



**Environmental
Protection
Agency**

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Environmental Permit (Renewed & Modified)

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

Reference No.:	20210426_EMASC
Fee:	Medium (C3) i.e., US\$1100 per year
Fees Paid:	US\$ 1100 for One (1) Year (August 2023 – July 2024)
Addressee:	Mr. Ershad Mahamad Operations and Accountable Manager GUYDRONES Lot 13, Area G Ogle East Coast Demerara
Activity:	Aerial Application of Fertilizers, Pesticides, Herbicides, and Seeds.

GUYDRONES, hereinafter referred to as the “Permit Holder”, is hereby authorized in accordance with the Environmental Protection Act, Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, for the operation of Aerial Spraying using Five Drone within Regions 3, 4, 5 & 6 and stored at Lot 13, Area G Ogle, East Coast Demerara hereinafter referred to as the “Project”, in a manner indicated in the Application for Renewal of Environmental Authorisation submitted on March 11, 2020, and subject to the terms and conditions set forth herein under the Environmental Protection Act, existing and/or forthcoming regulations made under the said Act, and/or guidelines, best practices and standards relevant to this project.

This is a Renewal and Modification of Environmental Permit, Reference No. 20210426_EMASC issued on September 06, 2015, and expired on August 31, 2020.

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

1.0 OPERATION OF AERIAL SPRAYING

- 1.1 Make an application to the Agency to vary this Permit in instances where it becomes

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necessary to:

- i. Change the construction, operation, structure, or layout of the facility and all associated buildings;
 - ii. change equipment, machine, apparatus, mechanism, system, or technology serving the facility;
 - iii. change the position and design of any outlet at the point or points of discharge of effluents; or
 - iv. effect any other change outlined in 20(3) of the Environmental Protection (Authorisations) Regulations.
- 1.2 Obtain approval from the Ministry of Agriculture, NAREI for the use and dispersal of genetically modified seeds and submit approval to the EPA.
 - 1.3 Obtain approval for the use and management of toxic chemicals from the Pesticide and Toxic Chemical Control Board. A copy of the Approval shall be submitted to the EPA upon receipt.
 - 1.4 Submit an Annual Plan to the EPA within three (3) months of receipt of the permit.
 - 1.5 The Annual must outline the proposed aerial spraying location and details of the aerial spraying activities, including the following information:
 - a. Starting date, time, location, GPS coordinates, and contact information for field operator(s).
 - b. A detailed map of the location clearly displaying:
 - i. The Spray area
 - i. Buffer Zones
 - ii. The designated emergency dumping location
 - iii. Non-target farmers' plots, housing areas, pastures, roadways, waterways, aquaculture, forested areas, or any other operation where human activities are taking place.
 - iv. List of all chemicals and materials to be applied, the rate of application, quantities to be applied, and an appropriate anti-drift.
 - 1.6 Operator(s) shall be trained by a credibly recognized authority (PTCCB) on the safe use and handling of pesticides and fertilizers. Training certificates and schedules to be provided to the Agency upon request.
 - 1.7 Maintain fire protection measures as determined by Guyana Civil Aviation Authority (GCAA) for drones such as fire extinguishers in accordance with Guyana Civil Aviation (Air Navigation) Regulations, 2001, and amendments. Ensure all firefighting equipment is maintained and serviced regularly.
 - 1.8 Maintain Drones according to Guyana Civil Aviation Authority (GCAA) approval certification as it relates to spill prevention for fertilizers, pesticides, and seeds from the aircraft.



- 1.9 Emergency spill clean-up kits shall be maintained and made readily available at the Project location. Kits should include absorbent materials, drain seals, and other appropriate tools for clean-up.
- 1.10 The Operation and Maintenance Manual shall be maintained on-site at all times.
- 1.11 The Permit Holder shall provide training on good environmental practices. Records of training conducted must be made available to the EPA upon request.
- 1.12 Fire prevention and control equipment shall be maintained in accordance with **Guyana Fire Service Approval**.
- 1.13 Adhere to the requirements of the **Occupational Safety and Health Act, Cap. 99:01, Laws of Guyana**.
- 1.14 Adhere to the **Pesticides & Toxic Chemicals Control Board Guidelines for Aerial Application of Pesticides, Guyana, 2016**.

2.0 AIR QUALITY MANAGEMENT (Aerial drift and over-spraying)

- 2.1 Adhere to the provisions of the **Environmental Protection (Air Quality) Regulations, 2000**.
- 2.2 Members of the public and surrounding communities shall be notified at **least three (3) days** prior to the aerial application. Records of such notifications are to be submitted to the Agency as a part of the **Annual Report**.
- 2.3 The buffer zone for the aerial application of Pesticides shall be in accordance with the World Health Organisation (WHO) minimum buffer zone requirements see below:

Table 1.1 Illustrating the buffer zone Requirements

World Health Organisation Pesticide Toxicity Class	Colour Codes	Minimum Buffer Zone (meter)
1a-Extremely Hazardous	Red	Aerial Application Prohibited
1b- Highly Hazardous	Red	Aerial Application Prohibited
II-Moderately Hazardous	Yellow	1600 m
III- Slightly Hazardous	Blue	900 m
IV/U- Unlikely to present acute hazard	Green	700 m

- 2.5 Pesticides, Herbicides and fertilizers **shall not** be dispensed from the Drones under the conditions listed below, including but not limited to wind speed; direction, humidity, temperature inversion, and lapse as well as volatility:
 - i. Whereby the applied pesticides and fertilizers would drift outside of the target

area to be treated and cause or create a hazard; resulting in pesticides and fertilizers overspray.

- ii. which adversely affects humans or the non-target environment;

3.0 WATER QUALITY

3.1 Adhere to the provisions of the **Environmental Protection (Water Quality) Regulations, 2000.**

3.2 The aerial application of Pesticides, Herbicides, and Fertilizers into waterways adjacent to the required buffer zone is **STRICTLY PROHIBITED.**

3.3 Decontamination of equipment shall be conducted within the designated area namely, the Agricultural Aircraft Washing Bay, GUYSUCO Aircraft Department at Eugene F. Correia International Airport.

3.4 The effluent generated by the designated area (collection pond) shall be treated and tested prior to discharge into the environment. Testing shall be in accordance with the Guyana National Bureau of Standards (GNBS) *Interim Guidelines for Industrial Effluent Discharge into the Environment and shall not exceed the limits below:*

Parameter	Daily Maximum Concentration	Units	Sample type
pH	(pH 5.0-9.0)		Grab
Temperature	<40	°C	Grab
Total Suspended Solids (TSS)	< 50	mg/L	Composite
Oil and Grease	< 10	mg/L	Composite
Biochemical Oxygen Demand (BOD)	< 50	mg/L	Composite
Chemical Oxygen Demand	>250	mg/L	Grab
Phosphorus	<2	Mg/L	Grab

The following information from the above testing shall be recorded and submitted cumulatively as a component of the project's **Annual Report:**

- i. The laboratory certificate;
- ii. Training certificate for individual(s) who performed the sampling;
- iii. Certificate of calibration for the equipment used;
- iv. The exact place, date, and time of sampling;

- v. The analysis of the results of the monitoring conducted;
- vi. Copies of original laboratory analytical reports.

3.6 GPS Coordinates for this final discharge point(s) shall be submitted to the EPA by **October 31, 2023**

4.0 WASTE MANAGEMENT

- 4.1 In accordance with the **Environmental Protection (Litter Enforcement) Regulations, 2013**, promote good sanitation and solid waste disposal practices on site. Covered garbage receptacles shall be placed upon impervious bases at strategic locations, both within and outside the facility.
- 4.2 Burning of waste is **strictly prohibited**. All solid waste shall be disposed of at an approved solid waste disposal site by an EPA Authorised Waste Disposal Company.
- 4.3 Good housekeeping, sanitary, and hygienic practices shall be maintained at all times. The Project's drains and surroundings shall be kept free of vegetation and litter.
- 4.4 Solid waste receptacles shall be secured when not in use.
- 4.5 Promote waste minimization and the reuse and/or recycling of waste and other materials where practical.
- 4.6 Waste collection areas shall be kept clean. Dry methods shall be used when cleaning waste handling and disposal areas (e.g., sweeping, use of absorbents).
- 4.7 Acid-contaminated waste shall be disposed of by an EPA-authorized Hazardous Waste Disposal Facility where applicable.
- 4.8 Septic Tank(s) shall be maintained in accordance with the Guyana National Bureau of Standards Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems:
 - i) The septic tank shall not be located within 1.5 meters of a building or property boundary;
 - ii) septic tanks shall be installed with a sand and charcoal filter bed, or other appropriate design for further treatment; and
 - iii) shall be accessible for cleaning and de-sludging.
- 4.10 Any modification to the Septic tank shall be in accordance with the Guyana National Bureau of Standards (GNBS) *Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems*.
- 4.11 The disposal of bulk liquid waste at any Landfill is **STRICTLY** prohibited. Liquid waste is waste that;

- i. Has a solids content of less than 20% and liberates free liquids when transported and or stored; or
- ii. Does not produce free liquids when tested in accordance with the US EPA Paint Filter Liquids Test and liberates no free liquids when transported.

5.0 ENVIRONMENTAL EMERGENCY RESPONSE MANAGEMENT

5.1 The Project shall be equipped with the following:

- i. An internal communications or alarm system capable of providing immediate emergency instruction to facility personnel.
- ii. Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment.
- iii. Water at adequate volume and pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems.

5.2 Standard Operating Procedures (SOPS) shall be maintained for inspecting and maintaining safety and emergency equipment, security devices, and operating and structural equipment that are important to preventing, detecting, or responding to environmental or human health hazards.

5.3 Aisle space shall be maintained at the Project to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency.

5.4 A Contingency Procedure/Plan shall be established and maintained for the Project. The Procedure shall include, but not be limited to:

- i. Procedures to be followed in the event of Plant malfunction.
- ii. The actions facility personnel must take to respond to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.
- iii. Systems for notification of national and local emergency response authorities
- iv. The names and contact information of all persons qualified to act as emergency coordinators.
- v. A list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required.

- vi. An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

5.5 All employees shall be trained on the Contingency Plan outlined in condition **5.4**.

6.0 COMPLIANCE MONITORING AND REPORTING

- 6.1 Notify the Environmental Protection Agency **within one (1) hour** of the occurrence of any environmental emergencies (e.g., oil spills, hazardous materials/wastes spill, sudden onset disaster, natural, technological, or human-induced factors that cause or threaten to cause severe environmental damage as well as harm to human health or livelihood).
- 6.2 Make all employees, and third parties under your direction, aware of the conditions of the Permit and provide training on good environmental practices.
- 6.3 Monitor the implementation of the conditions of this Permit, insofar as they involve adherence by your employees and all third parties under your direction.
- 6.4 Notify the Agency in writing of any change of name or ownership of the Permit Holder's facility **within thirty (30) days** after the change occurs.
- 6.5 Notify the Agency **within (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.
- 6.6 Maintain and submit to the Agency records of the type, composition, and quantity of contaminant released (i.e., any solid, liquid, gas, odor, sound, vibration, radiation, heat, or combination of any of them).
- 6.7 Submit **Annual Reports** to the EPA on the progress of the operation and compliance with the conditions under which this Permit was granted on or before **March 31, each year**.
- 6.8 Report to the Agency any non-compliance(s) with the Environmental Permit:
 - I. Within **twenty-four (24) hours** of the time the Permit Holder of 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.

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.

6.9 It is the responsibility of the Permit Holder to ensure the permitted activity and premises are secured and that all practicable steps necessary to prevent fires, explosions, leaks, or suspected leaks and spills at the permitted premises are taken.

7.0 INSTITUTIONAL AUTHORITY/ LIABILITIES

7.1 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.

7.2 EPA reserves the right to review/amend the conditions attached to this Permit which also includes the review and/or amendment of permit fees in consideration of any changes in fee schedule as determined by the Agency for projects of this nature.

7.3 Permit Holder 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 offense 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.

7.4 EPA shall have the right to cancel or suspend this Permit for breach of any of the terms and conditions contained herein.

7.5 Permit Holder shall be strictly liable for the adverse effect of any discharge or release, or cause or permit the entry of pollution, a contaminant in any amount, concentration, or level in excess of that prescribed by the regulations or stipulated by this environmental authorization, as are attributed to projects of this nature and in accordance with section 19(1), (2), and (3) of the Environmental Protection Act, Cap. 20:05.

7.6 Permit Holder shall be guilty of any offense in accordance with s. 39(1), (2), (3), (4) of the EP 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 offense, and shall be liable to the penalties prescribed under the Act.”

7.7 Permit Holder shall be liable to any gross negligence or willful misconduct caused by the Permit Holder, his Servants, and/ or Agents, to the marine or terrestrial environment, biodiversity, protected species, and natural habitat with respect to any release or discharge, spill, contaminant fluids, oil or lubricants from the fuel storage facility.



- 7.8 Permit Holder shall compensate any Party who suffers any loss or damage as a result of the attributed project. (See: s. 19(3)(e) of the Environmental Protection Act, Cap. 20:05).
- 7.9 Permit Holder, his Servants, and/or Agents shall be strictly jointly and severally liable as follows:
- a. For any activity that causes, or is likely to cause pollution of the environment, unless the person takes all reasonable and practicable measures to prevent or minimize any resulting adverse effect, in accordance with Section 19(1)(a) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
 - b. For any activity which results in the discharge, release or entry into the environment of any contaminant in any amount, concentration or level in excess of that prescribed by the regulations or stipulated by this Permit, in accordance with Section 19(1)(b) of the Environmental Protection Act, Cap. 20:05 Laws of Guyana.
 - c. The discharge or release of contaminants, such as hydraulic fluids, lubricants, fuel, or other industrial fluids relative to the Project, which are not stipulated herein, or by Regulations under the Environmental Protection Act, are strictly prohibited. Any such discharge or release shall be a violation of Section 19(1)(b) of the Environmental Protection Act.
 - d. For the compensation of any Party who suffers any loss or damage as a result of the project. (s.19(3)(e)) Environmental Protection Act, Cap. 20:05, Laws of Guyana.
 - e. For any material or serious environmental harm caused by pollution of the environment, whether intentionally or recklessly, in accordance with section 39 (1), (2), (3) and (4) of the Environmental Protection Act, 20:05, Laws of Guyana.
 - f. Any gross negligence or wilful misconduct resulting in serious risk, or adverse effects to the marine environment, biodiversity, protected species and natural habitat with respect to any release or discharge, spill, contaminant fluids, oil, or lubricants from any facilities permitted under this project.
 - g. For the payment of all costs and expenses related to the assessment of damage and investigations required, as a result of any pollution incidents attributable to the activity for which this Permit has been issued.
- 7.10 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).
- 7.11 The Agency (EPA) shall notify the Permit Holder immediately of any written claim or

notice sent by any Complainant seeking loss or damage for negligence as a result of the Permit Holder's lack of due care and diligence.

- 7.12 Should the Permit Holder contravene or be likely to contravene any condition of this Permit, the Agency (EPA) may issue an Enforcement Notice to him, in accordance with s.26 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 7.13 Where it appears to the Agency (EPA) that the Permit Holder is engaged in any activity that may pose a 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: s. 27 of the Environmental Protection Act, Cap. 20:05).
- 7.14 The Permit Holder is obligated to ensure that the Operation of Aerial Spraying using Aircraft is permitted by other relevant authorities.
- 7.15 The Permit is effective for the period stipulated herein **August 2023 – July 2024**.
- 7.16 This Operation Permit shall remain valid until **July 31, 2024**, unless otherwise suspended, cancelled, modified, or varied in accordance with the provisions of this Permit or the Environmental Protection Act, Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.
- 7.17 This Permit must be renewed by submitting a completed *Application Form for Environmental Authorisation* (Environmental Permit) to the Agency at least six months before this Permit expires, that is, no later than **January 31, 2024**.
- 7.18 Any late submission of renewal application(s) after the specified date as stated above, 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 (\$2,000.00) per day for every day late**, until such renewal application is submitted to the Agency, without prejudice to any other rights of the Permit Holder in connection therewith.
- 7.19 Failure to comply with the requirements of this Permit or with applicable laws and regulations, whether existing or forthcoming, shall render the Permit Holder liable to prosecution and to penalties, inclusive of civil penalties, injunctive relief, and imprisonment, as prescribed under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection Regulations, and other applicable laws of Guyana.

Operation Permit-Ref. No 20210426_EMASC

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

Date

2023-08-29

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

NAME	Zakiya Bunbury
DATE	12-19-2023
SIGNATURE	
DESIGNATION	Admin/Accounting Assistant



