Project Summary

Silica Sand Mine at Open Space, Sand Hill, Demerara River

Operated by Precision Minerals

Date: September 19 ,2025

Contents

Background

Guyana is situated in the mineral-rich portion of the Guiana Shield; and the country has capitalised on this fact by engaging in several forms of mining activities which contribute to Guyana's Gross Domestic Product (GDP). The Bank of Guyana's Annual Report for 2024 documented a 55.9% growth in the mining and quarrying sector, largely driven by the expansion of the oil and gas and support services industry. More specifically, sand production grew by 48.5%, and this was attributed to greater construction activities (a 30.8% growth in 2024) as well as increased public infrastructure developments.[1] The figures obtained after conducting financial analysis within the current market structure would support the case that based on the current and projected market prices and trends that Precision Minerals Sand Mining Project would be viable to execute.

Precision Minerals is a mining enterprise committed to the responsible development of silica sand. From the outset at the planning stage, the Company will implement a data-driven and informed operational framework, which aligns with all applicable local mining and environmental regulations and standards. Beyond its focus on extraction of this resource, much of the Company's emphasis will be placed on environmental stewardship, inclusive of land rejuvenation, progressive reclamation and the protection of human health and the environment. Precision Minerals will remain intentional about emphasizing environmental stewardship and maximizing socio-economic benefits.

Environmental Policy Statement

Precision Minerals is dedicated to continuously improving our environmental performance and providing positive contributions to our business and to society. We are dedicated to sustainable development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Environmental Policy Principles

[1] Bank of Guyana (2024) " Annual Report 2024"
<https://www.bankofguyana.org.gy/bog/images/research/Reports/ANNREP2024.pdf >

There are four main pillars of our Environmental Policy, for which we have assigned principles to guide our progress.

1. **Management Systems**: We apply environmental management guidelines and standards while monitoring our performance. We promote our commitment through training and integration into business processes. We comply with environmental laws, regulations and standards applicable to our products and operations, and subscribe to leading industry initiatives and internal requirements. We translate our commitments into actions by setting corporate objectives and targets and monitor our progress towards these targets.
2. **Resources Utilisation**: We promote eco-efficiency, conservation of non-renewable natural resources and recycling of secondary materials over our entire value chain. We invest in the development of innovative and sustainable products and processes.
3. **Environmental Impacts**: We assess and measure our environmental impacts, continuously improve processes, tools and capabilities and promote best practices in our industry. We develop and implement effective controls to monitor, prevent or minimize the release of pollutants to the environment in our operations. We seek opportunities to protect, restore and enhance biodiversity on and around our site.
4. **Stakeholder Relations**: We engage our stakeholders and report publicly on compliance, performance and progress.

Project Description

Site Description

The proposed project is situated at Open Space, Sand Hill, Demerara River, with a spatial area of approximately 431 acres. The site is accessible via multiple routes. The main access is available from Georgetown via river transport along the Demerara River; by which reliable and efficient transportation by boat to the southern part of the project is available. Inland access to the quarry block is currently facilitated through a clipped foot trail, which allows for on-foot entry into the site for personnel, fieldwork, and initial preparatory operations. While the trail is suitable for light movement, future infrastructural improvements may be considered to support logistical operations and enhance accessibility.

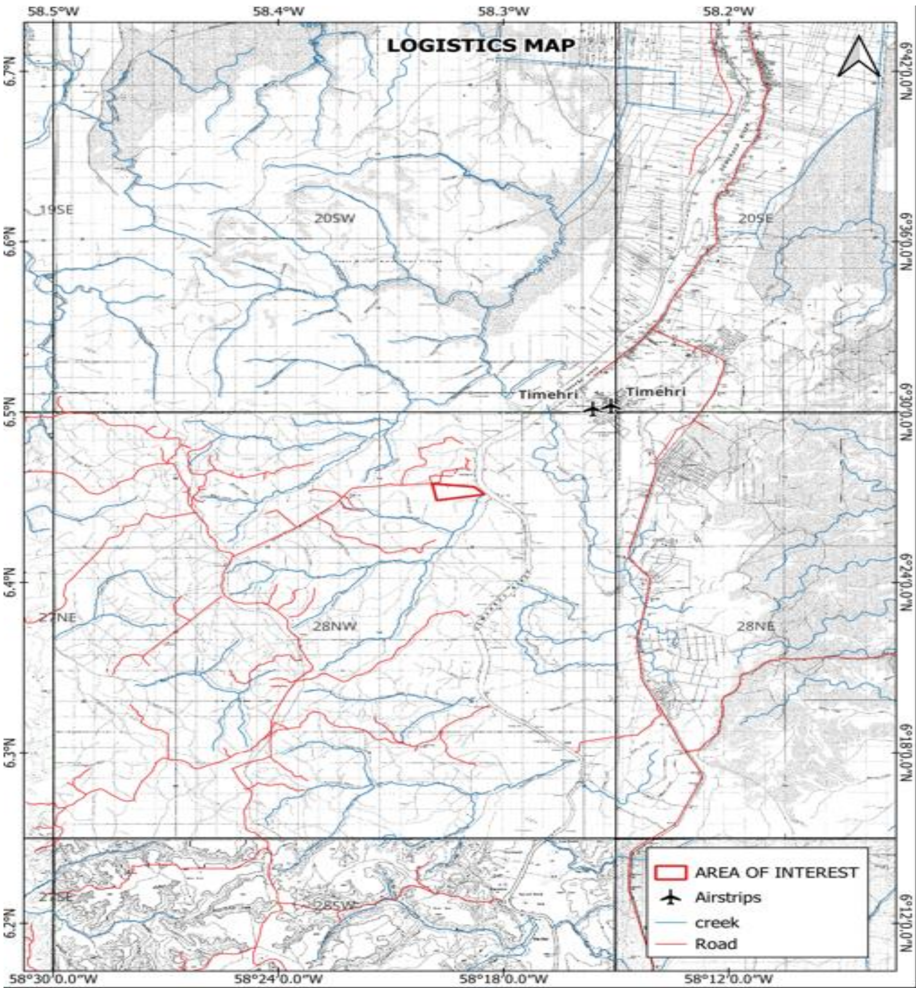

Figure 1: Logistics Map

The proposed Project site is dominated by flat sand dunes with elevations reaching hardly over 30 feet. The area is drained by a dendritic network of moderately incised small streams and creeks. The hills and ridges are elongated and oriented along a dominant north east- south west trend. The Project area is veneered entirely by tropical lowland forest with the canopy height ranging from approximately 4m to 9m. Aside from tracks and trails made by small scale artisanal loggers the forest cover has essentially been preserved.

The main area of direct influence of the proposed project is characterized by vegetation which can be described as dakama rainforest.

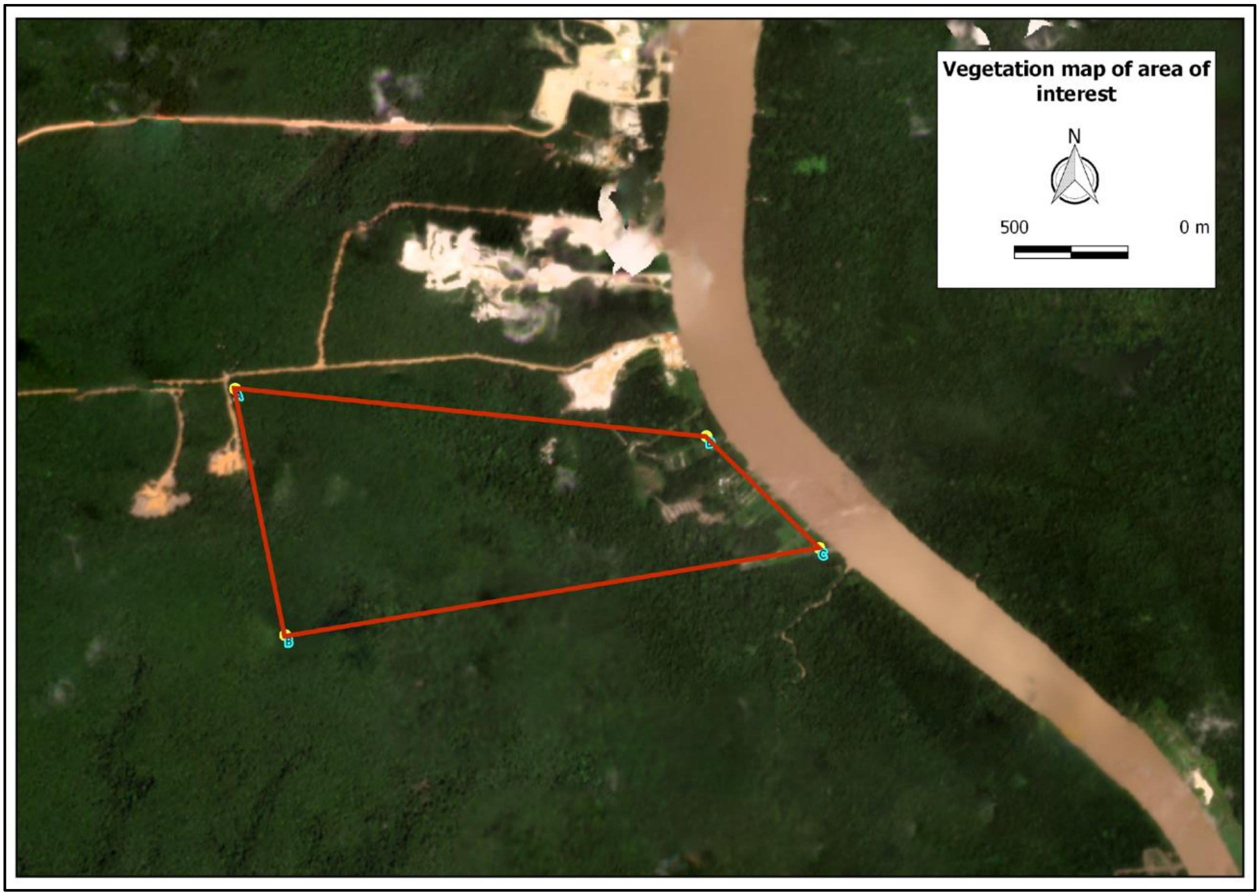

Figure 2: Vegetation Map of Area of Interest

This area has been logged for the commercial species in the past and it was observed that smaller trees of secondary growth are widely distributed over the study area. The canopy of the forest in the area is fairly open, reflecting the impact of logging, allowing light penetration to support understory growth.

Project Design and Operation

Although the project area is vast, only approximately 10% will be cleared for sand mining. The mining method selected for the Project is conventional truck and shovel for both overburden stripping and sand mining. The shallow pit depth, relatively low production levels and soft ground conditions favour a fleet of backhoe oriented hydraulic excavators and small rigid frame mining haul trucks, as no drilling and rock blasting is required to facilitate sand extraction.

The mine would be developed using straight trenches, thickness of the bench is limited to 3.0 m only and width will be more than 1.5 the height of the bench. The sand will be excavated using a backhoe. The commodity would be loaded onto a truck which will use already established trails. Sand extracted would be sold to trucks on site.

Preparation/pre-production

Work at the site will commence with removal of vegetation and top soil which will be cleared by a backhoe ahead of the mining operation. Suitable organic material will be stockpiled for future reclamation use. Overburden and clays will be stripped with backhoe exposing the siliceous zone.

The pre-production phase of mining will begin east and progress west. The stripping ratio is very low, and a total of 10 tons of waste material will be excavated during pre-production along with 70,000 tons of sand. Unsuitable grade of materials mined during pre-production will be used for capping of the haulage road. All other waste will be hauled to an area designated for the waste dump.

Construction & Operation

The project will progress in phases with a production target of 139,374 tons of sand annually for phase 1. The mine life for phase 1 is anticipated to last for 6 years. To enable an effective and efficient mining operation, a complement of 5 employees will be required to work five days per week and with one 8-hour shift. During the first five (5) years of production, mining will progress in Southern half of the pit, establishing the eastern and western portion of the final pit wall.

The debushing and excavation will be done using a CAT hydraulic excavator (backhoe/shovel). A CAT 950 bucket wheel loader will then be used to load the sand onto the dump truck. The sand will be sold at site so there will be no need for a tipper. One Toyota land cruiser will be used to transport personnel in and out of the mine, and for supplies.

Facility Electrical energy will be required for implementation of the project. This will be provided by diesel generators, which will provide a 3KW maximum power supply.

Closure

At the end of mineral extraction, the mine will be closed in accordance with the mining plan which was already developed. Although there will be progressive restoration and reclamation throughout the life of the mine, the mine closure plan will ensure that at the end of the mine's lifespan, all legislative and operational requirements are met, and that adequate resources are in place for final rehabilitation. It is the objective of Precision Minerals to ensure the following criteria are met as part of the mine closure activity:

- Restoration of disturbed land to stable conditions with similar capability or vegetation as before, unless an alternative beneficial use has been agreed upon. Success will be measured through defined criteria and ongoing monitoring to ensure compliance and effectiveness
- Rehabilitation of disturbed land to a stable, self-sustaining landform; or one that requires maintenance in accordance with the agreed post-mining land use.
- Implementation of effective soil management techniques including stripping, stockpiling, re- spreading and appropriate weed control
- Preservation of downstream water quality through maintenance of water quality conditions at acceptable levels throughout the project's lifespan
- Development of a monitoring program that can determine whether the rehabilitated areas are moving towards a successful outcome.

Potential Impacts and Mitigation Measures

As is the case with any developmental activity, the operation of the sand mine will result in both positive and negative environmental and socio-economic impacts, especially in the absence of robust mitigation measures. However, based on the layout of the environment (a large vegetative buffer) and the manner in which the mine intends to operate, the negative impacts expected from the mining activities may be considered low to moderate.

Positive Impacts

Economic Development

From a global perspective, the silica sand market reached around US$ 14.1 Billion in 2020 (IMARC, 2021 Silica Sand Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2021-2026). Moreover, looking forward, the market is expected to exhibit moderate growth during 2021-2026. The boom in infrastructural development has caused the demand for aggregates such as sand to increase exponentially. This makes Precision Minerals' investment critical to meeting this national demand.

Impacts of the project on overall socio-economic conditions of nearby communities will include generation of employment and increased demand for some goods and services and it is expected that at the peak of construction activities, the project will provide work for approximately 15 individuals. These will be direct hires by Precision Minerals and their sub-contractors.

The construction phase will demand goods, services and logistics. These will include transportation services, construction materials and construction equipment. Logistics contractors including truckers and security companies will directly benefit. Suppliers of building materials and construction equipment will also directly benefit from increased demand. Construction companies could also potentially benefit if some of the construction work is handed out to sub-contractors.

.

Potential Negative Impacts & Mitigation Measures

Construction& Operation

Noise

Impacts

During construction and operation, earth moving machinery will be utilised, resulting in noise emissions. The noise levels emitted from these equipment can range from 70 to 110 decibels (dBA) during construction and operational activities. Sources of noise from the mine include operation of machinery, generators and activities at machine maintenance areas.

Primary noise receptors in the area will be individuals involved in construction and operational activities at the site. Noise may also have an adverse effect on many species of wildlife that are sensitive to increased noise levels. However, some species may become habituated to frequent noise events or continuous noise levels and may return to the area.

Exposure to noise levels above 90 dBA can cause noise-induced hearing loss especially if this exposure occurs over an 8-hour workday. Noise levels above the tolerable threshold of 72 decibels may result in fatigue, tiredness, low morale and decreased production levels (OSHA, 2012). Employees are expected to be exposed about 4 hours to noise levels. Tired workers are prone to accidents which may contribute to an increase in work-related accidents.

Mitigation Measures

Noise from the project will be mitigated by implementing the following:

- Installation of sound suppression devices (such as mufflers) on earthmoving equipment and generators, as necessary;
- Employing best available work practices on-site to minimize occupational noise levels such as limiting the hours of exposure to noise
- Isolation of noise source from employees' living and dining areas;

- Issuing/requiring use of PPE (e.g., ear plugs or ear muffs) especially in high noise locations. This will be supported by posting visible warning signs in areas of high noise levels instructing employees to wear requisite PPE
- Avoiding unnecessary idling of vehicles and machinery that are used intermittently;
- Periodic monitoring of noise levels to ensure compliance with recommended threshold levels
- Conducting regular hearing tests and maintaining records of results for workers exposed to high noise levels.

Air Quality

An increase in dust generation will result from land clearing (stripping of topsoil and overburden), vehicle movement on earthen roads, excavation, grading and loading of soil, loading and unloading of haul trucks, wind erosion of stockpiles and spoil piles and the operation of heavy-duty equipment. Dust generation, transport and deposition will be a function of construction activities, soil type, moisture content, wind speed, frequency of precipitation, vehicle traffic and vehicle type. During dry, windy periods, dust emissions will increase and will be much easily transported. Combustion emissions will result from diesel and/or gasoline-fired heavy duty equipment usage and power generation from onsite generators. Products of combustion will include particulate matter (PM_{10}, $PM_{2.5}$), carbon monoxide (CO), oxides of nitrogen (Nox), sulphur dioxide (SO_2) and volatile organic compounds (VOCs). These emissions will be short-term and will be elevated only in the vicinity of construction and operational activities.

Mitigation Measures

Dust and gaseous emissions will be mitigated as follows:

- Minimizing drop heights from vehicles
- Limiting vehicle speed to a maximum of 30 km/hr
- Covering haul trucks to minimise dust emissions

- Employing dust suppression techniques such as applying water or non-toxic chemical
- Maintaining construction equipment according to manufacturer's specifications
- Prohibiting the burning of waste; all waste will be disposed of in a designated waste pit.
- Where practical, land clearing activities will be scheduled on less windy days

Soils

Impacts

During Construction and operations, soil erosion and sedimentation are the most significant impact to soil anticipated and are likely to result from clearing of vegetation, landscape grading, re-contouring to ensure proper drainage and sand mining. These impacts are expected to be more severe in steeply sloping areas where there is greater erosion potential. Additionally, soil contamination can result from the accidental release of fuels, lubricants, grease or other hazardous materials which may be used on site. This may be released from equipment or from failure of fuel/hazardous materials containment areas.

As it relates to potential changes in soil structure, the movement of heavy equipment, required to support the planned construction and mining may cause rutting and compaction of susceptible soils, although not considered a widespread concern at the site.

The construction of roads, access ways, and mine preparation during landscape grading and recontouring to ensure proper drainage; and during vegetation clearance has the potential to result in topsoil mixing. The mixing of the top soil with the subsoil from these activities could result in a loss of soil fertility and the loss of viable seeds present (seed banks) in the top soil.

Mitigation Measures

The following mitigation measures will be implemented to address potential impacts to soil:

- Implementation of best management practices in soil erosion, storm water runoff, and sedimentation control (e.g., silt fences)

- Segregate top soil or surface soil from subsurface layers during construction activities and stockpile in a designated area

- Replace topsoil following construction, as applicable;

- Re-spreading, de-compaction, and re-vegetation of soil

- Rutting and compaction will be minimized by scheduling the majority of the construction activities, to the extent practicable, during the dry season, by limiting off-road access, and by implementing an awareness education and training program.

- Fuel tanks and other hazardous materials will be placed on impervious bases within a bund wall designed to hold 110 % percent of the contents of the largest tank

- Implementation of the Spill control and Clean-up Plan

- Implementation of an Interim Reclamation Plan following clearance activities

- Implementation of a long-term Reclamation Plan for disturbed areas.

Water Quality

Surface Water

Impacts

The clearing of vegetation at the preparation stage will reduce interception of storm water and the stability of soil. As a result, sediment discharges from cleared areas can increase, and have the potential to reduce surface water quality in creeks and streams nearby.

During construction and operation, the use of earth moving equipment, connected with the development of infrastructure at the mine such as tailings and water management ponds may increase the potential for erosion and the associated increased sediment transport to waterways and sedimentation of these waterways in the Project area.

Surface water quality may also be negatively impacted by accidental discharges of fuels, oils and grease from construction and mining equipment and wastewater discharges from the onsite sewer system, domestic wastewater, and/or by storm water runoff from developed areas (i.e., workshops, equipment storage and service areas, etc.). Discharge of wastewater from these areas to surface water may cause changes to physical, chemical and biological properties within the receiving waters.

Mitigation Measures

Measures to minimise the impacts on surface water quality are as follows:

- Revegetation of disturbed areas (even if temporary),
- An Erosion and Sediment Control Plan will be implemented to mitigate potential impacts to water quality from erosion. This will focus on reduction of slope angles and capping exposed surfaces with crushed rocks
- Installation of an impermeable liner as part of a leachate collection system to minimize potential impacts to surface water
- Design of septic tanks in accordance with GNBS guidelines
- Channeling storm water discharge to an oil-water separator prior to its discharge into surface water.
- Periodic monitoring of the physical integrity of the overburden stockpiles during operations to minimize the potential for discharges due to slope failures.
- The potential for accidentals spills of fuels, oils and grease and the associated contamination of surface waters will be minimized by implementation of a Spill Control and Clean-up Plan. This Plan details measures which will be implemented to prevent, and if necessary, contain spills of fuels, oils, or other contaminants.
- Monitoring of the effluent from the oil-water separators to ensure that the discharged storm water meets effluent discharge/water quality standards prior to discharge into surface water.

Groundwater Quality

Impacts

Impermeable liners will be placed over the base of the water management pond during construction. The impermeable liners will reduce recharge to groundwater. However, the project foot print is quite small in comparison to the area available for groundwater recharge. The impacts of reduced groundwater recharge, occasioned by the impermeable liner, will therefore be minor.

Groundwater dewatering may be required during construction of foundations for project infrastructure. Surface spills of fuels in the vicinity of foundation excavations may result in localized impacts to shallow groundwater at the project site via runoff into the open excavations. Spills of fuel and oils from equipment, fuel storage and from service areas can also flow to the underlying aquifer and potentially impact groundwater quality.

Mitigation Measures

Measures to reduce ground water pollution are as follows:

- Installation of drip pans on all equipment
- Development and enforcement of a program to check for equipment leaks
- Implementation of the Spill Control and Clean-up Plan, with details on plans for utilization of sorbents, biological agents, chemical dispersants and gelling agents.
- Storage of fuel will be stored within containment walls designed to contain 110% of the tank contents

Waste

Impacts

The operation of the sand pit generates large volumes of solid wastes, including spoils, trash, scrap, rubble, domestic wastes, and hazardous wastes. If not properly managed, these wastes could lead to contamination of soils and water, as well as generation of odours, attraction of vermin, and creation of human health and safety hazards.

Mitigation Measures

The Project will minimize and mitigate these potential impacts by:

- Developing and implementing the respective waste management plans for each type of solid waste anticipated to be generated by the Project.
- Reuse and recycling will be preferred over disposal to the extent practicable.
- Placement of covered garbage receptacles at strategic locations throughout the site
- Providing waste management training to employees and contractors

Ecological Impacts

Impacts

Loss of Aquatic Habitats

The construction conducted within the project area and the associated infrastructure will result in the loss of various swamp habitats within the concession area. Several of these habitats have already been affected by historical exploration activities at the site. None of the aquatic fauna identified in the streams or creeks within the Area of Direct Influence is known to be threatened or restricted-range endemic.

Loss of Terrestrial Habitat and Flora

It is estimated that a relatively small amount of land will be cleared for the site and associated infrastructure, nevertheless, the loss of terrestrial habitats and flora is unavoidable within the project footprint area. None of the plant species known to be present in the Area of Direct Influence are known to be threatened locally or to be restricted-range endemic.

Loss of Terrestrial Fauna

Some loss of small and/or slow-moving fauna will inevitably occur during land clearing and earthmoving activity. None of the invertebrate, amphibian, non-avian reptile or small mammal species determined to be present in the Area of Direct Influence is known to be threatened or endemic. More mobile fauna, including large mammals and adult birds will very likely flee the area well in advance of any land clearing operations. The surrounding area is large enough to absorb fauna fleeing cleared areas.

Introduction of Invasive Alien Species

The movement of people, equipment, and materials to the mine has the potential to cause the introduction of alien invasive species of both plants and animals. The disturbance and clearing of natural habitats can also promote the growth or colonization of alien invasive species.

Mitigation Measures

Measures to minimise the impact on biodiversity include:

- Minimization of the Project footprint as far as possible
- Conduct pre-clearance survey to determine the types of species present (flora and fauna) to inform the development of a plan for their management
- Monitoring of biodiversity in the project area and documenting the findings
- Control of invasive species
- Implementation of measures for surface and groundwater to minimise the loss of aquatic species of flora and fauna
- Initiate restoration as soon as practicable in temporary work areas.