



**Environmental
Protection
Agency**

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Environmental Permit (Varied & Modified)

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.:	20140506-TITUL
Fees:	Large (C2) - US\$2,000 per year.
Fees Paid:	US \$ 10,000 for Five (5) years (August 2023 – July 2028).
Addressee:	Environmental and Technical Solutions Inc. Mr. Shane Singh General Manager Guyana Shore Base Inc. (GYSBI) Port, Houston, East Bank Demerara
Activity:	Hazardous Waste Storage and Treatment Facility
Varied Activity:	Operation of an Indirect Thermal Desorption Unit (ITDU) and Mechanical Shredder.

Environmental and Technical Solutions Inc., hereinafter referred to as the “Permit Holder”, is hereby authorised in accordance with the Environmental Protection Act, Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, to Operate the Hazardous Waste Storage and Treatment Facility at GYSBI Port, Houston, East Bank Demerara, hereinafter referred to as the “Project”, in the manner indicated in the application for variance submitted on October 5, 2023, and the 2024 updated Environmental Assessment Management Plan, and subject to the terms and conditions set forth herein under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, any existing or forthcoming Regulations made under the said Act, and any existing or forthcoming written law, guidelines, best practices, standards, codes of practice, and other statutory or regulatory instruments relevant to this project.

This is a Modification of the Varied Environmental Authorisation, Reference No.: 20140506-TITUL, issued on August 2023, and expires on July 31, 2028.

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

1.0 AUTHORISATION

- 1.1 An application shall be made to the Agency to vary this Permit in instances where it becomes 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 All employees and third parties under the Project's direction shall be made aware of the conditions of the Environmental Authorisation.
- 1.3 The Project shall operate in accordance with the **2024 Updated Environmental Assessment and Management Plan (EAMP)**.
- 1.4 Operation, inspection, maintenance, and repair of ALL Treatment Equipment, shall be in accordance with their respective manufacturer's specifications. A summarised copy of the inspection and maintenance report shall be made available for inspection by the EPA upon request.
- 1.5 Emergency spill clean-up kits shall be maintained at the Project for response to spills. Kits must contain absorbent materials, drain seals, and other appropriate tools for clean-up. Kits must be readily available and identified at the Project.
- 1.6 Scheduled training shall be maintained for employees involved in the Project. Training reports shall be made available for inspection by the EPA upon request.
- 1.7 The Guyana Fire Service approval shall be maintained and fire protection measures such as fire extinguishers and sand buckets shall be provided in accordance with this approval.
- 1.8 Fire prevention and control equipment shall be maintained and serviced in accordance with Guyana Fire Service approval.
- 1.9 Third-party contractor(s) utilised by the Project for the disposal of waste such as scrap metal shall be authorized by the EPA. Records of third-party contractors hired shall be maintained and made available for inspection by the EPA upon request.
- 1.10 Adhere to the requirements of the **Occupational Safety and Health Act, Cap.**

99:01, Laws of Guyana.

2.0 COLLECTION & TRANSPORTATION OF HAZARDOUS AND NON-HAZARDOUS WASTE

Hazardous and Non-Hazardous Waste Collection and Transportation

- 2.1 All collection and transportation of waste to and from the Project shall be in accordance with the Transportation Plan.
- 2.2 All employees involved in the transportation of waste shall be trained on the Transportation Plan outlined in **condition 2.1**. The training reports shall be made available to the EPA upon request.
- 2.3 A highly visible and legible label shall be affixed to the vehicle transporting the waste and shall include the following information:
 - i. **Danger**
 - ii. **Contains Hazardous Material**
 - iii. **No Smoking**
- 2.4 All hazardous waste shall be stored in sealed and labelled containers, appropriate for the waste stream during transport.
- 2.5 Containers of hazardous waste shall be labelled with the contents of the container (waste name) and the hazardous characteristic or property of the waste contained therein.
- 2.6 Cargo Carrying Units (CCUs) shall be inspected **before and after** the transportation of waste for signs of leakage, deterioration, or corrosion. Damaged containers **shall be replaced immediately**. Inspection reports shall be made available for inspection by the EPA upon request.
- 2.7 The collection and transportation of hazardous waste shall be supervised and monitored by trained employees.
- 2.8 Emergency spill clean-up kits and cordon equipment (traffic cones and restriction tapes) shall be maintained on transport vehicles for response to spills. Kits shall contain absorbent materials, drain seals, and other appropriate tools for clean-up and shall be readily available and identified.
- 2.9 Each transport of hazardous waste shall generate a manifest of the quantities of waste collected and transported. The manifest shall contain the following but not limited to:
 - i. The name and address of the waste generator;
 - ii. The name and description of the waste and hazardous class;
 - iii. The number and type of containers;
 - iv. The quantity of waste being transported.

Copies of signed manifests shall be maintained by the Project for not less than three years and made available for inspection by the EPA upon request.

- 2.10 An incident spill report shall document **EVERY** occurrence of spills during the collection and/or transportation of hazardous waste. A copy of the spill report shall be submitted to the Agency **within twenty-four (24) hours of the incident**.
- 2.11 Marked routes for vehicle movements shall be delineated at the Project to prevent any accident that may lead to the spillage of waste. This route shall be kept clear of waste material and free of obstacles, surface water drainage systems, and equipment.
- 2.12 Non-hazardous solid wastes collected shall be disposed of at an EPA Authorized Waste Disposal Site.

3.0 WASTE ACCEPTANCE

- 3.1 The Project shall maintain a clearly defined Waste Acceptance Criteria as defined by the Waste Acceptance Criteria submitted on May 19, 2021, for waste treated by the Project, including consideration of the following factors:
 - i. Concentration, boiling, and flash point of volatile organic contaminants
 - ii. Water content, pH, and physical and chemical characteristics of waste material
 - iii. Presence of inorganic contaminants, chlorinated compounds, and odorous materials.
- 3.2 The following wastes are not permitted under this Project:
 - i. Radioactive Waste
 - ii. Waste containing Halogenated/Chlorinated Organics
 - iii. Waste containing Polychlorinated biphenyls (PCB)
 - iv. Explosive Wastes
- 3.3 Wastes shall only be accepted if it conforms to the Project Waste Acceptance Criteria; or where applicable, the most recent version of the Criteria.
- 3.4 Hazardous wastes accepted for treatment by the Project shall be profiled in accordance with the EPA approved Waste Profile Sheet. Hazardous waste generators profile sheet shall:
 - i. Be current and available for review upon request by the Agency.
 - ii. Contain the waste designation and the necessary information for how that designation was determined.

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- 8.11 The following information from the monitoring exercise 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.
- 8.12 GPS Coordinates for this final discharge point(s) shall be submitted to the EPA.

9.0 NOISE QUALITY MANGEMENT

- 9.1 Adhere to the provisions of the **Environmental Protection (Noise Quality) Regulations, 2000**.
- 9.2 Noise monitoring shall be conducted **quarterly** using a calibrated Noise Meter, at least 3.5 meters from any reflecting surface and 1.5 above ground. Records of each monitoring exercise and the certificate of calibration of the monitoring equipment used shall be maintained and submitted cumulatively as a component of the project's **Annual Report**.
- 9.3 Comply with the Guyana National Bureau of Standards (GNBS) Guidelines for Noise Emission into the Environment at a distance of 15 m (50 ft) from the source or at the property boundary, whichever is closer.
- Industrial Limits:** **100 dB** during the daytime (06:00 h - 18:00 h)
 80 dB during the night-time (18:00 h - 06:00 h)
- 9.4 Noise monitoring shall be conducted **quarterly** by trained personnel using a calibrated Noise Meter, at least 3.5 meters from any reflecting surface and 1.5 above ground. Records of each monitoring exercise shall be maintained and results submitted to the Agency as a component of the project's **Annual Report**.
- 9.5 All machines and equipment including generators shall be serviced in accordance with the manufacturer's specification to ensure efficiency and reduce the level of noise produced. A summarised maintenance report shall be provided to the EPA upon request.

10.0 AIR QUALITY MANAGEMENT

- 10.1 Adhere to the provisions of the Environmental Protection (Air Quality) Regulations, 2000, the World Health Organisation (WHO) Air Quality Guidelines 2022 for air pollutants in the Environment, and the US EPA Emission Guideline for CISWI (Commercial and Industrial Solid Waste Incineration) for air pollutants emitted from stacks/ incinerators.
- 10.2 The wet scrubber and quencher installed on the emission stack of the V-IR and incinerator shall be maintained.
- 10.3 Stack emission monitoring shall be conducted in accordance with recognized methods given in **CISWI USEPA**. Utilize method 5 (Determination of particulate Emission from stationary sources) along with CISWI USEPA methods 1-4 to facilitate the isokinetic sampling of stack emission. Method 320 (Vapour Phase Organic & Inorganic Emission by Extractive Fourier Transform Infrared (FTIR) Spectroscopy) should also be incorporated.
- 10.4 Stack emission monitoring of air quality shall be conducted **annually** at the emission stack connected to the ITDU and incinerator to determine compliance with the requisite standards outlined below:

Table 3. - A list of Air pollutants, parameters, and permissible levels for required assessment within a given period when conducting stack emission monitoring according to CISWI USEPA methods.

Parameter	USEPA Emission Guideline for CISWI (PPM)
Carbon Monoxide	157
Nitrogen Dioxide	388
Sulphur Dioxide	20
Particulate Matter	70

Monitoring shall be conducted during normal operations by certified laboratory or trained personnel utilizing calibrated equipment.

- 10.5 The following information from the monitoring exercise 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 monitoring exercise;
 - iii. Certificate of calibration for the equipment used
 - iv. The exact place the monitoring was conducted;
 - v. Duration of the monitoring exercise
 - vi. The analysis of the results of the monitoring conducted;
 - vii. Copies of original laboratory analytical reports
- 10.6 The Permit Holder shall immediately respond to any visible (opaque) emissions that exceeds six minutes. A record of each air pollution episode and the actions to resolve same shall be maintained by the Permit Holder.
- 10.7 The **Best Available Technique (BAT)** for wet dust suppression shall be utilised in the areas of the Project which are not enclosed, to reduce the emission of particulate matters.
- 11.0 WASTE MANAGEMENT**
- 11.1 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 base at strategic locations, both within and outside facility.
- 11.2 Burning of waste is **strictly prohibited**. All solid waste shall be disposed at an approved solid waste disposal site by an EPA Authorised Waste Disposal Company.
- 11.3 Good house-keeping, sanitary, and hygienic practices shall be maintained at all times. The Project's drains and surroundings shall be kept free of vegetation and litter.
- 11.4 Solid waste receptacles shall be secured when not in use.
- 11.5 Promote waste minimization and the reuse and/or recycling of waste and other materials where practical.
- 11.6 Waste collection areas shall be kept clean. Dry methods shall be used when cleaning around waste handling and disposal areas (e.g., sweeping, use of absorbents).
- 11.7 The disposal of bulk liquid waste at any Landfill is prohibited. Liquid waste is waste which;
- 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 USEPA Paint Filter Liquids Test and liberates no free liquids when transported.

- 11.8 Septic Tank(s) shall be constructed and maintained by the Guyana National Bureau of Standards Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems.
- 11.9 Septic Tank(s) shall at all times be accessible for cleaning and de-sludging by an EPA-authorised waste disposal company.
- 11.10 Any modification to the Septic Tank(s) must be by 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.

12.0 ENVIRONMENTAL EMERGENCY RESPONSE MANAGEMENT

- 12.1 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.
- 12.2 Standard Operating Procedures (SOPS) shall be established 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. The SOPs shall be made available for inspection by the EPA upon request.
- 12.3 All employees shall be trained on the SOP outlined in **condition 12.2**.
- 12.4 All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, shall be tested and maintained as necessary to assure its proper operation in time of emergency.
- 12.5 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 facility operation in an emergency.

12.6 An EPA-approved Emergency Preparedness Plan shall be established and maintained for the Project and communicated to Staff and Contractors of 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 Project.
- 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 Project (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).
- vii. Clean-up Plan for the different areas of the operation.
- viii. Analysis of potential accidents and the proposed responses.

12.7 All employees shall be trained on the Emergency Response Plan outlined in the EAMP referenced in **condition 1.2**.

13.0 COMPLIANCE MONITORING AND REPORTING

- 13.1 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).
- 13.2 Make all employees, and third parties under your direction, aware of the conditions of the Environmental Authorisation and provide training on good environmental practices.
- 13.3 Monitor the implementation of the conditions of this Permit, insofar as they

involve adherence by your employees.

- 13.4 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.
- 13.5 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.
- 13.6 Maintain and submit to the Agency records of the type, composition, and quantity of contaminant released (i.e., any solid, liquid, gas, odour, sound, vibration, radiation, heat or combination of any of them).
- 13.7 Submit an **Annual Report** 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.**
- 13.8 Report to the Agency any non-compliance(s) with the Environmental Permit (Renewed):
- i. Within **twenty-four (24) hours** of the time the Permit Holder becomes aware of the non-compliance, and 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.
- 13.9 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.
- 13.10 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.

14.0 INSTITUTIONAL AUTHORITY/ LIABILITIES

- 14.1 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.
- 14.2 The 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.

- 14.3 The 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 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.
- 14.4 The EPA shall have the right to cancel or suspend this Permit for breach of any of the terms and conditions contained herein.
- 14.5 The 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 minimise 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 that results in the discharge, release, or entry into the environment of any contaminant in any amount, concentration, or level over 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, Cap 20:05, Laws of Guyana.
 - 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 sections 39 (1), (2), (3), and (4) of the Environmental Protection Act, Cap. 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 concerning 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.
- 14.6 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.
- 14.7 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 Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 14.8 Where it appears to the Agency 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, 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, Laws of Guyana.
- 14.9 This Environmental Permit (Varied and Modified) is subject to other relevant authorities' approval.
- 14.10 This Environmental Permit (Varied and Modified) is effective for the period stipulated herein; **August 2023 to July 2028.**
- 14.11 This Varied Environmental Permit shall remain valid until **July 31, 2028**, unless otherwise suspended, cancelled, modified, or varied, in accordance with the provisions of this Permit or the Environmental Protection Act, Cap. 20:05, Laws of Guyana, Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.
- 14.12 This Permit must be renewed by submitting a completed Renewed 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, 2028.**
- 14.13 Any late submission of renewal application(s) after the specified date as stated above, shall 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 day late, until such renewal application is submitted to the Agency**, without

4.0 HAZARDOUS WASTE HANDLING AND STORAGE

- 4.1 A register of the types and quantities of hazardous waste accepted and stored onsite shall be established and maintained. The register shall also record the source of waste generation for each waste type accepted. A summary of the registered information shall be maintained and made available for inspection by the EPA upon request.
- 4.2 Hazardous waste shall be contained in bunded storage areas. This area shall be provided with the following:
- i. Low traffic
 - ii. No floor drains
 - iii. Bunded area which shall provide 110% containment of the largest volume stored therein.
- 4.3 The Hazardous Waste Storage areas shall be clearly labelled, secured, and well-illuminated when not in use. The following warning signs shall be clearly posted:
- i. “Hazardous Waste Storage Area”
 - ii. Danger- “Authorized Personnel Only”
 - iii. No Smoking
 - iv. No Eating or Drinking
- 4.4 Where applicable, hazardous waste storage areas shall possess ventilation in accordance with one of the following:
- i. Gravity ventilation to the outside with a capacity of one cubic foot per minute per square foot or floor space
 - ii. Mechanical ventilation with on/ off switches at points of ingress that are capable of exhausting to the outside.
 - iii. Natural ventilation
- 4.5 Hazardous waste shall be stored away from ignition sources.
- 4.6 Hazardous waste shall be stored in sealed containers appropriate for the waste stream. That is:
- a) Sealed Plastic Containers:**
 - i. Water-based wastes:
 - ii. Fountain Solutions, Pre-Press
 - b) Sealed Metal or Plastic Containers:**
 - i. Solvents and Petroleum- based products; and
 - ii. Oil and Oily Absorbents.
- 4.7 Hazardous waste containers shall be labelled with the following:
- i. The words “**Hazardous Waste**”

- ii. The type of waste
 - iii. Beginning accumulation date - Date when the container was first placed in the Hazardous Waste Storage Area. Should the hazardous waste container be reused, the date hazardous waste was first placed in the container shall be recorded on the container.
- 4.8 Waste oil containers shall be labelled with the following:
- i. The words **“Waste Oil or “Used oil”**
 - ii. Beginning accumulation date
- 4.9 Hazardous waste storage containers shall remain closed during storage, except when it is necessary to add or remove waste.
- 4.10 Hazardous waste storage containers shall be inspected weekly for signs of leakage, deterioration, or corrosion and damaged containers **shall be** replaced **immediately**. A summarised inspection report shall be compiled and made available for inspection by the EPA upon request.
- 4.11 Standard Operating Procedures (SOPs) for safe transfer operations (from storage containers to the treatment plant), maintenance of containers and filling of storage containers shall be maintained. The SOP shall be made available for inspection by the EPA upon request.
- 4.12 All employees shall be trained on these SOPs outlined in **condition 4.11**.

5.0 MANAGEMENT OF WASTE TREATMENT SYSTEMS

- 5.1 The following records shall be maintained for all treatment systems identified at the Project:
- 1. Waste treatment verification results
 - 2. Operating logs
 - 3. Shutdown events
 - 4. Failed batches and their re-treatment
- 5.2 The records outlined in **condition 5.1** shall be made available for inspection by the EPA upon request.
- 5.3 Records or Manifests of all bi-products generated from each treatment system shall be maintained and submitted to the EPA as a component of the **Annual Report**.
- 5.4 Bi-products generated from the treatment systems shall be subjected to analytical testing prior to discharge or disposal. The results shall be submitted cumulatively as a component of the project's **Annual Report**.
- 5.5 Solid waste bi-products generated from the ITDU, incinerator, double auger system, mechanical shredder, bulb crusher, and aerosol unit shall be subjected to a

Toxicity Characteristic Leaching Procedures (TCLP) prior to disposal. The results shall be within the allowable limits in accordance with the following table:

Contaminant Group	Contaminant	Regulatory Level (mg/L)	CAS No.
Metals	Arsenic	5.0	7440-38-2
	Barium	100.0	7440-39-3
	Cadmium	1.0	7440-43-9
	Chromium	5.0	67-66-3
	Lead	5.0	7439-92-1
	Mercury	0.2	7439-97-6
	Selenium	1.0	7782-49-2
	Silver	5.0	7740-22-4
Volatile Organic Compounds	Benzene	0.5	71-43-2
	Carbon tetrachloride	0.5	56-23-5
	Chlorobenzene	100.0	108-90-7
	Chloroform	6.0	67-66-3
	1,4-Dichlorobenzene	7.5	10-46-7
	1,2-Dichloroethane	0.5	107-06-2
	1,1-Dichloroethylene	0.7	75-35-4
	Methyl ethyl ketone	200.0	78-93-3
	Tetrachloroethylene	0.7	127-18-4
	Trichloroethylene	0.5	79-01-6
	Vinyl chloride	0.2	74-01-4
Semi volatile Organic Compounds	o-Cresol	200.0	95-48-7
	m-Cresol	200.0	108-39-4
	p-Cresol	200.0	106-44-5
	Cresol (total)	200.0	N/A
	2,4-Dinitrotoluene	0.13	121-14-2
	Hexachlorobenzene	0.13	118-74-1
	Hexachlorobutadiene	0.5	87-68-3
	Hexachloroethane	3.0	67-72-1
	Nitrobenzene	2.0	98-95-3
	Pentachlorophenol	100.0	87-86-5
	Pyridine	5.0	110-86-1
	2,4,5-Trichlorophenol	400.0	95-95-4
	2,4,6-Trichlorophenol	2.0	88-06-2
Pesticides	Chlordane	0.03	57-74-9
	Endrin	0.02	72-20-8
	Heptachlor (and its Epoxide)	0.008	76-44-8
	Lindane	0.4	58-89-9
	Methoxychlor	10.0	72-43-5
	Toxaphene	0.5	8001-35-2

Herbicides	2,4-D	10.0	94-75-7
	2,4,5-TP (Silvex)	1.0	93-72-1

- 5.6 Solid wastes bi-products generated from the ITDU, incinerator, double auger system, mechanical shredder, bulb crusher, and aerosol unit that are within the allowable limits noted in **condition 5.5** shall be disposed at an EPA Authorised Waste Disposal Site.
- 5.7 Employees shall be trained on Operation Manuals for the waste treatment systems they are assigned to operate.
- 5.8 All waste treatment systems shall be situated in a bunded area which shall provide 100% containment of the largest volume stored therein.
- 5.9 Representative samples of new waste streams and new waste generation sources shall be taken and analyzed in a certified laboratory to characterize the waste material and identify contaminants before treatment.
- 5.10 Sample size and numbers shall be large enough to adequately represent the range of waste characteristics and contaminants contained in the waste material.
- 5.11 All treatment cycles shall be operated in accordance with the optimum operating criteria for the treatment plant, specifically maximum and minimum temperature range, waste feed rate, residence time, and airflow determined by the waste trial.

Indirect Thermal Desorption Unit (ITDU)

- 5.12 The ITDU shall only accept waste with the following properties identified in the Waste Acceptance Criteria submitted to the EPA:
- i. Volume (up to 2,000 m³)
 - ii. VOC Content % –2.5%
- 5.13 Treatment cycles shall be operated in accordance with the optimum operating criteria for the treatment plant, specifically maximum and minimum temperature range, treatment capacity, waste feed rate, residence time, and airflow determined by the waste trial.
- 5.14 Hazardous waste treated by the ITDU shall be documented. These records shall be made available for inspection by the EPA upon request.
- 5.15 All treated material shall be cooled before transfer from the contained system to prevent fugitive releases and to ensure the temperature of the material is safely below the auto-ignition temperature of any potential residual volatile contaminants.

- 5.16 Solid wastes generated from the treatment process **shall be** subjected to Toxicity Characteristic Leaching Procedures before reuse or disposal.
- 5.17 Automatic system alarms and/or trips shall be installed for relevant operating parameters such as temperature, pressure, thermal oxidizer temperature, fan/airflow temperature, waste feed, and condenser failure.

Wastewater Treatment System

- 5.18 The Wastewater Treatment System shall only accept waste with the following properties identified in the Waste Acceptance Criteria submitted to the EPA:
- I. Flammable/Inflammable Liquids
 - II. Flash Point up to (300°C)
 - III. Kinematic Viscosity – up to 500 CST
 - IV. Freezing points (-50°C)
- 5.19 Hoses shall be inspected weekly for signs of leakage, deterioration or corrosion and damaged hoses **must be** replaced **immediately**. A summarised inspection report shall be compiled and made available for inspection by the EPA upon request.
- 5.20 Secondary containment, drip trays, sump, or other overflow and drip containment measures shall be utilized to capture spillage at connection points and other possible overflow points.
- 5.21 Connection points shall be tightly secured using the Best Available Technology.
- 5.22 The Wastewater Treatment System shall not treat more than 400 bbl of wastewater per day.
- 5.23 Overfill protection shall be maintained on all franc tanks. This may include an automatic shut-off device or an audible or visible overfill alarm.
- 5.24 The safe fill level shall be identified on the gauge and set at 90% to prevent overfilling of the franc tanks. In the event of overfilling, all discharges shall be released into the containment bund.
- 5.25 Water recovered from the treatment process shall be directed to a storage tank made of plastic or metal, for testing before being discharged.

Used-Oil Processing Unit

- 5.26 Waste oil managed by the Project including the waste oil which is recovered from the oil-water separator shall be directed to the Used Oil Processing Unit to be treated and re-used.
- 5.27 The Used Oil Processing Unit shall treat no more than 80 bbl of oil per day.

- 5.28 Overfill protection shall be maintained on all franc tanks. This shall include an automatic shut-off device or an audible or visible overfill alarm.
- 5.29 The safe fill level shall be identified on the gauge and set at 90% to prevent overfilling of the franc tanks. In the event of overfilling, all discharges shall be released into the containment bund.
- 5.30 The Project shall maintain a register of the recovered oil including the system used to treat it. This register shall be made available for inspection by the EPA upon request.

Incinerator

- 5.31 The incinerator shall only accept waste with the following properties identified in the Waste Acceptance Criteria submitted to the EPA:
 - i. Volume (up to 2,000 m³)
 - ii. Flashpoint (up to 1700°C)
- 5.32 As indicated in the Waste Acceptance Criteria submitted to the EPA, the Incinerator shall not treat more than 3,600kg of waste per day.
- 5.33 All treated material shall be cooled before transfer from the contained system to prevent fugitive releases and to ensure the temperature of the material is safely below the auto-ignition temperature of any potential residual volatile contaminants. The temperature of the incinerator must be kept below 626.7°C as indicated in the Waste Acceptance Criteria, to allow for cooling.
- 5.34 Automatic system alarms and/or trips shall be installed for relevant operating parameters such as temperature, pressure, thermal oxidizer temperature, fan/airflow temperature, waste feed, and condenser failure.

Double Auger System

- 5.35 The Double Auger System shall only accept drilling mud and mud slop waste.
- 5.36 Not more than 80 metric tonnes of waste shall be treated by the Double Auger System per day.
- 5.37 Automatic system alarms and/or trips shall be installed for relevant operating parameters such as temperature, pressure, thermal oxidizer temperature, fan/airflow temperature, waste feed, and condenser failure.
- 5.38 Forklifts being used to lift the cement and waste streams into the Double Auger System shall have a rated capacity to support the full weight of the items.

Bulb Crusher

- 5.39 As indicated in the Waste Acceptance Criteria submitted to the EPA, the bulb crusher shall only accept fluorescent bulbs with Mercury Vapour < 0.1 (mg/m³).
- 5.40 Bulbs and drums shall be crushed individually and not in bulk.
- 5.41 Crushed bulbs shall be treated in the Double Auger System before disposal.

Aerosol Unit

- 5.42 The aerosol unit shall only be used to crush aerosol cans.
- 5.43 Aerosol cans shall be crushed individually and not in bulk.
- 5.44 The liquid waste released from aerosol cans shall be treated in the Wastewater Treatment System.

Mechanical Shredder Operation

- 5.45 Shredding activities shall at all times be conducted in accordance with the EAMP submitted to the EPA. All procedures including the type of waste accepted and operational procedures (shredding) shall be conducted in accordance with the EAMP.
- 5.46 The Shredder used at the facility shall at all times be operated in accordance with the manufacturer's specification.
- 5.47 The Shredder shall be mounted on an impervious base and enclosed to reduce vibrations and noise emissions.
- 5.48 Shredded materials shall be stored in secured polyethylene bags before disposal.
- 5.49 Metals from the shredding process shall be collected or sent to an EPA authorised Scrap Metal Dealer for recycling.
- 5.50 The Project shall maintain records of the quantity and type of material received, shredded, and removed. These records shall be maintained and made available for inspection by the EPA upon request.

6.0 WASH BAYS

- 6.1 The bases of the wash bays shall be elevated at a sloped angle to allow for effluent to be contained within the parameters of the wash bay operation.

- 6.2 The effluent shall be pumped **daily** from the wash bays into the wastewater treatment system to prevent the overflowing of effluent beyond the parameters of the wash bay operation.
- 6.3 The wash bay floor shall maintain an impervious surface.
- 6.4 Secondary containment shall be maintained around the wash bays. Secondary containment shall be impervious and provide 110% containment of the largest volume therein.

7.0 FUEL HANDLING AND STORAGE

- 7.1 Adopt the National Standard “Guidance for the Design, Construction, Modification, and Maintenance of Petrol Filling Stations” and any forthcoming code of practice/guidelines about the operation of fuel storage.
- 7.2 A register of the types and quantities of fuel and associated hazardous materials stored onsite shall be established and maintained. A summary of the registered information shall be made available for inspection by the EPA upon request.
- 7.3 Fuel shall at all times be stored above ground, in a cool, dry place, and away from ignition sources.
- 7.4 Fuel storage tank shall be visually inspected monthly to verify their integrity. Inspection reports shall be maintained and made available for inspection by the EPA upon request.
- 7.5 Protection measures such as painting and coating shall be maintained to minimize corrosion of the fuel tanks.

Secondary Containment

- 7.6 Secondary containment around fuel storage tanks shall provide containment sufficient to contain at least 100% of the contents of the largest storage tank.
- 7.7 Secondary containment around the fuel tanks shall be inspected monthly for cracks and breakage to ensure they are liquid-tight to withstand the hydrostatic pressure of any contained liquid when full. A summarised inspection report must be made available to the EPA upon request.
- 7.8 Containment bunds shall remain sealed and all piping must enter or exit the bund over the wall. Bunds shall provide total containment, and no part of the tank infrastructure (e.g., dispenser, filling hoses and valves) shall protrude outside the bund. There shall be no discharge point within the secondary containment bund.

Fuel Tank and Pipeline Maintenance

- 7.9 Fuel storage tanks shall be visually inspected to verify their integrity. A summarised inspection report shall be compiled and made available for inspection by the EPA upon request.
- 7.10 Maintenance and/or repair of fittings, pipes and hoses shall be conducted in accordance with the manufacturer's specifications. A summarised inspection report shall be compiled and made available for inspection by the EPA upon request.

Overfill Protection & Leak Detection

- 7.11 Overfill protection shall be maintained on all fuel tanks. This shall include an automatic shut-off device or an audible or visible overfill alarm.
- 7.12 The safe fill level shall be clearly identified on the gauge and set at 90% to prevent overfilling by the fuel tanks. In the event of overfilling, all discharges shall be released into the containment bund.
- 7.13 Dispensing equipment shall be designed with the Best Available Technology (BAT) to minimise spills e.g., suction, pressure, or gravity systems.

Fuel Transfer

- 7.14 The Best Available Technology/ Technique (BAT) shall be employed to capture fuel lost during the unloading of fuel to storage tanks and refuelling of equipment.
- 7.15 Secondary containment, drip trays, or other overflow and drip containment measures shall be installed and maintained at connection points or other possible overflow points.
- 7.16 A Standard Operating Procedure (SOP) for fuel transfer operations including a checklist of measures to follow during filling operations shall be established and maintained. These SOPs shall be made available for inspection by the EPA upon request.
- 7.17 All employees shall be trained on the SOP outlined in **condition 7.16.**

8.0 WATER QUALITY

- 8.1 Adhere to the provisions of the **Environmental Protection (Water Quality) Regulations, 2000.**
- 8.2 Discharge of untreated wastewater from into the environment is **strictly prohibited.**
- 8.3 All contaminated wastewater generated by the Project and its supporting operations including effluent from Wet Scrubbers shall be collected and directed to the Waste Water Treatment System.

- 8.4 Storm water discharge shall be directed away from the Project and hazardous waste storage areas.
- 8.5 Storm water shall be treated via the oil-water separator before final discharge.
- 8.6 Hazardous waste shall not be stored in an area where it could potentially enter any waterways as a result of heavy rainfall or high winds. All hazardous waste shall be stored at least **5m** away from any drains on site.
- 8.7 All equipment re-fueling shall be conducted on an impervious base to prevent leakage into the soil and surrounding waterways.
- 8.8 Samples of **treated water** from the Waste Water Treatment System shall be collected for analysis from the Wastewater Treatment System before final discharge into the environment.
- 8.9 Samples of **effluent discharge** shall be collected for analysis from the final discharge points every quarter.
- 8.10 The treated water and effluent discharge shall be in accordance with the Guyana National Bureau of Standards (GNBS) *Interim Guidelines for Industrial Effluent Discharge into the Environment*. The following allowable limits shall not be exceeded:

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
Faecal Coliform	<400	MPN per 100 ml	Grab
Total Petroleum Hydrocarbon (TPH)	< 40	mg/L	Grab

prejudice to any other rights of the Permit Holder in connection therewith.


- 14.14 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.

Signed by  on behalf of the Environmental Protection Agency.

Mr Kenraj Parsram
Executive Director

Date 2024.12.24

I hereby accept the above terms and conditions upon which this Environmental Permit (Modified) 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 written law, guidelines, best practices, standards, codes of practice and other statutory or regulatory instruments made under this Act.

NAME	SHANE SINGH
DATE	27/12/2024
SIGNATURE	
DESIGNATION	GENERAL MANAGER



