RL CONTRACTING
– ASPHALT DRUM MIX PLANT

PROJECT SUMMARY FOR THE OPERATION OF AN ASPHALT DRUM MIX PLANT AT TARLOGIE FARM, CORENTYNE, BERBICE, GUYANA

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TABLE OF CONTENTS

SECTION 1: INTRODUCTION

1.1 Project Overview

RL CONTRACTING, registered under the Business Names Registration Act, Chapter 90:05 on November 12, 2019 (See Certificate No: B20027) has submitted an Application for Environmental Authorization to the Environmental Protection Agency to operate an Asphalt Drum Mix Plant at Plantation Tarlogie, Corentyne, Berbice within the Maida/ Tarlogie Neighbourhood Democratic Council (NDC) for the production and supply of asphalt for the construction of flexible pavements.

RL CONTRACTING has acquired the land, erected structures, installed, commissioned the Asphalt Plant and its components, and is currently operating same.

The Project Location that hosts the Asphalt Drum Mix Plant has the following elements:

- Heavy-Duty Loader
- Heavy Equipment Parking Area
- Raw Coarse and Fine Aggregate Laydown Area
- Material Feeder Ramp/ Raw Material Feeding Area
- Fully Computerized Control Cabin with Control System
- Four Bin Cold Aggregate Feeder Unit
- Weighing System
- Conveyance Mechanisms (Slinger, Loadout),
- Vibratory Screens
- Fuel Storage Tanks
- Bitumen Heating and Storage Tanks
- Burner and Thermo Drum Unit (Hot Asphalt Mixing Unit),
- Hot Mix Asphalt Discharge System,
- Fuel Storage Tanks for Dryer Burner Unit and Bitumen Tank Burners
- Pollution Control Unit
- Sludge Pond
- Staff Sanitation Facilities;

RL CONTRACTING has made an investment of G$160,000,000 and is currently operating its asphalt plant for a maximum of 12 hours per day from 7:00 am to 7:00 pm. Based on conservative projections, the Plant is capable of producing 60 tons of hot mix asphalt per hour or 20,000 Metric Tons (MT) per year over a 30-year lifespan.

Apart from providing quality road construction materials to aid in infrastructure development across Region 6, this facility provides full time employment to ten (10) employees and will continue to provide benefit`s for the Government of Guyana in the form of tax revenues and insurance contributions.

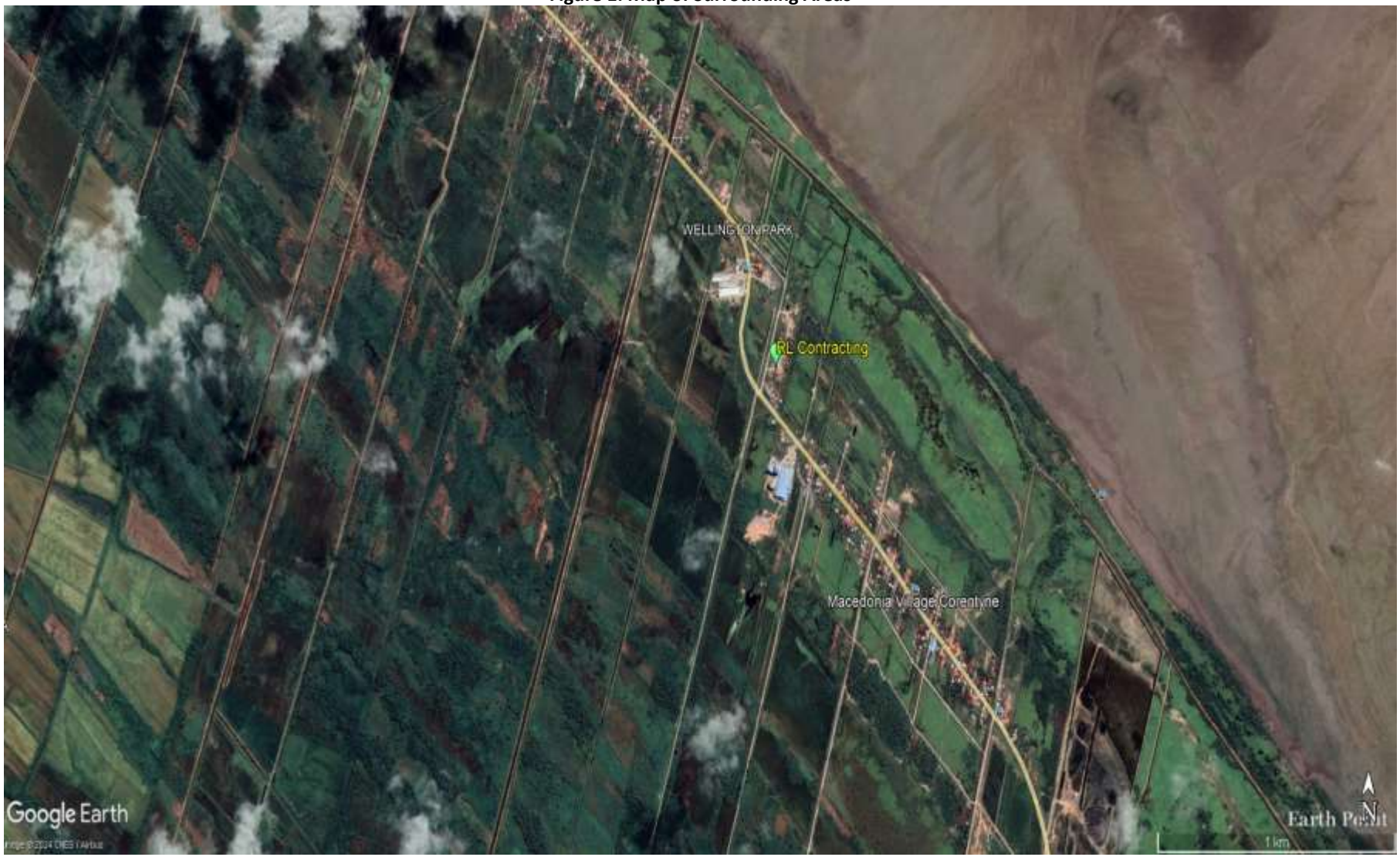
SECTION 2: DESCRIPTION OF PROJECT LOCATION

2.1 Layout of the Project

The existing Asphalt Drum Mix Plant operated by RL CONTRACTING is located at Plantation Tarlogie, Corentyne, Berbice. The Project area is designated for mixed land use; with land in this rural agricultural area generally used for both residential and commercial agriculture applications.

The project location with an area of approximately 5 acres is bordered to the **North** by a vacant tract of land, to the **East** by a vacant tract of land, to the **West** by a vacant tract of land; and to the **South** by the Corentyne Public Road Corridor, over the road from which is a vacant tract of land. **(See Figure 1 – 2 Below)**

<Figure 1: Map of Surrounding Areas>



Source: Google Earth, 2024

<Figure 1: Map of Project Location – Asphalt Plant>

Source: Google Earth, 2024

SECTION 3: DESCRIPTION OF THE EXISTING PROJECT

3.1 Concept of Operations

RL CONTRACTING has procured, installed and commissioned a VINAYAK DM Series: 60-120 tonnes per hour Drum Mix Asphalt Plant **(See Figure 3 below)**, which is currently operational.

<Figure 3: Asphalt Drum Mix Plant>

RL CONTRACTING uses a six (6) stage process to produce hot-mix asphalt for a range of flexible pavement applications, which is adumbrated as follows:

a) Accumulation of Raw Materials Onsite

Essential raw materials will be accumulated on site for use within the Asphalt Drum Mix Plant. The materials that will be accumulated onsite include, but are not necessarily limited to: Fine Aggregate, Coarse Aggregate, Sand, Bitumen, Heavy Fuel Oil (HFO), Diesel, Lubricants, Water, and an assortment of spares for the plant as well as movable heavy-duty equipment onsite.

b) Placement of Raw Materials into Temporary Holding and Dispensing Vessels

Fine and coarse aggregate stockpiled onsite are loaded using a front-end loader into the Cold Aggregate Bin of the Plants Feeder Unit. Diesel Fuel and Bitumen are loaded into the Aboveground Tanks and are delivered directly to the Burner and the Thermo Drum Unit of the Asphalt Plant where the asphalt mixing and drying occurs.

c) Using Client Material Specification to Obtain Dosing Requirements from Onsite Laboratory

Once an order with the requisite technical specification is received from a client engaged in flexible pavement construction, the required specifications are taken to the onsite laboratory where staff determine dosing requirements (i.e.) the amount of bitumen that has to be applied based on the type and quantity of

aggregate to form a good composite. When this determination is made, the particulars are noted and used in the configuration of the Asphalt Plant.

d) Configuration and Activation of Asphalt Drum Mix Plant

Once the dosing requirements are obtained from the laboratory the Plant manager configures the microprocessor-based control system of the Asphalt Drum Mix Plant contained within the confines of the Control Room which allows for the control all the critical components of the Asphalt Plant in order to consistently produce the desired specification of asphalt.

e) Production of Hot Mix Asphalt and Conveyance to Bulk Discharge System

Once the pre-configured Asphalt Drum Mix Plant is activated, raw aggregate placed into the cold aggregate bin feeder unit is dispensed onto a conveyance system below the unit where it is transferred to a vibratory screen which evenly distributes the material based on particulate size, conveying it onwards into a heated rotating Thermo Drum Unit where the contained aggregate is heated, coated with bitumen and mixed together. Once the bitumen coated aggregate is sufficiently heated and adequately mixed. The asphalt plant is able to produce 60 tons of asphalt per hour.

f) Dispensing of Hot Mix Asphalt into the Trays of Waiting High-Capacity Trucks/ Dumpers

Once the Asphalt mix has been sampled and has met the desired specifications, the hot asphalt mix is discharged from the unit and is transferred via loadout conveyor into the hopper of the bulk discharge unit which deposits the asphalt into the tray of a dumper truck for transfer to a road constitution project site for utilization.

3.2 Material Requirements

The following materials are used in our operations:

- Raw Fine Aggregate
- Raw Coarse Aggregate
- Sand
- Bitumen
- Bitumen Tank Thermal Oil
- Heavy Fuel Oil
- Diesel
- Water
- Spare Parts

3.3 Sources of Utilities

Several utilities are used for the operations of the facility:

- Water: The facility will be supplied by supply lines coming from Guyana Water Incorporated.
- Electricity: The facility will rely mainly on power from Guyana Power and Light Incorporated for its electricity needs. To complement or offer a backup electrical supply, the business will have a diesel generator with a 120 kVA capacity that is equipped with a silencer and placed in a soundproof room. In the event of a power outage, this will lessen reliance on the Demerara-Berbice Integrated System grid and assist in providing a steady power source.

3.4 Air Emissions

There are likely to be air emissions from the following stationary and mobile sources at RL Contracting. (**See Table below)**

No.	Types	Sources
	Stationary Sources	
1	Gaseous Pollutants (Combustion Gases)	Power Generation System
		Burner of Thermo Drum Unit of Asphalt (Drum Mix) Plant
2	Tank Venting	Aboveground Bitumen Tanks
		Aboveground Heavy Fuel Oil Storage Tank
		Aboveground Diesel Storage Tank
3	Fumes	Exhauster attached to the Wet Scrubber Type Pollution Control System.
		Fumes from Hot Mix Aggregate (Load Out Conveyor + Open Bed of Loaded Trucks/ Dumpers)
4	Particulate Emissions	Unpaved Surfaces Onsite
		Kick Up Dust from Vehicle Movements Onsite
		Vibrator Screen
		Conveyance System Transferring Aggregate to Thermo Drum Uni
		Emission from Aggregate Stockpiles
	Mobile Sources	
5	Gaseous Pollutants (Combustion Gases)	Exhaust of Heavy-Duty Trucks
		Exhaust of Front-End Loader

3.5 Waste Production

Three (3) categories of waste are generated by RL CONTRACTING. These are: Solid, Liquid and Hazardous Waste. Information on the types and treatment/ disposal method(s). **See Tables below.**

Solid Waste

	Types	Treatment/ Disposal Methods
	Domestic Waste	Collection and Disposal by Private Waste Management Service
	Obsolete Parts – Asphalt Plant Components*	Collection by Scrap Metal Dealers

Liquid Waste

	Types	Treatment/ Disposal Methods
	Domestic Waste Water (Grey Water)	Surface Drain
	Sewage	Onsite Septic Tank with Associated Treatment System. Sludge will be collected and disposed of by private waste management service.
	Tertiary Pollutant from Wet Scrubber Type Pollution Control System	Hazardous waste to be collected, treated and disposed of by certified hazardous waste treatment and disposal company
	Liquid in Sludge Pond	

Hazardous Waste

	Types	Treatment/ Disposal Methods
	Off Specification Hot Mix Asphalt	Reintroduction of Off spec Hot Mix material into production line

	Sludge – Captured Particulates	Particulate materials captured within the sludge pond will be reintroduced into the asphalt production line for use in the production of hot-mix asphalt.
	All Waste Oils	Collection, Disposal and Treatment of Waste by Hazardous Waste Treatment Facility.
	Wastes from Chemical Spills and Leaks	
	Spent Batteries	

SECTION 4: POTENTIAL IMPACTS AND MANAGEMENT

Given the activities elaborated at **Section 3 above** that are to be undertaken at the project site during the operational phases, several environmental impacts are anticipated and mitigation measures will be implemented for the management of the same. A comprehensive assessment will be undertaken at a later stage if it is so determined by the Agency.

4.1 Environmental and Social Impacts

The following environmental and social impacts are likely during the operations of all elements of the Asphalt Drum Mix Plant within the Project Complex.

Environmental Impacts

- Use of Energy Resources
- Use of Water Resources
- Emissions to the Air: Dust/ Particulates
- Emissions to the Air: Gaseous Emissions (Combustion Gases)
- Emissions to the Air: Gaseous Emissions (Volatile Organic Compounds)
- Noise and Vibration Impacts
- Nuisance: Odour Emissions
- Potential Releases/ Discharges to Surface Water
- Potential Releases to Land/ Soil
- Generation of Solid, Liquid and Hazardous Waste

Social Impacts

- Health and Safety Risks

The Table below identifies the actual sources of the Environmental and Social impacts identified above.

Impacts	Sources
Environmental Impact	
1. Use of Energy Resources (Direct)	Backup Power Generation System uses Diesel, Heaters use fuel to heat the Bitumen Tanks; Heaters are also used to provide heat to the Burner and Thermo Drum Unit; Heavy-Duty Front-End Loader
2. Use of Energy Resources (Indirect)	Administrative Office onsite; All Components of the Asphalt Drum Mix Plant powered by GPL/ Backup Power Generation System
3. Use of Water Resources	Onsite Washroom Facilities, Water for use in Scrubbing Unit for Air Emission Control; Use of Water in Tray of Trucks; Use in Equipment Cleaning Applications onsite
4. Emissions to the Air: Dust/ Particulates	Kick up Dust as a result of onsite vehicle movements; Upwelling of Dust from Unpaved Surfaces onsite; Fugitive dust emissions from material stockpiles; Fugitive dust emissions from material conveyor systems
5. Emissions to the Air: Gaseous Emissions (Combustion Gases)	Power Generation System (Backup); Exhaust from Heavy Duty Trucks/ Dumpers, Exhaust from Front End Loader

Impacts	Sources
6. Emissions to the Air: Gaseous Emissions (Volatile Organic Compounds)	Venting from Aboveground Diesel, Heavy Fuel Oil, Bitumen Heating and Storage Tanks, Releases from Rotating Thermo Dryer Unit, Tray of Loaded Trucks/ Dumpers
7. Noise and Vibration Impacts	Bulk Aggregate Dispensing Mechanisms, Conveyance Mechanisms; Vibratory Screens, Rotating Thermo Dryer Unit, Dispensing Mechanisms; Movement of Heavy-Duty Trucks/ Dumpers Onsite; Pumps etc.
8. Nuisance: Odour Emissions	Odours from Air Emission Releases from Asphalt Drum Mix Plant, Odours from Bitumen Heating Tanks, Odours from Aboveground Diesel and Heavy Fuel Oil Storage Tanks.
9. Discharges to Surface Water	Effluent from Onsite Washroom Facilities
10. Potential Releases to Land/ Soil	Potential Releases during Filling of Fuel, Bitumen and Heavy Fuel Oil Aboveground Fuel Storage Tanks; Potential for accidental discharges from storage vessels; Releases from Heavy Duty Equipment under maintenance or as a result of component failure
11. Generation of Solid Waste	Waste From Administrative Offices on Site (Packaging Wastes); Obsolete Parts/ Components
12. Generation of Liquid Waste	Human Excrement and Urine – Toilet Facilities; Discharge from Sludge Pond,
13. Generation of Hazardous Waste	Sludge (Particulates Captured and Removed from Exhaust Stream) In Pond; Spent Lubricating Oil, Off Specification Hot Mix Asphalt
Social Impacts	
14. Health and Safety Risks	Vehicle and Equipment Movements and Potential for Injury, Risk of Fire from Hot Liquid Ignition; Risk of Burns from Hot Liquids, Materials and Surfaces, Exposure to Asphalt Fumes, Moving Equipment, Exposure to Noise Emissions, Exposure to Dust/ Particulates; Exposure to Chemicals (Fuel, Heavy Fuel Oil, Bitumen)

4.2 Mitigation Measures

RL CONTRACTING will implement the following mitigation measures to address adverse impacts associated operations of all elements of the machining workshop. **See Table below.**

ASPECTS	MITIGATION MEASURES
ENVIRONMENTAL IMPACTS	
Use of Water Resources	• Implementation of water conservation initiatives
Use of Energy Resources	• Implementation of Energy conservation initiatives
Emission to Air: Dust/ Particulates	• Use of Wet Suppression methods • Limiting Vehicle Speeds onsite to minimize kick up dust
Emissions to Air: Gaseous Emissions (Combustion Gases)	• Use of improved Equipment with lower pollutant emission levels • Perform Regular inspection and maintenance of mobile heavy-duty equipment and Asphalt Plant elements in accordance with manufacturer's specifications
Emission to Air: Gaseous Emissions (Volatile Organic Compounds)	• Monitoring of Venting Systems on All Aboveground Storage Tanks • Design areas to improve ventilation. • Ensure the efficient operation of the emission control systems installed.
Noise and Vibration Impacts	• Use of Sound Attenuated Power Generation Systems • Use of Heavy-Duty Equipment with lower noise emission levels • Placement of Heavy-Duty Equipment on Level Ground/ Foundations.

	• Placement of Noise Generating Equipment away from sensitive receptors. • Regular inspection and maintenance of heavy-duty equipment in accordance with manufacturer's specifications • Restricting Noise generating activities to between certain times.
Nuisance: Odour Emissions	• Installation and use of emission control technologies
Potential Releases/ Discharges to Surface Water	• Use of Effluent Treatment Technologies
Potential Releases to Land/ Soil	• Use of drip trays • Use of Prepositioned Spill Kits • Use of Secondary Containment structures around high-capacity aboveground storage units to recover materials that can be spilt.
Generation of Solid, liquid and Hazardous Waste	• Holding of Waste material in sealed high-capacity bins onsite • Private Waste Management Contractor will collect, transport, treat and dispose of waste material generated
SOCIAL IMPACTS	
Health and Safety Risks	• Emergency Response Plans to address Emergency Situations that may potentially arise • Strategic placement of Emergency Resources: First Aid Kits, Spill Kits, Fire Extinguishers etc.

SECTION 5: APPENDIX

5.1 Pictures of Project Site