

## **Description of the Proposed Idaho Cobalt Project**

Formation Capital Corporation, U.S. (FCC or Formation) has been conducting mineral exploration in the Idaho Cobalt Belt since 1993 and has defined mineable reserves of cobalt, copper and gold ore. Based on this work, FCC is proposing to develop the Idaho Cobalt Project (ICP), which consists of an underground cobalt-copper-gold mine, processing plant, and ancillary facilities. FCC submitted a proposed Plan of Operations to the U.S. Forest Service and the Forest Service has determined that an Environmental Impact Statement (EIS) needs to be done on the proposed plan. The Plan of Operations provides details on the proposed construction and operation of the Idaho Cobalt Project (ICP). The ICP is located on the Salmon-Challis National Forest near Cobalt Idaho, about 40 miles west of Salmon Idaho. The project has an estimated working life of 10 years and is expected to employ about 150 people in the Salmon area through the projected mine life.

The ICP has identified several mineral deposits located on lands managed by the U. S. Forest Service and has staked mining claims over the project area within the Salmon-Cobalt Ranger District of the Salmon National Forest, approximately 45 road miles west of Salmon, Idaho. The property consists of 145 unpatented claims for a total of 2,524 acres of mineral rights.

The ICP would consist of developing, operating, and ultimately reclaiming an 800-ton per day mine and mill complex. The project would involve mining cobalt-copper-gold reserves with an annual production rate of 280,000 tons of ore at full production. There are sufficient cobalt-copper-gold reserves and resources for 10 to 12 years of operation. Estimated annual production is 2,600,000 pounds of cobalt, 2,000,000 pounds of copper, and 3,400 ounces of gold averaged over the mine life. Underground mining methods would be used to extract ore from two deposits, the Ram and the Sunshine. Ore would be conveyed by truck or an overhead tram to a nearby mill situated on a high plateau (the Big Flat). Concentrate from the mill would be shipped to an offsite processing facility.

There would be three main phases in the life of the ICP: the construction phase, the operating phase, and the reclamation phase. The construction phase would include preparing, constructing, and developing the mine and mill facilities. The operating phase would bring the mill on line at 400 tons per day; increasing to 800 tons per day as the underground Ram Mine expands. Ongoing mine development would include improving additional existing roads, constructing the Sunshine portal, and developing the underground Sunshine Mine. The reclamation phase would occur as facilities mature or are no longer needed. Reclamation would also occur concurrently during the construction and operating phases as existing or newly disturbed areas are reclaimed post-use.

Mine and mill facilities would include the Ram and Sunshine mine portals, the tram, the mill/plant, the tailings and waste rock storage facility (TWSF), the water management ponds, water treatment system, new and existing improved roads, borrow areas, and a

soil stockpile area. The total disturbance that would be created by the ICP would be approximately 129 acres under the company's proposal and about 112 acres under the agency preferred alternative. Ancillary facilities include power lines, fuel storage tanks, water ditches, warehouse and maintenance facilities, staff offices, change house, and domestic water disposal (septic and drain field).

The Ram and Sunshine mine portals would be located on the slopes above Bucktail Creek. Declines would be developed from portals located above the groundwater level and would be developed to ensure that water does not drain from the portals. There would be two ventilation shafts at the Ram Mine and one at the Sunshine Mine. After mine production ceases, the mine portals would be closed and bulkheaded against entry, portal pads would be removed and regraded, and roads not needed for post-mining monitoring or other purposes would be removed.

Ram and Sunshine ore and waste rock would be hauled by truck directly to the mill or TWSF (as appropriate).

The mill and ancillary facilities would be located on the Big Flat, a relatively flat area that is between the drainages of Big Deer Creek and Little Deer Creek. The mill/plant includes coarse and fine ore storage, an ore stockpile conveyor, a crushing, grinding, and flotation plant, an analytical laboratory, pipelines, concentrate dewatering equipment, a water treatment plant, and shipping dock. At full production, the mill would produce approximately 32 dry tons of concentrate and 768 dry tons of tailings per day. The mill and all its ancillary structures would be demolished during reclamation of the site.

The greatest effect to the environment from past mining activities in the area has been to water quality. This is due to acid and metals leachate generating waste rock and tailings being placed within stream channels. Formation's Plan of Operations provides for disposal of waste rock and tailings in a lined storage facility. Tailings, created by grinding the ore to a fine sand size to recover the metals, would be dewatered prior to disposal. Dewatering would produce tailings with no free draining water for disposal at the TWSF located on the Big Flat, east of and downslope from the mill. The TWSF would have an engineered composite underliner constructed over a prepared subgrade. The liner would consist of an impermeable soil (or engineered clay) layer and a synthetic liner. A drainage collection system would be constructed over the liner to collect water that infiltrates the tailings and waste rock; this water would be conveyed to the nearby water management ponds. Waste rock and tailings would be placed within the facility. Approximately half of the tailings produced at the mill would be used underground as paste backfill. Under the agency alternative the tailings backfill and any waste rock left underground as backfill would be amended with limestone or equivalent material to limit metals mobility and potential impacts to groundwater. The remainder would be disposed of in the TWSF using a dry stacking method, eliminating the need for a dam. During reclamation, the TWSF facility would be capped with a geotextile/soil/vegetative cover.

During operations process waters would be managed and recycled in a closed system, using a double-lined water management pond located east of and downslope from the TWSF. The pond would incorporate a seepage detection and recovery system and would be sized to contain all process and mine drainage waters, as well as the runoff occurring from a 500-year event. Excess water from the mining operation would be treated and disposed of by direct discharge to Big Deer Creek. At closure, the pond would be emptied, regraded and vegetated.

Process water treatment would be by lime neutralization/pH adjustment and reverse osmosis, both methods widely used in industry. .

A series of wells would be installed below the Ram and Sunshine mines to intercept groundwater from the mine after it floods following mine closure. Under the agency preferred alternative these wells would be supplemented or replaced with a shallower alluvial interception system located in the Bucktail drainage. Water from the capture system would be treated in the water treatment plant and discharged to Big Deer Creek until such time as the groundwater meets applicable water quality standards.

A soil stockpile area would be used to hold topsoil salvaged during construction of the project site roads and facilities. The area would be maintained to reduce runoff and seeded to stabilize the stockpile. The stockpile would be used during reclamation activities, and its area would be regraded and revegetated following depletion of the stockpile.

Power for the project would be secured from an existing power line that delivers power to the Blackbird Mine. Emergency power would be supplied with diesel generating equipment. This equipment would be sufficient only for essential mill equipment and mine pumps. Emergency power generators would be located at the main portals and at the mill. The power lines would be dismantled and the area revegetated during reclamation.

Access to the ICP from Salmon, Idaho would be via the Williams Creek, Deep Creek, Panther Creek, and Blackbird Creek roads. It is anticipated that most of the project employees would live in the Salmon area. Personnel would be transported to the project in vans or busses. Site roads would be constructed as either single lane or double lane roads. Many of the site roads currently exist, especially in the Bucktail Creek drainage where the Ram and Sunshine mines would be located. Some new roads would be constructed, and other roads would be reclaimed. All roads would be subject to BMPs for sediment control. Borrow areas would provide materials needed for road surfacing, drain rock, riprap, and other construction and reclamation activities. These borrow areas would have sediment control berms in place to prevent sedimentation impacts to nearby drainages.