

**PROJECT SUMMARY
QUEENSWAY FLATROCK QUARRY
BATAVIA - CUYUNI RIVER**



QUEENSWAY

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1 INTRODUCTION

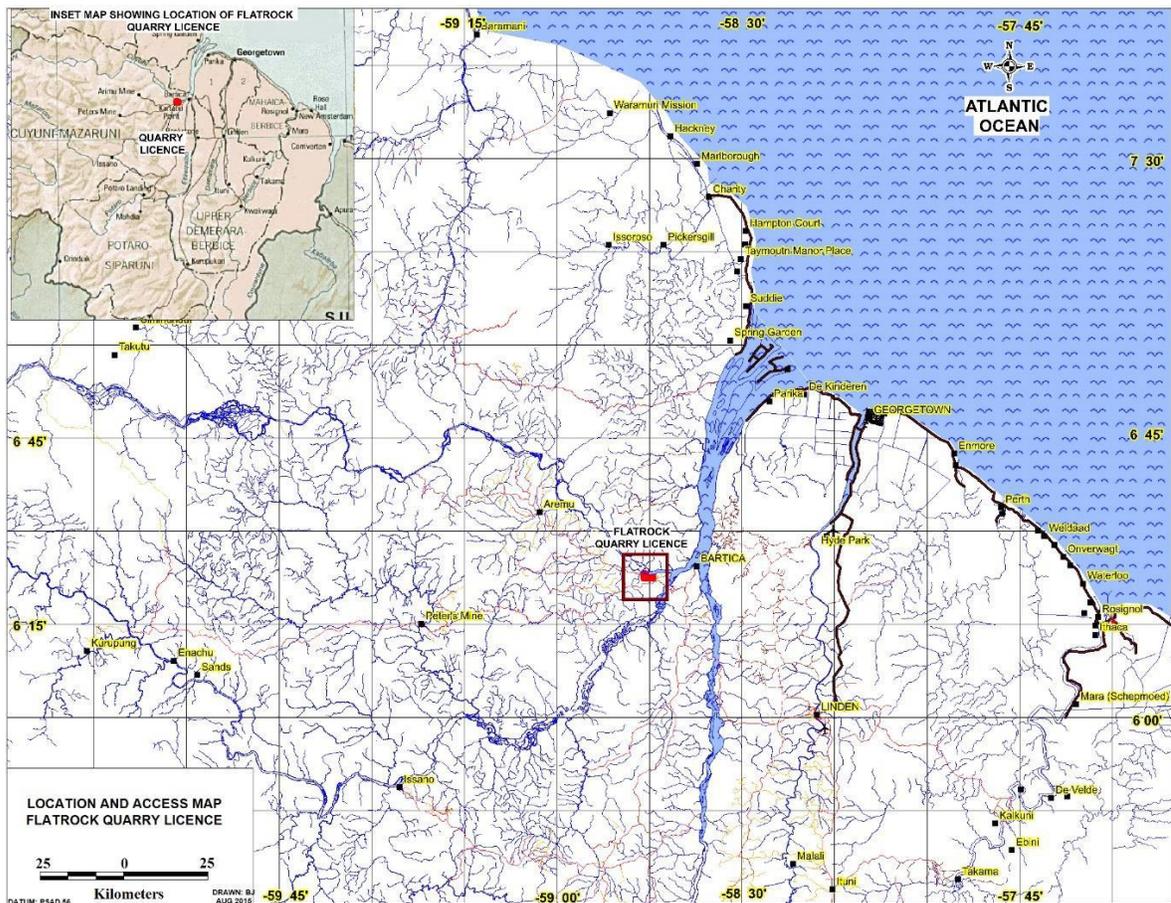
Queensway, a Guyanese company, has a number of mining interests and has been active in mining in Guyana since 2010. The Company is proposing to develop a stone (granite/gneiss) quarry (the Project) within the Cuyuni Mining District, south of Batavia. The Project will consist of a number of heavy-duty equipment along with a crushing plant and support equipment. This Project Summary is prepared as part requirement of the EPA's environmental authorization application process. The summary contains the following information as required by the EPA Act:

- a non-technical explanation of the project
- the location, design and size of the project;
- the duration of the project; and
- the possible effects on the environment

2 PROJECT LOCATION

The Project area is located in the Cuyuni Mining District just west of the confluence of the Mazaruni and Cuyuni Rivers, ½ mile down river from Little Batavia Landing between the Tumereng and Amariwabe Creeks on the Right bank of the Cuyuni River. Access is mainly by river namely from Parika on the Essequibo River to the project area some 5 miles from the mouth of the Cuyuni River. Access can also be had via fix wing from Ogle to Bartica/Baganara then via river and/or trail to the site. The Project site is presently unoccupied and is situated 4 miles northwest of the existing quarry at Teperu on the Mazaruni River. Figure 1 shows the location of Flatrock Quarry.

Figure 1: Map showing the location of the Flatrock Quarry



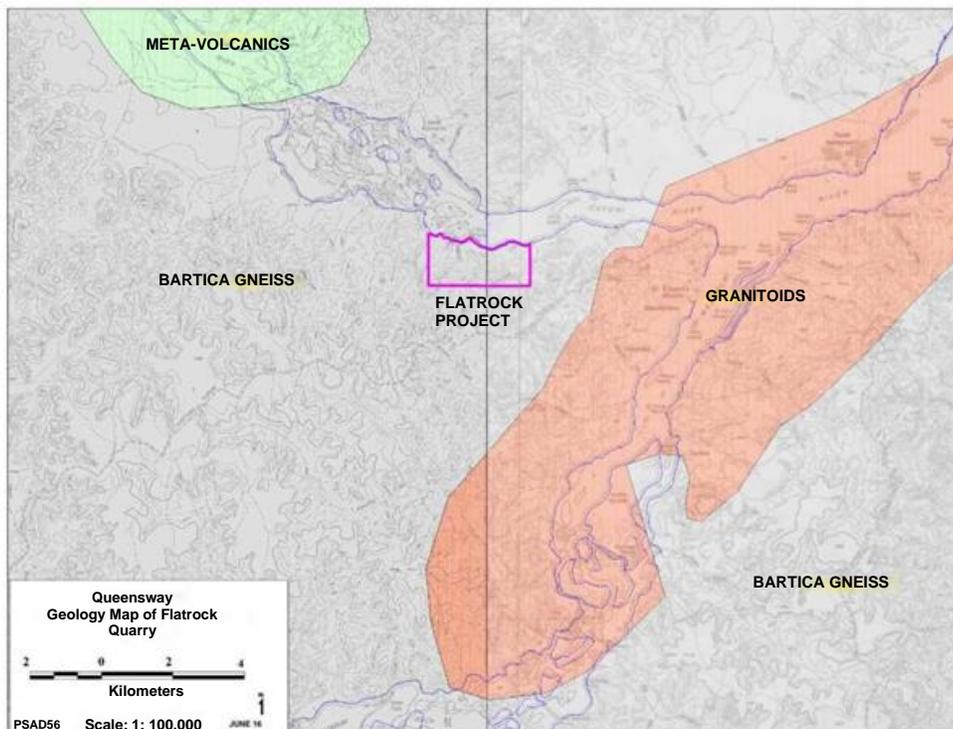
The formal boundary description is as follows: A Tract of state land located in the Cuyuni Mining District No. 4 as shown on Terra Surveys 1:50,000 Topographic Map 27NW, within the following boundaries;

Commencing from a reference point located at the confluence of the **Mazaruni and the Cuyuni Rivers** located at geographical coordinates of longitude **58°41'31.2"W** and latitude **6°23'18.6"N**, thence at true bearing of **268.4°**, for a distance of approximately **4.98 miles** to **Point 1**, located at geographical coordinates of longitude **58°45'53"W** and latitude **6°23'13"N**, thence along the right bank of the Cuyuni River for a distance of approximately **2 miles** to **Point 2**, located at geographical coordinates of longitude **58°44'20"W** and latitude **6°23'4"N**, thence at true bearing of **181°**, for a distance of approximately **1323 yards**, to **Point 3**, located at geographical coordinates of longitude **58°44'21"W** and latitude **6°22'24"N**, thence at true bearing of **90°**, for a distance of approximately **1 mile 1353 yards**, to **Point 4**, located at geographical coordinates of longitude **58°45'53"W** and latitude **6°22'25"N**, thence at true bearing of **0°**, for a distance of approximately **1602 yards**, to the point of commencement at **Point 1**, thus enclosing an area of approximately **869 acres**, save and except all lands lawfully held or occupied.

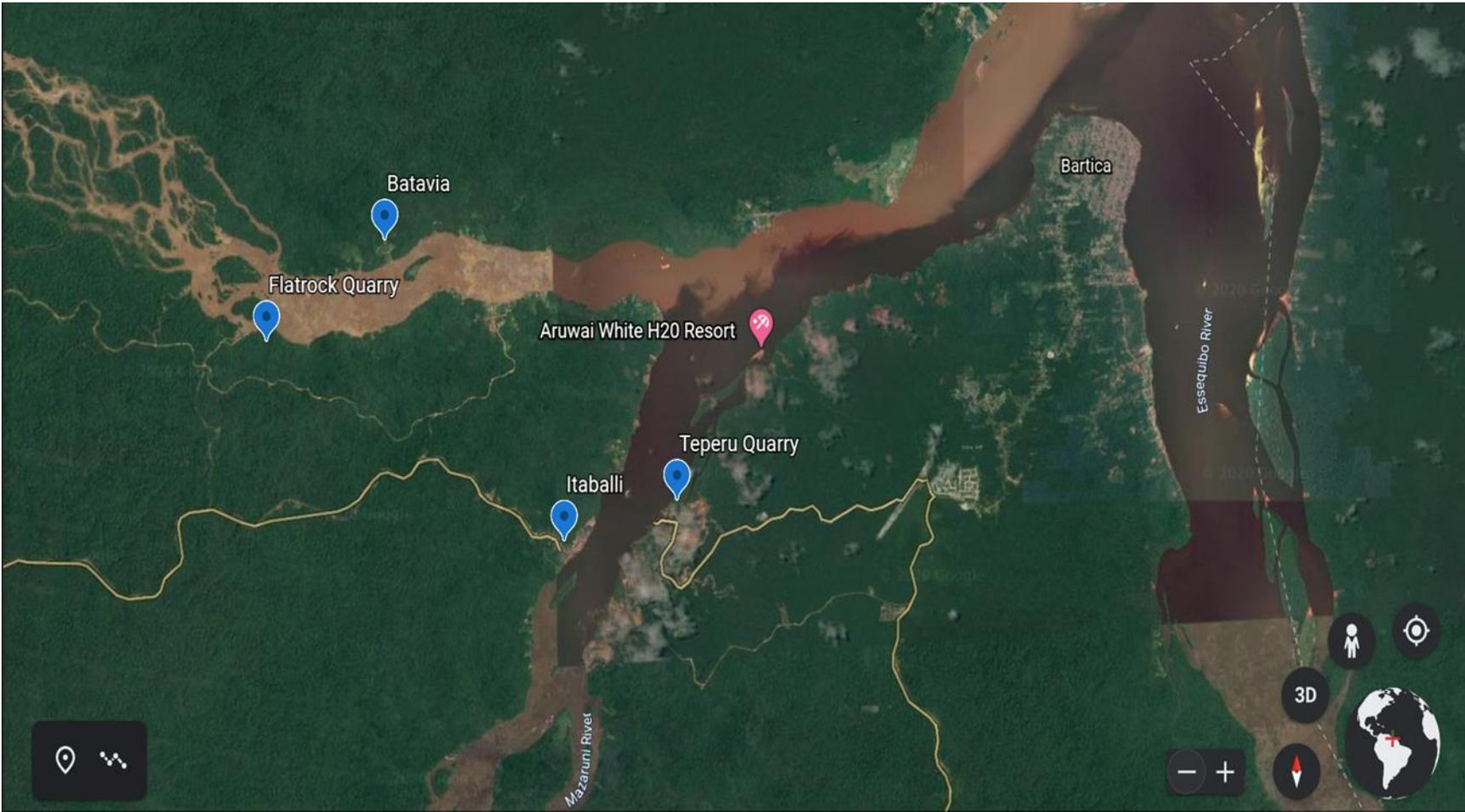
Flatrock Quarry has an estimated resource of 1,800,000 tons of rip rap and aggregate granite and gneisses rock. Drilling by GGMC in 1986 identified an estimated reserve of 157,000 tons of pegmatites within the Flatrock Hills from 5 drill holes mainly targeting the pegmatites at Flatrock "A" Hill. No other significant exploration has been carried out within the proposed area. The resource estimate is based on geological information available along with extrapolation of the GGMC Drill data and regional data using Teperu Quarry approximately 6 miles SE. Reserve calculations will be updated in the immediate future once exploration work has been carried out on the property. This will consist of extensive drilling on 100m * 100m line spacing using a RC drill rig for 1000m of drill core to define quarry resource. This is expected to cost approximately USD\$100,000 (GUY\$20 Million) and will be done within 5-7 months of the license being granted.

Regionally, the geology of the area is similar to that seen in other parts of the greenstone belts of Guyana with the oldest rocks consisting of gneisses of the Lower Proterozoic Barama-Mazaruni-Supergroup, intruded by Younger Granites, and both units intruded by the Younger Basic Rocks. Locally, the geology of the area consists of the Bartica Gneiss Complex which has been intruded by the younger granites of the Kartabu Granite suite to the south-east of the proposed area.

Figure 2 - Geology Map of Flatrock Regional Area



Google Earth Image showing surrounding land-uses and major watercourses of the proposed Flatrock Quarry project area



3 PROJECT DESCRIPTION

Queensway first applied for environmental authorization on October 21, 2016 following which the EPA adjudicated the requirement for an EIA. Since that time Queensway undertook a reassessment of our mine plan and has now limit the mine footprint to 57 acres. The reduced mine footprint acreage will by design significantly reduce the magnitude of potential environmental impacts to a level proportionate to the reduced scale of project. Figure 2 shows the proposed Flatrock Quarry Mine Footprint. Figure 3 shows the previous scope of the mine footprint.

Figure 3: Flatrock Quarry proposed mine footprint of 57 acres

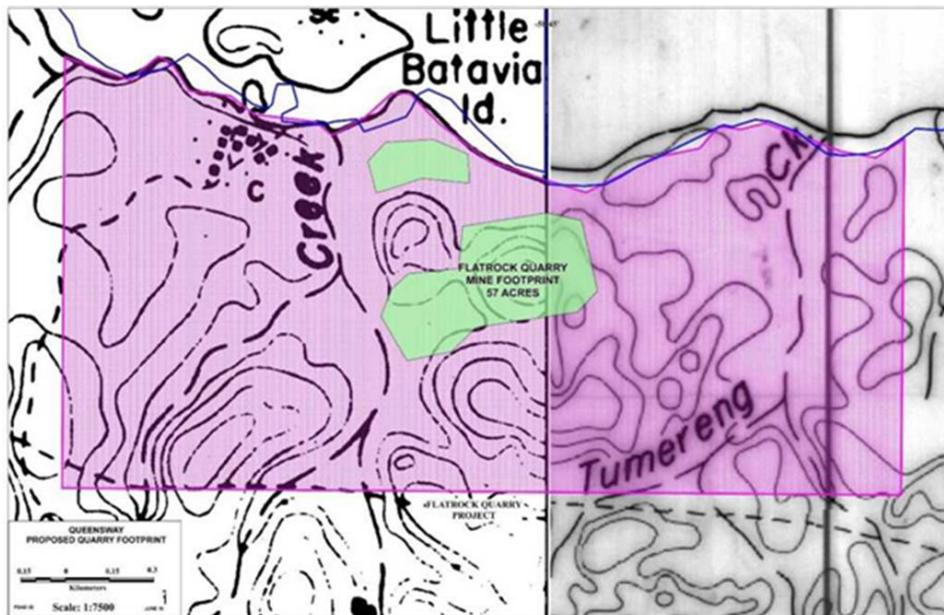
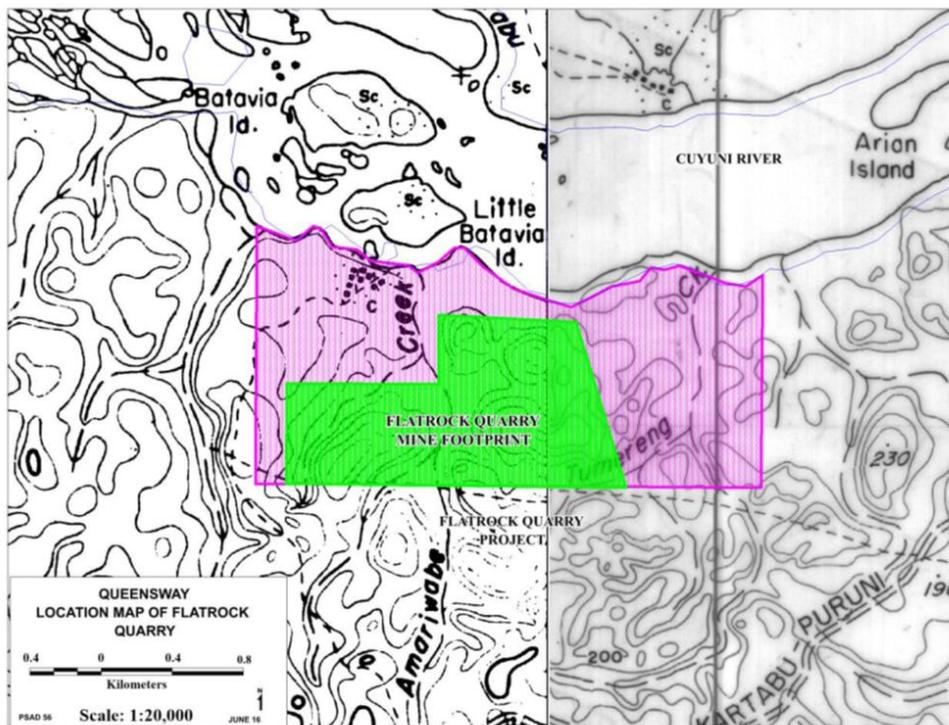


Figure 4 - Map showing the previous scope of the mine footprint



It is expected that approximately 300,000 tons of material will be mined and produced annually from the Flatrock Quarry over a mine life of 6 years unless additional reserves are discovered. Quarrying operations are anticipated to commence end of 2nd Quarter, 2021 once all regulatory approvals are obtained.

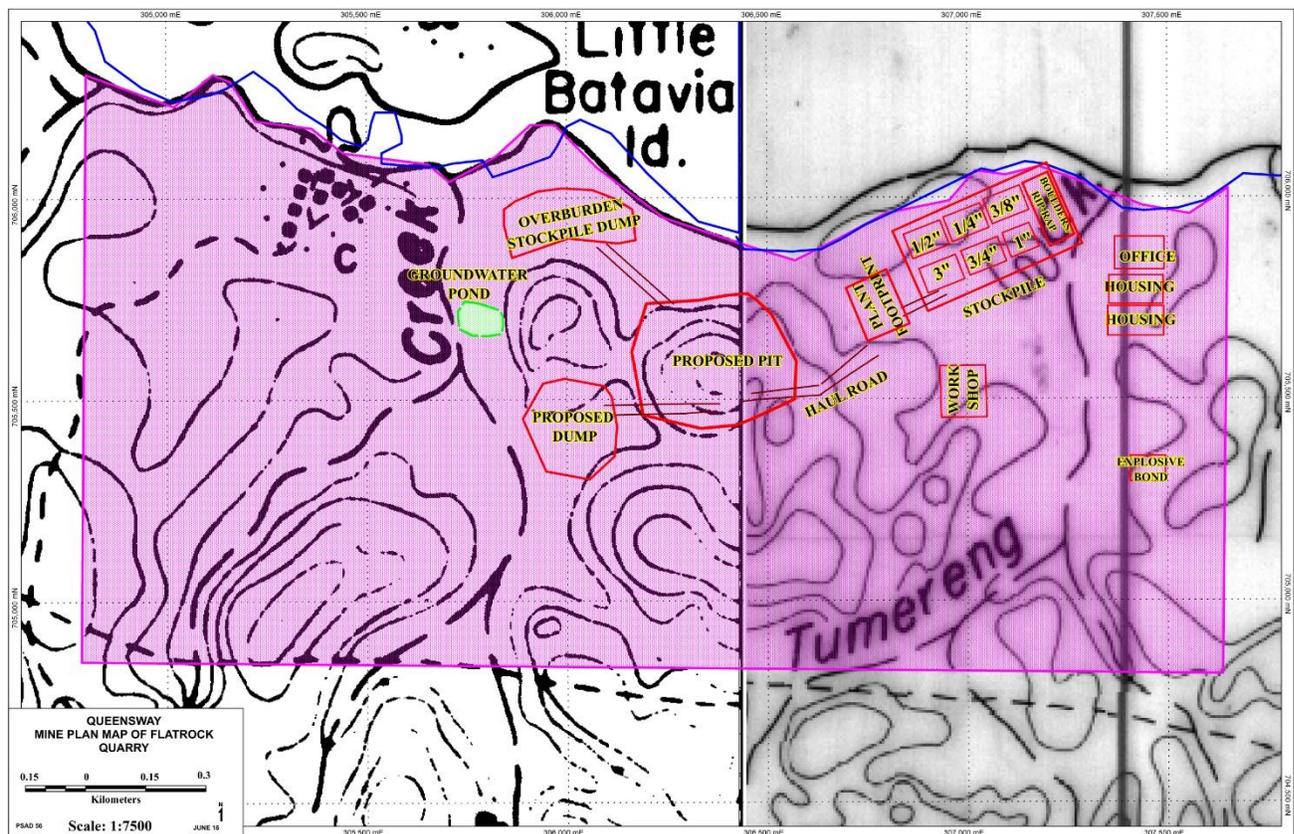
The capital investment of the project is approximately \$900,000.00 United States Dollars (USD) or \$180,000,000.00 Guyana Dollars equivalent. Though the project's capital investment totals Guyana Dollars \$180 million, this amount will be deployed over the project's estimated life of 6 years with an estimated annual turnover of Guyana Dollars \$65 million. Employee turnover during the life of the project is small in scale and is estimated to be design/exploration - 20 employees; construction - 50 employees; and operation - 20 employees.

The production objective for the quarry is to produce riprap and aggregates for the local market. Over the 6 year period, 60% of the quarrying material will be aggregates with 40% rip-rap. Initial production will focus on 2.8/6 and 6.3/10 Category GC aggregates for local construction and road building industry.

The development stages of the project will consist of:

- Exploration/Design Phase, which will include drilling boreholes for the geotechnical and hydrogeological investigations and conducting topographic and environmental surveys of the Project area;
- Construction Phase, which will include land clearing, over burden stripping and stockpiling, construction of mine site access roads, on-loading facility, office and camp facilities and the procurement of the processing/crushing facility;
- Operation Phase, which will include granite/gneiss rock excavation ripping and blasting, crushing, aggregate screening, on-loading and tug and barge transport to markets; and
- Closure Phase, which include mine decommissioning activities such as mine site reclamation, rehabilitation and clean up.

Figure 5 - Flatrock Quarry Proposed Mine Plan



3.1 MINING AND ORE PROCESSING

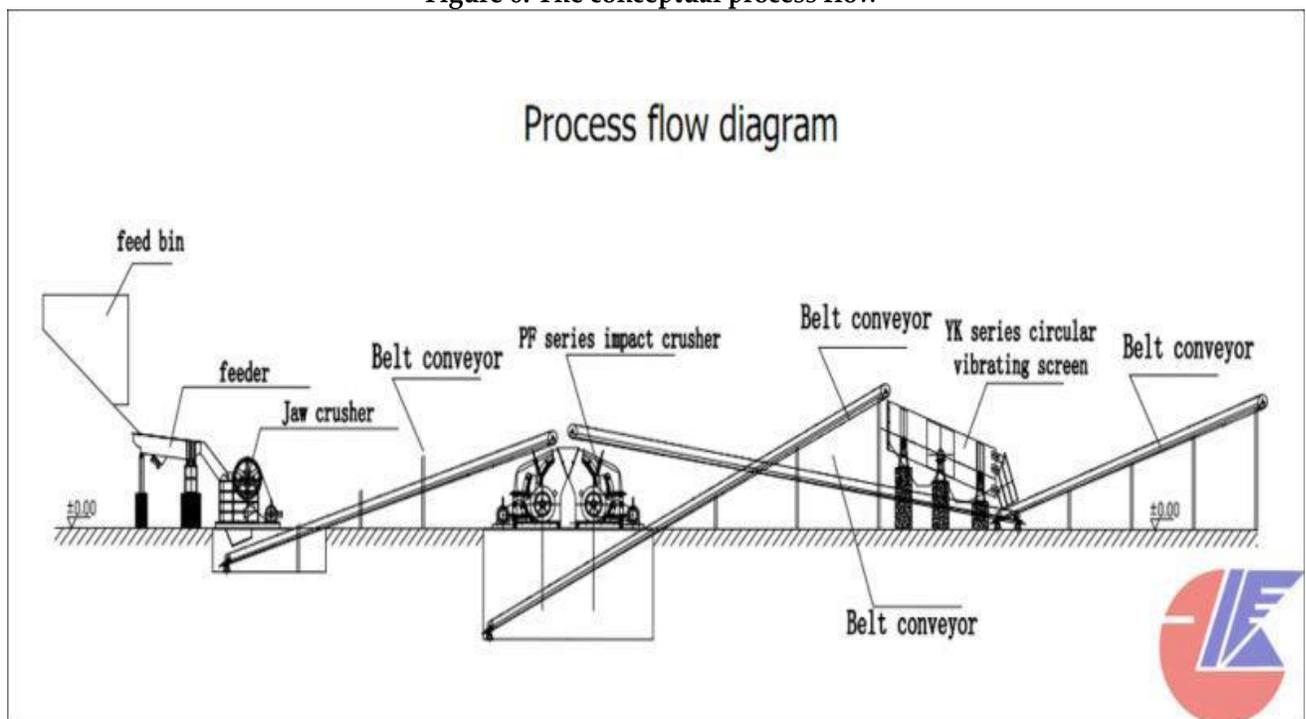
Mining will be conducted in accordance with industry best management practice. Vegetation clearing will be limited to areas required for quarry operations such as the open pits, access roads, crushing/processing and camp areas. Overburden will be stockpiled for reclamation efforts. Once a desirable surface is exposed, granite, gneiss and related materials will be excavated via ripping with appropriate tracked equipment, and blasting.

Overall pit configuration will reflect local geological conditions of rock orientation and stability. The pit will closely follow the east-northeasterly orientation of the Bartica Formation. In general, a series of high-walls and benches trending chiefly west-northwesterly to east southeasterly will be created.

Areas too hard to be ripped by tracked excavators will be drilled, and blasted. Drilling and blasting will be carried out to fracture the rock to enable mechanical excavation. Holes will be drilled behind the working face and filled with an explosive. When detonated, the rock is broken into manageable fragments and transported for further crushing and processing. Blasting will be accomplished using methodologies designed to limit noise and vibration.

Once the desired material is broken loose in the open pit, it will be transported by excavators, front end loaders and/or dump trucks to a primary crusher and loading facility located within the concession. Stockpiles will be established to store run-of-mine and crushed material such that crushing and loading capacities will not be exceeded. Crushing operating will start with a mobile crusher being used to crush first 150,000 tons of boulders. This mobile Crushing Plant is rated at 300 tons/ operating hour. Crushing will be accomplished only during daylight hours (10 -12 hours per day). The Conceptual Process Flow Diagram is depicted in Figure 6.

Figure 6: The conceptual process flow



Out-loading will be done with one 2000 h.p tug and two (2) 1500 ton barges (one equipped with extremely heavy metal decking for rip-rap). The estimated barge turnaround time is 48 hours (21 hrs on the river, 12 hrs at the quarry (on-loading) and 15 for off-loading). There is clear river access for tugs and barges using the Essequibo River.

Offloading sites are available at Parika and road access is also readily available to take product to market. For International markets, like the Caribbean, the Essequibo River provides easy access to international waters. It is estimated that 300,000 – 350,000 tons of product will be transported down river per annum. The quarry will be operated 12 hours a day (plant operation) with out-loading of the barges around the clock once onsite.

Power supply for camps and office facilities will be via a 15 kva generator. Potable water for domestic use will be sourced from a ground water well. No process water is required. Water obtained from the proposed mine water ponds will be routinely sprayed from a water tanker onto roadways and active stockpiles. Water spray bars will be installed on crushing equipment to suppress dust emissions.

Mine waste such as overburden materials and cleared vegetation will be stockpiled for reuse in progressive land reclamation and backfilling. Logs obtained from land clearing will be used for the construction of camps, offices, on-loading facilities, bridges and erosion protection. Vegetation trash will be land spread within forest areas of the site.

Domestic wastewater and effluent will be directed to soak away filter treatment system prior to discharge to the Cuyuni River. Discharges to the River will be in accordance with the EPA domestic wastewater discharge limits. All sewage will be directed to septic tanks with filter bed treatment installed. Hazardous materials and waste will be managed in accordance with the EPA hazardous waste management regulations.

The following equipment are proposed to be used in the mining and processing of quarrying material at the Flatrock quarry:

1. Hydraulic Jacking Plant with Jacking Capacity of 300 tons complete.
2. Hydro pushing plant with Pushing Capacity of up to 250 tons Complete
3. Excavator Doosan 340
4. Wheel Loader 35 tons Caterpillar
5. Bulldozer D6 Caterpillar
6. HD785 Rigid Truck 90 ton
7. Water Cart 4000 liters
8. Barges 1500 Tons and 2000 hp Tug Boat

4 POTENTIAL EFFECTS ON THE ENVIRONMENT

Queensway desires to conduct its Flatrock quarry operations in an environmentally responsible manner and will address all pertinent issues to insure proper stewardship of public lands and preservation of wildlife. An environmental assessment will be completed to address the potential environmental and social risks associated with the project. Details of the environmental mitigation measures to be employed at the quarry will be provided in the Environmental Management Plan (EMP) to be commissioned by the Company. The EMP will address potential impacts of the design, construction, operation and closure phases of the quarry.

POTENTIAL IMPACTS TO LAND/SOIL:

Soil erosion and sedimentation, top soil mixing, compaction and rutting may occur during construction and operation of the mine. Soil contamination may also occur as a result of the accidental release of fuels, waste oils and lubricants.

Mitigation measures:

Soil erosion and sedimentation impacts will be minimized through the implementation of best management practices outlined in the storm water and sediment control, and erosion control management plans of the EMP. Fuels and waste oils will be managed to ensure safety in handling and the prevention of spills to soil.

POTENTIAL IMPACTS TO AIR QUALITY:

Fugitive dust from access roads, the pit excavations and the crusher, and diesel engine emissions are the main elements of air quality concern at the quarry.

Mitigation measures:

Fugitive dust emission will be managed by periodic wet suppression on roadways, process areas and accessible working faces. Speed limits will be enforced within the quarry and access road to limit fugitive dust, and spray bars will be installed at several points on crushing equipment to limit dust generation. Vehicles will be maintained according to the manufacturer's manual and are kept in good working order.

NOISE AND VIBRATIONS:

Noise and vibrations will be produced from the operation of heavy equipment, the generator, pit excavation and blasting operations.

Mitigation measures:

Noise emissions will be mitigated by installing sound suppression equipment on vehicles, e.g. mufflers; ensuring vehicles are maintained according to the manufacturer's manual and are kept in good working order. Vegetative buffer zones will be maintained between the mine face and the mine site accommodation and contiguous land uses, which will act as a noise buffer. Mine site buffer zones will be established in accordance with the GGMC Code of Practice for Quarrying.

Blasting will be conducted in accordance with a Quarry Blasting Plan to be developed in accordance with the GGMC Code of Practice for Quarrying and approved by the GGMC prior to implementation of the plan..

IMPACTS TO WATER (BOTH GROUND AND SURFACE):

The quarry may be excavated below existing groundwater levels. This could result in groundwater infiltration to the quarry floor. Rain induced infiltration and leaching of chemical impurities from exposed spoil piles, and spills of oil and grease from operations can infiltrate and affect ground water quality.

Vegetation clearing for construction will reduce rain interception by forest cover and may result in increased discharge to the Tumereng and Amariwabe Creeks and Cuyuni River. During construction and operation of the mine sediment discharge and erosion may potentially impact the water quality of receiver water bodies.

Mitigation measures:

Ground and surface water impacts will be mitigated through the implementation the storm water, sediment control, and erosion control management plans of the Quarry and the GGMC Code of Practice for Quarrying.