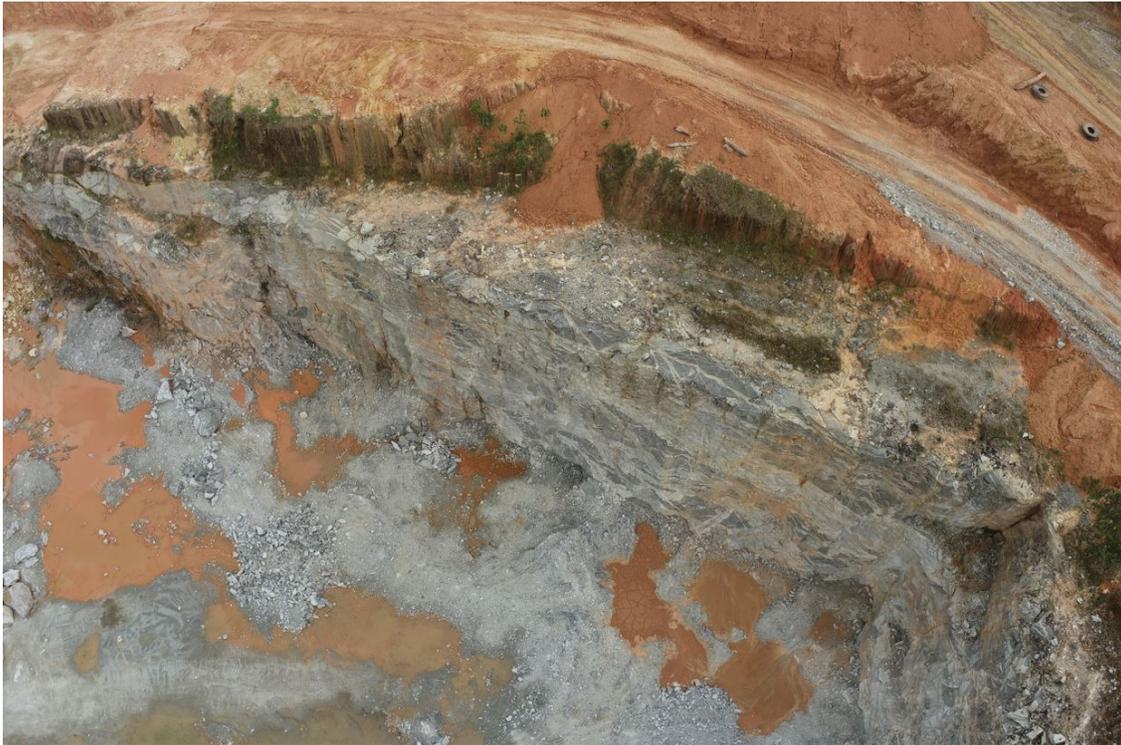


Project Summary – Koetaru Quarry

Romesh Kishun



Submitted by: Romesh Kishun

Prepared by: C. Sparman

Date: September 13, 2021

Summary

Koetaru Quarry developer, Mr. Romesh Kishun, recognises the demand for aggregate, the current limitations of supply and the anticipated increase in demand from the emerging oil and gas sector and the expanding civil works and construction sector; particularly, the Linden-Lethem road. As such the company seeks to obtain from the Guyana Geology and Mines Commission (GGMC) a Quarry License (QL) to develop a modern, large-scale quarry to meet the existing and projected demand for aggregate and boulders (if required).

The Koetaru Quarry project is centred at grid coordinates N 6.0670 W 58.6440 in the Mazaruni Mining District No.3, northern Guyana. The area is approximately 98.7 Km south west of the capital city of Georgetown and the closest town is Bartica, some 37.8 Km south, all distances along terrestrial routes. The project is 14.3 km north west of the Rockstone settlement.

The Phase 1 project will see stone extraction and construction of infrastructural works being conducted on Mining Permits GS23: K-1013/MP/000/20, GS23: K-1013/MP/001/20 and GS23: K- 1013/MP/002/20 for the first five years of the project life. Further exploration work would be conducted on GS23: K-1013/MP/003/20.

The rock quarried at Koetaru Quarry is dark medium grained, massive gabbro that extends north to south along the property.

The proposed project site encompasses 4,757 acres of land. The proposed Koetaru Quarry Project QL is dominated by gentle undulations with elevations reaching over 150 feet. There is exposure of rocks along the creeks indicate resistant rock mass. The rocks are weathered and cracked with some transported along the creek due to relief. The hill is largely covered with clays and sands of varying thicknesses.

The main operational centre will be closer to the western sector of the license; rocks harvested from the central and eastern sectors will be transported here for processing into aggregate, or will be shipped as boulders for use in sea defence projects. Tract of State Land located in the Mazaruni Mining District, No. 3 as shown on Terra Surveys Topographic Map 27 SE.

All grid references used for the remainder of this report are following those on Figure 1, which is adapted from the 1:50, 000 sheet 27SE published by the Guyana Geology and Mines Commission (GGMC). The project area is approximately 4,757 acres.

The project area can be defined by the following grid references based on the 1:50,000 topographic map sheet 27SE.

It is estimated by C. Blackman 2020, that the Koetaru Quarry has in excess of 7.5 million tons: gabbro mineable reserves at a stripping ratio of 0.160:1. Mining operations will continue to meet boulder production demands for sea defence works and local aggregate production demands. The quarry will operate 5 days per week at single shifts of 8 hours to produce 300,000 tons of gabbro annually. Typical

drill, blast, load and haul cycles will be used. Equipment not listed in the purchase schedule are already owned by Romesh Kishun and committed to the project.

It should be noted that this is the first phase of mining in the project area, and there were no quarries in the immediate project area during an earlier period. The contour heights range at 50- 150 feet above sea level in the project area.

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The area is drained by a dendritic network of moderately incised small streams and creeks. The hills are small, rounded and oriented along a dominant E-W structural trend. The isolated high elevations carry relatively sharp and steep slopes as a result of hard underlying rock which resists mass movement. The lower elevations are covered by fluvial and in-situ material. The Project area is veneered entirely by tropical lowland forest with the canopy height ranging from approximately 4m to 12.5m. Aside from tracks and trails made by loggers and the access road to the project area, the forest cover has essentially been preserved.

The area is currently undeveloped but inhabited at Rockstone, south east of the project area. There is no activity in the area presently- neither mining or logging. Selective logging was previously done in this area. The larger general area is already designated as mining lands and have been allocated to several persons as a series of medium scale prospecting and mining permits for gold. The areas to the north has already been granted to Toolsie Persaud Quarries and Baracara Quarries for quarry development.

Location

The property is located on map sheet 27 SE on quarter degree topographical sheet. The proposed project is south of the Sherima Crossing on the left bank of the Essequibo River. The centre of the property is located 21.92Km from the Crossing and the upper most boundary is located a mere 1.19Km from the junction of the Bartica-Potaro Road and the Sherima Crossing trail.

The distance from the capital city Georgetown to Kurupukari Crossing is 142 Km. The area is accessed from Georgetown by asphalt road to Linden and thereby 4-wheel drive road towards the Sherima Crossing. The Project site is also accessed by the Bartica-Potaro Road.

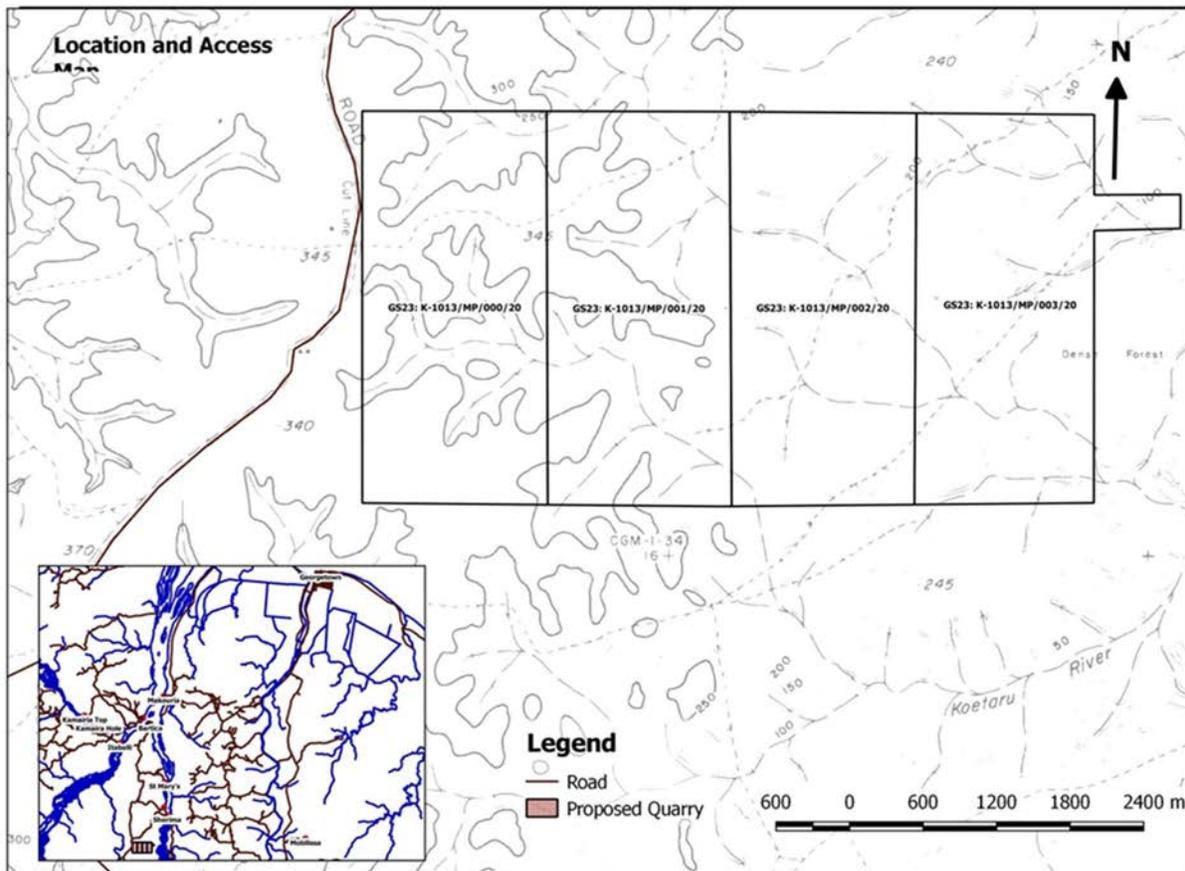


Figure 1: Location map of Quarry

The Rockstone and Winiperu Amerindian Titled Areas are located on the right bank of the Essequibo River; while, the project area is on the left. No mining Closed Area or Forest Reserve exists at the project location. The distance of the Amerindian Reservations negates any effect from the quarry project.

The main drainage in the project area is Koetaru Creek and its left bank tributaries. The Koetaru discharge into the Essequibo River, downstream of the Titled Lands.

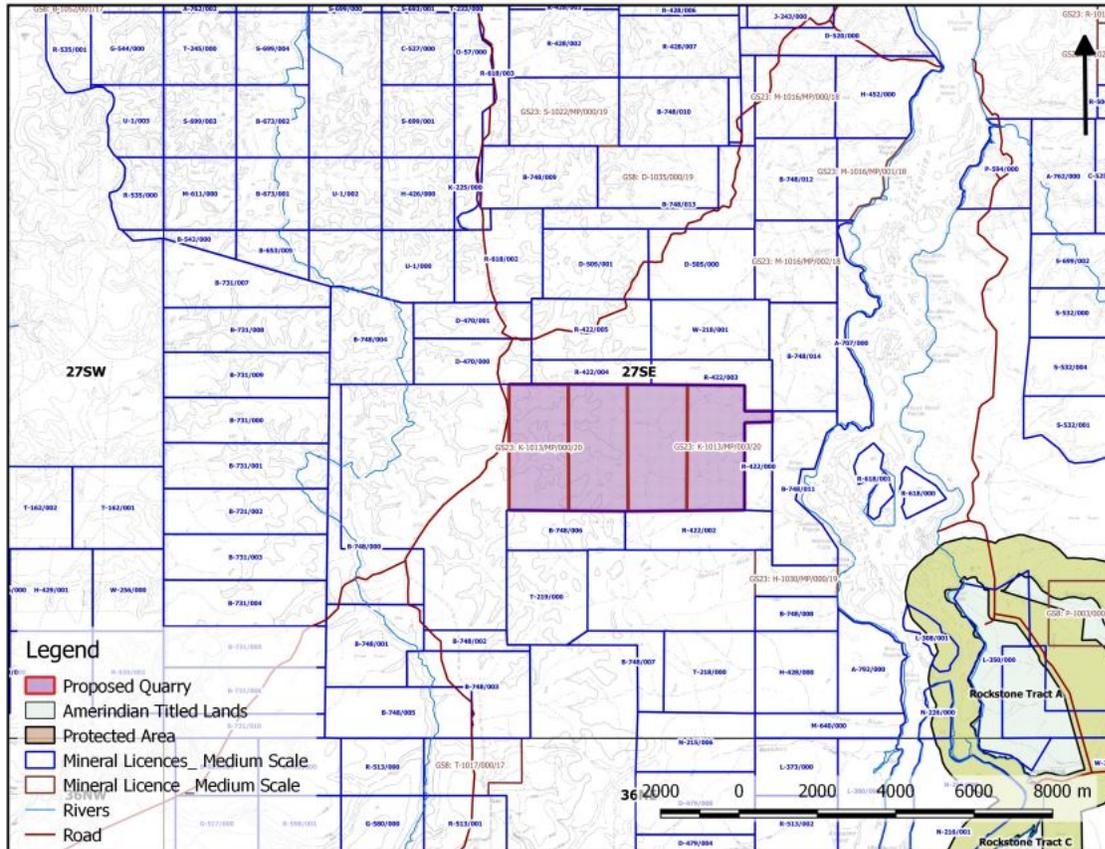


Figure 1(b): Location, Drainage and Titled/Protected Areas map

Mineral Tenure

The quarry project area does not overlap any previous properties. The properties are GS23 K-1013/MP/000-003/20.

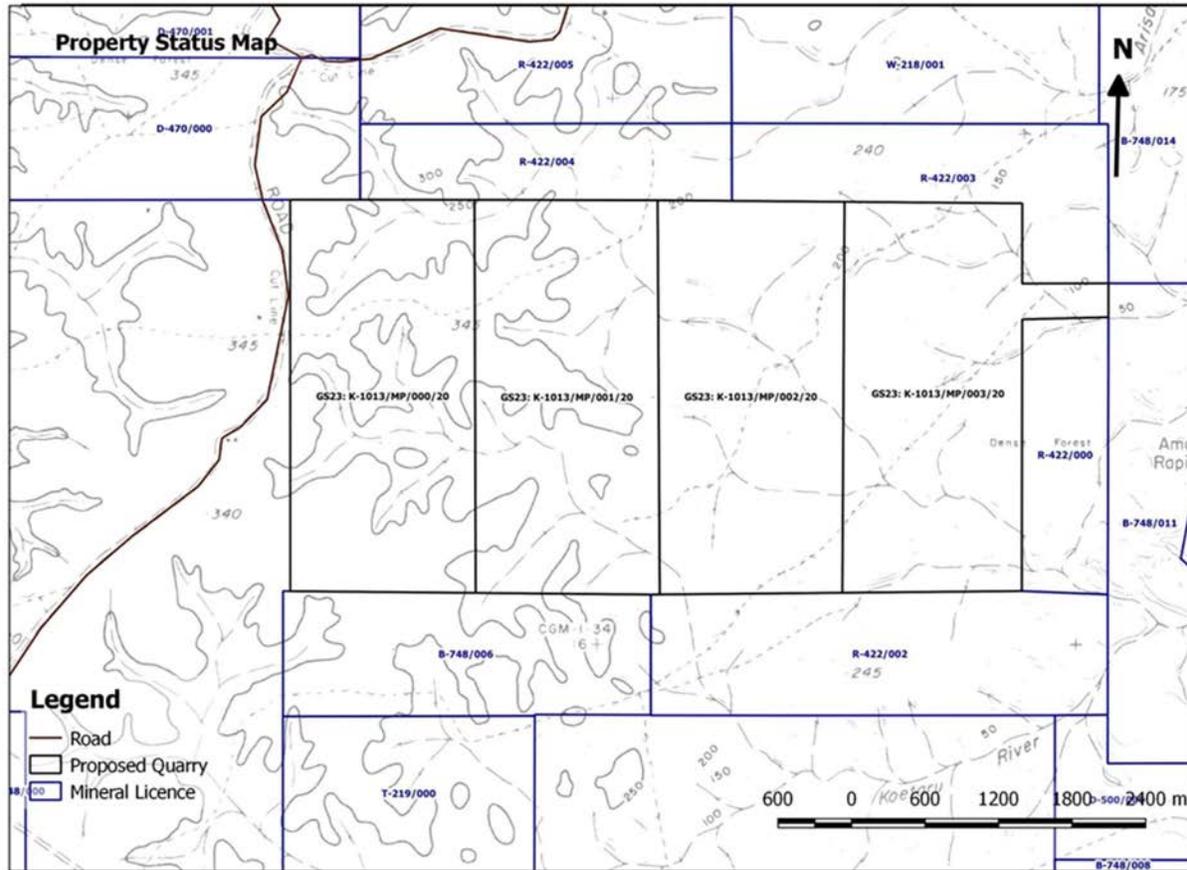


Figure 2: Property map of Quarry

Geology

The main rock classification in the project area is gabbro. Gabbro is a medium- grained, dark- coloured, intrusive igneous rock .It is usually black or dark green in colour and composed mainly of the minerals plagioclase and augite.

Based on recent work contracted by Romesh Kishun, samples collected were tested for engineering properties. The uniaxial compression strength of the gabbro is about 225 N/mm², porosity of approximately 0.8% to 1.7% and permeability 10-4 cm/s. the Aggregate Abrasion Value, Aggregate Crushing Value and Aggregate Impact Value reside about 30-35%.

The fact that the total average percentage components accounted for in the analyses is 99.37%, the stone can be regarded free of insoluble or organic materials, making it suitable for quarrying.

The proposed quarrying of the stone deposit is designed with respect to the proposed production capacity, spatial extent of the stone deposit and geomorphology, as well as other factors (quarry drainage, environmental requirements and others). With this in mind, an effort was made to find the optimum solution, in order to utilize all the stone quarried with minimal impact on the surrounding areas of the potential future quarry and stone and aggregates production sites.

Density of the Gabbro ranges from 2.7 to 3.2 g/cm³. Compressive strength is approximately 220 N/mm². The rock mass is competent and does not exhibit signs of fracturing.

Koetaru Geology

Three distinct lithological units are found within the area (Figure 2). The oldest unit being the Bartica Gneiss complex with ages of 1.9 Ga – 1.8 Ga, then the pluton was emplaced (younger granites) approximately 1.7 Ga – 1.6 Ga ago. The PAPA dykes (Post Avanavero Pre Apatoe) then intruded the Bartica gneiss complex around 0.2 Ga.

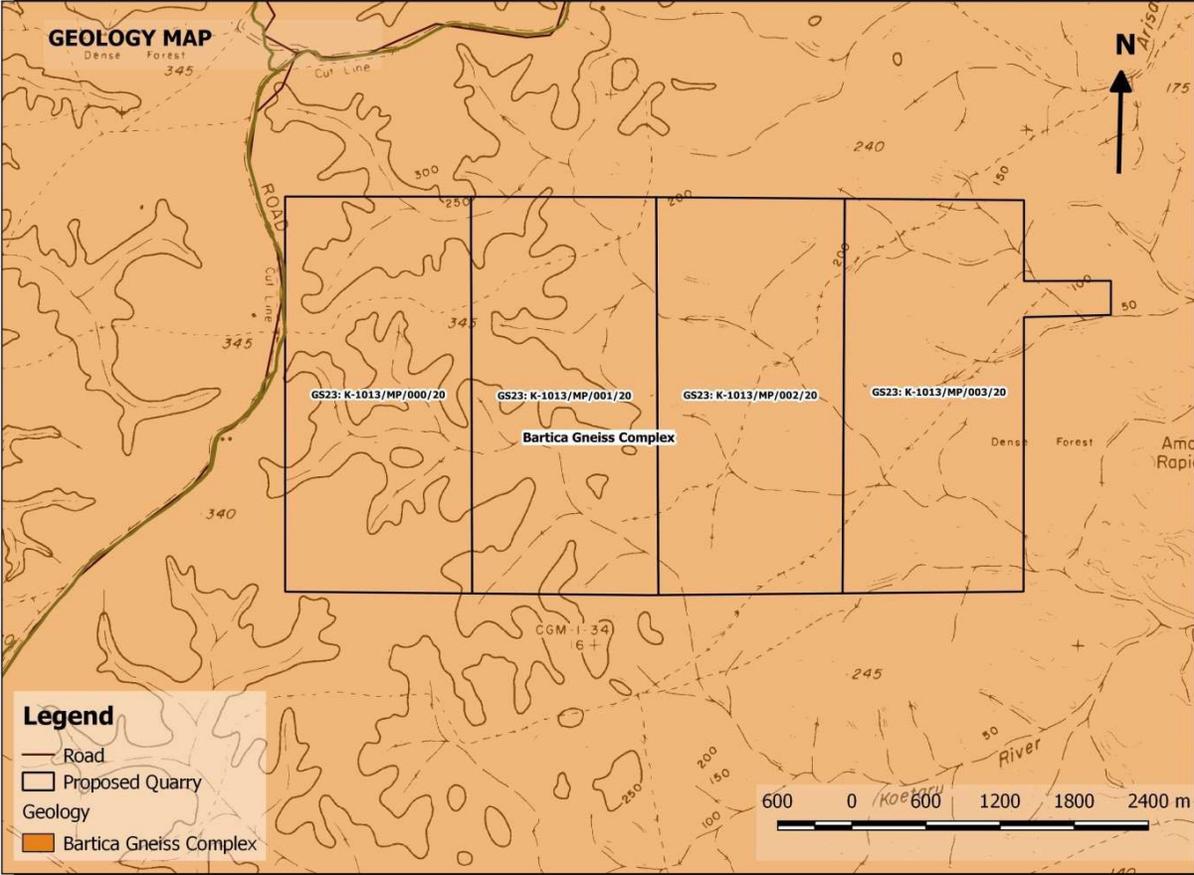


Figure 3: Geological map of property

Younger Basic Rocks (PAPA dykes)

Large Igneous Province or LIPs are usually made up of granitic plutons, dykes, and sills, mostly mafic, ultramafic, and gabbroic intrusions. They are primarily melanocratic rocks ranging from a fine grainmatrix to a coarse grain matrix.

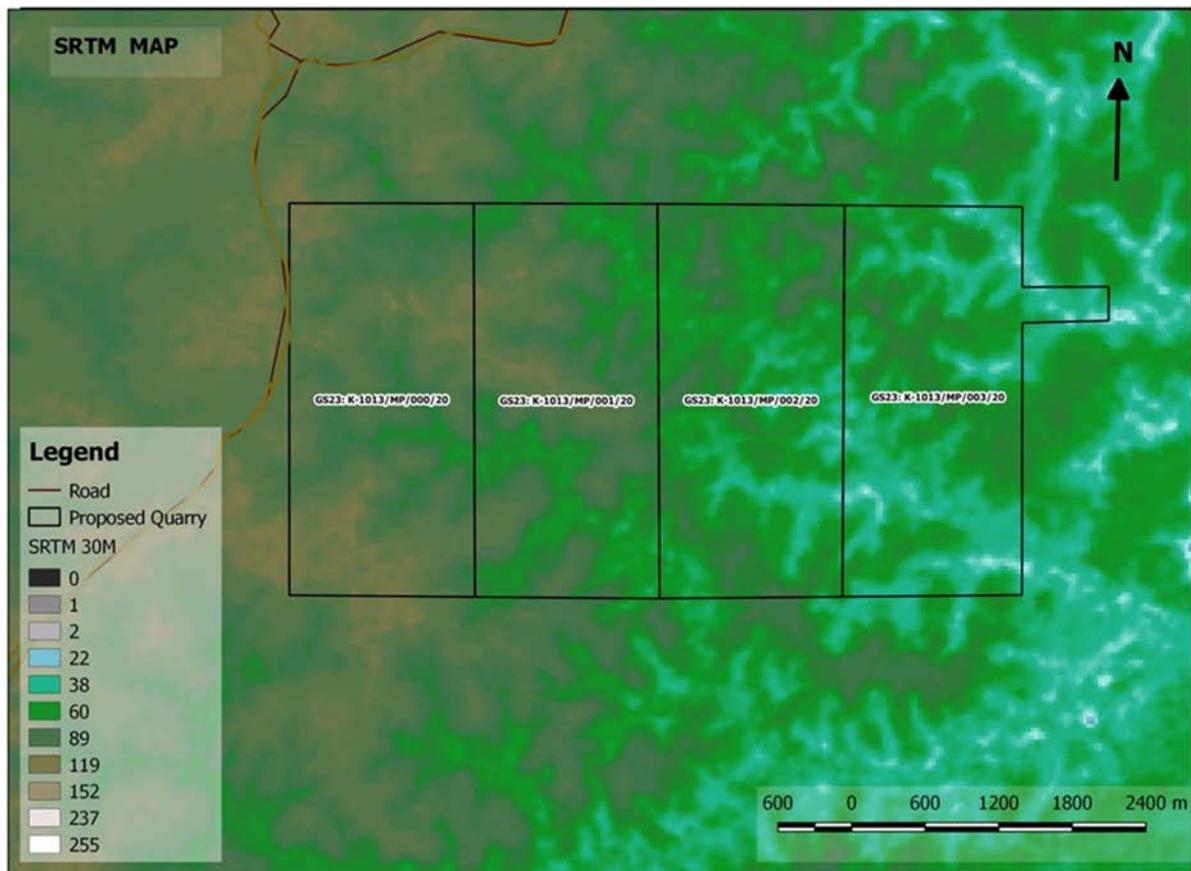


Plate 4 Local geology of property area

Younger Granites rocks.

Granodiorite is an intrusive igneous rock that has phaneritic textured. The grain sizes are visible to the naked eye. Granodiorite formation is slow cooling crystallization below Earth's surface. It is similar to granite and

diorite, but It has more plagioclase feldspar than orthoclase feldspar. It appears to be a small pluton intrusion with coarse grain biotite.

Gneiss Metamorphic rocks.

In that area, distinct gneisses are present but occur in narrow zones within a belt of syn-tectonic granites with amphibolitic xenoliths and amphibolite slivers.

POTENTIAL

The delineated area designated for quarrying covers an area of 11.46 acres. A density of 1.6 ton/yd³ is used to calculate overburden tonnage and a density of 3.0 gm/cc (2.53 ton/yd³) for the ore.

Resource Modelling

Based on existing information and samples collected the mineable tons for the initial five years is 2,238,720. The overall rock body is 1,574 acres with some estimated minable tons of 7,532,100 in the 16.44 acres. This will be revised based on weathering and rock compressive strength away from the outcrop.

Estimated Minable Tons Phase 1 Quarrying

Based on existing information, GGMC 2021, the estimated mineable reserve is 7,532,100 tons of gabbro.

Overburden: 149,945 yd³ (density 1.6 tons/yd³) = 239,912 tons

Depth of overburden: 3.23 yd. Ore: 1,500,000 tons

Quarry Life: 5 years with possibility for expansion

Strip Ratio: 0.365:1

MINING PROCESS DESCRIPTION

In order to estimate the total volume of stone reserves in the delineated area and in the area after stone exhaustion, the lowest quarrying level of -2.6 m was chosen., which still allows for the quarry floor to be drained by gravity flow into a receiving sump. The final quarry floor of the deposit is proposed to slope slightly by 1.7% from a level of 0 m in the east to be pumped towards settlement ponds, then into the natural drainage system.

The basis of the quarry benches will be horizontal. In order to estimate the tonnage of stone, a raw material density of 2.53 t/yd³ was used. The level of individual quarry benches, were determined with regard to the bottom, to quarry face heights of 22.5 m and to the Geomorphology, and after testing several other options and possibilities, thus, the quarry bench levels in the proposed quarry were chosen as follows: 7.5 m, 15 m, 22.5 m. The peripheral areas in the west would drop to -2.6 m ASL so as to drain the entire quarry.

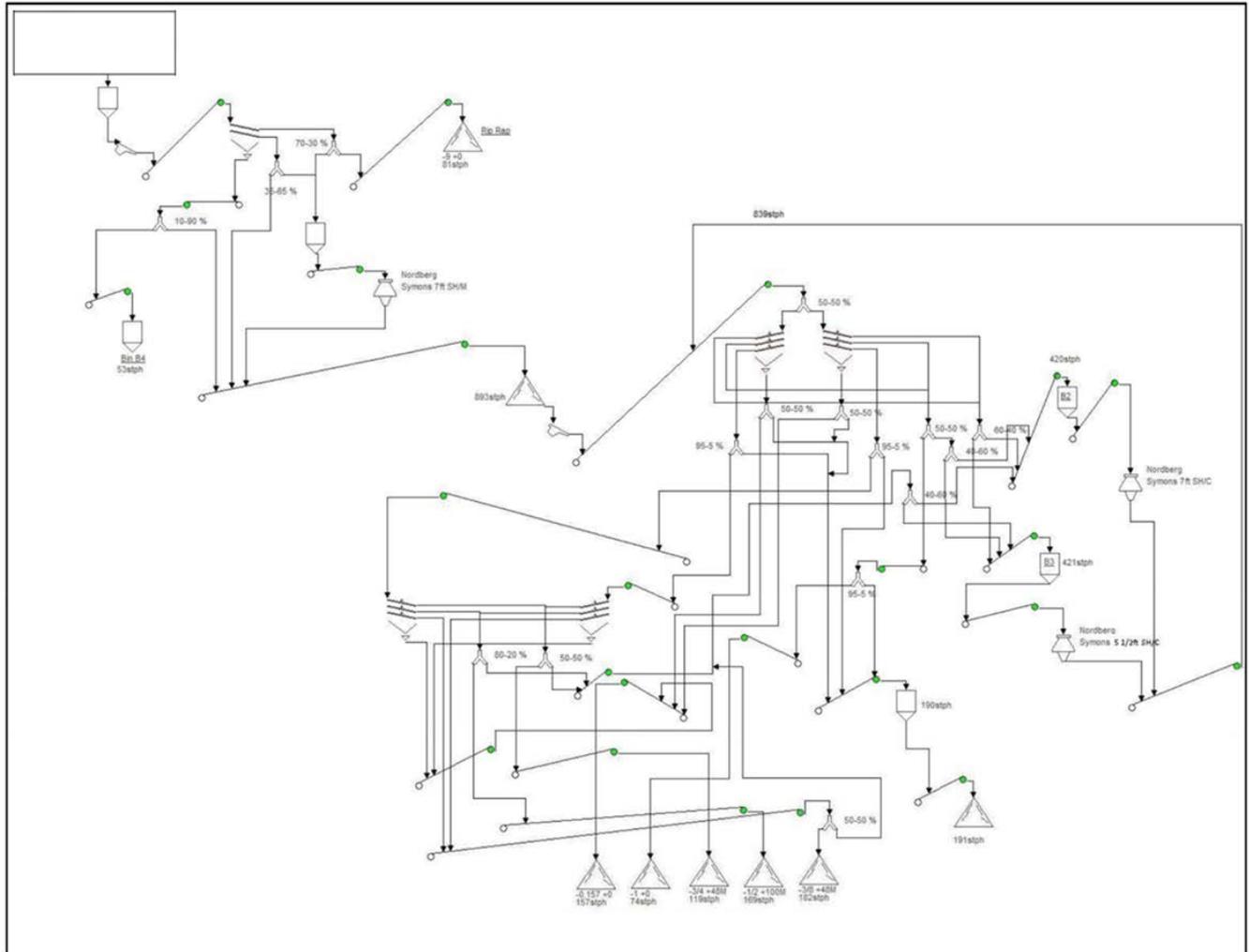


Figure1: Quarry Flow Chart

PROJECT ACTIVITIES/DESIGN

Overburden Stripping and Pile and Re-utilizing

The volume of overburden is estimated at 239,912 tons. The characteristics of the soil include vegetative cover, top soil, saprolite and clay. The top soil will be stripped and stored for rehabilitation purposes. The overburden will also be stripped and stockpiled for rehabilitation purposes. Berms will be constructed around overburden spoil heaps to prevent run-offs and sedimentation of natural drainage systems. Overburden spoil piles will be located in areas of poor stone reserves.

Drilling and Blasting

Stone will be fragmented by blasting in the form of several standard bench blasts, rock breakers will be utilized in place of secondary blasting.

If adequate quarry development is achieved with a long face, then it may be possible to consider single row bench blasts, which usually consumes less explosives. It is assumed that the effect of individual bench blasting will amount to 6,250 tons, once to twice per week to meet the annual production capacity of 300,000 tons as planned.

Bench Design and Construction

The proposed stone quarrying will involve three horizontal benches, a maximum 22.5 m quarry face height and a 37° slope. The quarry face height is usually based on the technical possibilities of the drilling technology used to prepare for the bench blasting, on requirements regarding the fragmentation of blasted rocks, and on safety instructions for loading of raw materials.

The slope of the quarry face is basically based on the angle of the drill holes used to prepare for bench blasting. The quarry faces are proposed to set back at least minimum 10 m (working terrace width) for safe operation of loading and hauling equipment.

Proposed Quarry Development- Bench Levels	Bench 3	22.5 m
	Bench 2	7.5- 15 m
	Bench 1	0-7.5 m

The proposed quarry floor slopes slightly from 0 m in the east to about -2.6 m in the west in order to drain the quarry. It is possible to use temporary surface drains (gutters) if percolation and run off of rainwater from higher benches proves the sloping inadequate.

Facilities Construction

The project will see housing facilities made from local wood produce and aggregate materials. This will occur simultaneously with equipment mobilization to the site. Local skills and labour will be used for construction.

Planned Production Rate

The total reserve will last for approximately five years of quarrying and production, based on the assumption that the proposed initial quarrying phase produces 1.5 million tons of granite stone material. By deepening the quarry and extending the quarry to the probable reserves in the south east or to other reserves discovered by the drilling program, the life of the quarry can be extended.

Product (Tons)	Year 2022	Year 2023	Year 2024	Year 2025	Year 2026	Total
Aggregates	150,000	150,000	150,000	150,000	150,000	750,000
Boulders	150,000	150,000	150,000	150,000	150,000	750,000
Total	300,000	300,000	300,000	300,000	300,000	1,500,000

Table 1- Potential mineable reserves and production rate

Tonnage per month: 25,000 tons per month

Tonnage per day: 1,250 tons blasting production per day

Stock Pile inventory (end 2021 of boulders and aggregates) - Nil

Total Projected production- 1,500,000.

5-Year Period	Production Phase	Quarry Area Yd ²	Quarry Waste Volume (Yd ³)	Quarry Waste Volume (Tons)	Quarry Stone Volume (Yd ³)	Quarry Stone Volume (Tons)
1	1	9,278	29,989	47,983	131,579	300,000
2	2	9,278	29,989	47,983	131,579	300,000
3	3	9,278	29,989	47,982	131,579	300,000
4	4	9,278	29,989	47,982	131,579	300,000
5	5	9,278	29,989	47,982	131,579	300,000
Total		46,390	149,945	239,912	657,895	1,500,000

Table 2- Potential mineable reserves and production rate

Materials Transport

The Koetaru Quarry will utilize articulated trucks to transport materials from the site to the wharf at the Essequibo River. Conveyor transport will be used for plant to stockpile transport. Hauling in the Essequibo River will be by tug and barge system to the capital Georgetown.

Labour Requirement

The total number of employed persons and employee schedules will vary during the five years. Table below shows the amount of employees per year during the five years.

Year	Employees
1	32
2	32
3	32
4	32
5	32

Table 2: Proposed staff for five-year period

The staff complement will comprise of:

Professional Staff:-

Description	Number
Site Manager	1
Engineer	1
Safety Professional	1
TSU Security	4

Plant Foreman	1
Plant Operator	3
Plant Labourer	1
Scale Operator	1

Plant Staff:-

Description	Number
Quarry Foreman	1
Blast Overseer/Drill Overseer	1
Blaster	2
Driller	2
Haul Truck Operator	1
Over Road Driver	2
Loader Operator	1

Maintenance Staff:-

Description	Number
Pit Maintenance	2
Plant Maintenance	2
Electrician	1

Additional staff will be recruited upon a need basis, such as barge operator and sailors. ALL staff will be transported via road from Georgetown to Linden. Additional staff will be collected at Linden and transported via enclosed minibus to the quarry site along the Batica Potaro Road.

In instances of poor road access, personnel will be transported from Ogle to Bartica via airplane or river taxi. Then, all personnel will be transported via enclosed minibus to the quarry site.

Water Management

Two water management ponds will be used (each with 2000 m³ capacity) for the quarry and domestic facilities. Discharge into Koetaru River or left bank tributary of the Koetaru River will be monitored for turbidity and dissolved oxygen.

Waste Management

All domestic waste will be stored landfill to the East of the mechanic shop. Similarly, adjacent to this site, a lay down yard with impervious base (geo-textile) will be built to store plastic containers in which discharged oils and lubes, filters and spares that were in contact with petroleum products. Batteries will also be stored at this site until resale. All containers will be covered and sealed.

Waste water will be discharged to a soakaway behind the admin buildings. The base of the soak away will be $\frac{3}{4}$ aggregate and the surface, sand aggregate.

Utilities

Electric power will be sourced from 1000 KVA generators onsite. This will be responsible for power to the plant, office and housing areas. Electrical poles and approved wired for the load will be used for overhead conveyance.

Water will be sourced from the Koetaru River and rainfall. All water will be treated using Puritabs and filtered through a sand filter. The sand filter will discharge into three (3) sets of water-polishers to remove bacteria and fines.

Area of Influence

The area of influence is presented on the map below. The calculated area is 723 acres, but quarrying will be confined to only one pit for a mere 11 to 16 acres. The area calculated accounts for all structures, including roads to be developed within the project area.

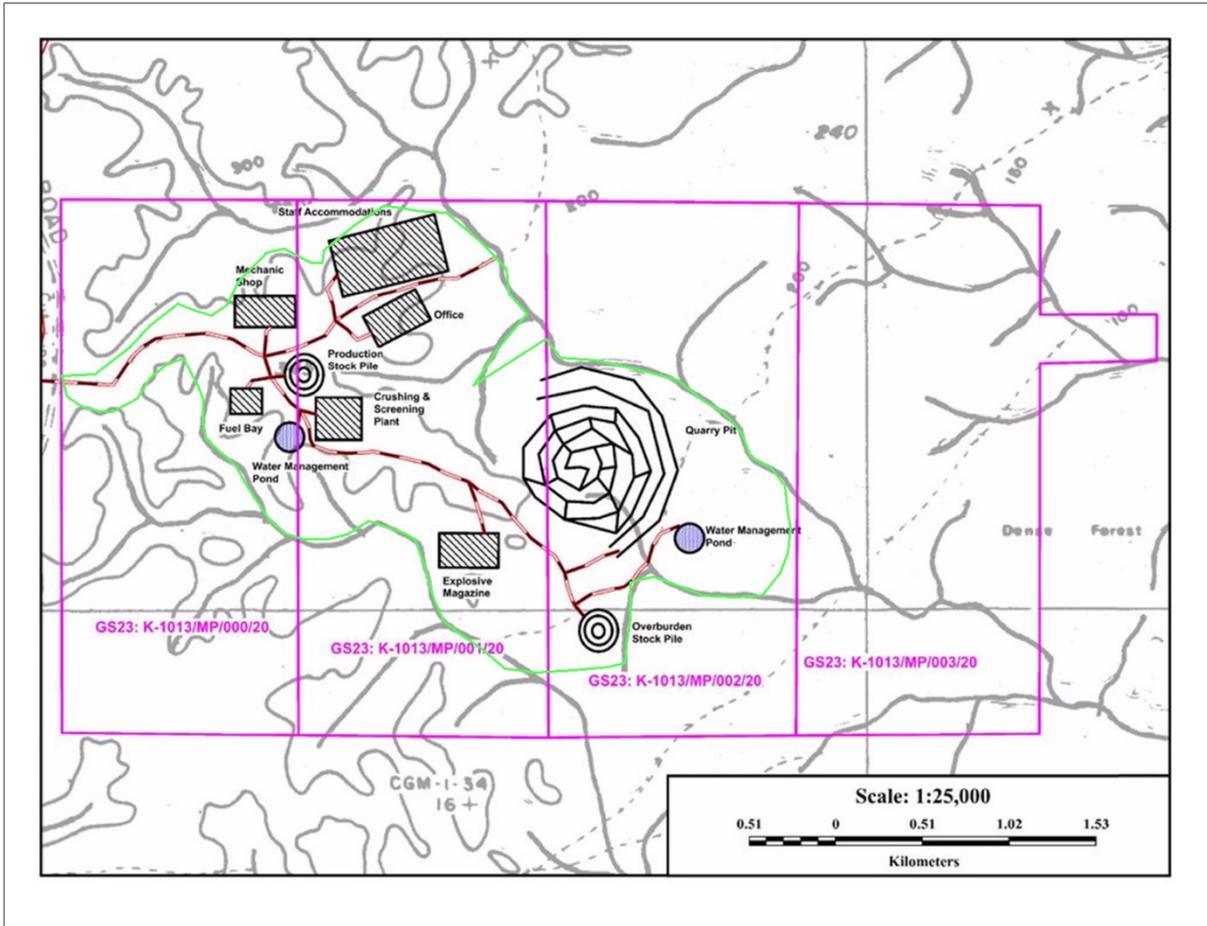
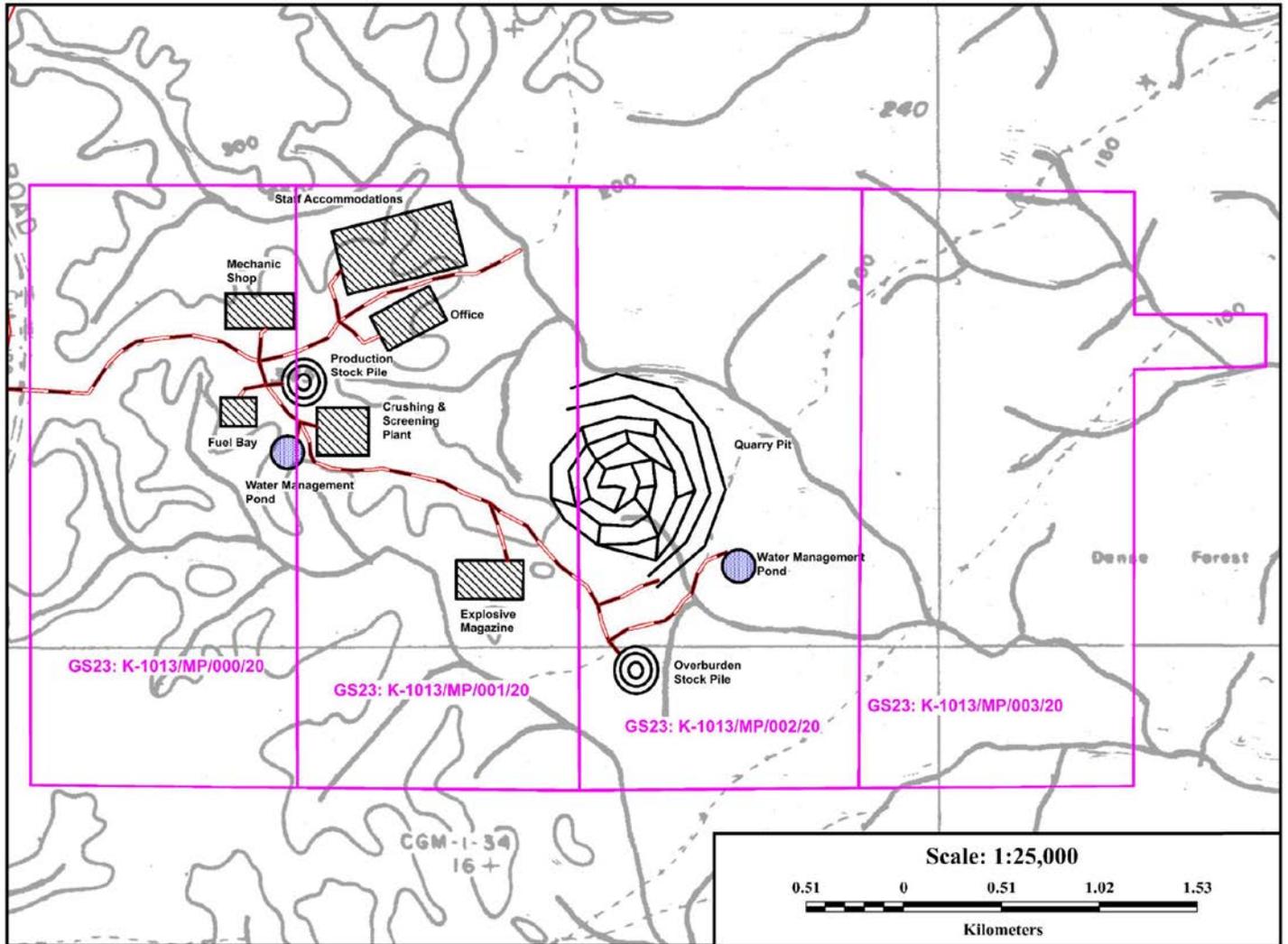


Figure: Area of Influence

Figure 4: Site Layout



ENVIRONMENTAL MANAGEMENT

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.

To prevent mixing of soil horizons, the following mitigation measures will be implemented:

- Segregate topsoil or surface soil from subsurface layers during construction activities;
- Replace topsoil following construction, as applicable;
- Site topsoil storage areas;
- Identify and maintain or salvage topsoil pockets; and
- Replace segregated topsoil as indicated in the Reclamation Plan.

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 Essequibo River and Winiperu Creek. 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.

FIANACIAL ANALYSIS

The project will see 32 persons employed.

Classification	Salary	Personnel/Year						Cost (\$/ton)				
		1	2	3	4	5		1	2	3	4	5
Quarry Foreman	USD 7.10 \$/hr	1	1	1	1	1		0.045	0.045	0.045	0.045	0.045
Drill/Blast Overseer	USD 4.06 \$/hr	1	1	1	1	1		0.026	0.026	0.026	0.026	0.026
Driller	USD 3.04 \$/hr	2	2	2	2	2		0.04	0.04	0.04	0.04	0.04
Blaster	USD 3.04 \$/hr	2	2	2	2	2		0.04	0.04	0.04	0.04	0.04
Haul Truck Operator	USD 5.11 \$/hr	1	1	1	1	1		0.03	0.03	0.03	0.03	0.03
Loader Operator	USD 5.68 \$/hr	1	1	1	1	1		0.036	0.036	0.036	0.036	0.036
Mechanic	USD 4.26 \$/hr	2	2	2	2	2		0.054	0.054	0.054	0.054	0.054
Plant Mechanic	USD 4.26 \$/hr	2	2	2	2	2		0.054	0.054	0.054	0.054	0.054
Electrician	USD 4.26 \$/hr	1	1	1	1	1		0.027	0.027	0.027	0.027	0.027
Plant Foreman	USD 5.68 \$/hr	1	1	1	1	1		0.036	0.036	0.036	0.036	0.036
Plant Operator	USD 4.26 \$/hr	3	3	3	3	3		0.081	0.081	0.081	0.081	0.081
Plant Laborer	USD 2.84 \$/hr	1	1	1	1	1		0.018	0.018	0.018	0.018	0.018
Scale Operator	USD 2.27 \$/hr	1	1	1	1	1		0.015	0.015	0.015	0.015	0.015
TSU Magazine Security	USD 10.60 \$/hr	4	4	4	4	4		0.271	0.271	0.271	0.271	0.271
Site Manger	USD 16,364.00 \$/Year	1	1	1	1	1		0.055	0.055	0.055	0.055	0.055
Engineer	USD 13,636.00 \$/Year	1	1	1	1	1		0.045	0.045	0.045	0.045	0.045
Safety Professional	USD 8,182.00 \$/Year	1	1	1	1	1		0.027	0.027	0.027	0.027	0.027
Environmental Officer	USD 8,182.00 \$/Year	1	1	1	1	1		0.027	0.027	0.027	0.027	0.027
Medic	USD 8,182.00 \$/Year	1	1	1	1	1		0.027	0.027	0.027	0.027	0.027
Over Road Driver	USD 4.26 \$/hr	2	2	2	2	2		0.054	0.054	0.054	0.054	0.054
Cook	USD 16,364.00 \$/Year	2	2	2	2	2		0.11	0.11	0.11	0.11	0.11
Total		32	32	32	32	32	Total (\$/Ton)	1.118	1.118	1.118	1.118	1.118

The feasibility of the project is summarized below.

The capital investment is captured in the table below totaling USD 11, 349,276.

Capital Expenditures						
Mining Equipment						
Type of Equipment	Make Model	Qty	Cost Per Unit	Total Cost	Replacement (Yrs)	Depreciation (Yrs)
<i>Drilling Equipment</i>						
Production Drill	Atlas CopcoDM 25-SP	1	USD 156,800.00	USD 156,800.00	0	5
Exploration Drill	Aircore	1	USD 280,000.00	USD 280,000.00	0	5
<i>Loading Equipment</i>						
Production Loader	Cat 990	2	USD 377,192.00	USD 754,384.00	0	5
Production Excavator	Cat 320 D	2	USD 153,440.00	USD 306,880.00	0	5
<i>Haulage Equipment</i>						
Haul Truck	Cat 775 F	1	USD 784,000.00	USD 784,000.00	0	5
Haul Truck	Volvo FH	32	USD 112,000.00	USD 3,584,000.00	0	5
<i>Support Equipment</i>						
Stripping & Rehabilitation	Cat D6R1ILGP Bulldozer	1	USD 258,720.00	USD 258,720.00	0	5
Production Excavator	Cat 320 D	2	USD 153,440.00	USD 306,880.00	0	5
Transportation	Toyota Hilux 4x4	2	USD 22,400.00	USD 44,800.00	0	5
Stemming Holes	Ingersoll-Rand Bobcat S185 Skidsteer	1	USD 20,832.00	USD 20,832.00	0	5
Power Admin	Miller 4KW Generator	1	USD 5,600.00	USD 5,600.00	0	5
Water Supply	Cat 613CII water Truck	1	USD 160,160.00	USD 160,160.00	0	5
Sales	Cat 980H Loader	1	USD 224,000.00	USD 224,000.00	0	5
Transport Explosive	4 x 4 Toyota Pick Up truck	1	USD 28,000.00	USD 28,000.00	0	5
Power Processing Plant	CAT 1000 KW Generator	1	USD 100,000.00	USD 100,000.00	0	5
Haulage	CAT 740 Truck	1	USD 156,800.00	USD 156,800.00	0	5
Maintenance	Lincoln Air 500 Welding Plant	1	USD 16,800.00	USD 16,800.00	0	5

Total			USD	USD		
			3,010,184.00	7,188,656.00		
Capital Expenditures Processing Equipment						
Type of Equipment	Make Model	Qty	Cost Per Unit	Total Cost	Replacement (Yrs)	Depreciation (Yrs)
<i>Primary</i>						
Primary Crusher	Nordberg C200 59 X 79	1	USD 2,000,000.00	USD 2,000,000.00	LOM	5
Conveyors		5	USD 1,500.00	USD 7,500.00	10	5
Feeder	MF1000 Feeder	1	USD 108,000.00	USD 108,000.00	15	5
Scalper	6 x 16 Triple Deck Scalper	1	USD 28,400.00	USD 28,400.00	15	5
<i>Secondary</i>						
<i>Conveyors</i>						
Triple Deck Screens	8 x 24 Triple Deck Screens	4	USD 143,500.00	USD 574,000.00	15	5
Feeder	MF200C Feeder	8	USD 42,000.00	USD 336,000.00	15	5
Secondary Crusher	7' STD Cone	1	USD 375,000.00	USD 375,000.00	15	5
<i>Tertiary</i>						
<i>Conveyors</i>						
Sand Screw	54 x 34 Double Screw	1	USD 120,520.00	USD 120,520.00	15	5
Truck Loading Bins		4	USD 68,800.00	USD 275,200.00	15	5
Tertiary Crusher	5.5" Short Head Cone	1	USD 120,000.00	USD 120,000.00	15	5
Tertiary Crusher	7' Short Head Cone	1	USD 180,000.00	USD 180,000.00	15	5
Total			USD 3,190,720.00	USD 4,160,620.00		
Total Capital Expenditure			USD 11,349,276.00			

Revenue projections for the 5-year period is summarized below.

Year	Asphalt Aggregates Revenue	Concrete Aggregate Revenues	Gabion Rock Revenues	Boulder Revenues	Total Revenue
2022	USD 2,556,750.00	USD 2,727,000.00	USD 2,556,750.00	USD 2,556,750.00	USD 10,397,250.00
2023	USD 2,556,750.00	USD 2,727,000.00	USD 2,556,750.00	USD 2,556,750.00	USD 10,397,250.00
2024	USD 2,556,750.00	USD 2,727,000.00	USD 2,556,750.00	USD 2,556,750.00	USD 10,397,250.00
2025	USD 2,556,750.00	USD 2,727,000.00	USD 2,556,750.00	USD 2,556,750.00	USD 10,397,250.00
2026	USD 2,556,750.00	USD 2,727,000.00	USD 2,556,750.00	USD 2,556,750.00	USD 10,397,250.00
Total	USD 12,783,750.00	USD 13,635,000.00	USD 12,783,750.00	USD 12,783,750.00	USD 51,986,250.00

The following is a cash flow of the Koetaru project.

Item		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Totals
Mine Production							
Asphalt Aggregates (ton)		75,000	75,000	75,000	75,000	75,000	375,000
Concrete Aggregates (ton)		75,000	75,000	75,000	75,000	75,000	375,000
Gabion Rock (ton)		75,000	75,000	75,000	75,000	75,000	375,000
Boulders (ton)		75,000	75,000	75,000	75,000	75,000	375,000
Total Production (ton)		300,000	300,000	300,000	300,000	300,000	1,500,000
Revenue							
Asphalt Aggregates (\$/ton)	\$ 34.09/ton	USD 2,556,750.00	USD 12,783,750.00				
Concrete Aggregates (\$/ton)	\$ 36.36/ton	USD 2,727,000.00	USD 13,635,000.00				
Gabion Rock (\$/ton)	\$ 34.09/ton	USD 2,556,750.00	USD 12,783,750.00				
Boulders (\$/ton)	\$ 34.09/ton	USD 2,556,750.00	USD 12,783,750.00				
Total Revenue		USD 10,397,250.00	USD 51,986,250.00				
Capital Costs							
Direct Costs (Exploration Drilling)		USD 95,000.00	USD 0.00	USD 0.00	USD 0.00	USD 0.00	USD 95,000.00
Mobile Equipment- Depreciation		USD 1,553,832.00	USD 1,553,832.00	USD 1,553,831.00	USD 1,553,831.00	USD 1,553,830.00	USD 7,769,156.00
Mobile Equipment- Rebuilds		USD 0.00					
Fixed Equipment Depreciation		USD 922,914.00	USD 4,614,570.00				
Indirect Costs		USD 200,000.00	USD 1,000,000.00				
Contingency		USD 363,953.00	USD 1,819,765.00				
Total Capital		USD 3,135,699.00	USD 3,040,699.00	USD 3,040,698.00	USD 3,040,698.00	USD 3,040,697.00	USD 15,298,491.00
Operating Costs							
Operating		USD 6,282,321.00	USD 6,282,321.00	USD 6,282,319.00	USD 6,282,319.00	USD 6,282,319.00	USD 31,411,599.00
Sinking Fund		USD 41,256.00	USD 206,280.00				
Loan Payment		USD 0.00					
Total Operating		USD 6,323,577.00	USD 6,323,577.00	USD 6,323,575.00	USD 6,323,575.00	USD 6,323,575.00	USD 31,617,879.00
Total Cash Flow (Pre Tax)		USD 937,974.00	USD 1,032,974.00	USD 1,032,977.00	USD 1,032,977.00	USD 1,032,978.00	USD 5,069,880.00
Cumulative Cash Flow (Pre Tax)		USD 937,974.00	USD 1,970,948.00	USD 3,003,925.00	USD 4,036,902.00	USD 5,069,880.00	
NPV (Discount Rate 10%)	USD 3,148,396.00						
IRR	62%						
Tax							
Taxable Revenue		USD 937,974.00	USD 1,032,974.00	USD 1,032,977.00	USD 1,032,977.00	USD 1,032,978.00	USD 5,069,880.00
Corporate Tax (40%)		USD 375,190.00	USD 413,190.00	USD 413,191.00	USD 413,191.00	USD 413,191.00	USD 2,027,953.00
Royalty (\$ 0.11/ton)		USD 33,000.00	USD 165,000.00				
Net Income		USD 529,784.00	USD 586,784.00	USD 586,786.00	USD 586,786.00	USD 586,787.00	USD 2,876,927.00

SUMMARY

The Koetaru Quarry at Essequibo, Poterima, is an aggregate and boulder producing project aimed at infrastructure development demands, especially the oil and gas sector and public infrastructure project.