

Reply To Attn Of: OWW-130

RECORD OF DECISION

IDAHO COBALT PROJECT

I. DECISION TO BE MADE

This Record of Decision (ROD) documents the decision by the U.S. Environmental Protection Agency Region 10 (EPA) to issue a National Pollutant Discharge Elimination System (NPDES) permit for discharges from the Idaho Cobalt Project (ICP) to Big Deer Creek through Outfall 001. This project is considered a new source and, in accordance with Section 511(c)(1) of the Clean Water Act (CWA), 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). EPA participated in the development of the Idaho Cobalt Project Environmental Impact Statement (EIS) as a cooperating agency, with the U.S. Forest Service Salmon-Challis National Forest (USFS) as the lead agency. Per 40 CFR 1506.3, EPA is adopting the Final EIS (FEIS) to fulfill its NEPA requirements for issuing a new source NPDES permit.

On June 12, 2008, the USFS issued its FEIS and ROD documenting its decision, rationale for the decision, and requirements that must be met by Formation Capital Corporation (FCC), the project proponent, prior to approval by USFS of the plan of operations. Appeals of the June 12, 2008 USFS decision were filed by the Nez Perce Tribe, Noranda, Charles Pace, Earthworks, and Boulder-White Clouds Council. On September 30, 2008, the Regional Forester reversed and remanded the Forest Supervisor's decision. Specifically, the Regional Forester determined that while the analysis of potential effects in the FEIS and administrative record was adequate, the USFS ROD failed to adequately address some of the criteria for approval of a Plan of Operations under 40 CFR 228.5.

On January 16, 2009, the Forest Supervisor issued a new ROD that addressed the Regional Forester's appeal decision as well as new information submitted by FCC. Specifically, FCC sent a letter to the USFS, dated November 14, 2008, stating that it now planned on delaying development of the Sunshine deposit to allow for information to be gathered during the mining of the Ram deposit. As such, approval of only the components associated with development of the Ram deposit is included in the USFS ROD. The USFS decision on approval of those

components of the proposed plan of operations related to development of the Sunshine deposit is deferred. For agency consistency, EPA's ROD includes the decision to authorize a discharge of mine wastewater and process wastewater from development of only the Ram deposit. The Permit does not authorize the discharge of wastewater from the Sunshine deposit. If FCC decides to mine the Sunshine deposit at a later date, the deposit will be considered during the relevant permit period.

EPA's decision to issue an NPDES permit is based upon the analysis in the FEIS, which identified Alternative IV as the preferred alternative, and Alternative V as the environmentally preferable alternative. The Notice of Availability of the FEIS was published in the Federal Register and in local newspapers by the USFS on June 27, 2008. EPA issued the draft NPDES permit on February 8, 2007 for a 60-day public comment period, which was extended for an additional 45 days (to May 24, 2007), for a total of 105 days. Public meetings were held in Salmon, Idaho on March 14, 2007, and Challis, Idaho on March 15, 2007. EPA's response to comments on the draft NPDES permit is included in Appendix A.

II. INTRODUCTION

As proposed, the ICP would consist of an underground cobalt-copper-gold mine where ore would be mined from two separate ore bodies; the Ram deposit and Sunshine deposit, a flotation mill, a lined dry-stack tailings and waste rock disposal facility, a water management pond, water treatment facilities, and various ancillary facilities. As noted above, FCC now plans on deferring the mining of the Sunshine deposit. The average ore mining and processing rate is approximately 800 tons per day. The proposed project is located approximately 45 road miles (or 22 direct miles) west from Salmon, Idaho (Figure 1). Salmon, Idaho, is the county seat of Lemhi County, and has a population of approximately 3,000 people.

The FCC property is composed of several mineral deposits acquired by locating and filing mining claims within the Salmon-Cobalt Ranger District of the Salmon-Challis National Forest (SCNF) pursuant to the United States Mining Laws. The property consists of 241 unpatented mining claims for a total of 4,979 acres. Approval of the Plan of Operations for the Ram deposit by the USFS will result in surface disturbance of approximately 132 acres.

2.1 Location

The ICP is located adjacent to the Blackbird Mine Superfund Site. It is centered on 45°07'50" north latitude and 114°21'42" west longitude, and is located on the Grant Mountain, 7.5 minute, U.S. Geological Survey topographic map. The project area is within or adjacent to Sections 8, 9, 15, 16, 17, 20, 21, and 22 Township 21 North, Range 18 East (Boise Meridian).

The ICP lies within the Panther Creek drainage, which flows to the Salmon River near Shoup, Idaho. The Salmon River flows to the Pacific Ocean via the Snake and Columbia Rivers. Panther Creek, the Salmon River and various tributaries form the Middle Salmon River-Panther Creek Subbasin. The ICP itself lies near the headwaters of several drainages including Bucktail Creek, Big Deer Creek, Big Flat Creek, Little Deer Creek and Blackbird Creek. All these drainages ultimately flow into Panther Creek (Figure 2).

2.2 Background

On January 22, 2001, FCC submitted a proposed Plan of Operations (Plan) for the ICP to the USFS. FCC's proposal includes a description of the major activities that would take place during the construction phase, operating phase, and reclamation phase associated with the ICP. On February 4, 2005, FCC submitted a revised proposed Plan, including additional supporting technical information. On April 5, 2006 and June 6, 2006 FCC submitted additional revisions to the proposed Plan. The USFS released a Draft EIS (DEIS) for public comment on February 23, 2007. The DEIS evaluated the environmental impacts associated with the proposed Plan and alternatives.

The USFS was the lead agency for preparation of the ICP EIS. EPA and the State of Idaho Department of Environmental Quality (IDEQ) were cooperating agencies because of the federal and state authorizations and approvals required for this project. In addition, EPA was a cooperating agency because of the project's need for a new source NPDES permit. In accordance with NEPA, one FEIS 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, EPA has determined that the FEIS adequately describes the potential direct, indirect, and cumulative effects associated with the ICP and the project alternatives.

2.3 NPDES Permit Application

On May 25, 2006, FCC submitted an NPDES permit application to EPA requesting authorization to discharge treated wastewater associated with the ICP to Big Deer Creek. EPA reviewed the application and after several additional submittals, deemed the application complete on July 14, 2006. On January 14, 2008, FCC submitted a revised application that reflected changes to wastewater management associated with EIS Alternative IV. Supplemental information was received on January 23, 2008. EPA reviewed the application and supplemental information and deemed the revised application complete on March 3, 2008.

Sections 301 and 306 of the CWA require that EPA develop wastewater effluent standards for specific industries, including hardrock mines. These standards are established for both existing sources and "new sources". Because this project is a new source, the New Source Performance Standards (NSPS) at 40 CFR Part 440, Subpart J, for mines and mills, are applicable to the project (Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory). 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 wastewater (such as the process wastewater associated with mill tailings). An exception to the discharge prohibition is provided for excess flows associated with net precipitation where discharge of such flow is subject to the comparable effluent limits for mine drainage. The Fact Sheet and Response to Comments for the NPDES permit describe how the NSPS were included in the NPDES permit.

In states that have not been delegated NPDES permitting authority, such as Idaho, EPA retains the authority to issue NPDES permits for point source discharges of pollutants to waters

of the U.S. under the CWA. Where EPA is the permitting agency, the regulations require that EPA comply with the environmental review requirements of NEPA because issuance of a new source NPDES permit constitutes a federal action (40 CFR 122.29(c)).

III. PROPOSED MINING OPERATION

In their revised proposed Plan submitted to the USFS on June 6, 2006, FCC proposes to develop, operate, and ultimately reclaim an 800-ton per day mine and mill complex. Underground mining methods would be used to extract ore from two deposits; the Ram and the Sunshine. On November 14, 2008, FCC indicated its intent to utilize information from mining the Ram deposit to refine the proposed mining plan for the Sunshine deposit. Therefore, plans on mining the Sunshine deposit have been deferred to a future date. During development of the Ram deposit, ore would be trucked from the mines to the mill. Ore from the Ram mine may eventually be conveyed by an overhead tram to the mill. A cobalt-copper-gold concentrate would be produced at the mill via the flotation process. The concentrate from the mill would be shipped to an off-site processing facility. There would be three main phases in the life of the ICP; the construction phase, the operating phase, and the reclamation phase.

Additional details regarding FCC's proposal are discussed under Section 5.2, Alternative II, below.

IV. BLACKBIRD MINE SUPERFUND SITE

The Blackbird Mine Site is an inactive mine that covers approximately 830 acres of private, patented mining claims and 10,000 acres of unpatented mining claims within the Salmon-Challis National Forest. The mine is situated on a large copper and cobalt deposit. Elevations at the mine range from approximately 6,600 feet to 8,000 feet above sea level. Mining activities began in the late 1800s and continued until 1982. Mining activity resulted in about 14 miles of underground workings, a 12-acre open pit, 4.8 million tons of waste rock deposited in numerous piles, and 2 million tons of tailings disposed of at a tailings impoundment.

The Blackbird Mine affects three different drainages: 1) Blackbird Creek, 2) Bucktail Creek, and 3) Panther Creek. Blackbird Creek flows into Panther Creek from the north. Bucktail Creek flows into the South Fork Big Deer Creek which joins with Big Deer Creek, which flows into Panther Creek from the south. Panther Creek flows into the main stem of the Salmon River. Acid rock drainage from the waste rock piles, the underground workings, the tailings impoundment, and tailings deposited along area creeks have resulted in the release of elevated levels of hazardous substances to the environment (groundwater, surface water, soils), including but not limited to copper, cobalt and arsenic. These releases have contributed to elevated levels of dissolved copper and cobalt in Panther Creek and its upstream tributaries. Contaminated sediments, tailings, waste rock, and soils (deposits) from the Blackbird Mine site were transported down Blackbird Creek and Bucktail Creek during high flow events and were deposited at overbank areas and in-stream areas along Panther Creek, South Fork Big Deer Creek, and Big Deer Creek. There is also evidence of transport and deposition of contaminated materials at several areas along Panther Creek by irrigation waters diverted from Panther Creek. In 1983, the State of Idaho initiated a natural resource damage assessment (NRDA) and cleanup lawsuit for the Blackbird Mine pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and various Idaho laws. In 1992, the United States joined the lawsuit for cleanup, cost recovery and natural resource damages. In 1995, a Consent Decree (No. 83-4179 State of Idaho, et al. v. The M.S. Hanna Company et al.) was entered in federal district court and committed the Settling Defendants to, among other things, restore water quality in Panther Creek and Big Deer Creek to a level that will support all life stages of salmonids, implement a Natural Resource Restoration Plan for returning Snake River Chinook salmon to Panther Creek, and implement the future remedial actions selected by EPA under separate order or consent decree.

The cleanup at the Blackbird Mine was performed as several removal actions and a remedial action which generally included collection, storage and treatment of contaminated surface and groundwater from mine drainage and mine wastes, diversion facilities to re-route clean and contaminated waters, relocation and capping of waste rock, removal and selective stabilization of contaminated overbank deposits, natural recovery of in-stream sediments, long-term operation and maintenance, and institutional controls.

From 1993 to1994 a time-critical removal action was performed at the West Fork Tailings Impoundment to stabilize the dam and to minimize the potential for release of tailings into Blackbird and Panther Creek. Non time-critical removal actions (Early Actions) were implemented to address releases of dissolved cobalt and copper into area streams downstream from the mine site. The Early Actions focused on controlling sources of acid rock drainage that were impacting water quality. In addition, overbank deposits along Panther Creek were removed to address human health risks from arsenic contaminated soils. The Early Actions were initiated during the summer of 1995 and were continued in five phases each year through 2002.

The CERCLA Record of Decision (CERCLA ROD, EPA 2003) selected site-specific remedial actions to take place at the Blackbird Mine site subsequent to the Early Actions. Because the Blackbird Mine affects three different drainages, the Remedial Actions for the Blackbird Mine site were divided into three remediation areas: 1) Blackbird Creek, 2) Bucktail Creek, and 3) Panther Creek. The Blackbird Mine Site Group (BMSG) is currently implementing the remedial activities outlined in the Record of Decision under a Unilateral Administrative Order issued by EPA in 2004.

4.1 Blackbird Creek

The selected remedy for the Blackbird Creek drainage area included:

- Collection of Meadow Creek seeps
- Covering the West Fork Tailings impoundment and treating tailings impoundment seepage
- Removal with selective stabilization of overbank deposits along Blackbird Creek
- Natural recovery of in-stream sediments in Blackbird Creek
- Institutional controls (ICs)

4.2 Bucktail Creek

The selected remedy for the Bucktail Creek drainage area included:

- Groundwater seep collection and treatment
- Diversion of Bucktail Creek around the South Fork Big Deer Creek.
- Natural recovery of sediments
- Institutional controls

4.3 Panther Creek

The selected remedy was a combination of removal of contaminated soils and institutional controls. The contaminated areas at the Rufe, Shook, and Hade properties were comparatively small. Therefore, soil in overbank deposits was removed to the human health cleanup level for arsenic. The contaminated overbank deposits at the Rogers property included both small and large areas. The soils in the smaller areas were removed. However, the larger areas have or will have institutional controls to preclude future development. Overbank soils were removed as part of early actions prior to the CERCLA ROD, but elevated levels were left at or below the water table, thus, institutional controls are needed to address activities that might result in exposure of subsurface soils. The properties where elevated levels of subsurface soils exist are: Riprap Bar 1, Riprap Bars 3 and 5, Deep Creek Campground 2, Bevan 2/1, Sillings1 (Ditch Area), Sillings Lower Pasture, Sillings Upstream Low Bar, Fernandez Low Bar 1, Fernandez Low Bar 2, Noranda Pasture 3, Cobalt 1, 4, and 5, and the Panther Creek Inn area.

Construction of most of the remedial actions has been completed as of 2007. The diversion of Bucktail Creek is scheduled to be completed in the future after a couple more years of monitoring and evaluations. Long-term operation and maintenance is required in perpetuity for all of the facilities and remedial actions required by the CERCLA ROD.

4.4 Contingent Actions

There was uncertainty whether some of the components of the remedial actions would be effective in meeting the Remedial Action Objectives (RAOs) and cleanup levels. Therefore, the CERCLA ROD determined that monitoring and evaluations would be needed after construction of the remedial alternative. Based on the monitoring results and further evaluations, contingent actions may be necessary for some areas of the site in the future if cleanup levels are not met.

V. 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. The following discussion provides a summary of the No Action Alternative (Alternative I), FCC's proposed alternative (Alternative II), and three Agency alternatives (Alternatives III, IV, and V). Chapter 2 of the FEIS provides detailed descriptions of each of the following alternatives for the Idaho Cobalt Project.

5.1 Alternative I – No Action

The No Action Alternative functions as the baseline against which the effects of other alternatives are compared. Under this alternative, the USFS would deny approval of the Plan of Operations and EPA would not issue an NPDES permit for the project. Therefore, no mining operations would occur. In order to choose the No Action Alternative, however, the USFS would need to find that the proposed plans or parts of the proposed plans of operation do not represent logical and sequential development of mineral property, may not be feasible, may not comply with applicable state or federal laws, or may not be reasonably incident to mining. If USFS makes this conclusion, under 40 CFR 228.5, it is obligated to notify the operator of required changes that are necessary for its approval.

5.2 Alternative II – Formation Capital Corporation's Proposed Plan of Operations

Alternative II represents the proposed ICP Plan originally submitted by FCC and would allow for mineral development of FCC mining claims located in the Panther Creek drainage on the Salmon-Cobalt Ranger District, Salmon-Challis National Forest.

The ICP would consist of developing the Ram deposit (with 2,230,000 tons of ore currently known). Alternative II also included development of the Sunshine deposit, (approximately 340,000 tons of ore). However, the USFS has not approved the Plan associated with Sunshine. The average rate of mining production would be 800 tons per day (tpd) based on mine operation of 350 days per year. It is possible, however, that mine and mill throughput could reach 1,200 tpd. Ore would be trucked from the mines to the mill. Ore from the Ram deposit may eventually be conveyed by an overhead tram to the mill. Concentrate from the mill would be shipped to an off-site processing facility. Exploration for additional ore reserves is anticipated to continue through the life of the ICP operations. If additional tonnage is identified and defined, the production life of the ICP may be extended beyond the currently proposed mine and mill life schedule. However, any changes or additions to the current proposed plan would require agency review and additional analysis of potential environmental effects.

There would be three main phases in the life of the ICP: the construction phase (approximately 2 years), the operating phase (10 to 12 years), and the reclamation/closure phase (2 years for surface reclamation and up to 30 or more years of post-mine water quality monitoring, and water treatment if necessary). There would also be concurrent reclamation in the construction and operating phases as existing disturbed areas or new disturbances are reclaimed post-use.

The construction phase would include improving existing roads, constructing new roads, constructing the Ram portal, mill, powerline and substation, additional groundwater monitoring wells, and groundwater capture wells. The ore processing mill (flotation), TWSF, water treatment facility, and ancillary facilities would be constructed on the Big Flat between the drainages of Big Deer Creek and Little Deer Creek. Ancillary facilities would include offices, warehouse, change rooms, shipping and receiving docks, emergency sleep quarters, and other structures. The TWSF would cover 55 acres.

Power for the project would be obtained from an existing power line that delivers power to the adjacent Blackbird Superfund site. Emergency power would be supplied with diesel generating equipment.

Access to the ICP from Salmon, Idaho, would be via the Williams Creek, Deep Creek, Panther Creek and Blackbird Creek roads. The anticipated personnel equipment at full production is 157 employees. The work force numbers are anticipated to be temporarily higher during construction and start up. During closure and reclamation, the work force would be reduced significantly. It is anticipated that most of the project employees would live in the Salmon, Idaho area. Personnel would be transported to the project site in vans or buses.

Mine and mill facilities would include the Ram portal, the tram, the mill/plant, the TWSF, water management pond, water treatment and discharge facilities, new and existing improved roads, borrow areas, a soil stockpile area, and ancillary facilities. FCC's proposed Plan of Operations includes an operational and post-operational monitoring plan for surface water and groundwater quality.

The Ram portal would be located on the slopes above Bucktail Creek. A declines would be developed from the portal located above the groundwater level and would be designed to ensure that water does not drain from the portal. There would be two ventilation shafts at the Ram Mine. Ore and waste rock would be hauled directly to the mill or TWSF, as appropriate, in 20-ton trucks (approximately 0.8 mile distance from the Ram).

The operating phase would bring the mill on line at 400 tpd; increasing to 800 tpd as the underground Ram Mine expands. At full production, the mill would produce approximately 32 dry tons of concentrate and 768 dry tons of tailings per day. The Ram ore and waste rock from the Ram portal would be transported to a mill facility located on the Big Flat area initially by haul truck and potentially later by overhead tram. The mine would need to be dewatered during mining operations. Mine drainage water would be used in the mill or treated and discharged into Big Deer Creek in accordance with an NPDES permit.

Tailings leftover from flotation would be dewatered. Approximately one-half of the tailings would be mixed with cement and backfilled into the underground mine. The remaining would be disposed in the TWSF. Runoff and drainage from the TWSF would be collected and transferred to the process water management pond. Wastewater from tailings dewatering and the water management pond would be recycled back to the mill with excess wastewater treated and discharged via a pipeline to Big Deer Creek in accordance with an NPDES discharge permit. Water treatment for combined mine drainage and excess process wastewater would consist of lime precipitation, filtration, and reverse osmosis to reduce the concentrations of metals, nitrate, and sulfate prior to discharge. The treatment plant would be designed for flows up to 150 gpm. Sludge from the water treatment plant and concentrated brine from reverse osmosis would be disposed in the TWSF.

The reclamation and closure phase would focus on reclaiming lands disturbed by FCC's mining activities and providing for long-term management of the reclaimed facilities and mine water following cessation of mining and dewatering. There would be limited concurrent

reclamation during the operations phase, primarily on completed portions of the TWSF. The reclamation phase would include final shaping, covering, and vegetation of the TWSF, sealing mine portals and demolishing the mill and tram system. If no longer needed, the water treatment system, power line, substation, and roads would be reclaimed. The underground mines would be allowed to flood. Groundwater downgradient of the mines would be monitored and a series of pumpback wells would be installed in the downgradient bedrock to intercept contaminated groundwater for treatment, if necessary.

5.3 Alternative III – Relocation of TWSF, Perpetual Mine Dewatering, and Land Application Water Discharge

Alternative III includes several modifications to FCC's proposal. The modifications include:

(1) Relocation of the TWSF to a footprint of 53 acres to avoid impacts to isolated wetlands and modifications of the TWSF cover.

(2) In place of reverse osmosis treatment and discharge of wastewater to Big Deer Creek under an NPDES permit, land application treatment (LAT) would be used for wastewater treatment and disposal. LAT utilizes soil attenuation to supplement wastewater treatment and dispose of wastewater. The 175-acre LAT area would be located in the Big Flat drainage. An NPDES permit for discharge to Big Flat Creek would be needed due to the hydrologic connection between groundwater and Big Flat Creek.

(3) Addition of amendments (lime) to tailings backfill and waste rock (slash) that is left underground to reduce risks potential for leaching of metals.

(4) In place of the post-closure bedrock capture system, the mines would continue to be dewatered from the lower level of mine workings to maximize groundwater capture efficiency.

(5) Increase the size of the process water management pond and addition of a storage pond to account for the revised water balance.

This alternative would require a modification to the Plan of Operations.

5.4 Alternative IV – Reduced Size of TWSF, Modified Water Treatment to Reduce Waste Stream, Surface Discharge to Big Deer Creek and Additional Groundwater Capture in Lower Bucktail Creek (Selected Alternative)

Alternative IV is distinguished from Alternatives II and III as follows:

(1) Similar to Alternative II, the TWSF would be located to the southeast of the mill site. However, it would be reduced in size (from 55 acres to 36 acres) to accommodate only the amount of ore currently identified by FCC. (2) Water treatment would be required to meet NPDES permit limits. Water treatment would include lime precipitation and filtration but would not include reverse osmosis. Ion exchange may be used for polishing as needed. The water treatment system would not include reverse osmosis as a primary treatment step in order to reduce the large amount of water treatment waste (brine) that would require on-site disposal. Alternative IV would require that FCC obtain a NPDES discharge permit for the discharge to Big Deer Creek and an authorization from IDEQ for a mixing zone in Big Deer Creek for sulfate. Discharge of treated water to Big Deer Creek would be via an in-stream effluent diffuser.

(3) The groundwater capture system would include bedrock groundwater capture wells as in Alternative II with an additional alluvial groundwater/surface water capture system in lower Bucktail Creek drainage to assure capture of the metals load, if necessary, to attain water quality goals. At the completion of mining, the decision to cease pumping from the mine would be made based on results of water quality monitoring, verification of groundwater flow patterns, and predictions of impacts to groundwater and surface water.

(4) As in Alternative III, Alternative IV would require amendment of slash (waste rock) backfill in the Ram underground mine to reduce metals mobility.

(5) Alternative IV also includes, a spillway to the water management pond to reduce risk of structural failure in the event of pond overflow; use of native vegetation for reclamation to minimize time required to regain natural vegetation community and minimize spread of non-native species; commingling tailings and waste rock in the TWSF; and additional access road improvements on the Williams Creek/Deep Creek route to improve traffic safety, reduce spill risk, and reduce sediment release to surface waters.

(6) The above changes to Alternative II would require modification to FCC's Plan of Operations. Per the USFS ROD, the following additional items need to be incorporated into the Plan of Operations and submitted by FCC prior to the USFS' approval of the Plan of Operations:

- a. Make changes and additions to the Proposed Plan of Operations to be consistent with development of the Ram deposit in accordance with Alternative IV as described in the USFS ROD.
- b. Submit a reclamation performance surety acceptable to the USFS for the development of the Ram deposit.
- c. Provide USFS with a copy of the NPDES permit from EPA and the 401 Certification from IDEQ.

Further details regarding the modifications included in Alternative IV as well as operational components and mitigation measures included in all agency alternatives are discussed in Chapter 2 of the FEIS and the USFS ROD.

5.5 Alternative V – Lower Bucktail Groundwater Capture, Water Treatment at Site of Blackbird Treatment Plant and Surface Discharge to Blackbird Creek

Alternative V is the same as Alternative IV except for the wastewater treatment and discharge component. Under Alternative V wastewater would be pumped from the process water ponds to the existing Blackbird water treatment plant. The Blackbird water treatment plant would be upgraded to meet effluent limits for discharge into Blackbird Creek. The change in the location of the water treatment and discharge facility under Alternative V is meant to minimize physical disturbance and impacts to the environment by utilizing existing infrastructure.

Alternative V would require that FCC enter into an agreement with the Blackbird Mine Site Group/Noranda for use and maintenance of the water treatment system. FCC would be required to obtain a NPDES discharge permit into Blackbird Creek. This alternative would require a modification to the Plan of Operations.

VI. Environmentally Preferable Alternative

NEPA requires that RODs specify the alternative or alternatives which were considered to be environmentally preferable. 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).

Alternative V, summarized in Section 5.5 above, is EPA and the USFS' environmentally preferable alternative because it would require the smallest physical disturbance, would minimize the footprint and infrastructure requirements during operations by utilizing an existing treatment facility and outfall, would minimize amount of road required in roadless area, and would result in water quality improvement in Blackbird Creek by discharging an increased amount of treated water to the Blackbird drainage. However, the USFS and EPA do not have the authority to require FCC or BMSG to agree to the use BMSG's private property, water treatment plant or other facilities for the ICP. While Alternative V is the most environmentally preferable of the action alternatives, implementation of this alternative is not within the jurisdiction of the agencies.

VII. EPA DECISION

Because the Environmentally Preferable Alternative cannot be selected as discussed above, EPA's decision regarding the ICP involves the issuance of an NPDES permit based on FCC's NPDES permit application associated with Alternative IV. FCC's permit application reflects the wastewater management and treatment with the modification to Alternative IV prescribed in Chapter 2 of the FEIS and the USFS ROD. The USFS modified the FEIS preferred Alternative IV by including phased construction of the TWSF with a maximum disturbance of 55 acres. The first two phases of the TWSF construction will be completed during the first NPDES permit cycle, therefore, the NPDES permit is based on the total phase two acreage of 44 acres. The NPDES permit sets conditions on the discharges of pollutants from the ICP to Big Deer Creek (Outfall 001). FCC applied to IDEQ for a mixing zone in Big Deer Creek for sulfate. IDEQ issued a 401 certification authorizing a mixing zone for sulfate and certified that the mixing zone and permit complies with state water quality standards. The sulfate effluent limits in the NPDES permit are based on meeting 100 mg/L at the edge of the mixing zone. (See the Response to Comments for a discussion of the sulfate limits.) Effluent limits for metals and other parameters are based on meeting the water quality standard at the point of discharge (end-of pipe). Effluent limits for total suspended solids are based on the NSPS effluent limitation guidelines.

Discharge is not allowed until the permittee submits to IDEQ for review and approval, a fish tissue study plan for 11 metals, including methylmercury, and a copper load demonstration plan. Furthermore, at least 30 days prior to commencement of discharge, the permittee must submit the fish tissue and aquatic invertebrate baseline sampling results to EPA, IDEQ, the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS).

Except for the discharge authorized in the NPDES permit, EPA is not authorizing the release or threat of release of hazardous substances into the environment that would require a response action or result in the incurrence of response costs under CERCLA. The NPDES permit does not authorize or in any way permit the ICP to adversely affect or affect the integrity of the design, construction, or performance of the Blackbird Mine Superfund Site remedy, the long-term operation and maintenance of the remedy, or the restoration of natural resources contemplated at the Site pursuant to the 1995 Blackbird Site Consent Decree (*State of Idaho et al. v. M.A. Hanna Company*, Consolidated Case No. 83-4179 (R) (D. Idaho)). If EPA receives new information from testing or sampling, or information regarding changes to the permitted discharge or additional discharges, such information may be cause for modification or revocation of the permit in accordance with 40 CFR 122.62 or termination under 40 CFR 122.64.

The United States reserves its rights and claims under CERCLA to seek performance of response actions and/or reimbursement of response costs that may be incurred as a result of any release or threat of a release of a hazardous substance from the ICP, or any ancillary operations for the mining activity.

Since the ICP is a new source, under EPA's CWA implementing regulations, any future changes that occur in the Plan after issuance of this NPDES permit, which affects the wastewater discharges during mining, will need to be further analyzed pursuant to NEPA. Therefore, in any permit modification or future NPDES permit issuance, EPA is required to comply with the environmental review requirements of NEPA.

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

VIII. FACTORS CONSIDERED IN THE DECISION

8.1 Scope of EPA's Clean Water Act § 402 Authority

EPA's NPDES permitting authority is limited to issuing permits based on NPDES permit applications received. The applicant must demonstrate that it is feasible to meet permit limits (40 CFR 122.4(a) and (d)). FCC applied for an NPDES permit to discharge wastewater based on Alternative IV and the FEIS analysis determined that the Alternative IV wastewater treatment system will meet permit limits. FCC has gained preliminary approval of its Proposed Plan of Operation with final approval awaiting issuance of the NPDES permit and 401 certification, modifications to the Plan to be consistent with the description of Alternative IV in the USFS ROD (including numerous mitigation measures and monitoring requirements), and a reclamation performance surety acceptable to the USFS.

8.2 Effects on Blackbird Mine Superfund Site Cleanup

Based on existing information, effects on the Blackbird Mine Superfund Site Cleanup is not predicted to occur due to mitigation measures and controls the USFS added as part of Alternative IV and the Approved Plan of Operations for the ICP. As discussed in Chapter 2 of the FEIS and the USFS ROD, the following controls will be required by the USFS in order to avoid the release of hazardous substances from the ICP:

- 1. Water treatment and discharge in compliance with a NPDES permit;
- 2. Post-mining groundwater and surface water capture and treatment to the extent needed to offset all ICP-derived chemical mass loads to the Bucktail Creek/Big Deer Creek drainage;
- 3. Stormwater controls in compliance with a NPDES permit;
- 4. Amendment of tailings backfill and waste rock material remaining in the underground mines to reduce the potential for leaching of metals;
- 5. Placement of ICP waste rock and tailings in a lined and capped tailings and TWSF;
- 6. Placement of pre-existing waste material in the TWSF or other approved repository;
- 7. Geochemical and water monitoring programs;
- 8. Development of a waste rock and contaminated material disposal plan;
- 9. The approved Plan of Operations does not allow operations at the ICP to adversely affect the design, construction and performance of the Blackbird Mine Superfund Site remedial action and long-term operation and maintenance of the selected remedy. As fully described in the FEIS Chapter 2 and USFS ROD, adherence with the Blackbird Mine remedy through the following mitigations:
 - a. Road upgrades and modifications required for USFS Road Use permit.
 - b. Modifications that could affect capped mine wastes or remedial infrastructure to be approved by EPA and FS Remedial Project Managers.
 - c. Power line and access route access agreements.
 - d. Establishment of an Inter-Agency Task Force to oversee, coordinate and approve activities for the ICP approved Plan of Operations.

e. Stipulations, mitigations, and monitoring programs discussed under USFS ROD Section 1.1.3, some of which will require approval by the EPA and USFS Remedial Project Managers.

Except for the discharge authorized under the NPDES permit, EPA is not authorizing the release or threat of release of hazardous substances into the environment that would require a response action or result in the incurrence of response costs under CERCLA. The NPDES permit does not authorize or in any way permit the ICP to adversely affect or affect the integrity of the design, construction, or performance of the Blackbird Mine Superfund Site remedy, the long-term operation and maintenance of the remedy, or the restoration of natural resources contemplated at the Site pursuant to the 1995 Blackbird Site Consent Decree (*State of Idaho et al. v. M.A. Hanna Company*, Consolidated Case No. 83-4179 (R) (D. Idaho)). The NPDES permit does not authorize operations at the Idaho Cobalt Project that may adversely affect the design, construction, and performance of the Blackbird Mine Superfund Site remedial action and long-term operation and maintenance of the selected remedy. If EPA receives new information from testing or sampling, or information about changes to the permitted discharge or additional discharges, such information would be new information and may be cause for modification or revocation of the permit in accordance with 40 CFR Section 122.62 or termination under 40 CFR Section 122.64.

The United States reserves its rights and claims under CERCLA to seek performance of response actions and/or reimbursement of response costs that may be incurred as a result of a release or potential threat of a release of a hazardous substance from the ICP, or any ancillary operations of the mining activity.

8.3 Receiving Water

The permit authorizes discharges to Big Deer Creek through Outfall 001 located approximately 1/3 of a mile downstream (east) of its confluence with the South Fork of Big Deer Creek (Figure 2). This location is approximately 100 feet downstream of monitoring station WQ-24 and three miles upstream from the confluence of Panther Creek near WQ-25. Big Deer Creek has not been specifically designated for any beneficial use. Therefore by default according to the Idaho Water Quality Standards, Big Deer Creek is protected for cold water aquatic life and primary contact recreation.

Due to the historic activities at the Blackbird Mine site, elevated concentrations of metals (primarily copper, arsenic and cobalt) are found in the water and sediments of some of the area streams. Within the Idaho Cobalt Project area, Bucktail Creek, South Fork Big Deer Creek and Big Deer Creek are the most impacted by historic mining activities. However, remediation activities performed by BMSG have resulted in significant improvements in water quality throughout the drainage, and pollutant concentrations have been shown to decrease rapidly in a downstream direction (USFS 2005). Big Deer Creek was listed as impaired for copper, pH and sediments in the State's approved 2002 CWA 303(d) list. However, EPA recently approved the removal of numerous waters and associated pollutants from the State's 2008 303(d) list; the delisted waters included the removal of sediment and pH in Big Deer Creek from the impaired

waters list. Sediment and pH were "delisted" because water quality data showed that Big Deer was no longer impaired for these parameters.

Big Deer Creek is a third order stream draining Blackbird Mountain to the south and Gant Ridge to the north. The headwaters originate in the Frank Church River of Not Return Wilderness. Big Deer drains an area of 44 square miles and is a tributary of Panther Creek (a 5th order stream). Big Deer Creek has a natural cascade about 0.7 miles upstream from its confluence with Panther Creek that reportedly blocks upstream fish migration. Chinook salmon have been observed in Panther Creek, while rainbow and westslope cutthroat trout occur in Big Deer Creek. Bull trout have not been observed in Big Deer Creek, and no fish have been observed in either Bucktail or South Fork Big Deer Creek. Maximum stream temperatures in Big Deer Creek for the seven year period from 1996 to 2003 varied from 14.8 to 19.0°C with a lightly lower range reported for the maximum 7-day average temperatures (14.0 to 18.2 °C).

8.4 Description of Water Management, Treatment, and Discharge (Outfall 001)

The pollutants of concern at the ICP are predicted to be ammonia, nitrate, sulfate, metals, sediment, and pH. FCC has applied to IDEQ for a sulfate mixing zone in Big Deer Creek. Pursuant to IDAPA 58.01.02.060, IDEQ granted a mixing zone for Outfall 001 allowing the use of 25 percent of the flow in Big Deer Creek, which resulted in chronic and acute dilution factors of 23:1 and 20:1, respectively, and a sulfate concentration of 100 mg/L to be met at the edge of the mixing zone. The effluent limits for metals and other parameters are based on meeting water quality standards at the end-of pipe (*i.e.*, at the point of discharge). The permit also includes effluent limits for total suspended solids (TSS), based on the NSPS. An internal flow limit is included in the permit to ensure that the discharge of process wastewater is limited to the net precipitation allowance of the NSPS.

The goals of water management and treatment during and after operations are to (FEIS, Chapter 2, Alternative IV):

- 1. Maintain groundwater quality in existing (baseline) condition;
- 2. Prevent direct discharges to surface water in excess of surface water quality standards;
- 3. Prevent any interference with BMSG's requirements to meet water and sediment quality standards.

Wastewater management to meet these goals will consist of wastewater capture and treatment. During the operational phase, mine water would be captured by pumping from the underground mines. The mine drainage, wastewater from tailings dewatering, and TWSF seepage and drainage will be recycled to the mill, with excess wastewater treated for removal of metals and other parameters to meet NPDES permit limits. The water balance is described in the FEIS. At closure, mine dewatering would continue until a post-closure groundwater capture system has been designed, constructed, tested, and proven effective. Post-closure water treatment, if necessary, will consist of the same water treatment methods used during operations and would be required to continue to comply with an NPDES permit.

The influent to the water treatment process will first be treated with lime to raise the pH to facilitate precipitation of metals. Clarification and filtration will then allow the metal hydroxides to be removed as a solid sludge. The sludge will be disposed in the TWSF. The clarified water will be treated via biological denitrification to reduce nitrate to below the permit limits. Additional treatment via ion exchange would be utilized if needed to meet the effluent limits. The ion exchange process could include two steps: (1) all or a portion of the treated water could undergo ion exchange for removal of residual metals; (2) this would be followed by ion exchange to remove ammonia.

The wastewater treatment plant would be designed to process up to 150 gallons per minute (gpm). Based on the analysis in the FEIS, it is expected that this treatment system will produce treated water in compliance with the permit limits. The USFS ROD requires that a final engineering design for the water treatment system be submitted and that the water treatment plant will provide treatment capable of meeting effluent limits in the NPDES permit. Treated water would be discharged through a pipeline to Big Deer Creek, approximately 2 miles from the water treatment plant.

8.5 Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act (ESA) requires Federal agencies to consult with NMFS and USFWS (collectively referred to as the "Services"), 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.

On July 3, 2006, EPA sent letters to the Services requesting a list of threatened or endangered species in the vicinity of the proposed discharge. The Services identified the following species: Snake River spring/summer Chinook salmon, Snake River steelhead, and Upper Columbia River bull trout. EPA sent a copy of the draft NPDES permit and Fact Sheet to the Services prior to the public notice period. On December 18, 2007, EPA and the USFS initiated formal consultation by submitting a Biological Assessment (BA) to the Services. The USFS, as the lead federal agency, prepared the BA, which evaluated potential affects on the listed species from the proposed ICP project as a whole, including EPA's proposed NPDES permit issuance.

The BA concluded that the project is likely to adversely affect threatened Snake River spring/summer Chinook salmon, threatened Snake River steelhead, and threatened bull trout. The BA determined that the NPDES discharge was likely to adversely affect the species because of potential avoidance behavior due to copper, zinc, and cobalt in the effluent. The NPDES discharge was determined not likely to adversely affect the species for other parameters. The Services issued Biological Opinions (BOs) in May 2008 that concluded that the project would not jeopardize listed species. The BOs included numerous reasonable and prudent measures (RPMs), and terms and conditions required to implement the reasonable and prudent measures to be implemented by the USFS and EPA to reduce effects on listed species. Incidental take statements were issued by both NMFS and USFWS. The following is a summary of the RPMs specific to the NPDES permit. The final permit contains conditions to implement the RPMs that

are within EPA's Clean Water Act authority. The final NPDES permit is attached in Appendix A.

From the NMFS BO:

- 1. Minimize incidental take from effects to water quality:
 - a. EPA shall modify the draft NPDES permit to limit the effluents maximum daily concentration for levels of nitrate + nitrite to <10 mg/L at the end-of-pipe to prevent nutrient enrichment of habitat in Big Deer and Panther Creeks.
- 2. Monitoring and reporting:
 - a. EPA shall work with FCC to develop a tissue sampling protocol and sampling scheme for salmonids in Big Deer Creek. A baseline study shall be conducted prior to first effluent discharge, and annually for 3 years following, conduct tissue sampling of non-ESA listed resident salmonids in Big Deer Creek collected downstream from effluent and upstream from the falls for:
 - Bioaccumulation of aluminum, arsenic, cadmium, cobalt, lead, manganese, mercury, nickel, selenium, thallium, and zinc. Measureable bioaccumulation of these metals and pollutants will indicate the amount of take authorized has been exceeded.
 - b. EPA shall work with FCC to develop an aquatic invertebrate sampling scheme and protocol in Big Deer Creek. Prior to first effluent discharge, and annually for 3 years following, conduct sampling of aquatic invertebrates in Big Deer Creek to assess the potential for bioaccumulation of pollutants and/or changes in community structure. Measureable bioaccumulation of metals/pollutants and/or changes in community structure will indicate the amount of take authorized has been exceeded.
 - c. The USFS and EPA will annually report monitoring results as described in the ICP BA, ROD, Supplemental Reports, and this Opinion.
 - d. The USFS and EPA shall submit reports and annual monitoring results noted in the BA, ROD, Supplemental Reports, and this Opinion to: NMFS, Attn: David Mabe, 10095 W Emerald, Boise, Idaho 83704.

From the USFWS BO:

Reports generated from testing required as part of the NPDES permit (i.e. WET testing, toxicity tests, etc.) shall be submitted to the Service for our review as they become available. Additionally, any notifications of violations of compliance with the NPDES permit shall be submitted to the Service as they occur.

8.6 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). The BA determined that USFS approval of the Plan of Operations is likely to adversely affect designated Critical Habitat for Chinook salmon and steelhead, and EFH for Chinook salmon within the middle Panther and Williams Creek watersheds.

In its BO, NMFS concluded that the proposed project would have the following adverse effects on EFH designated for Snake River spring/summer Chinook salmon: (1) localized effects to habitat (increased turbidity, sediment deposition, and/or riparian disturbance/streambank alteration) and (2) localized effects to water quality (increased chemical contamination). NMFS identified two conservation measures to avoid, mitigate, or offset these impacts. These conservation measures are the same as the ESA reasonable and prudent measures 1 and 2 and their implementing terms and conditions. The terms and conditions identified for EPA action were included in the NPDES permit as described in Section 8.5, above.

8.7 National Historic Preservation Act (NHPA)

Section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq) requires federal agencies to identify any historic properties that might be affected by a federally licensed, permitted or assisted undertaking. Twenty-two cultural resource inventory projects have been conducted within the general Idaho Cobalt Project area. The inventories have identified 12 historic and two prehistoric properties in or immediately adjacent to the Idaho Cobalt Project area that are eligible or are likely eligible for nomination to the National Register of Historic Places (NRHP). The historic properties range in function from trails to mining camp ruins dating primarily to the first half of the 20th century. As currently designed, the Project area (a portion of the Thunder Mountain Trail, a dump at an early 20th century mining camp ruin, and a log hoist house) have been carefully mapped to ensure avoidance.

8.8 Wetlands (Executive Order 11990)

Approximately 4.9 acres of wetlands have been identified in the project area. Project activities would result in dredge or fill in jurisdictional wetlands for the wastewater discharge pipeline and construction of the TWSF. Approximately 0.2 acres of jurisdictional wetlands will be impacted by the water discharge pipeline in crossing Ram Gulch, an unnamed tributary of Bucktail Creek, and where the pipeline crosses the riparian zone of Big Deer Creek and discharges into Big Deer Creek under Alternative IV. It is anticipated these activities would be covered by Nationwide Clean Water Act Section 404 permits. Approximately 0.2 acres of nonjurisdictional wetlands that would be removed by construction of the TWSF. Indirect impacts that are predicted to result in the dewatering of 0.22 acres of jurisdictional wetlands downgradient of the Ram Mine for the duration of the mining and closure activities. In its Plan of Operations, FCC proposes to construct 0.5 acres of wetlands in the headwaters of Big Flat Creek to offset impacts.

8.9 Floodplains (Executive Order 11988)

The Idaho Cobalt Project is not located within floodplains.

8.10 Environmental Justice (Executive Order 12898)

Executive Order 12898 directs each federal agency to make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

The ICP would contribute to the local and regional economic base for all the alternatives. The social and economic impacts identified with the ICP are primarily positive. FCC is working with the local communities to address potential economic stresses associated with the mine work force. Concerns regarding bioaccumulation of metals were analyzed in the EIS through Cormix modeling, specifically addressing fish as a result of mine water discharge.

Additionally, EPA, through the NPDES permit, is requiring a fish tissue study plan to evaluate current (baseline) bioaccumulation in fish tissue prior to first effluent discharge to monitor the impacts on fish tissue bioaccumulation of FCC's discharge of the following pollutants: aluminum, arsenic, cadmium, cobalt, lead, manganese, methylmercury, nickel, selenium, thallium, and zinc. Discharge cannot occur until the results of the baseline fish tissue monitoring have been submitted to EPA. Following the baseline report submittal, the permittee must conduct fish tissue bioaccumulation monitoring annually for 3 years during the permit term. EPA is also requiring an aquatic invertebrate sampling program to assess current (baseline) aquatic invertebrate community structure and annual (for 3 years) monitoring of the impacts of FCC's discharge on the aquatic invertebrate community structure in Big Deer Creek, and copper mass loading study to demonstrate that there will be no net increase in the total load of copper in the Big Deer Creek watershed as a consequence of the outfall 001 discharge.

Based on the above discussion, EPA concludes that the issuance of the NPDES permit will not result in disproportionate adverse human health or environmental effects to minority or low-income communities.

8.11 Tribal Consultation and Coordination (Executive Order 13175)

The Idaho Cobalt Project area is located within the aboriginal lands of the Shoshone-Bannock Tribes. On July 7, 2006, and January 22, 2007, EPA sent letters to the Shoshone-Bannock and Nez Perce Tribal Governments, respectively, informing them that the preliminary draft NPDES permit would be sent to them for review. EPA also invited the Tribes to initiate formal government-to-government consultation with EPA for the permit issuance. In a letter dated May 16, 2006, the Shoshone-Bannock Tribe requested formal government-to-government consultation with the USFS and EPA on the NEPA process. EPA and the USFS met with the Shoshone-Bannock Tribe on March 29, 2007. In a letter dated May 24, 2007, the Nez Perce Tribe requested formal consultation between the Salmon-Challis National Forest and the Nez Perce Tribal Executive Committee on the project. In the same letter, the Tribe provided comments on the project and the draft NPDES permit.

Each Tribe received a copy of the draft permit and Fact Sheet at the start of the public comment period on January 22, 2007. EPA received comments from the Nez Perce Tribe on May 24, 2007. EPA sent the preliminary final permit to the Nez Perce Tribe on September 23, 2008, and received an acknowledgement but no comments. EPA sent the preliminary final permit to the Shoshone-Bannock Tribe on September 24, 2008, and received no response or comments.

IX. MITIGATION MEASURES

In its revised Record of Decision, dated January 16, 2009, the USFS stipulated numerous modifications, monitoring requirements, and mitigation measures be incorporated in FCC's Plan of Operations to reflect Alternative IV and to implement the terms and conditions in the BOs. (See Section 8.5, Endangered Species Act, above, for a discussion of the EPA-specific stipulations from the BOs.)

In addition, prior to authorizing any surface disturbance activities, FCC shall provide the following to the USFS:

- 1. To ensure protection of the Blackbird Mine remedy, FCC shall obtain approval from the CERCLA Remedial Project Manager and USFS CERCLA Project Manager for any designs or activity that would modify the existing transportation system and which could affect capped wastes, clean water diversions, and other activities associated with the cleanup project.
- 2. To ensure long-term administrative access for agency personnel for the Idaho Cobalt Project, FCC will obtain right-of-way or access agreements through patented lands owned by Noranda (Cobalt Townsite and Blackbird Mine Site), that will allow USFS continued future access. Additionally, FCC will provide an agreement indicating permission to utilize power line across private property to the Idaho Cobalt Project, which also permits USFS to utilize the power line facilities in the event long-term treatment or other reclamation administered by the agencies is required. Agreements shall address protocol for authorized vehicle access to the site, measures to ensure contaminated materials do not leave the site, and other requirements as outlined in any health and safety plan or other decontamination requirement for vehicles and personnel related to the remediation project area.

Section 1.1.3 of the USFS ROD and Alternative IV in the FEIS describes in detail the mitigation measures, monitoring requirements, and operational practices necessary to ensure ongoing protection of the environment. The USFS is requiring that the 29 stipulations, mitigations, and monitoring programs identified in Section 1.1.3 of its ROD be included in the ICP Plan of Operations for Plan approval. In addition, EPA has included the monitoring requirements specific to the NPDES permit, discussed in Section X, below.

X. NPDES MONITORING REQUIREMENTS

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 effluent, surface water (ambient), baseline and annual fish tissue monitoring, and aquatic invertebrate monitoring requirements. The data from surface water, fish tissue, and aquatic invertebrate 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 FCC prepare a Quality Assurance Plan for all monitoring.

10.1 Effluent Monitoring

The effluent monitoring requirements for Outfall 001 are summarized in Section I.B. and Table 1 of the permit.

10.2 Surface Water Monitoring

The permit requires FCC to conduct surface water monitoring for metals, nitrate, sulfate and other parameters within 60 days of the effective date of the permit. Monitoring locations in Big Deer Creek include WQ-14, located upstream of Outfall 001, and a newly established monitoring station not less than 400 feet downstream from Outfall 001. Quarterly sampling is required for flow and hardness; semiannual sampling for all other parameters (See Table 2 of the permit).

10.3 Toxicity Testing

The permit requires chronic whole effluent toxicity (WET) testing semiannually on effluent samples from Outfall 001. Toxicity testing must be conducted during high flow (May) and low flow seasons (September). See Part I.C. and Table 1 of the permit.

10.4 Copper Loading Demonstration Plan

As described in the state's 401 certification, the permit requires a copper loading demonstration plan to be developed and approved by IDEQ prior to discharge of pollutants from outfall 001. The plan must describe the measures FCC will implement to ensure the discharge does not increase the total load of copper in the Big Deer Creek watershed. The plan must also include a schedule for implementation of the measures.

10.5 Fish Tissue Study Plan

The permit requires FCC to develop and submit a fish tissue study plan, within 90 days of the effective date of the permit, for 11 metals, including methylmercury. A methylmercury fish tissue study plan is also a requirement of the State's 401 certification. The plan must be submitted to EPA and NMFS for review and to IDEQ for approval. Prior to discharge of

pollutants from outfall 001, notification of IDEQ's approval of the plan must be submitted to EPA and NMFS, and the first round of samples (baseline monitoring) must be completed in accordance with the plan. At least 30 days prior to discharge of pollutants, FCC must submit the results of the baseline monitoring to EPA, IDEQ, NMFS, and USFWS.

10.6 Aquatic Invertebrate Sampling Program

The permit requires FCC to develop an aquatic invertebrate sampling program within 90 days of the effective date of the permit. The program plan must be submitted to EPA and NMFS for review and to IDEQ for approval. Prior to discharge of pollutants from outfall 001, notification of IDEQ's approval of the program must be submitted to EPA and NMFS, the first round of samples (baseline monitoring) must be completed in accordance with the plan, and the results of the baseline monitoring must be submitted to EPA, IDEQ, NMFS, and USFWS.

XI. RECLAMATION

Chapter 2 of the FEIS and the USFS ROD discusses the general reclamation procedures proposed by FCC and summarizes how major mine components would be reclaimed. Pertaining to water management at mine closure, Alternative IV incorporates additional water capture elements (mine dewatering, lower Bucktail alluvial groundwater and/or surface water capture). Alternative IV also requires that bedrock and alluvial capture wells be installed and tested during the construction phase and that an effective capture system in controlling the flow of contaminated mine/groundwater from the Ram mine be demonstrated prior to the start of mining. The demonstration would rely on a combination of empirical testing and model predictions.

At mine closure, cessation of mine dewatering would be contingent on monitoring results and projections indicating no unacceptable effects to water quality objectives or cleanup goals. If monitoring data and water quality models indicate that downgradient groundwater and surface water quality would be acceptable, the Ram mine would be allowed to flood resulting in groundwater flow through the mine workings toward Bucktail Creek. All necessary water capture system components would be fully built and operational prior to allowing the mine to flood. The final capture system would consist of the bedrock groundwater capture wells, the lower Bucktail alluvial groundwater/surface water capture system, or both as needed to meet the following goals of post-closure water management:

- 1. Maintain groundwater quality in baseline (pre-mining) condition.
- 2. Prevent any interference with BMSG's requirements to meet water quality standards.

The post-closure water capture system would be operated for as long as needed to meet the water management goals. Once water quality objectives have been met and groundwater capture is not longer needed, the capture system(s) would be decommissioned and reclaimed. If the bedrock capture system is not able to capture enough metal load to maintain groundwater quality at or below background levels, there could be a metals load originating from the Ram mine area to the upper Bucktail drainage. If this were to occur, there needs to be an agreement with BMSG on responsibility for treating this metal load.

11.1 Financial Assurance

The USFS is authorized to require an operator to furnish a bond or other financial assurance for Plans of Operations to assure reclamation of surface disturbances to prevent or control damage to the environment, to control erosion, landslides, water runoff and toxic materials and to provide for rehabilitation of fish and wildlife habitat (36 CFR 228.13). In developing the financial assurance amount for the ICP, the USFS followed its 2004 guidance for calculating the amount of financial assurance required for mining projects. The financial assurance amount includes costs to remove structures, regrade and recontour the surface, replace soil, revegetate the reclaimed land, administrative and overhead costs to complete the reclamation if the company were unable or unwilling to do so, and costs for long-term water treatment, if such treatment were to be required to meet water quality requirements.

The estimated financial assurance requirement for the ICP is estimated to be \$44 million dollars plus or minus 20 percent. The final bond calculation will be completed by the USFS prior to approval of the Plan of Operations. The bond amount will be reviewed annually after approved operations begin to ensure its adequacy.

XII. 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 permit requires the BMP Plan to include a specific Mercury Minimization Plan to minimize the amount of mercury discharged from the facility. 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. The permit requires FCC to prepare and implement a BMP plan within 90 days and 120 days, respectively. Annually, the BMP Plan must be reviewed and certified.

XIII. PUBLIC INVOLVEMENT

The public involvement process is presented in Chapter 5 of the FEIS. The following is a chronology of the public involvement process for the FEIS and NPDES permitting process:

July 10, 2001	Scoping Packet distributed by USFS to potentially interested parties
July 20, 2001	Public Scoping meeting
September 10, 2001	The <i>Notice of Intent (NOI)</i> was published in the Federal Register and announced the USFS' intention to prepare an EIS for the Idaho Cobalt Project. Another Scoping Packet detailing modifications to the Proposed Plan of Operations was distributed.

Oct. 10&11, 2001	USFS held formal public Scoping meetings in Challis and Salmon, Idaho, respectively
2003-2007	Numerous updates to interested parties were distributed by USFS
February 23, 2007	Draft EIS released to the public for review and comment
March 14&15, 2007	Public meetings on the Draft EIS and draft NPDES permit were held in Salmon and Challis, respectively.

IVX. CONCLUSIONS

Based on the NPDES permit application received by EPA, the FEIS and FCC's demonstration that the project can meet permit limits, and the findings of the FEIS, EPA is issuing an NPDES permit for Alternative IV. The permit authorizes treated mine and process wastewater discharges from Outfall 001 to Big Deer Creek. 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:<u>shaw.hanh@epa.gov</u> Telephone: (206) 553-0171 Facsimile: (206) 553-0165

Approving Official:

<u>/s/___</u>

Michael A. Bussell, Director Office of Water and Watersheds EPA Region 10 2/9/09_

Date





END			
P-24	BMSG SURFACE WATER SEEP SAMPLE SITE		
P-03	BMSG SURFACE WATER SAMPLE SITE		
-1	FORMATION CAPITAL SURFACE WATER SAMPLE SITE		
l	SEEP/SPRING MONITORING LOCATIONS		
-14	SURFACE WATER SITES FUNCTIONING AS SEEP/SPRING MONITORING POINTS		
	WETLAND POLYGON		
KBIRD MINE FEATURES			
	WASTE ROCK		
	RELOCATED WASTE ROCK		
	UNDERGROUND WORKINGS		
	Ń		
SCALE IN FEET			
	After Shaw, 2004		

EPA FORM 3510-1 QUESTION XI FACILITY MAP



NPDES	
FIGURE 2	

JANUARY 2008