



**Environmental
Protection
Agency**

Ganges Street, Sophia
Georgetown, GUYANA
Tel.: (592)-225-5467-9
Fax: 225-5841
Email: epa@epaguyana.org
Website: www.epaguyana.org

Environmental Permit- Transferred

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

Reference No.:	20230728-AKSL2
Fee:	Medium (C2) -US\$800 per year
Fee Paid:	US\$4000: Five (5) years (October, 2023 – September, 2028)
Addressee:	Crystal Mines Inc. Lot 532 Section "X", Diamond, East Bank Demerara.
Activity:	Operation of a Sand and Loam Mine

Crystal Mines Inc., hereinafter referred to as the "Permit Holder", is hereby authorised in accordance with the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, to construct Support Infrastructure for a Sand and Loam Mine Operation to be located at M-1094/MP/001 (MP2) located at the confluence of Hubudebu River and Labba Creek, hereinafter referred to as the "Project", in the manner indicated in the Application for Environmental Authorisation submitted on July 28, 2023, subject to the terms and conditions set forth herein and any existing and any forthcoming regulations made under the said Environmental Protection Act and/or any other applicable laws, best practices, guidelines and standards relevant to this project.

This is a Transfer of the Environmental Permit, Reference #20230728-AKSL2, issued in October, 2023, and expired on September, 2028, in accordance with the Environmental Protection (Authorisations) Regulations, 2000.

The Permit Holder, His Servants, Agents and/or Sub-Contractors shall comply with the following Terms and Conditions for Construction:

1.0 INFRASTRUCTURE

- 1.1 Notify the Agency in writing and obtain its approval for **ANY MAJOR** proposed changes in construction activities at least **fourteen (14) days before** making the change. The notification shall contain a **description of the proposed change in construction**. In this condition ‘**change in construction**’ 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. Change 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. And,
 - iv. Any other circumstance prescribed by Regulation 20(3) of the Environmental Protection (Authorisations) Regulations.
- 1.2 Ensure all activities are conducted within the boundaries more fully described in the ‘Notice of Intention to Grant Licence’ **M-1094/MP/001/2023**, confluence of Hubudebu River and Labba Creek, published in the Official Gazette, dated August 2023.
- 1.3 Maintain all demarcated boundary limits for the site claim and the periphery of the concession as prescribed by the Guyana Geology and Mines Commission (GGMC), using signage, fences or other means.
- 1.4 Maintain good housekeeping, sanitary and hygienic practices, and the aesthetic quality of your surroundings at all times
- 1.5 Ensure dredging and/or wharf development activities are done to coincide with low-flow periods of the river and seasonal conditions. Wharf construction and related works are prohibited during the rainy seasons.

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 Employees shall at all times be well protected and equipped with Personal Protective Equipment (PPE) relevant to the occupational tasks during operation. These (PPE) must include but not be limited to:
 - i. Safety helmets;
 - ii. Earmuffs/earplugs;
 - iii. Safety boots with ankle support;
 - iv. Gloves with reinforced palms and fingers; and
 - v. Tightly fitted safety goggles.
 - 2.3 Prepare and maintain an employee log of the distribution of Personal Protective Equipment.
 - 2.4 Ensure all employees/third-party contractors are aware of the Conditions of this Environmental Permit (**20230728-AKSL2**) and provide training on the requirements of the Interim Permit and good environmental management practices.
 - 2.5 Provide and maintain adequate fire protection measures per guidelines established by the Guyana Fire Service.
 - 2.6 Provide well-equipped first aid and snake bite kits at the work site.
 - 2.7 Ensure that communication and transportation systems are in place to respond to emergencies.
- 3.0 WATER QUALITY MANAGEMENT**
- 3.1 Comply with the provisions of the **Environmental Protection (Water Quality) Regulations, 2000.**
 - 3.2 Implement practical measures where applicable to prevent pollution of the Hubudebu River, Labba Creek or any other streams and natural waterways that may be found within or adjacent to your mining concession.
 - 3.3 At all times, avoid water contamination from fuel, grease and waste oils.

- 3.4 Store overburden stockpiles away from drainage systems and beyond **two hundred (200) meters** away from any waterway, creek or drainage system.
- 3.5 Consider the weather pattern before initiating major earthworks e.g., road maintenance, topsoil excavation, etc.
- 3.6 Conduct site clearing of any mine expansion panels in a gradual and phased manner to minimise sediment discharge.
- 3.7 Ensure that all reasonable and practical measures are taken to safeguard any water source/ spring intended for use by the residents/ farmers residing in the area. The pollution of a potable water source is strictly prohibited.

4.0 BIODIVERSITY PROTECTION

- 4.1 Report any occurrences of illegal wildlife trapping and trading in the project area to the EPA and Guyana Wildlife Conservation and Management Commission.
- 4.2 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.
- 4.3 Ensure all mining activities are carried-out in areas that are not sensitive to mining such as Wetlands, Swamps, Protected species Habitat, etc.
- 4.4 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.
- 4.5 Prohibit employees from the capturing, killing and trading of all Wildlife from the project area in accordance with the Wildlife Conservation and Management Act, 2016.
- 4.6 Communicate to employees through training, signage and other practicable means, that the capture, trading and/or removal of endangered and vulnerable wildlife from the project area and surrounding areas is forbidden, in accordance with the **Wildlife Conservation and Management Act, 2016**, and any applicable forthcoming Regulations made under that Act.

5.0 BUFFER ZONES MANAGEMENT

- 5.1 Maintain demarcated boundary limits 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.
- 5.2 Conduct all mining related activities at least **one hundred (100) meters** away from nearby communities/ farm/residential settlements.
- 5.3 Ensure suitable buffers are in place to mitigate potential impacts to farms and settlements that may be located nearby.

6.0 VEGETATION CLEARING, TOPSOIL STRIPPING AND RECLAMATION

- 6.1 Do not store topsoil (overburden) within **three (3) metres** of natural vegetation or mine's face. Topsoil 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.
- 6.2 Maintain the integrity of areas where riparian vegetation is located to aid in mitigating erosion/sedimentation impacts at the site.
- 6.3 Erect silt fences or other sediment control devices in drainage lines/around the mine in erosion-prone areas.
- 6.4 Limit the removal of vegetation to the extent necessary for works to proceed in a safe manner.

7.0 ROADS

- 7.1 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 storm water away from surface water bodies.
- 7.2 Maintain the active road/trail leading to the site. In the event that ruts/holes are developed as a result to usage of the main access road to the sand mine, ensure

to fill in ruts and holes that develop during road/trail use with suitable material (such as compacted fill), as possible to reduce the potential for erosion.

- 7.3 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.
- 7.4 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.
- 7.5 Install adequate safety signs along roads informing users of dangerous bends, crossing of haul trucks, speed limits, etc.
- 7.6 Ensure that activities of the operation do not impede river traffic.
- 7.7 Continuously conduct visual observations within the confines of the operation and conduct road wetting as needed to maintain dust levels so as to prevent nuisance to nearby residents.

8.0 NOISE QUALITY MANAGEMENT

- 8.1 Comply with the **Environmental Protection (Noise Management) Regulation, 2000.**
- 8.2 Comply with *Guyana National Bureau of Standards (GNBS) Guidelines Noise Emissions into the Environment*, not exceeding the limits below at a distance of 15 meters (50 feet) from the source or property boundary, whichever is closer.
 - Industrial Limits: **100 dB** [Daytime Limits (06:00 h-18:00 h)]
- 8.3 Ensure all significant noise-producing equipment, e.g., machinery, generators, etc. are equipped with appropriate silencers or mufflers and/or are enclosed in suitable acoustic enclosures where necessary to reduce noise levels impacting the surrounding environment to achieve compliance with GNBS requirements.
- 8.4 Operate all mechanical equipment in accordance with the manufacturer's specifications. All mechanical equipment and vehicles should be regularly maintained and operated at their optimal levels to ensure efficiency and reduce the noise levels produced.

9.0 AIR QUALITY MANAGEMENT

- 9.1 Comply with the provisions of the **Environmental Protection (Air Quality) Regulations, 2000.**
- 9.2 Operate and service all mechanical equipment in accordance with the manufacturer's specifications at all times. Additionally, ensure that mechanical equipment and vehicles are regularly maintained and work at their optimal levels to minimise atmospheric emissions.
- 9.3 Employ dust suppression methods such as watering and erecting dust screens/fences to control dust emissions from material stockpiles and other components that would generate dust.
- 9.4 Ensure to maintain a vegetative buffer around the active Mine Site to aid with the control of dust particles that are likely to be emitted during mining activities.
- 9.5 Maintain an inventory of all sources of air contaminants e.g., generators, heavy-duty equipment, trucks, etc. on site. The inventory should be submitted in the Project's Environmental Annual Report.
- 9.6 Comply with the *World Health Organisation (WHO) Air Quality Guidelines for Particulate Matter in the Environment*, not exceeding the limits below:

PM_{2.5}: 10 µg/m³ annual mean
25 µg/m³ 24-hour mean

PM₁₀: 20 µg/m³ annual mean
50 µg/m³ 24-hour mean

10.0 WASTE MANAGEMENT

- 10.1 Adhere to the provisions of the **Environmental Protection (Litter Enforcement) Regulations, 2013.**
- 10.2 Not store top soil (overburden) within three (3) metres of the Demerara River and 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.



- 10.3 Progressively rehabilitate the site allocating at least one (1) metre 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.
- 10.4 Maintain good sanitary and hygienic practices and the aesthetic quality of your surroundings at all times.
- 10.5 Do **not** dispose of waste in or near the waterways (Hubudebu River and Labba Creek, etc.).
- 10.6 Provide covered garbage receptacles at strategic locations, at the project site, which should be emptied, cleaned and maintained.
- 10.7 As far as possible, reduce, reuse, recycle and/or compost waste materials.
- 10.8 Dispose of all solid waste in a solid waste pit.
- 10.9 Burning is prohibited at all times unless otherwise approved by the Environmental Protection Agency.
- 10.10 Implement waste control measures to minimise odour and loss of visual aesthetics around the solid waste pit.
- 10.11 Construct and maintain ***new or existing*** pit latrine(s) in accordance with the ***Guyana Bureau of Standard (GNBS) Code of Practice for the Design and Construction of Ventilated Improved Pit Latrines.***
- 11.0 FUEL, WASTE OIL AND HAZARDOUS MATERIALS MANAGEMENT**
 - 11.1 Adhere to the provisions of the **Environmental Protection (Hazardous Waste Management) Regulations, 2000.**
 - 11.2 There shall be no release of any pollutants (i.e., fuel, waste oil, etc.,) to groundwater or soil from permitted installation. Accidental release of pollutants to soil and groundwater should be recorded and reported within **twenty-four (24) hours** to the Agency for further investigation.

- 11.3 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.
- 11.4 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 during the handling and use of all Hazardous Waste on site.
- 11.5 Promote the reuse of waste oil, for example lubrication of equipment, where practical.
- 11.6 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 waterways.
- 11.7 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.
- 11.8 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.

12.0 COMPLIANCE MONITORING AND REPORTING

- 12.1 Comply with any directions given by the EPA from time to time in furtherance of the implementation of any international or other obligations for the environmental protection of Guyana.
- 12.2 Submit to the EPA, the **Environmental Annual Reports** on the status of the project, progress of the implementation of the monitoring activities and compliance with the conditions contained herein by **March 31** each year (Please see attached, the *Guidelines for the preparation of Environmental Annual Reports*).
- 12.3 Inform the Agency prior to or within **thirty (30) days** of any change of name or ownership of the operation.

- 12.4 Notify the Agency **within twenty-one (21) days** in the event of death, bankruptcy, liquidation or receivership of the Permit Holder or if the Company becomes a party to an amalgamation.
- 12.5 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.
- 12.6 Report to the Agency any non-compliances with the Environmental Permit:
- a) 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.
 - b) 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.
 - c) 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.
- 12.7 Prepare and submit a detailed Reclamation Plan for approval six (6) months before the actual reclamation process commences.
- 12.8 Submit to the Agency a detailed Project Closure Plan for review and approval two (2) years prior to closure. Thereafter, the closure plan will be updated and reviewed at a frequency agreed to with the Agency.
- 12.9 Submit to the EPA, the Mining License from the Guyana Geology and Mines Commission (GGMC) **within one (1) week** of its issuance by the GGMC.
- 12.10 Notify the EPA once the roads are constructed in order for an assessment to be conducted before the expiration of the Permit.

13.0 INSTITUTIONAL AUTHORITY/ LIABILITIES

- 13.1 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

Environmental Permit – Transferred - Ref. No. 20230728-AKSL2

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

the Agency for projects of this nature.


- 13.2 The EPA shall have the right to cancel or suspend this Permit for breach of any of the terms and conditions contained herein.
- 13.3 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 Environmental Protection Act, Cap. 20:05, Laws of Guyana, it is an offence to assault, obstruct or hinder an authorised 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.
- 13.4 This Environmental Permit is not the final consent; all relevant permission should be obtained from other regulatory bodies for continued operation.
- 13.5 The Permit Holder, his Servants and/or Agents 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 to 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. Section 19(1) and (2) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 13.6 The Permit Holder, his Servants and/or Agents shall be guilty of any offence in accordance with Section 39(1), (2), (3), (4) of the Environmental Protection Act, Cap. 20:05, which states respectively that 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.
- 13.7 The Permit Holder shall be liable to any gross negligence or wilful misconduct caused by the Permit Holder, his Servants and/ or Agents, to the marine environment, biodiversity, protected species and natural habitat.
- 13.8 The Permit Holder shall compensate any Party who suffers any loss or damage as a result of the attributed project. (Section 19(3)(e)) of the Environmental Protection Act Cap. 20:05, Laws of Guyana.



- 13.9 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 Section 26 of the Environmental Protection Act Cap. 20:05, Laws of Guyana.
- 13.10 Where it appears to the Agency (EPA) 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, the Agency may issue to the Permit Holder a Prohibition Notice, which may include an order to immediately cease the offending activity (See: Section 27 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana).
- 13.11 This Environmental Permit is valid for the period stipulated herein **October, 2023 to September, 2028.**
- 13.12 This Environmental Permit shall remain valid until **September 30, 2024**, unless otherwise suspended or revoked in accordance with the provisions of this Permit or the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.
- 13.13 This Permit must be renewed by submitting a completed Application Form for Renewal of Environmental Authorisation to the Agency at least six months before this Permit expires, that is, no later than **March 31, 2028.**
- 13.14 Any late submission of renewal application(s) 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\$2,000.00) 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.
- 13.15 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 and its Regulations, including under any forthcoming regulations made under the said Act or any other applicable Laws of Guyana.

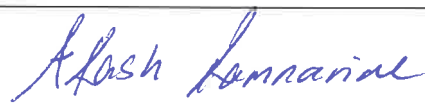
Environmental Permit – Transferred - Ref. No. 20230728-AKSL2

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

Signed by  on behalf of the Environmental Protection Agency.
Kemraj Parsram
Executive Director
Executive Director

Date: 20-9-2024

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

NAME:	Akash Samnarine
DESIGNATION:	Managing Director
SIGNATURE:	
DATE:	02th Oct 2024



AL

