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The notification shall contain a **description of the proposed change in operation**. It is not necessary to make such a notification if an **Application to vary** this Permit has been made and the Application contains a description of the proposed change. In this condition '**change in operation**' means a change in the nature or functioning, or an extension, of the installation, which may have consequences for the environment, including but not limited to the following:

- i. Changes in construction, structure, layout of the facility;
 - ii. Installation of new and/or changes to equipment, machine, apparatus, mechanism, system or technology serving the facility or operation; and
 - iii. Any technology installed at the facility from which effluent may be discharged.
- 1.2 Not undertake any development activity which may significantly affect the environment other than those activities covered by this Permit without prior approval by the EPA.
- 1.3 Operate **only** within the description of the block granted by the Guyana Geology and Mines Commission (GGMC) as is described herein: **Point A**, located at geographical coordinates of longitude **57°57'7"W** and latitude **5°29'46"N**, thence at true bearing of **271°**, for a distance of approximately **1 mile 265 yards** to **Point B**, located geographical coordinates of longitude **57°58'8"W** and latitude **6°29'47"N**, thence at true bearing of **360°**, for a distance of approximately **453 yards** to **Point C**, located at geographical coordinates of longitude **57°58'8"W** and latitude **5°30'1"N**, thence at true bearing of **90°**, for a distance of approximately **1 mile 205 yards**, to **Point D**, located at geographical coordinates of longitude **57°57'7"W** and latitude **5°30'0"N**, thence along the Berbice River, for a distance of approximately **524 yards**, the point of commencement at **Point A**.
- 1.4 Maintain demarcated boundary limits as provided in **condition 1.3 above** for the site claim. Ensure proper signage and security measures are utilised throughout the mining concession to keep unauthorised persons from accessing restricted and high-risk areas.
- 1.5 Ensure proper signage and security measures to keep unauthorized persons from accessing restricted and high-risk areas.
- 1.6 Provide and maintain adequate fire protection measures such as fire extinguishers and sand buckets, in accordance with approval granted by the Guyana Fire Service.
- 1.7 Use benchmarks to determine depth achieved during mining operations.
- 1.8 Ensure that transportation of sand by tugs and/or barges to and from the project site does not encumber traffic on the Berbice River, and is done in accordance with the requirements of the **Maritime Administration Department**.

- 1.9 Adhere at all times to the terms and conditions outlined in sections **5.0, 6.0 and 7.0 of the Guyana Geology and Mines Commission (GGMC) Draft Code of Practice for Sand and Saprolite Mining.**

2.0 EMPLOYEES, OCCUPATIONAL HEALTH AND SAFETY

- 2.1 Adhere to the requirements of **the Occupational Safety and Health Act, Cap. 99:01, Laws of Guyana.**
- 2.2 Provide Employees with training on good environmental management practices, occupational health and safety and of their obligations under this Permit at least once annually.
- 2.3 Prepare and maintain a training file of all trainings completed by employees/contractors. This file should be available upon request during a Compliance Inspection of the Sand Mine.
- 2.4 Prepare and maintain a log of the distribution of Personal Protective Equipment to employees.
- 2.5 Provide well-equipped first aid and snake bite kits at all work sites.
- 2.6 Employees shall be equipped with Personal Protective Equipment relevant to the occupational tasks during operation. These Personal Protective Equipment (PPE) must include but not be limited to:
- i. Safety helmets;
 - ii. Protective respiratory devices
 - iii. Safety boots with ankle support;
 - iv. Gloves with reinforced palms and fingers; and
 - v. Safety goggles.
- 2.7 Ensure that communication and transportation systems are in place to respond to emergencies.

3.0 VEGETATION CLEARING AND TOP SOIL STRIPPING AND RECLAMATION

- 3.1 Maintain natural vegetative cover as far as practical and re-vegetate areas from which vegetation was removed.
- 3.2 Consider the weather pattern before initiating major earthworks. Monitor areas of exposed soil during periods of heavy rainfall.

- 3.3 Take necessary precautions to avoid soil compaction, erosion, rutting, siltation and sedimentation during operation by limiting the size of the disturbed area, slope length and gradient, and the duration of soil exposure.
- 3.4 Avoid soil contamination from fuel, grease, waste oils and other petroleum products.
- 3.5 Where possible, topsoil should be placed directly onto an area being rehabilitated to reduce double handling of soil.
- 3.6 Where applicable, incorporate vegetative debris with top soil to keep active for reuse in reclamation. In addition, practical measures such as growing of vegetation such as shrubs and grasses on topsoil and overburden should be employed to reduce erosion.
- 3.7 Conduct reclamation activities at mined-out sites/pits, in accordance with the stipulations of the Environmental Codes of Practice for Sand and Loam Mining (*Guyana Geology and Mines Commission, Environmental Management Codes of Practice 2010, Mining Amendment Regulations, 2005*).
 - i. Progressively rehabilitate the site allocating at least one meter (1 m) of the topsoil (including all vegetation cleared from the site) to be used as backfill material. Rehabilitation will include reduction of slopes to prevent landslides and/or erosion, and re-vegetation.
- 3.8 Not store topsoil (overburden) within **3 meters** of natural vegetation or mine face. Top soil and vegetation should be carefully stripped and stockpiled in an allocated area marked by a sign, so that it can be used for reclamation and re-vegetation as mining finishes.

4.0 WATER QUALITY AND DRAINAGE MANAGEMENT

- 4.1 Adhere to the provisions of **the Environmental Protection (Water Quality) Regulations, 2000**.
- 4.2 Implement practical measures to prevent pollution of Paripi Creek and the Berbice River, its tributaries and other streams.
- 4.3 Channel/route constructed storm water cut-off drains into forested or vegetated zones to allow natural filter of drainage waters before entry into Paripi Creek and the Berbice River, its tributaries and other streams.
- 4.4 Ensure that drains are cleared of debris on a regular basis to promote free flow of water.
- 4.5 Not undertake any fueling activity inside of the pit. Ensure that the areas assigned for storage of fuel, lubricants, and waste oil have an impervious base and are located **10 meters** away from watercourses, operating areas, drainage lines and major

waterways to minimize adverse impacts to the environment in the event of spillage.

- 4.6 Store overburden stockpiles at least **100 meters** of any water courses. Runoff from this overburden should not be directed into the area's watershed.
- 4.7 Install sediment control structures such as sediment traps and screens to prevent the inflow of sediments to surface water especially during the area's rainy seasons.
- 4.8 Determine and demarcate the 'high' ground water depth. Conduct excavation to a depth that leaves **2 meters** above the water table. No mining is allowed at or below the water table.

5.0 BUFFER ZONES

- 5.1 Maintain demarcated boundary limits for the site claim and a non-extractable, vegetated buffer zone at least **150 m** wide from adjoining areas with different land uses unless otherwise approved by the EPA.
 - (i) A non-extractable buffer of **100 meters** wide, must be maintained along the side of the mine/pit parallel to any main public or private road and power lines; and
 - (ii) Do not operate within **200 meters** of any river, creek, water source/spring located on the property.
- 5.2 Establish and maintain a vegetated buffer zone **50 meters** wide from the centre line of the access road to the edge of the pit.
- 5.3 Ensure to re-contour mined-out areas within your concession to address the effects such as erosion, wildlife movement, landslide and Occupational Health and Safety hazards.

6.0 ROADS

- 6.1 Design and construct mine access road(s) to limit erosion. The running surface of the road should be crowned with a compacted layer and should have sufficient diversion drains and culverts to direct stormwater away from surface water bodies.
- 6.2 After construction, continue to maintain the mine access road leading to the mine site. In the event that ruts/holes are developed, as a result to usage of the road to the mine, fill with suitable material (such as compacted fill), as much as possible to reduce the potential for erosion.
- 6.3 Ensure roads are sloped and constructed to minimise the likelihood of soil erosion. In addition, roads should be **berm** with compacted material on both sides to prevent erosion of road and impede the flow of runoff into surface water bodies.

- 6.4 Trucks transporting mined material should be covered with a tarpaulin **at all times.**
- 6.5 Ensure that all trucks transporting materials to the River front does not exceed the established speed limit of the roads so as to minimise dust generation on the road. Additionally, road should be soaked as needed in areas close to farms settlements to not exceed ambient dust levels and become a nuisance to residents.
- 6.6 Ensure that all measures such as grading, compacting, and wetting of the specified section of the access road are carried out as is necessary to maintain the road.
- 6.7 Ensure that trucks are equipped with the necessary reflecting signage to warn the public of impending danger of parked/moving trucks on the public thoroughfare.
- 6.8 Install adequate safety signs along roads informing users of dangerous bends, crossing of haul trucks, speed limits, etc.
- 6.9 Ensure that activities of the operation do not impede road traffic.

7.0 HAZARDOUS WASTE/MATERIAL MANAGEMENT

- 7.1 Adhere to the provisions of the **Environmental Protection (Hazardous Waste Management Regulations, 2000.**
- 7.2 There shall be no release of any pollutants (i.e. fuel, waste oil) to ground water or soil from permitted installation. Accidental release of pollutants to soil and ground water should be recorded and be reported within twenty-four (24) hours to the Agency for further investigation.
- 7.3 In the event that fuel is stored onsite, ensure that the fuel containment bund has a 110 % percent containment capacity of the largest storage tank/container, which must have an impervious surface for the handling of all oils, lubricants and fuels.
- 7.4 Take the necessary precautionary measures such as the use of leak - proof and tightly closed lid containers during the transport of fuel from the site. Appropriate measures should also be taken and during the handling and use of all Hazardous Waste on site.
- 7.5 Store all used oil in tightly covered drums or barrels to avoid spillage. Drums should be stored on an impervious base or in a bunded area. It is an offence to drain fuel/lubricants including used oils of any quantity from equipment onto the ground, drains or water ways.
- 7.6 Label and store in a containment bund which must have an impervious surface all waste oil, used batteries, oily rags, filters and oil containers before being reused or sold to an authorized dealer.

- 7.7 Waste oils should be stored on-site until it is ready for reuse. Disposal of waste oils shall be done in a manner approved by the EPA.
- 7.8 Not undertake any fueling activity inside of the pit. All fueling must be done away from mining pit and on a concrete/ impervious surface.

8.0 WASTE MANAGEMENT

- 8.1 Adhere to the provisions of the **Environmental Protection (Litter Enforcement) Regulations, 2013.**
- 8.2 Promote proper solid waste management and disposal practices at your facility. Reduction and reuse of waste should be promoted.
- 8.3 Do not dispose waste in or near the waterways.
- 8.4 Maintain good house-keeping, sanitary and hygienic practices and the aesthetic quality of the surroundings at all times.
- 8.5 Provide covered garbage receptacles at strategic locations within the project site, which should be emptied, cleaned and maintained. There should be separate bins to facilitate the collection and sorting of waste according to liquid and solids; organic and inorganic; degradable and non-degradable. Used tyres and batteries should be re-used or disposed of in a manner approved by the EPA.
- 8.6 Erect appropriate signage to communicate prohibition against open garbage disposal at strategic locations within the mining site.
- 8.7 Construct a pit latrine(s): according to the following requirements:
 - i. The environs of the latrine/latrines shall be kept clean in a hygienic manner and maintained both internally and externally.

This latrine shall be:

- a) Built with suitable materials such as hardwood or concrete materials;
- b) Maintained on a clay mound to prevent surface water from entering;
- c) Properly vented with a tall ventilation pipe located on the windward side;
- d) Fitted with a fly screen on the top of the vent to prevent the passage of flies and mosquitoes. The meshed apertures (holes) of the fly screen must not exceed 1.5 millimeters, made with corrosion resistant material to withstand intense rainfall, high temperature and strong sunlight;

- ii. Positioned at least 50 meters away from surface and ground water sources, creeks well or springs;
 - iii. Dug at least 0.6 meters above the average water table and at least four (4) meters away from any dwelling (such as camps, residential areas and any sleeping and living quarters, etc.);
 - iv. Easily reach during bad weather and will not cause odour;
- 8.8 When the maximum capacity is reached latrine(s) should be covered with at least 0.3 meters of soil and a suitable determined for another.
- 8.9 Dispose all solid waste in a solid waste pit.
- 8.10 Ensure that solid waste pits are located at least **one hundred (100) meters** away from any watercourses, or sensitive habitation that may be found within the Mining Concession. The waste sites should be constructed above the ground water table and lined to the floor with an impervious, earthen or other material to prevent leaching to ground water.
- 8.11 Burning is prohibited at all-time unless otherwise approved by the Environmental Protection Agency.
- 8.12 Implement waste control measures to minimise odour and loss of visual aesthetics around the solid waste pit.

9.0 AIR QUALITY MANAGEMENT

- 9.1 Adhere to the provisions of the **Environmental Protection (Air Quality) Regulations, 2000.**
- 9.2 Ensure all trucks and other vehicles used for the transportation of sand from the mine are adequately covered to prevent any escape of sand particles during transportation.
- 9.3 Employ all practical measures within the stock pile area to prevent/reduce fugitive dust impacts during the operation phase. Dust-suppression methods such as wetting should be used, as necessary.
- 9.4 Operate all mechanical equipment in accordance with manufacturer's specifications. All mechanical equipment and vehicles should be are regularly maintained and operated at their optimal levels to minimize atmospheric emissions.

9.5 Respond to equipment malfunction or **inefficiencies** which may result in visible emissions to air. In the event of malfunction leading to abnormal emissions the operator shall:

- a) investigate and undertake remedial action **immediately**;
- b) adjust the process or activity to minimise those emissions; and
- c) record the events and actions taken.

10.0 NOISE MANAGEMENT AND VIBRATIONS

10.1 Adhere to the **Environmental Protection (Noise Management) Regulations, 2000.**

10.2 Comply with *Guyana National Bureau of Standards Guidelines for the Measurement and Assessment of Noise into the Environment*, not exceeding the limits below at a distance of 15 m (50 ft) from the source or property boundary, whichever is closer:

- Industrial Limits: **100 dB** (Daytime Limits (06:00 h-18:00 h))
80 dB (Night –time (18:00-06:00 h))

10.3 Equip all sound-making devices, e.g. generators, etc. with silencers or mufflers to reduce noise level and/or enclose all sound-making devices in structures constructed with materials of good insulation properties (e.g. hollow concrete blocks, insulation boards, solid clay bricks, etc).

10.4 Ensure that all equipment and machinery are placed on foundations properly designed to ensure effective damping of vibrations.

10.5 Turn off equipment when not in use to avoid unnecessary idling of motors and noise emissions.

10.6 Regularly inspect equipment and machinery to ensure adequate equipment maintenance is provided and obsolete tools and equipment are replaced.

10.7 Ensure that the generators and machines/equipment are regularly serviced to ensure efficiency and reduce the level of noise produced.

11.0 BIODIVERSITY PROTECTION

11.1 Prohibit the hunting, trapping, trading and removal of wildlife that is found within the Mining Site by employees.

11.2 As practical as possible, avoid or minimise the creation of barriers that would impede the movement of wildlife or cause a threat to their migration.

- 11.3 Ensure that no mining activities are carried-out in areas that are sensitive to Mining such Wetlands, Swamps, Protected species Habitat etc.
- 11.4 Site access routes and facilities in locations that avoid impacts to critical terrestrial habitats, and plan construction activities to avoid sensitive times of the year.
- 11.5 Report any occurrences of illegal wildlife trapping and trading in the project area to the EPA and the Wildlife Conservation and Management Commission (WCMC).

12.0 COMPLIANCE MONITORING AND REPORTING

- 12.1 Comply with any lawful directions given by the EPA from time-to-time in furtherance of the implementation of any international or other obligation for the environmental protection of Guyana.
- 12.2 Submit to the Agency, the **Environmental Annual Report** on the status of the project, progress of the implementation of the monitoring activities and compliance with the conditions contained herein by **March 31** every year (Please see attached, the *Guidelines for the preparation of Environmental Annual Reports*).
- 12.3 Submit to the Agency a detailed **Project Closure Plan** for review and approval within **three (3) months** of issuance of this Permit. Thereafter, the closure plan will be updated and reviewed at a frequency agreed to with the Agency.
- 12.4 Keep all records of environmental monitoring, malfunctions, pollution of the environment, and any failure to comply with requirements as stated in this Permit in an acceptable format, which should be made available to the EPA upon request.
- 12.5 Inform the Agency prior to or within **thirty (30) days** of any change of name or ownership of the operation.
- 12.6 Notify the Agency within **twenty-one (21) days** in event of death, bankruptcy, liquidation or receivership of the Permit Holder or if the Company becomes a party to an amalgamation.
- 12.7 Notify the EPA within **one (1) hour** of the occurrence of any environmental emergencies such as a sudden onset disaster, accident, natural, technological or human induced factors that cause or threaten to cause severe environmental damage as well as harm to human health or livelihood.
- 12.8 Report to the Agency of non-compliance with the Operation Permit (Renewed):
 - i. Within **twenty-four (24) hours** of the time the holder of the Environmental Permit becomes aware of the non-compliance, the anticipated manner in which it may endanger human health or the environment;

- ii. Within **seventy-two (72) hours** submit to the Agency a written report containing a description of the non-compliance, its cause and the period of non-compliance including exact dates and time; and
 - iii. Submit a report to the Agency indicating the reasons and the anticipated time it is expected to continue if the non-compliance has not been corrected.
- 12.9 Provide all reasonable and necessary access to the facilities by the EPA to conduct regular monitoring of the operations. Additionally, the Permit Holder shall be responsible for the payment for all environmental audits and compliance monitoring associated with this Permit.
- 12.10 Implement relevant measures/agreements to avoid conflicts with other land users/communities. Conflicts should be reported to the relevant authorities if they occur.
- 12.11 Monitor the implementation of the conditions of this Permit, insofar as they involve adherence by your employees and all third parties under your direction.
- 12.12 Inform the National Trust and Walter Roth Museum if any artifacts of archaeological and anthropological significance are unearthed during the sand mining operations.
- 12.13 Submit to the EPA the results of all periodic audits conducted by the GG&MC.
- 12.14 The Permit Holder shall provide the financial, equipment and technical capacity to adequately respond to any emergency that may occur on site and emergency response shall be immediate.
- 13.0 INSTITUTIONAL AUTHORITY**
- 13.1 The EPA reserves the right to conduct regular inspections of the Permit Holder's operation as part of its monitoring and enforcement requirements under the Environmental Protection Act, Cap.20:05, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection Regulations, 2000.
- 13.2 The EPA reserves the right to review and/or amend the conditions and fees attached to this Permit, which also includes the review and/or amendment of Permit Fees in consideration of any changes in fee structure as determined by the Agency for projects of this nature.
- 13.3 The Permit Holder shall compensate any Party who suffers any loss or damage as a result of the attributed Project (s. 19 (3) (e)) EP Act, Cap. 20:05, Laws of Guyana.
- 13.4 Conform to all terms and conditions under which this Permit is granted and be liable for any loss or damage which arises from the project as a result of the Permit Holder's activities or breach of any term or condition of this Permit.

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(Issued under the Environmental Protection Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and Environmental Protection (Authorisations) Regulations, 2000.

- 13.5 The EPA shall have the right to cancel or suspend this Permit for breach of any of the terms and conditions contained herein.
- 13.6 The Permit Holder shall be liable to any gross negligence or wilful misconduct caused by the Permit Holder, and/ or Agents, to the marine environment, biodiversity, protected species and natural habitat.
- 13.7 Where it appears to the Agency that the Permit Holder is engaged in any activity that may pose serious threat to natural resources or serious pollution of the Environment or any damage to public health, issue to the Permit Holder a Prohibition Notice Order to immediately cease the offending activity. S 27 EP Act, Cap. 20:05, Laws of Guyana.
- 13.8 Should the Permit Holder contravene or is likely to contravene any condition of this Permit, the Agency (EPA) may serve him an Enforcement Notice in accordance with s. 26 of the EP Act Cap. 20:05, Laws of Guyana.
- 13.9 The Permit Holder, his Servants, Agents and/or Sub-Contractor shall be strictly liable for any loss or damage to the environment through any act caused intentionally or recklessly, through the adverse effect of any discharge or release, or cause or permit the entry of pollution, contaminant in any amount, concentration or level in excess of that prescribed by the regulations or stipulated by any Environmental Authorisation which are attributed to the Project, s. 19 (1) and (2) Environmental Protection (EP) Act, Cap. 20:05, Laws of Guyana.
- 13.10 The Permit Holder, his Servants and/or Agents shall be guilty of any offence in accordance with s. 39(1), (2), (3), (4) of the Environmental Protection Act, Cap. 20:05, which states respectively –“every person who causes material or serious environmental harm by polluting the environment intentionally or recklessly and with the knowledge that material and/or serious environmental harm will or might result is guilty of an offence and shall be liable to the penalties prescribed under the Act.”
- 13.11 The Permit Holder shall be responsible for the payment of all costs related to the assessment of damage and costs for the independent assessor (s).
- 13.12 The Permit Holder, His Servants, Agents and/or Sub-Contractors shall at all times, allow entry to the Permitted facility to any Officer designated by the EPA for the purposes of conducting inspections or any other legitimate business of the Agency. Pursuant to s.38 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana, it is an offence to assault, obstruct or hinder an authorized person in the execution of his/her duty under the said Act or its Regulations and the Permit Holder shall be liable to penalties prescribed under paragraph (c) of the Fifth Schedule for doing so.

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(Issued under the Environmental Protection Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and Environmental Protection (Authorisations) Regulations, 2000.)

- 13.13 This Operation Permit (Renewed) is not the final development consent. Permission must be obtained from other relevant regulatory bodies prior to project implementation.
- 13.14 This Permit is effective from the period stipulated herein (**July, 2021 to June, 2026**).
- 13.15 This Operation Permit (Renewed) shall remain valid until **June 30, 2026**, unless otherwise cancelled, suspended, modified or varied in accordance with the provisions of this Permit or the Environmental Protection Act, 1996, the Environmental Protection (Amendment) Act, 2005 and the Environmental Protection Regulations, 2000.
- 13.16 This Permit must be renewed by submitting '*an application for renewal of environmental authorisation*' to the Agency at least six months before this Permit expires, that is, no later than **December 31, 2025**.
- 13.17 Any late submission of renewal application after the specified date as stated above, the Agency may require the Permit Holder to pay, in addition to the renewal fee, a late penalty fee (accruing at the time such obligation was first owed for renewal) at a rate of **two thousand dollars (GY\$2000.00) per day for every business day late**, until such renewal application is submitted to the Agency, without prejudice to any other rights of the Permit Holder in connection therewith.
- 13.18 Failure to comply with the requirements of this Permit shall render the Permit Holder liable to prosecution and to civil penalties and/or injunctive reliefs prescribed under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, including under any existing and forthcoming regulations made under the said Act or any other applicable Laws of Guyana.

Signed by  on behalf of the Environmental Protection Agency.

Mr. Kemraj Parsram
Executive Director

Date: 19 July, 2021

Operation Permit (Renewed) - Ref. No. 20030612-LHWSP
(Issued under the Environmental Protection Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and Environmental Protection (Authorisations) Regulations, 2000.

I hereby accept the above terms and conditions upon which this Operation Permit (Renewed) is granted and agree to abide by the Environmental Protection Act, Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, the Environmental Protection Regulations, 2000, and any forthcoming regulations, guidelines, best practices, and standards made under this Act.

NAME:	LAKHRAM HARIPARSHAD
DESIGNATION:	Owner
SIGNATURE:	Lakshman Hariparshad
DATE:	9 th Feb. 2022



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