

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



QUEENSWAY

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1 INTRODUCTION

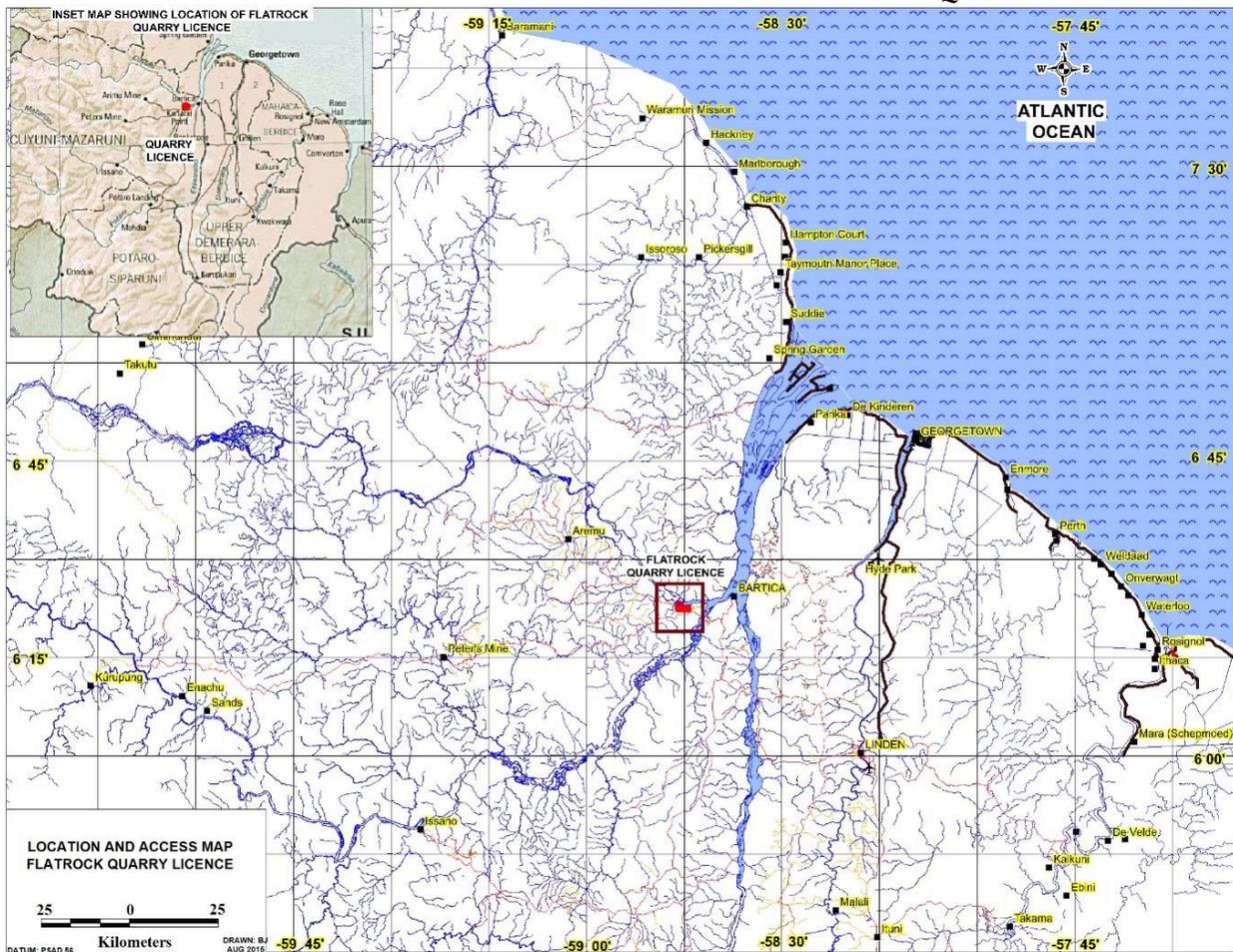
Queensway, a Guyanese company, has a number of mining interests and has been active in mining in Guyana since 2010. The Company is proposing to develop a stone (granite/gneiss) quarry (the Project) within the Cuyuni Mining District, south of Batavia. The Project will consist of a number of heavy duty equipment along with a crushing plant and support equipment.

The Environmental Protection Agency (EPA) after review of Queensway application for environmental authorization for the project determined that an Environmental Impact Assessment (EIA) is required. The EIA study will identify the relevant, appropriate and applicable measures to avoid, mitigate and or minimize the potential negative impacts associated with the development phases of the project and enhance the positive impacts. This Project Summary is prepared as part requirement of the EPA's EIA public notification process.

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 and access map of Flatrock Quarry.

FIGURE 1: LOCATION AND ACCESS MAP OF FLATROCK QUARRY



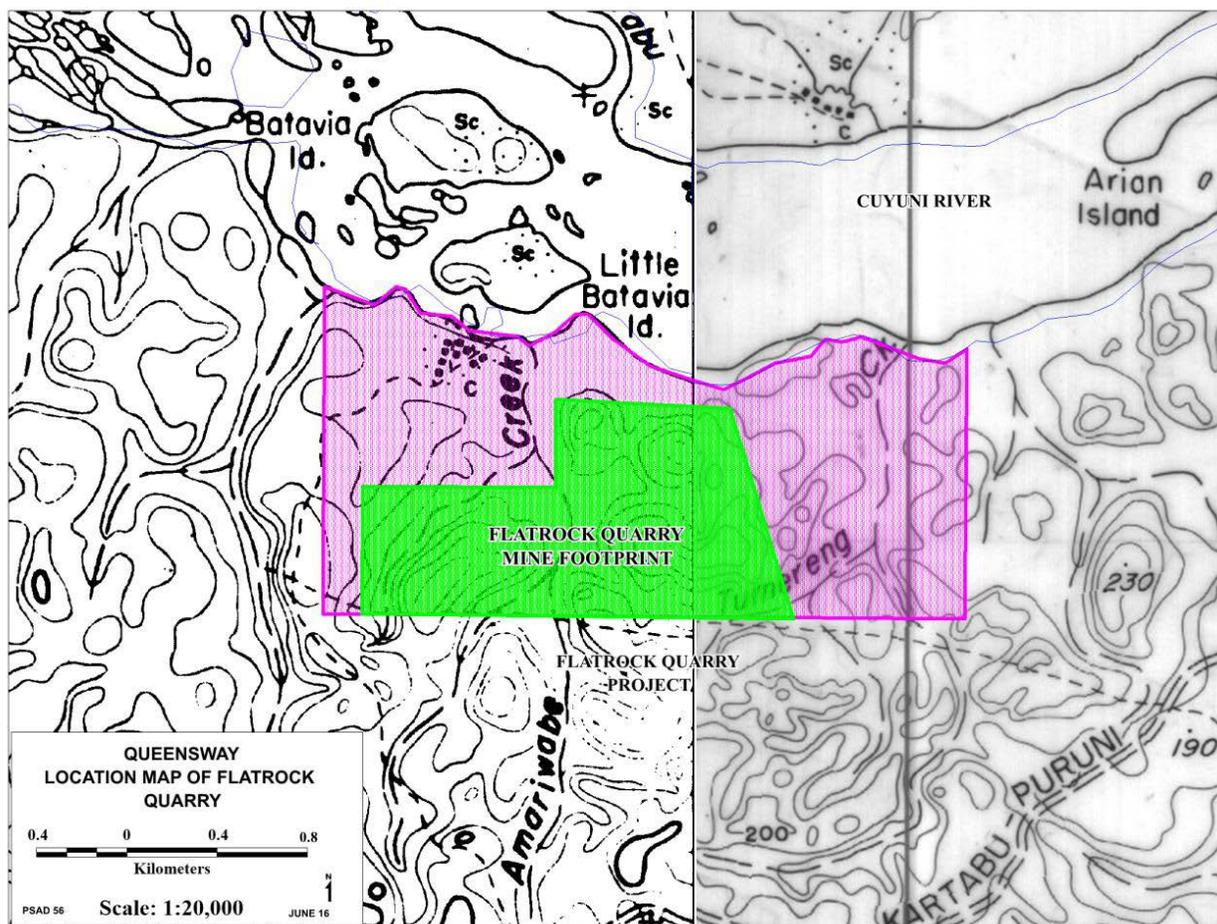
The formal boundary description is as follows: A Tract of state land located in the Cuyuni Mining District No. 4 as shown on Terra Surveys 1:50,000 Topographic Map 27NW, within the following boundaries;

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. The resource estimate is based on geological information available along with extrapolation of the Guyana Geology and Mines Commission (GGMC) drill data and regional data using the Teperu Quarry approximately 6 miles south east (SE). Reserve calculations will be updated in the immediate future once exploration work has been carried out on the property.

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 shows the proposed Flatrock Quarry Mine Footprint.

FIGURE 2: FLATROCK QUARRY MINE FOOTPRINT



3 PROJECT DESCRIPTION

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. The capital investment of the project is approximately \$900,000.00 United States Dollars (USD) or \$180,000,000.00 Guyana Dollars equivalent.

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 hydro-geological 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.

Approximately 20 persons will be employed during the design/exploration phase of the project; 50 persons during the construction phase and 20 persons during the operation phase.

3.1 MINING AND ORE PROCESSING

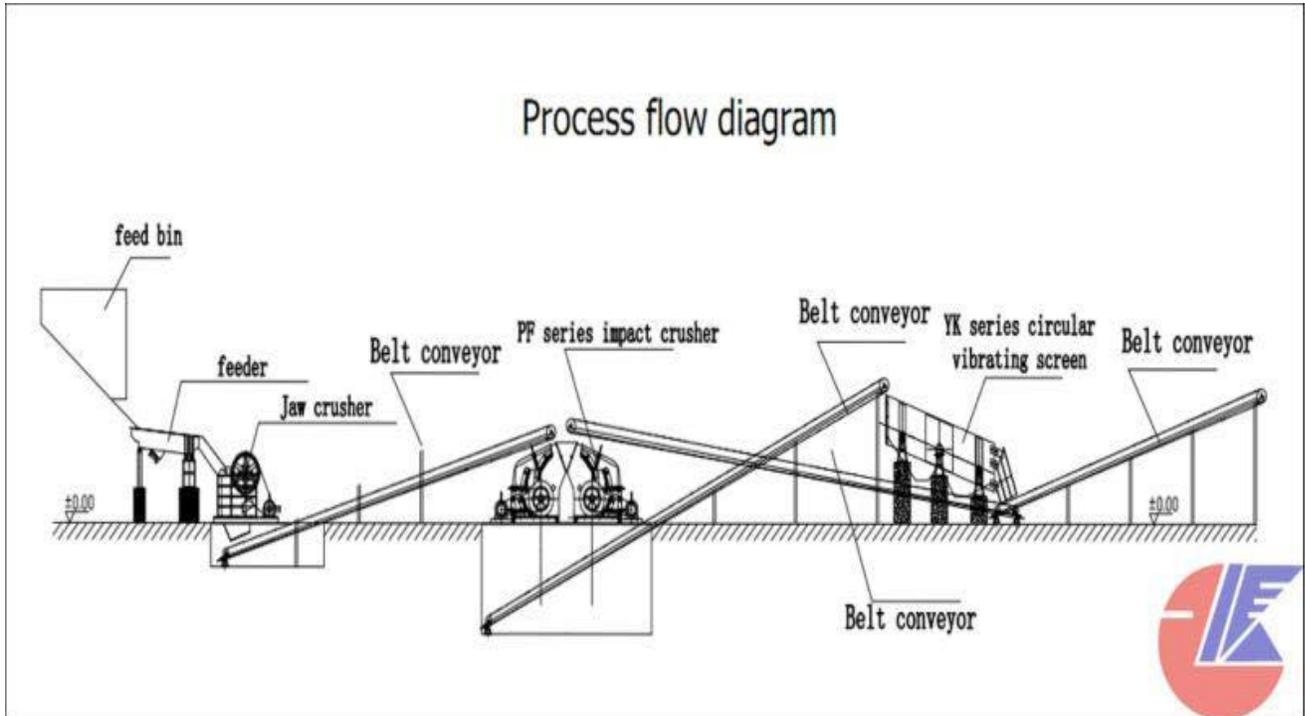
Mining will be conducted in accordance with industry best management practice. Vegetation clearing will be limited to areas required for quarry operations such as the open pits, access roads, crushing/processing and camp areas. Overburden will be stockpiled for reclamation efforts. Once a desirable surface 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 3.

FIGURE 3: 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 waste water 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 waste water 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

The Environmental Protection Agency (EPA) after review of Queensway application for environmental authorization determined that an Environmental Impact Assessment (EIA) is required for the project. The EIA study will identify the relevant, appropriate and applicable measures to avoid, mitigate and or minimize the potential negative impacts associated with the development phases of the project and enhance the positive impacts. The EIA will be conducted in accordance with the EP Act, 1996 and Regulations, the EPA guidelines for preparing EIAs and the approved Terms of Reference (TOR) for the study. Some of the potential issues that may arise from the project include:

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.

EIA TEAM OF CONSULTANTS

Resilient Future Services Inc. (RFSI) is pleased to submit an exceptionally well qualified project team to provide environmental consulting services to perform the EIA for the Queensway Flatrock Quarry at Batavia, Cuyuni Mining District, Region 7.

RFSI team of experts has over 14 years of experience within their distinct specializations and will work as a team combining knowledge of international best practices and local requirements in environmental and social standards in conducting this assignment. The team will be led by RFSI Director Hance Thompson. The profile for key team members are detailed below. These key team members will be supported by other personnel qualified in bio-physical and socio-economic surveys, geotechnical and hydro-geological investigations and environmental impact assessment.

KEY TEAM MEMBERS

Hance Thompson, Project Coordinator

Mr. Hance Thompson is an environmental specialist and biologist, and has years of experience in environmental and earth resources management in his capacity working as an environmental management consultant. Mr. Thompson will be the Project Coordinator and will provide strategic guidance to the team. Mr. Thompson will oversee the fieldwork and baseline studies at the Flatrock concession. Mr. Thompson will also be responsible for the all works to be undertaken to develop the bio-physical baseline for the site. He will also work the assessment of potential environmental impacts related to construction, operation and closure of the quarry and for the preparation of management plans to mitigate these impacts. He will also be involved in the development of the monitoring and closure plans.

Annie Pitamber - Environment and Development Specialist

Ms. Annie Pitamber is an environment and development professional with experience in environmental monitoring and enforcement, natural resource management and climate change assessments. Ms. Pitamber has a wide range of expertise, technical and non-technical, including, knowledge of national policies, regulatory requirements and social assessments. She has worked as a Senior Researcher on

governance/development issues and directly/collaboratively on ESIA's, including assessment of livelihood intervention projects in Guyana. Ms. Pitamber will be responsible for the assessment of possible social impacts of the operations on the immediate and surrounding communities. This will include the establishment of baseline socio-economic data, the identification of social risks and proposed recommendations for mitigating those risks. Ms. Pitamber will also be responsible for defining the regulatory/legislative framework for the project.

Bjorn Jeune - Exploration Geologist

Mr. Bjorn Jeune is an Exploration Geologist with over 18 years experience in prospecting and exploration of precious minerals, base metals, stone aggregates, bauxite and mine development. He has participated in completing NI-43-101 reports for the Toronto Stock Exchange and contributed to the Feasibility, Resource evaluation and mine planning for Sacre-Coeur Million Mtn Gold project and First Bauxite Bonasika/Sand Hills Project. Mr. Jeune will be responsible for geological, topography, soil, and hydro-geological baseline data acquisition, the identification of impacts on geology, and hydro-geology and the development of quarry mine management strategies to mitigate potential impacts.