corps, in their CWA 404 permit and Record of Decision, determined Alternative D was least environmentally damaging based on total wetland acreages of impact.

### **Floodplains (Executive Order 11988)**

The Kensington Gold Project is not located within floodplains.

### **Environmental Justice (Executive Order 12898)**

EPA's issuance of the NPDES permit will not result in disproportionate adverse human health or environmental effects to minority or low-income communities.

### **Tribal Consultation and Coordination (Executive Order 13175)**

On January 23, 2004, EPA sent letters to Chilkat (Klukwan) Village, Chilkoot Indian Association, Douglas Indian Association, and Tlingit and Haida Central Council informing the Tribes that the preliminary permit will be sent for tribal review. EPA also invited the Tribes to initiate formal government-to-government consultation with EPA in developing the final draft permit prior to public release. EPA transmitted the preliminary draft permit and draft Fact Sheet

to the Tribes on April 8, 2004. EPA received no comments in response. Each Tribe also received a copy of the draft permit and Fact Sheet at the start of the public comment period on June 21, 2004. EPA did not receive any comments from these Tribes.

## **MITIGATION MEASURES**

Section 2.5 and Tables 2-6 and 2-7 of the FSEIS identifies potential mitigation and monitoring measures required as part of Alternative D during construction, operation, and reclamation. Additional mitigation measures have been developed as part of stipulations, special conditions, monitoring requirements of other Federal and State permits and authorizations to ensure that environmental protection is being achieved.

Alternative D also includes the construction of a reverse osmosis treatment system to treat the TSF effluent water. The RO system would ensure compliance with permit limits for total suspended solids and metals. The treatment plant effluent would discharge into the diversion pipeline, which would flow to East Fork Slate Creek below the TSF dam.

Once tailings disposal is complete, the tailings would be capped to isolate any toxic contaminants unless Coeur could demonstrate to the satisfaction of EPA that tailings are not toxic. Although the FSEIS refers to a cover of approximately 4 inches of native material, the cap design (e.g., horizontal and vertical dimensions, types of materials, placement methods, etc.) will depend on the evaluation of the test results and the site characterization at closure.

The U.S. Army Corps of Engineers, in its CWA 404 permit, requires a special condition for Coeur to use nontoxic chemical flocculent to enhance the deposition of suspended particles and reduce turbidity levels in the Lower Slate Lake disposal site.

## **MONITORING**

Under Section 308 of the Clean Water Act and 40 CFR 122.44(i), EPA must require a discharger to conduct monitoring whenever necessary to determine compliance with effluent limitations and assist in the development of effluent limitations. The permit contains both effluent and receiving water (ambient) monitoring requirements. The data from ambient monitoring is important for determining whether effluent limits in the proposed permit are adequate, and may be necessary for the development of water quality-based effluent limitations when the permit is reissued. The permit also requires that Coeur prepare a Quality Assurance Plan for all monitoring.

### **Outfall Monitoring**

To ensure compliance with the effluent limitations, Coeur is required to monitor the discharges from Outfalls 001, 002, and 003 for metals, toxicity, and other parameters on a routine basis (See Permit Tables 1-4). The permit also requires that the percent removal for BOD and TSS be calculated on a quarterly basis for Outfall 003. This would entail measuring the influent as well as the effluent for these parameters.

### **Receiving Water (Ambient) Monitoring**

The permit requires Coeur to conduct ambient monitoring in Sherman Creek, Slate Creek, and Johnson Creek.

### **Water Column Monitoring**

The permit requires monthly water column monitoring for metals and other parameters at locations in Sherman Creek, Slate Creek, and Johnson Creek. The Sherman Creek and Slate Creek monitoring will provide data to assess the characteristics of the receiving stream below the discharges. Monitoring in Johnson Creek will be used to determine whether the process areas are affecting conditions in the creek.

### **Sediment Monitoring**

The permit requires annual sediment monitoring for metals and other parameters and annual toxicity testing to assess the effect of mine effluent on sediments within the receiving streams. The permit requires sampling in Sherman Creek at a location immediately downstream of Outfall 001 and at another location below the fish barrier. Additional sampling is required at a location below Outfall 002 in East Fork Slate Creek and in lower Slate Creek below the fish barrier. Sediment sampling is also required at a location in upper Johnson Creek immediately below the process area.

### **Biological Testing and Monitoring of Aquatic Resources**

*Benthic Invertebrates* – The permit requires benthic invertebrates monitoring using methods and locations established in baseline surveys in Sherman and Sweeny creeks. In Slate and Johnson Creeks, Coeur will define reaches to be sampled that are representative of potential impacts from Outfall 002 and the process area, respectively. Each reach will be delineated for all possible sampling sites. Every third or fourth sampling site will be sampled until a total of 6 samples are collected. Sampling will be conducted once during the construction period and annually thereafter.

*Resident Fish* – Abundance and condition of Dolly Varden char in Sherman, Slate, and Johnson creeks will be monitored using annual snorkel observations or electrofishing techniques comparable to those employed in previous baseline studies. Surveys will be conducted in: upper, middle, and lower Sherman Creek; East Fork Slate Creek and Lower Slate Creek; and Johnson Creek. These surveys will focus on fish greater than 25 mm. Data to be derived from the surveys include: 1) population estimates by species, habitat type, and stratum, and 2) condition factor by stratum.

*Anadromous Fish* – Annual surveys of spawning salmon in Sherman, Slate and Johnson creeks will be conducted to assess the size of the escapement. Surveys will consist of weekly stream counts throughout the spawning season documenting the distribution of salmon within the surveyed areas. Outmigrating juvenile pink salmon from the Sherman, Slate, and Johnson creek drainages will be sampled during the spring following each year of adult counts. Quantitative methods, such as screw trap or inclined plane trap will be used to estimate the relationship between adult escapement and fry protection.

The quality of spawning substrate used by pink salmon will be monitored to detect possible changes caused by potential introduction of fine sediments into lower Sherman, Slate, and Johnson creeks. Sediment samples will be collected in July prior to spawning activity.

Aquatic Vegetation – Annual visual surveys of visual impacts of aquatic vegetation in Sherman, Slate, and Johnson creeks will be conducted during the summer months.

## **RECLAMATION**

Section 2.3.19 of the FSEIS discusses the general reclamation procedures for all the alternatives and summarizes how major mine components would be reclaimed. A more detailed closure and reclamation plan specific to Alternative D is presented in Appendix 1 of the Final Plan of Operations.

## **BEST MANAGEMENT PRACTICES (BMP) PLAN**

Section 402 of the Clean Water Act and federal regulations at 40 CFR 122.44(k)(2) and (3) authorize EPA to require Best Management Practices (BMP) Plan in NPDES permits. The BMP Plan will be used to control the discharge of toxics or hazardous pollutants by way of spillage or leaks, sludge or waste disposal, and drainage from raw material storage. The BMP Plan must be maintained at the mine facility and amended whenever there is a change in the facility or in the operation of the mine which materially increases the potential for an increased discharge of pollutants. Annually, the BMP Plan must be reviewed and certified.

## **PUBLIC INVOLVEMENT**

The public involvement process is presented in Section 1.5 of the FSEIS. The following is a chronology of the public involvement process for the FSEIS and NPDES permitting process:

- |                     |   |
|---------------------|---|
| September 13, 2002  | The <i>Notice of Intent (NOI)</i> was published in the Federal Register and announced the USFS' intention to develop an SEIS under NEPA for the Kensington Gold Project. The NOI initiated the 30-day public scoping period.                                      |
| Sept. 19 & 21, 2002 | Scoping open houses held in Juneau and Haines, respectively.  |
| January 23, 2004    | Draft SEIS released to the public for review and comment.   |
| Feb. 24 & 26, 2004  | Public meetings on the Draft SEIS were held in Juneau and Haines, respectively.   |
| June 21, 2004       | EPA, U.S. Army Corps of Engineers, and the State of Alaska issued draft permits and draft decisions/authorizations (draft NPDES permit, CWA 404 public notices, draft State CWA 401 certifications, draft State decisions and authorizations) for public comment. |

July 26 & 27, 2004 Public hearings on draft Federal and State permits and decisions/authorizations were held in Juneau and Haines, respectively.

## CONCLUSIONS

Based on the NPDES permit application received by EPA, Coeur's demonstration that the project can meet permit limits, and the findings of the FSEIS, EPA is issuing an NPDES permit, with discharge limits, for Alternative D. The permit authorizes treated mine water discharges from Outfall 001 to Sherman Creek, treated TSF discharges from Outfall 002 to East Fork Slate Creek, and treated domestic wastewater discharge during construction from Outfall 003 to Lynn Canal. The final NPDES permit is included in Appendix A.

Further information regarding this Record of Decision (ROD) may be obtained by contacting:

Hanh Shaw  
NEPA Compliance Coordinator  
U.S. Environmental Protection Agency  
1200 Sixth Avenue, OWW-130  
Seattle, WA 98101  
E-mail: [shaw.hanh@epa.gov](mailto:shaw.hanh@epa.gov)  
Telephone: (206) 553-0171  
Facsimile: (206) 553-0165

Approving Official:

/S/ Michael F. Gearheard  
Michael F. Gearheard, Director  
Office of Water and Watersheds

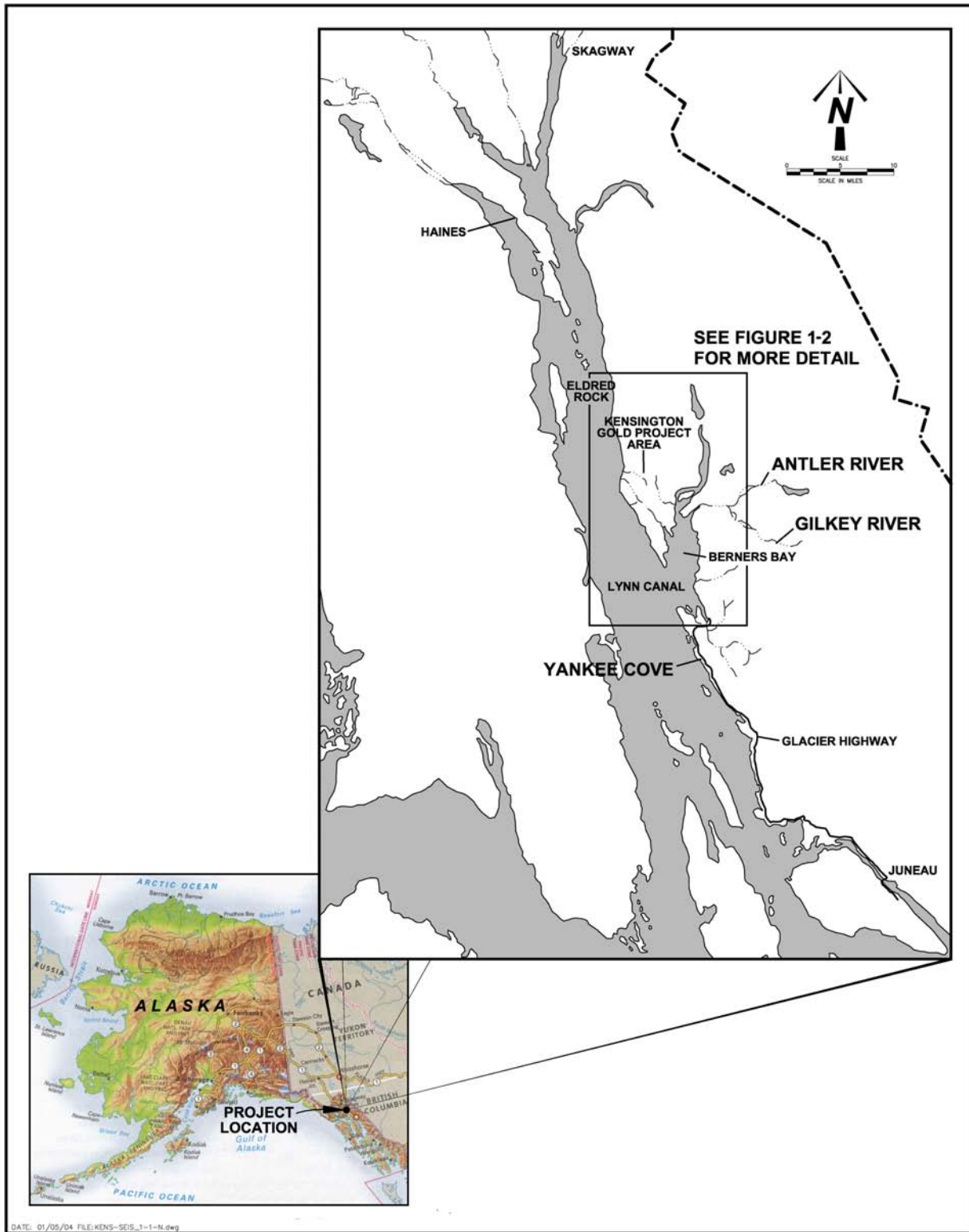
6/28/2005  
Date

<b>Alternative</b>	<b>A</b>	<b>A1</b>	<b>B</b> (Coeur's Proposed Action)	<b>C</b>	<b>D</b>
Alternative Description	1998 permitted project	Same as A w/ reduced mining rate	Recycle process water; no treatment of TSF effluent	Same as B except with no recycle	Same as B except with treatment of TSF effluent by reverse osmosis and capping of the sediment post-operation
Tailings Disposal	DTF  20 million tons; 25% backfilled	DTF  4.5 million tons; 40% backfilled	Lower Slate Lake TSF  4.5 million tons; 40% backfilled	Lower Slate Lake TSF  4.5 million tons; 40% backfilled	Lower Slate Lake TSF  4.5 million tons; 40% backfilled
Diversions	Stormwater diversion around DTF	Stormwater diversion around DTF	No diversion	Ditch diversion around TSF - would require damming of Upper Slate Lake and raising water level 20 ft. to allow gravity flow	Pipeline diversion around TSF - would require dam in Mid-lake East Fork Slate Creek
Access/Marine Facilities	On-site housing; workers transported by helicopter (12 RT per week); marine terminal at Comet Beach	Same as A	No on-site housing; daily crew shuttle between marine terminals at Cascade Point and Slate Creek Cove (4 RT per day)	Same as B except daily crew shuttle service between Echo Cove and Slate Creek Cove; no landing craft ramp at Slate Creek Cove	Same as B

DTF - drystack tailings facility  
TSF - tailings storage facility  
RT - round trip



## FIGURES



Source: Forest Service, 1997a

**FIGURE 1. GENERAL PROJECT AREA (APPROXIMATELY 45 MILES NORTHWEST OF JUNEAU)**



Source: U.S. Geological Survey, 1985  
**FIGURE 2. SPECIFIC PROJECT AREA**

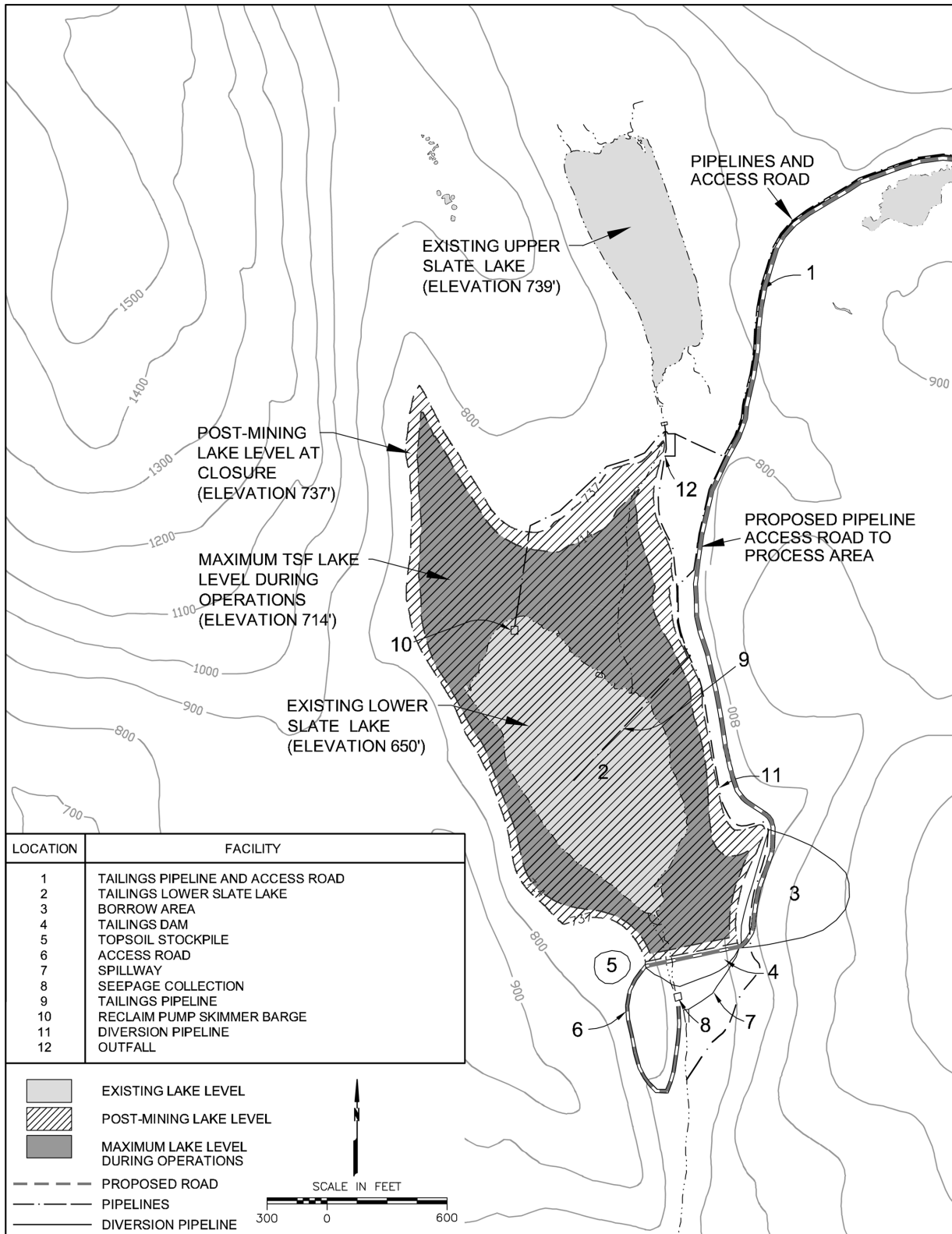


FIGURE 3. ALTERNATIVE B, TSF

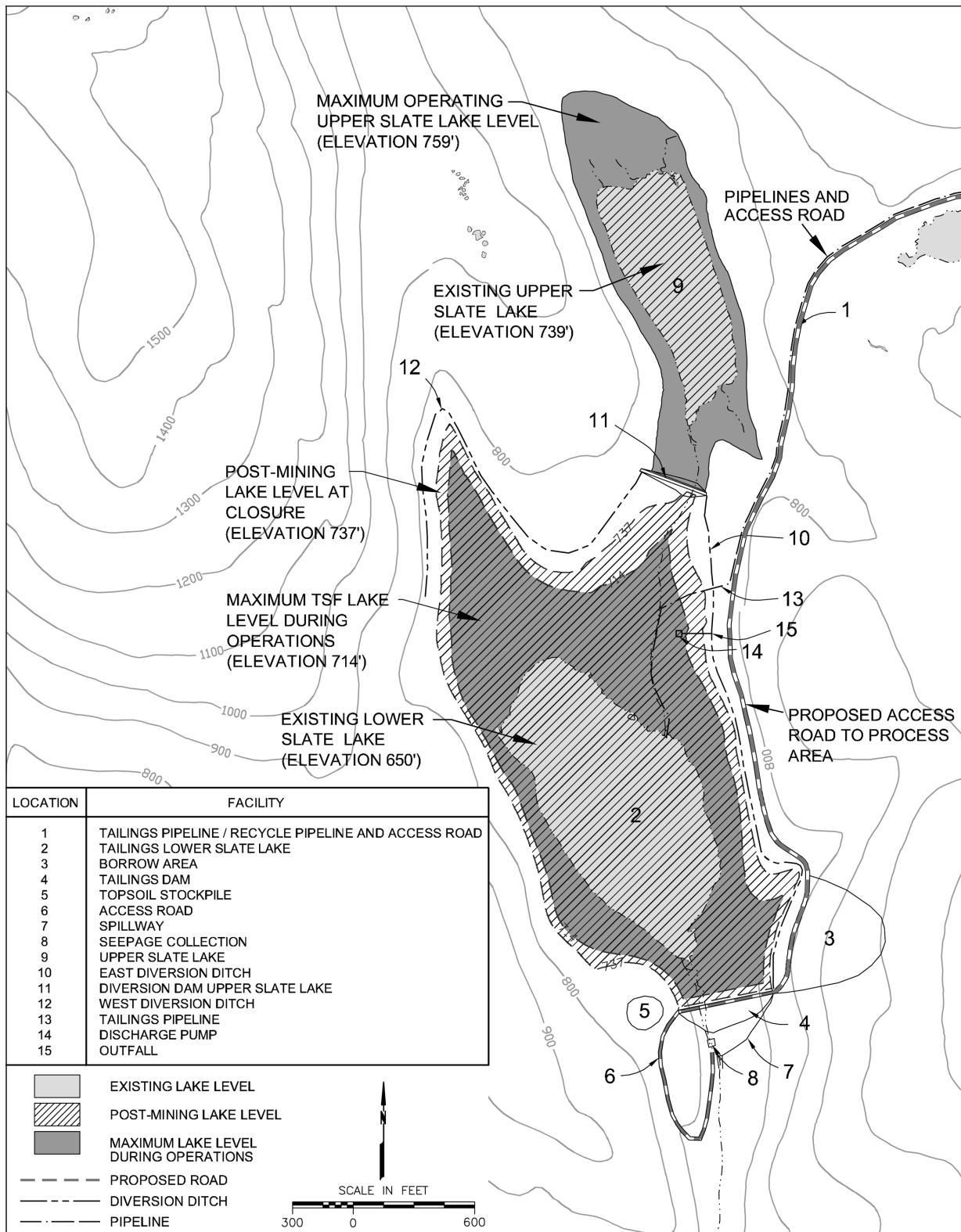


FIGURE 4. ALTERNATIVE C, TSF AND DIVERSIONS



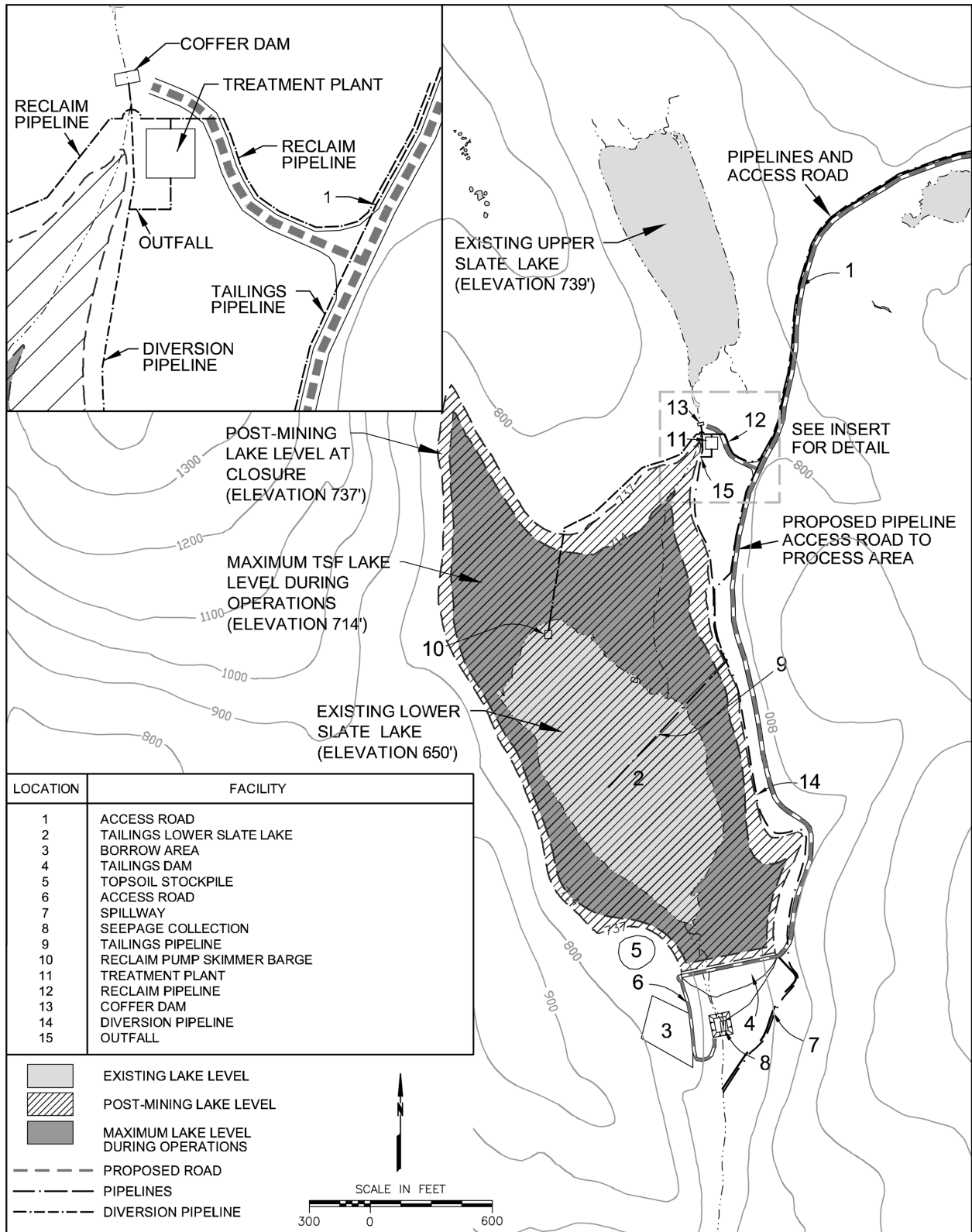


FIGURE 5. ALTERNATIVE D, TSF

## **APPENDIX A**

### **FINAL NPDES PERMIT AND RESPONSE TO COMMENTS**