

# PROPOSED DEVELOPMENT OF NEW SCHEDULED WASTE STORAGE DEPOT AT LOT PT 1457, MUKIM 01, SEBERANG PERAI TENGAH, PENANG

## 1 INTRODUCTION

### PROJECT BACKGROUND



**Location:** No. 2605, Tingkat Perusahaan 6, Kawasan Perusahaan Perai, 13600 Perai, Pulau Pinang.



**Area:** 4,046.72 m<sup>2</sup>.



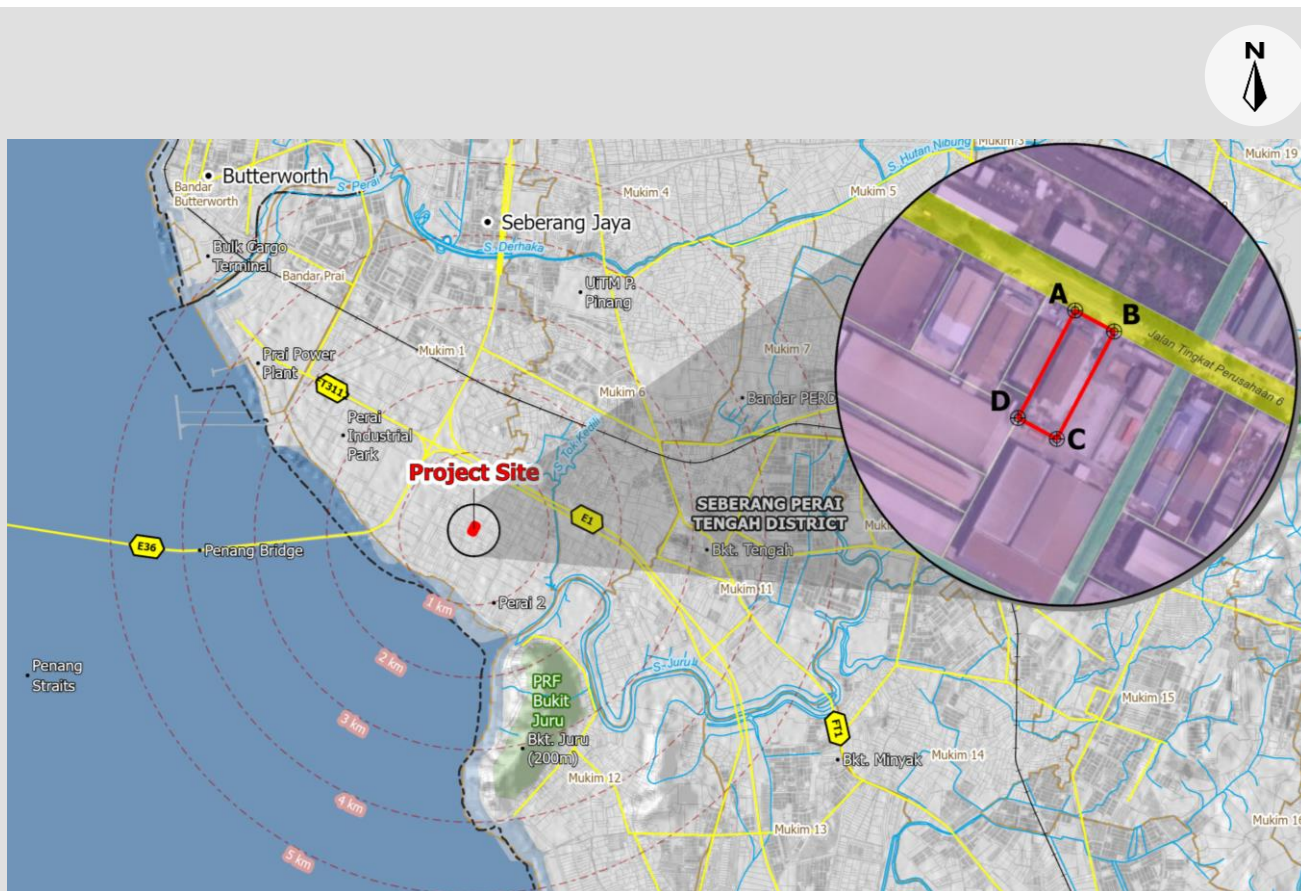
**Capacity:** 1,718 MT of scheduled waste codes.



**Coverage:** 54 scheduled waste codes listed under the First Schedule of the Environmental Quality (Scheduled Wastes) Regulation 2005.



**Special Handling:** Clinical wastes (SW404) will undergo tail-to-tail transfer and will not be stored at the facility.



Point	Latitude	Longitude
A	5.354308	100.402034
B	5.354144	100.402339
C	5.353305	100.401891
D	5.353469	100.401587

## PROJECT PROPONENT



**Cenviro Services Sdn. Bhd.**  
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Jalan Stesen Sentral 5,  
Kuala Lumpur Sentral,  
50470 Kuala Lumpur, Malaysia.

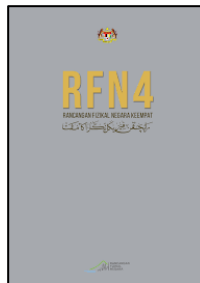
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## CONFORMANCE WITH POLICIES & DEVELOPMENT PLANT

The Proposed Project aligns with and supports the policies and plans at the national, state, and local levels, as outlined in the following documents:



12<sup>th</sup> Malaysia Plan  
2021-2025 (RMK-12)



4<sup>th</sup> National Physical  
Plan (NPP-4)



Rancangan Struktur  
Negeri Pulau Pinang  
2030



Draf Rancangan  
Tempatan Seberang  
Perai 2030

## QUALIFIED PERSONS



**Aurecon Lestari Sdn. Bhd.**  
(formerly known as ERE Consulting Group  
Sdn Bhd)  
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## LEGAL ASPECTS



### Activity 14 – Waste Treatment and Disposal

#### (a) Scheduled Waste

- (iii) Construction of Storage Facility (Off-Site)

## 2 EIA SCOPING NOTES

### SENSITIVE RECEPTORS



57 residential areas, institutions and public amenities, and religious places are identified as sensitive receptors within a 5-km radius of the Proposed Project site.

#### Example List of Sensitive Receptors



- Kg. Jawa
- Taman Nagasari
- SMK Perai
- SJK(T) Ladang Prye
- FGA Church Prai
- Masjid Abdullah Ibnu Mas'ud

### POTENTIAL ENVIRONMENTAL IMPACTS FROM PROPOSED PROJECT

#### Construction

- Air Quality
- Water Quality
- Noise
- Waste Management

LOW

#### Operation

- Air Quality
- Water Quality
- Noise
- Waste Management
- Public Risk

LOW

### ENGAGEMENT WITH TECHNICAL AGENCY



The Project Proponent and the Consultant engaged with Department of Environment (DOE) Pulau Pinang on 18 September 2024.

### 3 STATEMENT OF NEED



#### Need for the Project

##### Scheduled Waste Generation:

- Northern Region (Perlis, Kedah, Pulau Pinang, Perak) produced **972,629.9 MT of scheduled waste** in 2023, accounting for 16% of Malaysia's total.
- Largest contributors: Power plants (1.81 million MT), metal refineries (1.11 million MT), and chemical industries (574,076 MT).

##### Proposed Solution:

- A **centralized off-site storage facility** in Pulau Pinang to serve 54 scheduled waste codes.
- Waste to be stored for  $\leq 180$  days with a cap of 20 MT before relocation to recovery, treatment, and disposal facilities.



#### Existing Storage Issues:

- On-site storage facilities at generator's premise lack capacity and infrastructure, leading to contamination risks and inefficiencies.
- Fragmented storage locations complicate logistics and increase risks.



#### Regulatory Compliance:

- Centralized storage ensures compliance with the Environmental Quality Act 1974 and Environmental Quality (Scheduled Wastes) Regulations 2005.
- Enables improved monitoring, reporting, and adherence to safety standards.



#### Environmental & Health Protection:

- Prevents soil, water, and air contamination.
- Protects communities from adverse health effects of improper waste management.



#### Economic & Operational Efficiency:

- Reduces logistical burdens and transportation costs.
- Improves safety during transport and enhances resource allocation.

## 4 PROJECT OPTIONS

### NO PROJECT OPTION

Implications of Not Proceeding with the Proposed Project:

- ❑ Higher risk of soil and water pollution due to improper waste management, harming ecosystems and potentially contaminating drinking water.
- ❑ Challenges in enforcing the Environmental Quality (Scheduled Wastes) Regulations 2005 due to decentralized storage.
- ❑ Decentralized waste management results in logistical challenges, higher costs, and inefficiencies.
- ❑ Centralized storage would reduce costs through efficiency and resource sharing.
- ❑ Inefficient waste management deters investment and hampers economic development.

### SITE OPTIONS

The proposed **Site A – Lot PT 1457** is the most suitable option as compared to the other sites for the Proposed Project given the following advantages:

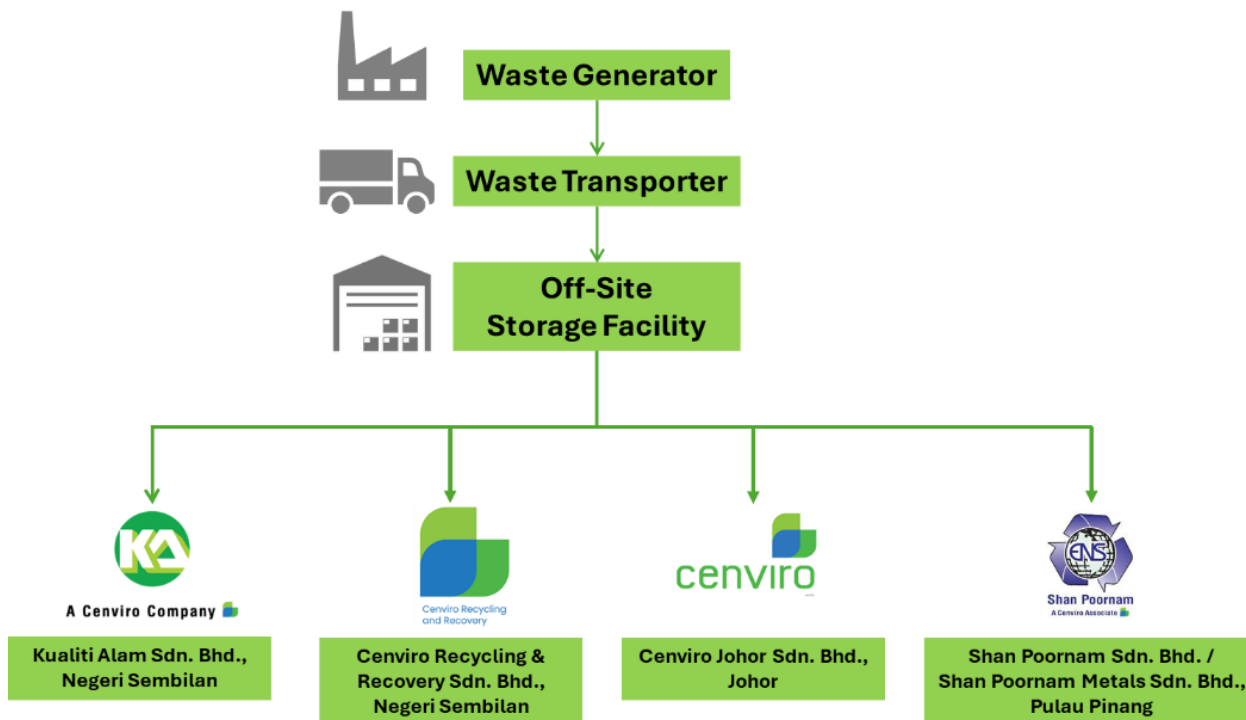


### TECHNOLOGY OPTIONS

There are no technological options required, as the scheduled wastes storage facility does not rely on advanced technology for the collection, packaging, or handling of scheduled waste.

## 5 PROJECT DESCRIPTION

## PROJECT CONCEPT



- ❑ This facility is designed to temporarily store scheduled wastes before transferring them to appropriate treatment or recovery facilities.
- ❑ The facility will cater to waste generators in the Northern region of Peninsular Malaysia, encompassing Perlis, Kedah, Pulau Pinang, and Perak.
- ❑ It will manage 54 out of 77 scheduled waste codes, excluding SW404.
- ❑ For SW404, a tail-to-tail transfer will be conducted, ensuring direct disposal at Kualiti Alam Sdn. Bhd. without storage at the facility.
- ❑ Maximum storage capacity of 1,718 MT (excluding SW404).
- ❑ Scheduled wastes will be transported to the facility by Cenviro using licensed 8-tonne vehicles.
- ❑ The expected transportation frequency is 10 to 15 trips per day, based on waste generation levels.
- ❑ Scheduled wastes will be stored according to their compatibility and regulatory guidelines, with daily inspections and maintenance.
- ❑ Containers will be organized on a first-in, first-out basis to ensure that older wastes are processed first.
- ❑ Scheduled waste is transfer in 40-tonne containers to designated treatment facilities.

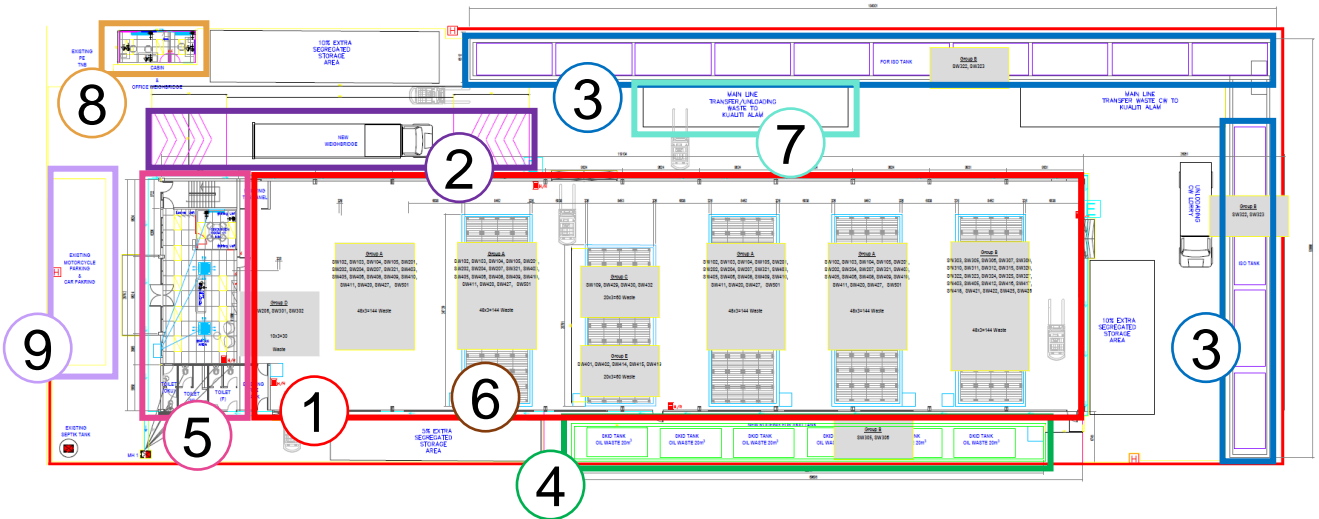
5 PROJECT DESCRIPTION

PROJECT SIZE

Total land area is 43,560 square feet (4,047 m<sup>2</sup>)



PROJECT COMPONENTS



- 1 Warehouse
- 2 Weighbridge
- 3 ISO tanks storage area
- 4 Waste oil storage area
- 5 Office
- 6 Multi levels racking facility
- 7 Loading/Unloading Bay
- 8 Guard house and comprehensive CCTV system
- 9 Carpark

## Scheduled Waste Transportation

- ❑ 8 tonnes licensed vehicles will be collected and transported scheduled waste from norther region to the off-site scheduled waste storage facility.
- ❑ The type of transportation vehicles will vary depending on the type of scheduled wastes collected from the waste generators.
- ❑ The number of trips from the waste generators to the storage facility is expected to range from 10 to 15 trips per day depending on the waste volume.



Scheduled Waste  
Curtain Sider Lorry and Cargo Lorry



Clinical Waste  
Box Lorry



IMO Tank



Vacuum Lorry



Tipper Lorry



Skip Bin

## Scheduled Waste Storage Containers



Bunghole drum (steel/plastic)



Jumbo Bags /Flexible Intermediate Bulk Containers (FIBCs)



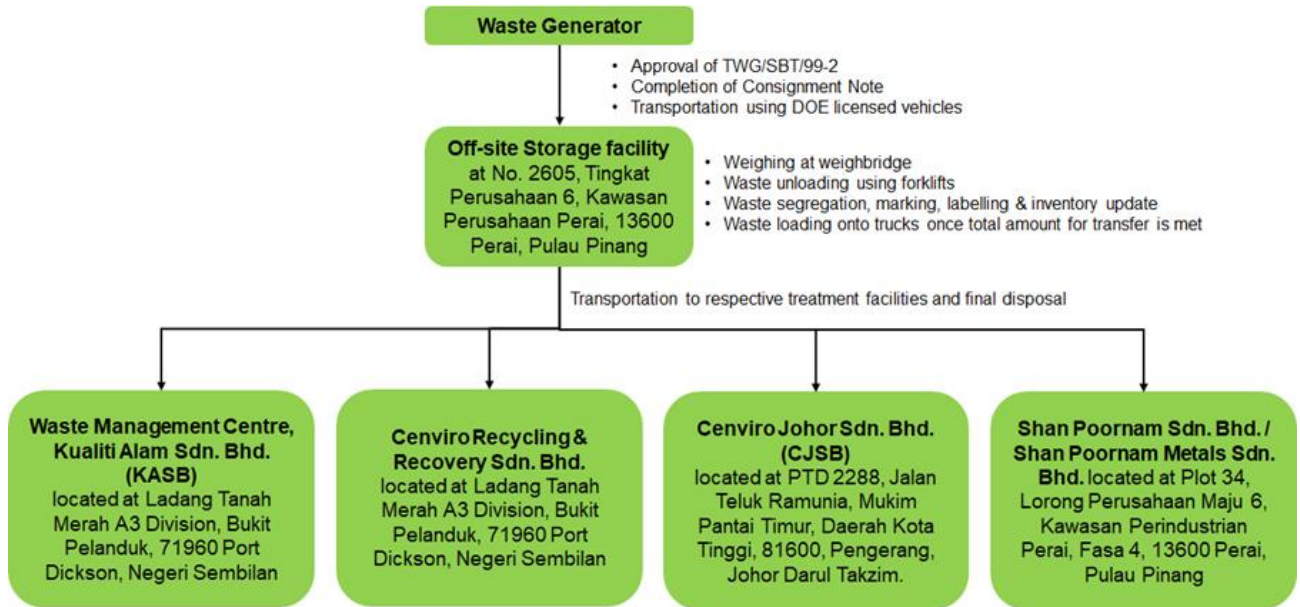
Open top drum with cover and clamp  
(steel/plastic)



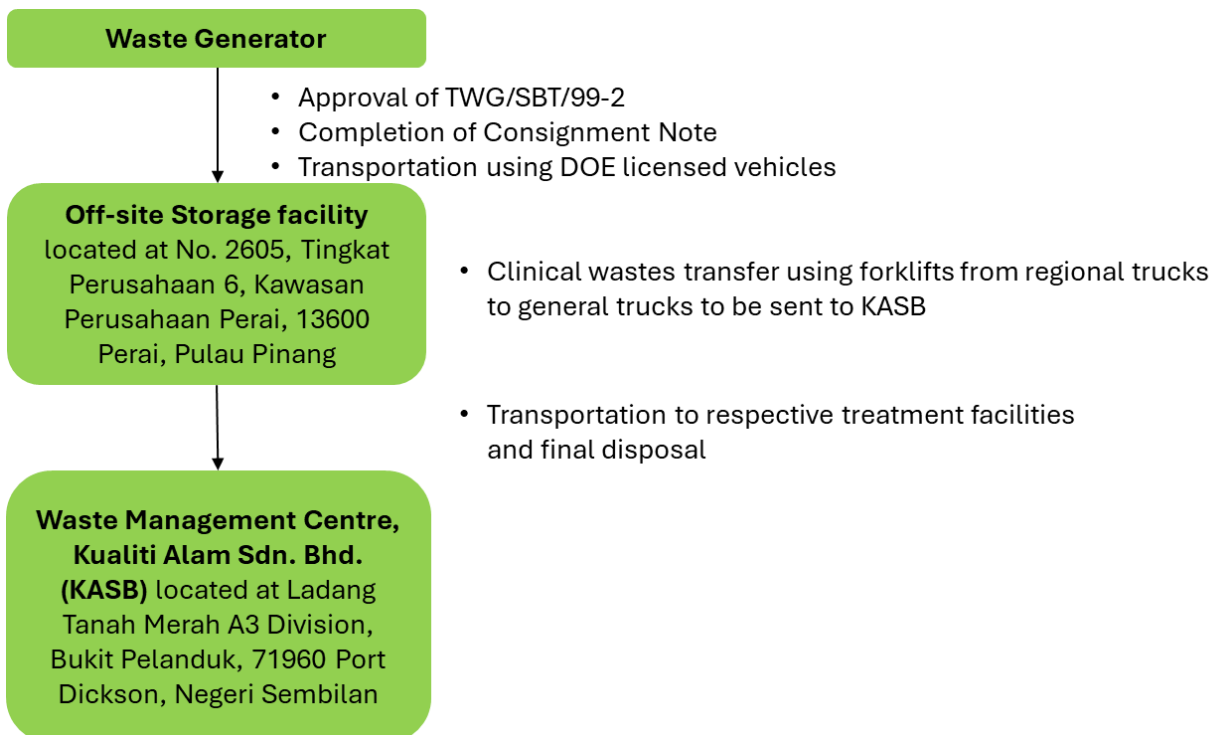
Intermediate Bulk Containers (IBC)  
Tanks

**PROCESS OF SCHEDULED WASTE TRANSFER TO TREATMENT FACILITIES**

**Scheduled Waste**



**Clinical Waste**



PRINCIPLE PROJECT ACTIVITIES

Site Investigation

- Site survey
- Site acquisition

Construction Phase

- Installation of weighbridge
- Installation of crate storage
- Construction of internal drainage and sump pit
- Construction of bund wall
- Installation of firefighting system (e.g., a sprinkler system)

Operation Phase

- **Collection of scheduled wastes**  
 Coverage: Northern Region of Peninsular Malaysia (Perlis, Kedah, Penang, Perak)
- **Management**  
 Compliance: Guidelines for Packaging, Labelling and Storage of Scheduled Wastes in Malaysia
- **Storage**  
 54 scheduled wastes codes (excluding SW404 – clinical wastes)  
 Maximum capacity: 1,718 MT
- **Tail-to-Tail transfers**  
 Clinical wastes (SW404)
- **Transportation**  
 Delivery: Scheduled wastes transported to receivers within the Cenviro Group

PROJECT IMPLEMENTATION SCHEDULE

The renovations of the warehouse for the Proposed Project are expected to be completed within a period of **five (5) months**. The expected date of construction shall be no later than 01 April 2025 to ensure that the facility is fully operational by Quarter 4, 2025 (or earlier).

Item	Month	1				2				3				4				5				
		Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Installation of weighbridge																					
2	Installation of crate storage																					
3	Construction of internal drainage and sump pit																					
4	Construction of bund wall																					
5	Installation of fire fighting system																					
6	Completion																					

Note: ● Assuming 50% completion of item 3

★ Assuming all items are completed

## 6 EXISTING ENVIRONMENT

### PHYSICAL ENVIRONMENT



#### Site Elevation

Proposed Project site is a flat area at low 1 meter elevation



#### Soil

The soil series category at the Proposed Project site is Linau-Sedu



#### Geology

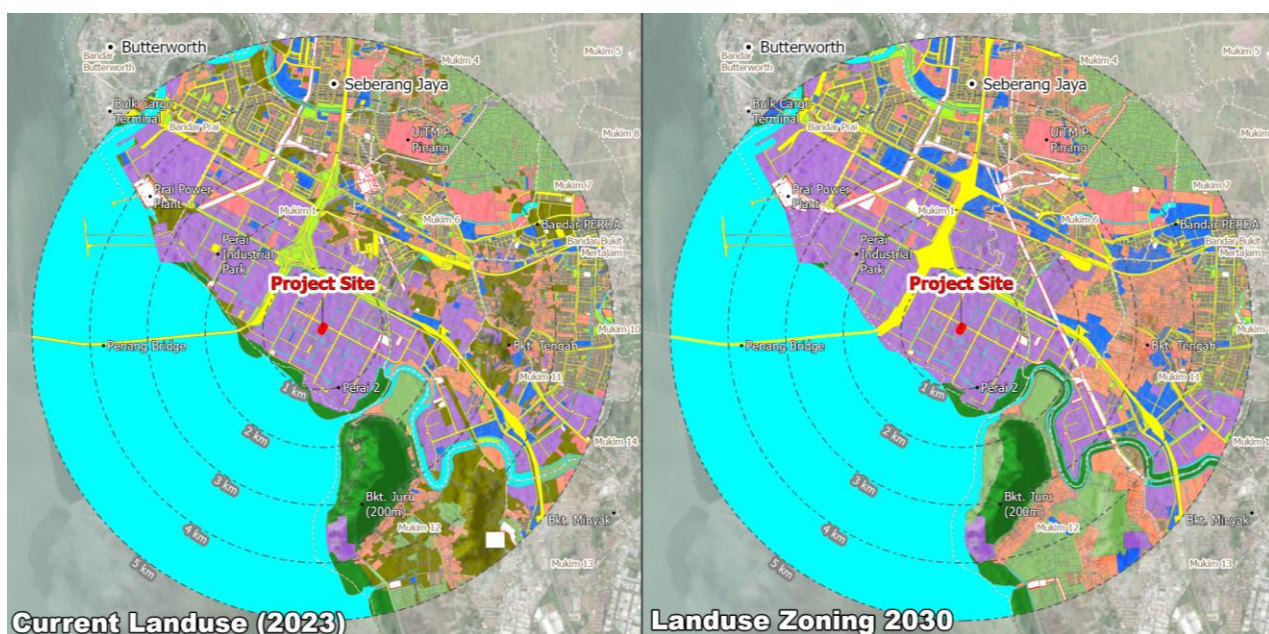
Lithology of the Proposed Project site consists of sand, primarily of marine origin



#### Hydrogeology

Potential aquifer in study area is rated a medium aquifer potential

### LAND USE AND SENSITIVE RECEPTORS



#### LEGEND

- Place of Interest
- Town
- Site
- Mukim Boundary

#### Landuse Category

- Agriculture
- Waterbody
- Forest
- Industry
- Infrastructure & Utility
- Residential

- Public Facilities & Institution
- Mixed Development
- Transportation
- Commercial & Services
- Open Space & Recreation
- Vacant Land

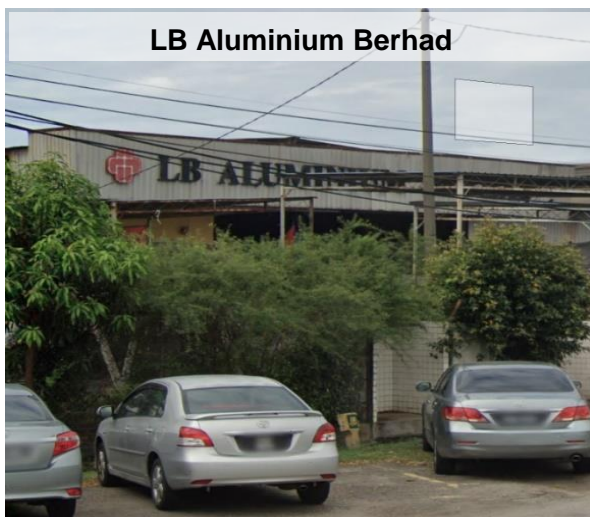
#### Exiting Land Use

Proposed Project site is currently classified as an industrial zone. Surrounding 5-km radius primarily consists industry, residential and vacant land.

#### Future Land Use

According to the *Draf Rancangan Tempatan Seberang Perai 2030, Jilid 2 Seberang Perai Tengah*, the Proposed Project site is designated as an industrial zone, allowing industrial development.

## Neighbouring Industries



**LB Aluminium Berhad**



**Gocycle Experience Lab**

## Key Landmarks

Residential	<ul style="list-style-type: none"> <li>▪ Kg. Jawa</li> <li>▪ Taman Nagasari</li> <li>▪ Kg. Sekolah Juru</li> </ul>
Institutions & Public Amenities	<ul style="list-style-type: none"> <li>▪ SMK Perai</li> <li>▪ Politeknik Seberang Perai</li> <li>▪ UiTM Pulau Pinang</li> </ul>
Religious Places	<ul style="list-style-type: none"> <li>▪ FGA Church Prai</li> <li>▪ Surau Taman Pauh Jaya</li> <li>▪ Sri Maha Veerabakthra Kaliaman Alayaman</li> </ul>

## CLIMATE

### Temperature

Avg. Annual 24-hour: 28.1° C  
 Warmest Months: May (avg 28.9° C)  
 Coolest Month: Nov & Dec (avg 27.4° C)

### Rainfall

Avg. Annual Rainfall: 2,288.3 mm  
 Most Rain Days: Oct & Nov (20 days)  
 Least Rain Days: Jan & Feb (9 days)

### Relative Humidity

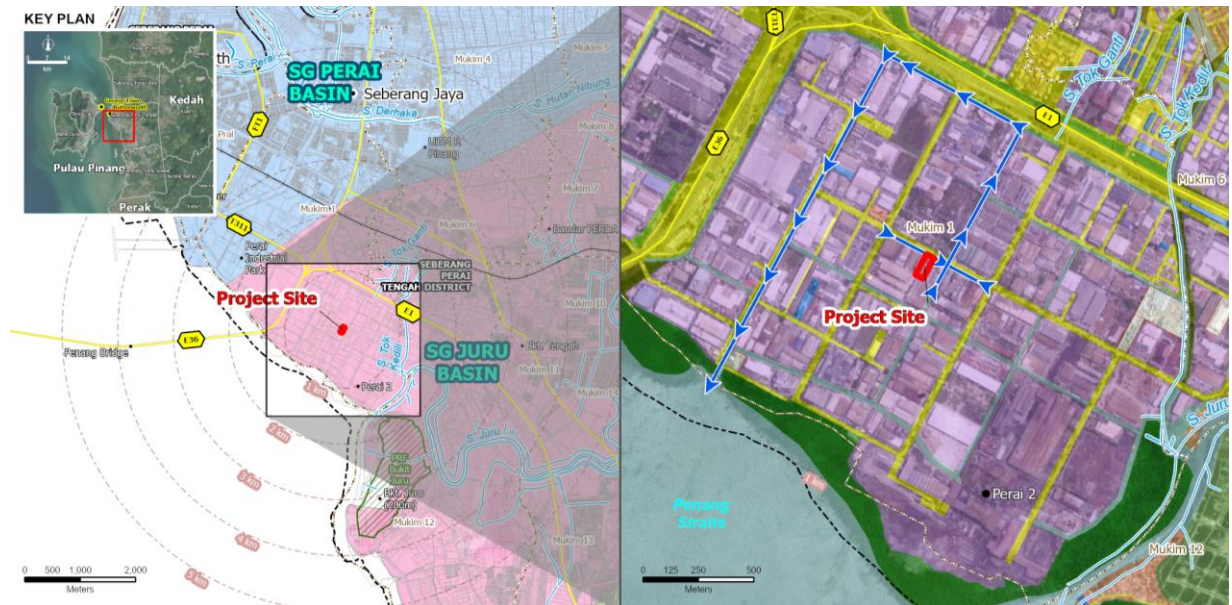
Avg. Annual 24-hour Mean: 79.5%  
 Highest RH: Nov (83.5%)  
 Lowest RH: Jul (75.5%)

### Surface Wind

Predominant Wind: Northwest  
 Annual Mean Speed: 2.2 m/s  
 Calm Period: 0.3 m/s (5.8% of the time)

## HYDROLOGY AND RIVER SYSTEM

The Proposed Project site is downstream of Sg. Tok Kedili and Sg. Tok Ganti, within the 91 km<sup>2</sup> Sg. Juru catchment area. However, its discharge will flow into a surrounding monsoon drain, leading directly to the Penang Straits.



### LEGEND

- Place of Interest
- Town
- River
- Main Roads
- KTMB Railway

- Site
- Radius (Distance)
- Permanent Forest Reserve
- Mukim Boundary
- District Boundary

- Main River Basin**
- Sg. Juru Basin
  - Sg. Jawi Basin
  - Sg. Perai Basin

### Flood Prone Area

The flood risk map from the Department of Irrigation and Drainage (DID) confirms that the Proposed Project site is not in a flood-prone area. DID's annual flood reports (2020–2022) show no recorded flood incidents at the site, though flooding occurred within a 3–5 km radius during the same period.

Flood data from DID highlight key flood factors in Seberang Perai:

1. **Heavy Rainfall** – Intense or prolonged rain across the catchment.
2. **Drainage Issues** – Poor maintenance, incomplete infrastructure, and inadequate depth.
3. **River Capacity Limits** – Sediment buildup, insufficient maintenance, and overflow during storms.
4. **High Tides** – Ineffective flood control measures.

## ENVIRONMENTAL QUALITY



### Air Quality

**Three (3)** locations were selected to carry out monitoring for air quality (9 pollutants – PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>3</sub>, HCl, HF, VOC).

Concentrations of all the 9 pollutants are below the stipulated limits of the Malaysia Ambient Air Quality Standard (MAAQS) 2020 at all monitoring locations.



### Water Quality

**Four (4)** samples were collected from the upstream and downstream of the drainage near the Proposed Project site.

According to the DOE Water Quality Index (WQI), the baseline water quality results ranged from 27 to 54, categorizing the water as "Polluted." The water quality at the four monitoring locations fell within Class III to Class V standards.



### Marine Water Quality

**One (1)** location was selected to carry out marine water quality monitoring.

All parameters compared to the MMWQS at WQMI location fell within Class III standards, except Nitrate (NO<sub>3</sub>), which exceeded Class III.



### Noise Level

**Three (3)** locations were selected to carry out noise level monitoring.

Based on the results, it is observed that all measured noise levels did not exceed the permissible limits as stipulated in the Guidelines for Environmental Noise Limits and Control – 3<sup>rd</sup> Edition by DOE (2019) for Industrial Zones and Mixed Development areas, respectively.

SOCIO-ECONOMIC PROFILE



**Total Population**

The population of Seberang Perai Tengah District in 2022 around 422,800, with roughly 223,700 males and the remainder females.



**Households Income**

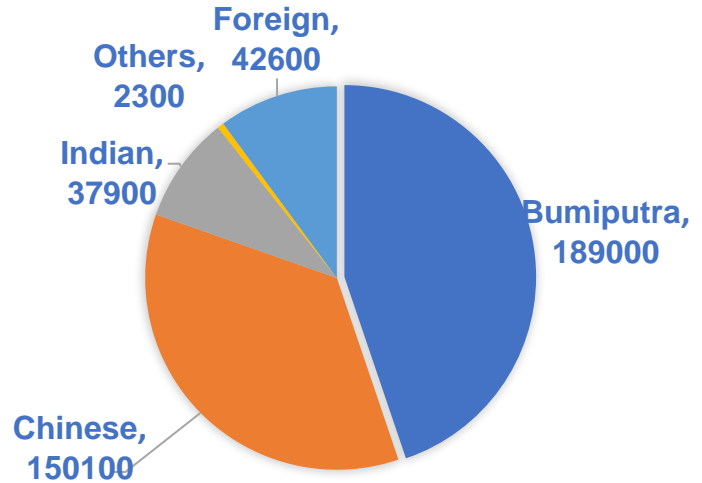
Median – RM6,220  
Mean – RM8,056



**GDP Pulau Pinang State**

2023 – RM116 billion

**ETHNICITY**



**KELUARAN DALAM NEGERI KASAR, 2023**



INFOGRAFIK



Gross Domestic Product (GDP) 2023 in Pulau Pinang State

## 7 &amp; 8 EVALUATION OF IMPACTS AND MITIGATION MEASURES

## CONSTRUCTION PHASE

## Environmental Elements

## Potential Impacts

## Proposed Mitigation Measures



## Air Quality

- Fugitive dust generation due to minor renovation works, such as installation of weighbridge as well as the construction of internal drainage, sump pit and bund wall.
- Release of gaseous emissions, including PM<sub>10</sub>, PM<sub>2.5</sub>, CO, NO<sub>2</sub>, and SO<sub>2</sub> due to fuel combustion from vehicles.

**Impact Magnitude:** Low

**Reference page:** 7-6

- **Cover the open beds of vehicles** that carry construction with material, with **tarpaulin** before entering public roads.
- Prevent the spreading of the dust and debris by **the usage of plastic sheeting or other barriers** to isolate the work area from the rest of the building.
- **Clean the area regularly** to prevent the accumulation of dust and debris.
- **Wear proper respirators** (e.g. N95 mask) if dust or fumes from chemicals are expected.

**Reference page:** 8-1



## Water Quality



- Surface runoff generation during heavy rainfall from minor renovations that include bund wall construction, weighbridge installation as well as installation of the roof.
- Spillage or leakage of fuels, oils, lubricants or scheduled waste via poor storage and maintenance of machinery or equipment.

**Impact Magnitude:** Low




**Reference page:** 7-6 to 7-7



- **Monitor the water quality regularly** to detect any signs of pollution early.
- The materials for renovation work **should be kept covered or stored in sheltered areas** to avoid rainwater contamination.
- **Regular inspections and maintenance of equipment** are pivotal to prevent any leakage or spillage of the hazardous substances.
- Implement good housekeeping practices (e.g. promptly cleaning up spills and securing materials)

**Reference page:** 8-1 to 8-2

Environmental Elements	Potential Impacts	Proposed Mitigation Measures
 <p>Noise</p>	<ul style="list-style-type: none"> <li>Temporary increased in ambient noise from the installation of shelves and activities for renovation such as vehicle movements, hammering, forklifting, drilling as well as loading and unloading.</li> </ul> <p><b>Impact Magnitude:</b> Low</p> <p><b>Reference page:</b> 7-8 to 7-10</p>	<ul style="list-style-type: none"> <li><b>Usage of equipment in accordance with the manufacturers' instructions</b></li> <li>Machineries and equipment <b>should not be left idling unnecessarily</b></li> <li><b>Conduct the renovation activities during permitted hours</b> only which is during the daytime</li> </ul> <p><b>Reference page:</b> 8-2</p>
 <p>Waste Management</p>	<ul style="list-style-type: none"> <li>Domestic and construction wastes are expected to be generated from the minor renovation works.</li> <li>Improper disposal of scheduled wastes from the construction activities could cause contamination to the nearby water bodies and harm nearby receptors with hazardous pollutants.</li> </ul> <p><b>Impact Magnitude:</b> Low</p> <p><b>Reference page:</b> 7-10 to 7-11</p>	<p><u>Solid Waste</u></p> <ul style="list-style-type: none"> <li>Management of waste are in accordance with the waste management hierarchy: <b>refuse, reduce, reuse, recycle, recover and disposal</b></li> </ul> <p><u>Scheduled Waste</u></p> <ul style="list-style-type: none"> <li>Scheduled wastes generated must be managed in compliance with the <b>Environmental Quality (Scheduled Wastes) Regulations 2005</b>. Additionally, the <b>Guidelines for Packaging, Labelling, and Storage of Scheduled Wastes in Malaysia</b> issued by the DOE must be adhered to.</li> <li>The scheduled wastes stored on-site must be <b>treated and disposed of or recovered at any DOE licensed facilities</b>.</li> <li>Project Proponent is responsible for <b>upholding an accurate and up-to-date inventory in the eSWIS system</b> to ensure continuous monitoring of the classification and quantities of scheduled wastes generated.</li> </ul> <p><b>Reference page:</b> 8-3 to 8-4</p>

OPERATION PHASE

Environmental Elements	Potential Impacts	Proposed Mitigation Measures
 <p>Air Quality</p>	<p><b>Normal Operation</b></p> <ul style="list-style-type: none"> <li>Vehicles usage such as trucks and forklifts for transporting and handling of the scheduled wastes may produce minimal air emissions.</li> </ul> <p><b>Impact Magnitude:</b> Low</p> <p><b>Abnormal Operation</b></p> <ul style="list-style-type: none"> <li>Fire incidents resulting from oil spills in skid tanks or ISO tanks could affect the air quality around the Proposed Project site.</li> </ul> <p><b>Impact Magnitude:</b> Moderate</p> <p><b>Reference page:</b> 7-11 to 7-18</p>	<ul style="list-style-type: none"> <li><b>Implement best management practices (BMPs) wherever possible</b></li> <li><b>Proper ventilation systems must be included</b> to capture and treat any gases or vapours that might be released, in order to prevent fire incidents.</li> <li><b>Possess emergency response plans</b> to address accidental releases, spills, or fires by having proper safety equipment and procedures for containment and clean-up.</li> </ul> <p><b>Reference page:</b> 8-5</p>
 <p>Water Quality</p>	<ul style="list-style-type: none"> <li>Leakage or spillage of scheduled waste during packaging, storage, or transportation.</li> <li>Spillage or leakage of materials, including oils, lubricants, and chemicals during maintenance and repair works.</li> </ul> <p><b>Impact Magnitude:</b> Low</p> <p><b>Reference Page:</b> 7-18 to 7-20</p>	<ul style="list-style-type: none"> <li><b>Install bunds, drip trays, or containment pallets around storage areas</b> to capture any potential spills or leaks.</li> <li><b>Clearly label containers</b> to identify their contents and ensure that all scheduled waste is documented and tracked to avoid mishandling</li> <li><b>Regularly check equipment</b> for spills or leaks and ensure all maintenance tools and materials are properly sealed when not in use.</li> </ul> <p><b>Reference page:</b> 8-6 to 8-7</p>
 <p>Noise</p>	<ul style="list-style-type: none"> <li>Minimal temporary increase in ambient noise to direct neighbouring industry due to lorry movements, with additional contributions from segregation, loading and unloading, as well as other related storage and transport activities of the scheduled wastes.</li> </ul> <p><b>Impact Magnitude:</b> Low</p> <p><b>Reference page:</b> 7-20</p>	<ul style="list-style-type: none"> <li>No mitigation measures for operation phase</li> </ul>

Environmental Elements	Potential Impacts	Proposed Mitigation Measures
 <p>Waste Management</p>	<ul style="list-style-type: none"> <li>• Infestation of pests caused by the accumulation of organic wastes such as food waste.</li> <li>• Odour pollution due to improper management of domestic wastes.</li> <li>• Accidental spillage caused by poor handling of scheduled wastes can cause contamination to the nearby waterways, posing health risks to the on-site workers and surrounding communities.</li> </ul> <p><b>Impact Magnitude:</b> Low</p> <p><b>Reference page:</b> 7-21 to 7-22</p>	<p><u>Solid Waste</u></p> <ul style="list-style-type: none"> <li>• Management of solid waste in accordance with the <b>waste management hierarchy</b>: reduce, refuse, reduce, reuse, recycle, recover and disposal.</li> </ul> <p><u>Scheduled Waste</u></p> <ul style="list-style-type: none"> <li>• Management of scheduled waste in accordance with the <b>Environmental Quality (Scheduled Wastes) Regulations 2005</b> and <b>Guidelines for Packaging, Labelling and Storage of Scheduled Wastes in Malaysia</b> published by DOE.</li> <li>• Make use of specialized equipment such as funnels, pumps, and transfer hoses to avoid spillage during transfers.</li> </ul> <p><b>Reference page:</b> 8-7 to 8-9</p>
 <p>Public Risk</p>	<ul style="list-style-type: none"> <li>• Risk of fire and explosion from light diesel storage, common storage waste pit and storage of other flammable liquid or substances.</li> </ul> <p><b>Impact Magnitude:</b> Low</p> <p><b>Reference Page:</b> 7-22</p>	<ul style="list-style-type: none"> <li>• <b>Emergency Response Plan (ERP)</b> must be prepared to include potential emergency scenarios due to the operation of the proposed project.</li> <li>• <b>Segregate the waste</b> according to the compatibility to prevent fires due to contact between incompatible waste.</li> </ul> <p>Reference page: 8-9</p>

## PROJECT ABANDONMENT

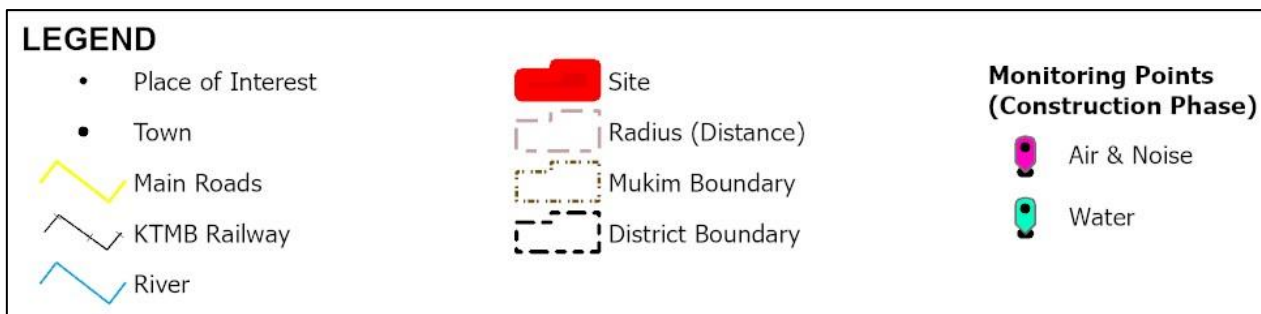
In the event that the Project is abandoned, the following measures shall be taken:

- Submit **Project Abandonment Plan** to DOE Pulau Pinang
- Site offices must be **abolished**
- All solid wastes must be disposed off at **approved landfill**
- Scheduled waste must be managed by **DOE licensed contractors**

9 ENVIRONMENTAL MANAGEMENT PLAN

CONSTRUCTION STAGE

Proposed Environmental Monitoring Locations during Construction Phase



**Water Quality**

**Impact Monitoring** – Quarterly monitoring at two (2) monitoring points (W2 and W4)



**Air Quality**

**Impact Monitoring** – Quarterly monitoring at one (1) monitoring point (A1)

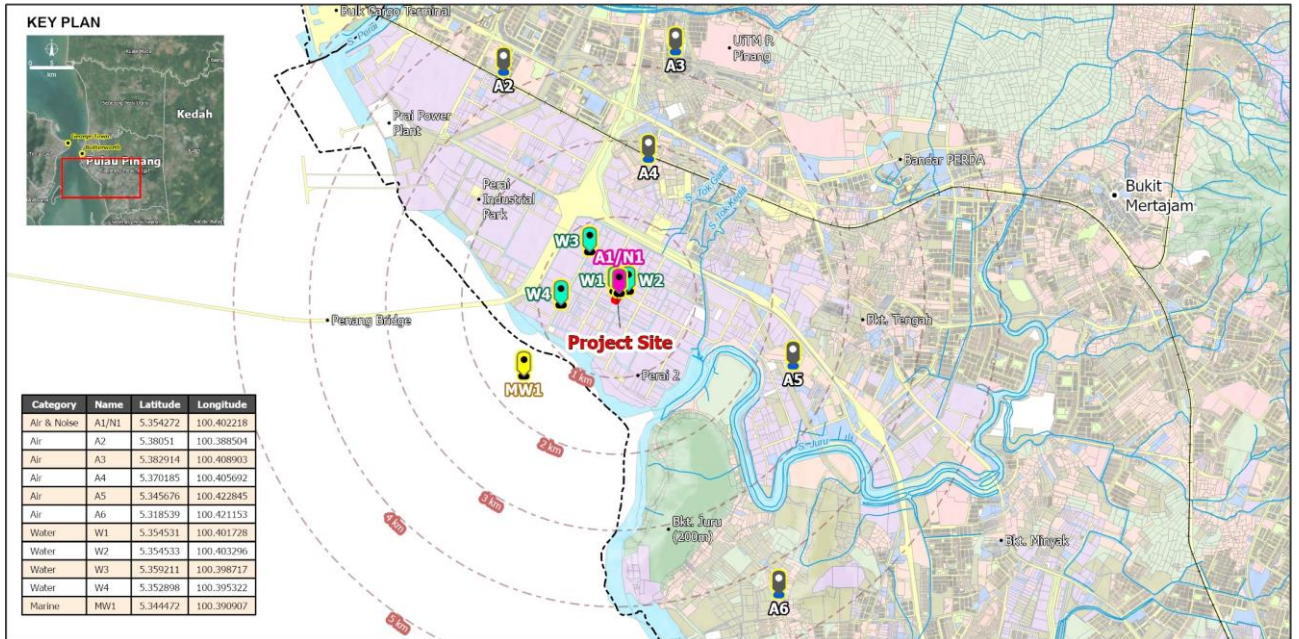


**Noise**

**Impact Monitoring** – Quarterly monitoring at one (1) monitoring point (N1) during daytime for 12 hours from 7.00 am – 7.00 pm

## OPERATION PHASE

### Proposed Environmental Monitoring Locations during Operation Phase (Abnormal Scenario)



### LEGEND

- Place of Interest
- Town
- KTMB Railway
- River

- Site
- Radius (Distance)
- District Boundary

### Monitoring Points (Operation Phase)

- Air
- Marine
- Water
- Air & Noise



#### Air Quality

**Impact Monitoring** – Daily monitoring six (6) monitoring points (A1, A2, A3, A4, A5 & A6)



#### Water Quality

**Impact Monitoring** – Daily monitoring at four (4) monitoring points (W1, W2, W3 and W4)



#### Marine Water Quality

**Impact Monitoring** – Daily monitoring at one (1) monitoring point (MW1)



#### Noise Quality

**Impact Monitoring** – Daily monitoring at one (1) monitoring point (N1) during the daytime for 12 hours from 7.00 a.m. to 7.00 p.m.



#### Environmental Audit

To carry out **annually to DOE Pulau Pinang\***

\* Means applicable throughout the lifespan of the Project and not only during fire incident.

STUDY FINDINGS

Environmental Elements	Impact Magnitude	Study Findings
<b>Construction Phase</b>		
Air Quality	Low	<p>The impact of air pollution during the construction phase is expected to be minimal and will not significantly affect the air quality in the surrounding sensitive receptors areas.</p> <p><b>Reference Page: 7-6</b></p>
Water Quality	Low	<p>The water quality impact is expected to be low as the project activity during construction phase only involve minor site conversion without major earthwork activities.</p> <p><b>Reference Page: 7-6 to 7-7</b></p>
Noise	Low	<p>There will be temporary increase in noise levels to the neighbouring industries next to the Project site during renovation activities.</p> <p><b>Reference Page: 7-10</b></p>
Waste Management	Low	<p>The generation of solid and scheduled waste is expected to be minimal and will not cause and detrimental impacts to the surrounding receptors.</p> <p><b>Reference Page: 7-11</b></p>

Environmental Elements	Impact Magnitude	Study Findings
<b>Operation Phase</b>		
<b>Air Quality</b>	Low	<p>In normal operations, the levels of the air quality are anticipated to stay within the safe limits, similar to baseline levels.</p> <p><b>Reference Page: 7-17</b></p>
	Moderate	<p>Under the worst-case fire scenario, pollutant concentrations could rise, especially near sensitive receptors. Air quality modelling for this scenario indicates that the Ground Level Concentration (GLC) values for all pollutants would surpass the 2020 MAAQS limits.</p> <p><b>Reference Page: 7-17</b></p>
<b>Water Quality</b>	Low	<p>The water quality impact is expected to be minimal, as no potentially contaminated water will be discharged into nearby drainage system and Penang straits.</p> <p><b>Reference Page: 7-19</b></p>
<b>Noise</b>	Low	<p>There will be minimal temporary increase in noise levels to the neighbouring industries next to the Project site during operation activities such as movement of vehicles, loading and unloading of scheduled wastes and other related storage and transport activities of scheduled waste.</p> <p><b>Reference Page: 7-20</b></p>
<b>Waste Management</b>	Low	<p>The generation of solid and scheduled waste is expected to be minimal and will not cause any detrimental impacts to the surrounding receptors.</p> <p><b>Reference Page: 7-21</b></p>
<b>Risk Assessment</b>	Low	<p>The <math>1 \times 10^{-5}</math> and <math>1 \times 10^{-6}</math> risk contours extend 13m and 17m beyond the proposed site boundary, respectively, but remain within the industrial area. They do not affect residential areas, schools, hospitals, or other places of continuous occupancy. Therefore, the results will not be affected.</p> <p><b>Reference Page: 7-22</b></p>