

	ENVIRONMENTAL IMPACT ASSESSMENT (EIA) (FIRST SCHEDULE)	
	CADANGAN TAMBAHAN MEMBINA PEMBANGUNAN PANEL SOLAR (KEGUNAAN PERSENDIRIAN) BERKAPASITI 49.99MWp SELUAS 28.24 HEKTAR DI ATAS LOT 8101 (80.83 HEKTAR), JALAN RUMBIA 4, KAWASAN PERINDUSTRIAN TANJUNG LANGSAT, MUKIM SUNGAI TIRAM, DAERAH JOHOR BAHRU, JOHOR DARUL TA'ZIM.	REV:01

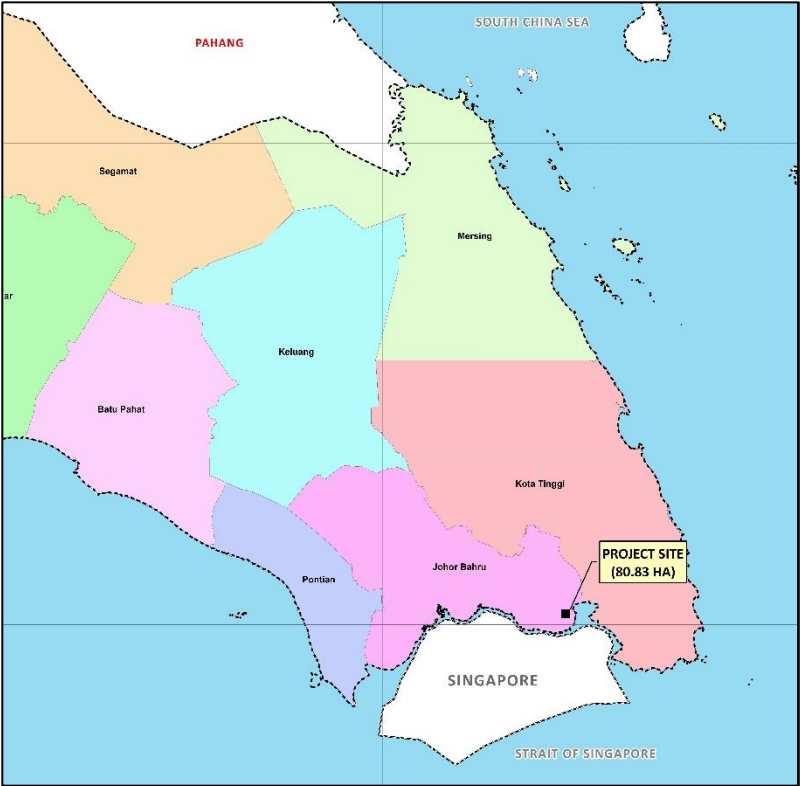
EXECUTIVE SUMMARY

1.0 INTRODUCTION

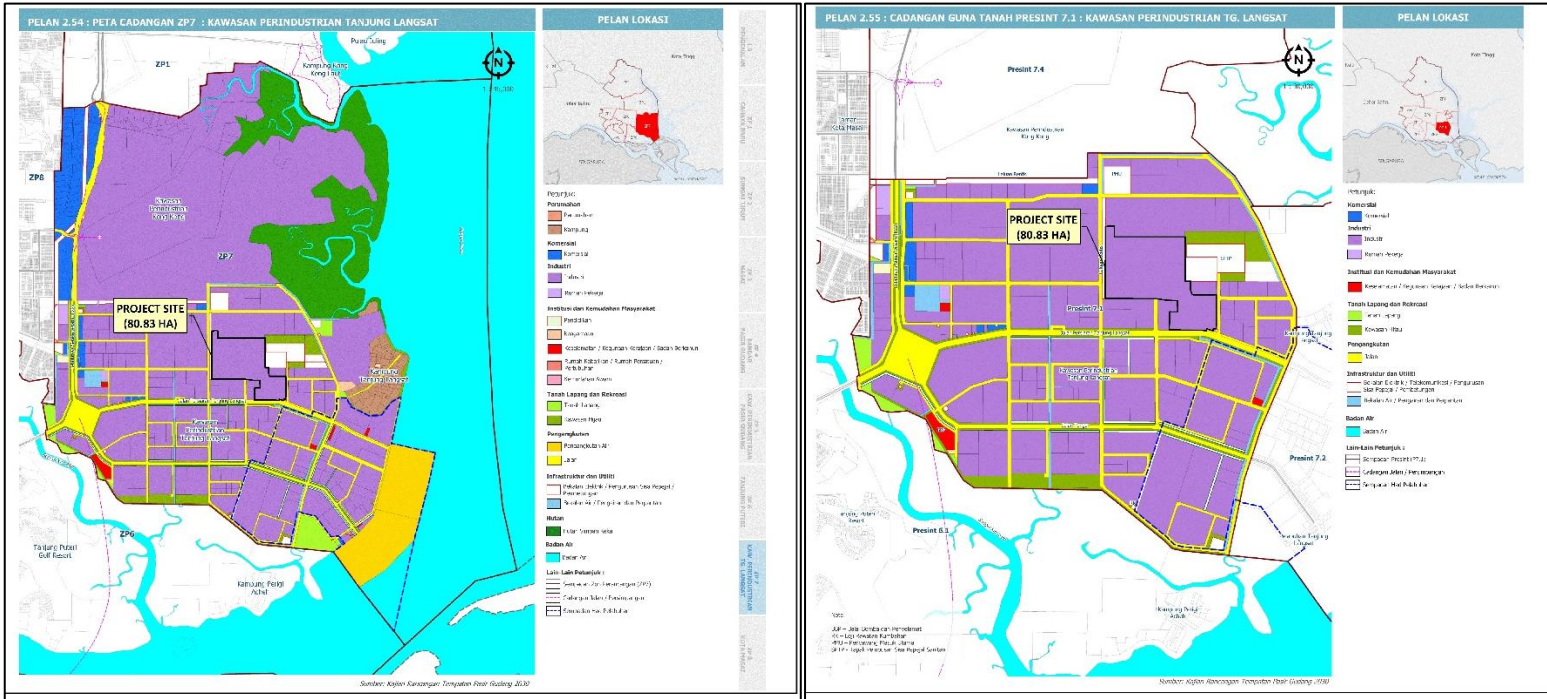
Project Title:

CADANGAN TAMBAHAN MEMBINA PEMBANGUNAN PANEL SOLAR (KEGUNAAN PERSENDIRIAN) BERKAPASITI 49.99MWp SELUAS 28.24 HEKTAR DI ATAS LOT 8101 (80.83 HEKTAR), JALAN RUMBIA 4, KAWASAN PERINDUSTRIAN TANJUNG LANGSAT, MUKIM SUNGAI TIRAM, DAERAH JOHOR BAHRU, JOHOR DARUL TA'ZIM.

- The proposed Project site is located within the area of *Kawasan Perindustrian Tanjung Langsat, Mukim Sungai Tiram*, in the District of Johor Bharu, Johor Darul Ta'zim.
- Peta Cadangan ZP7: Kawasan Perindustrian Tanjung Langsat* in the *Rancangan Tempatan Pasir Gudang, 2030* which was gazetted as Industrial land.



RANCANGAN TEMPATAN PASIR GUDANG, 2030



2.0 PROJECT PROPONENT & CONSULTANTS



PROJECT PROPONENT

BAHRU STAINLESS SDN BHD

Lot 8101, Jalan Rumbia 4,
Kawasan Perindustrian Tanjung Langsat,
81700, Pasir Gudang, Johor Darul Ta'zim
Tel: 013-9852462
Contact Person: Mr. Mohammad Khalid
Email: mohammadkhalid.mohammadbahrun@bahrustainless.com



EIA CONSULTANT

NILAIMAS SERVICES

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Email: nilaimas@gmail.com
Contact Person: Dato' Seri Ts. Hj. Mohd Nawahidudin Mahamad Isa

3.0 LEGISLATIVE REQUIREMENTS



**Environmental Quality Act 1974,
Environmental Quality (Prescribed Activities) (Environmental Impact
Assessment) Order 2015; First Schedule, the proposed Project falls under:**

i. First Schedule, Activity 17: Industrial Estate Development:
Development of industrial estate covering an area of 20 hectares or more.

4.0 STATEMENT OF NEED

Why need this project?		
- The project in line with National Physical Plan 4 – KD 3: Development Towards a Carbon Neutral Nation	- It complements the Johor Renewable Energy Policy 2030 and contributes to Johor’s broader renewable energy roadmap.	- To contribute to sustainable development
- Aligned with Rancangan Struktur Negeri Johor (RSNJ) 2030 . Johor State has introduced the Johor Renewable Energy Policy 2030, which supports the Structure Plan by guiding the development of renewable energy including solar.	- Positive social and economic impacts to the local population are also predicted in the form of job opportunities in Pasir Gudang area and potential spill-over in economic activities.	- Social benefits of the Project: improve the quality of life

5.0 PROJECT DESCRIPTION

COORDINATE OF PROJECT BOUNDARY

POINT	LATITUDE	LONGITUDE
A	1° 28' 31.517" N	103° 58' 52.948" E
B	1° 28' 31.517" N	103° 58' 56.087" E
C	1° 28' 27.675" N	103° 58' 56.086" E
D	1° 28' 27.671" N	103° 59' 21.451" E
E	1° 28' 11.715" N	103° 59' 21.448" E
F	1° 28' 11.714" N	103° 59' 23.422" E
G	1° 28' 06.802" N	103° 59' 24.346" E
H	1° 28' 06.801" N	103° 59' 32.599" E
I	1° 27' 54.688" N	103° 59' 32.597" E
J	1° 27' 53.958" N	103° 59' 29.078" E
K	1° 27' 54.127" N	103° 59' 15.820" E
L	1° 28' 00.669" N	103° 59' 15.822" E
M	1° 28' 00.668" N	103° 59' 18.669" E
N	1° 28' 04.872" N	103° 59' 18.670" E
O	1° 28' 05.364" N	103° 59' 11.496" E
P	1° 28' 05.366" N	103° 58' 52.945" E

01

The proposed solar development covers a total area of **28.24 hectare** on **Lot 8101 (80.83 hectare)**

This project shall be constructed in **one (1) phase** and to ensure to minimize the environmental impact.

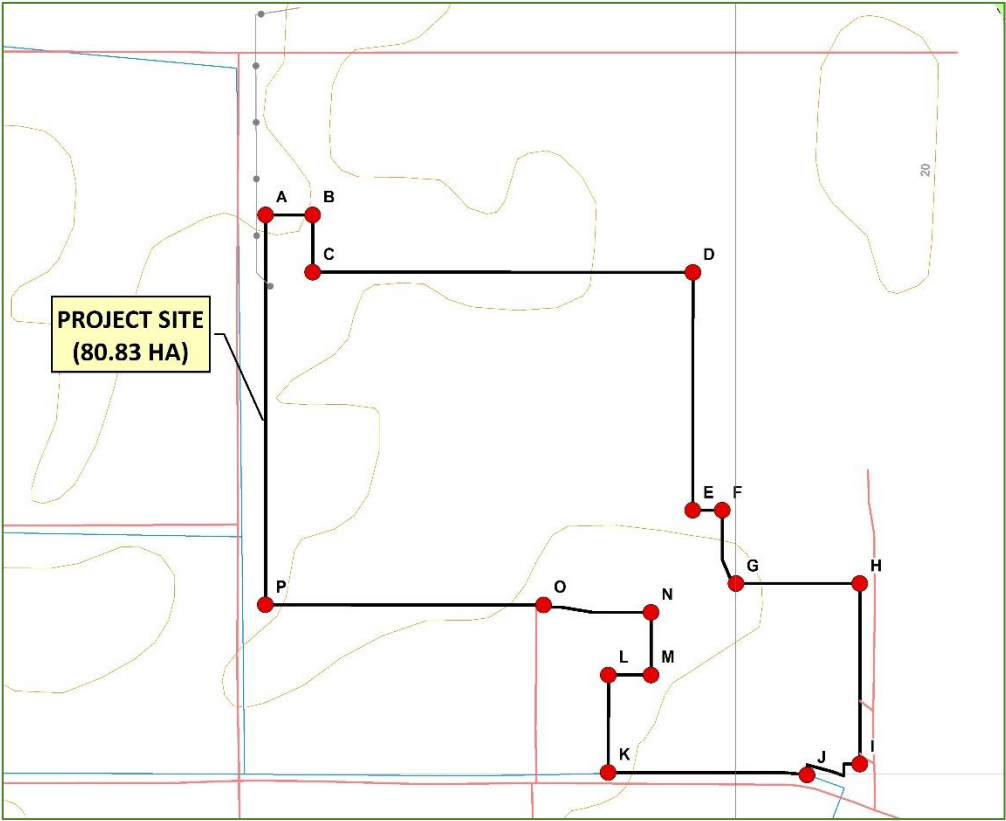
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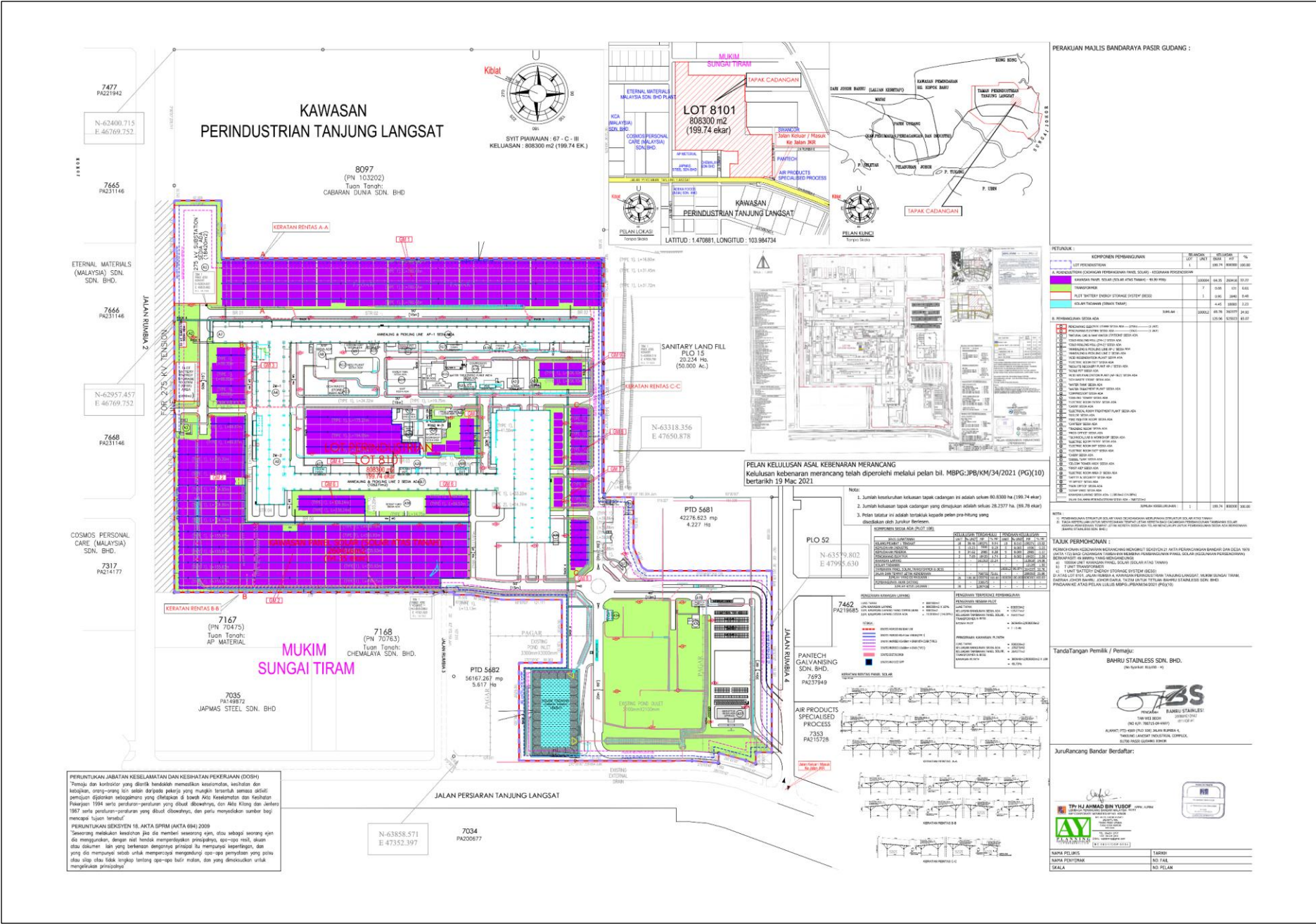
The Project development comprises of **two (2) major components**; Industrial component, Infrastructure and Utility.

Proposed project site can be access using **Jalan Persekutuan 17 (Jalan Persiaran Tanjung Langsat)**,

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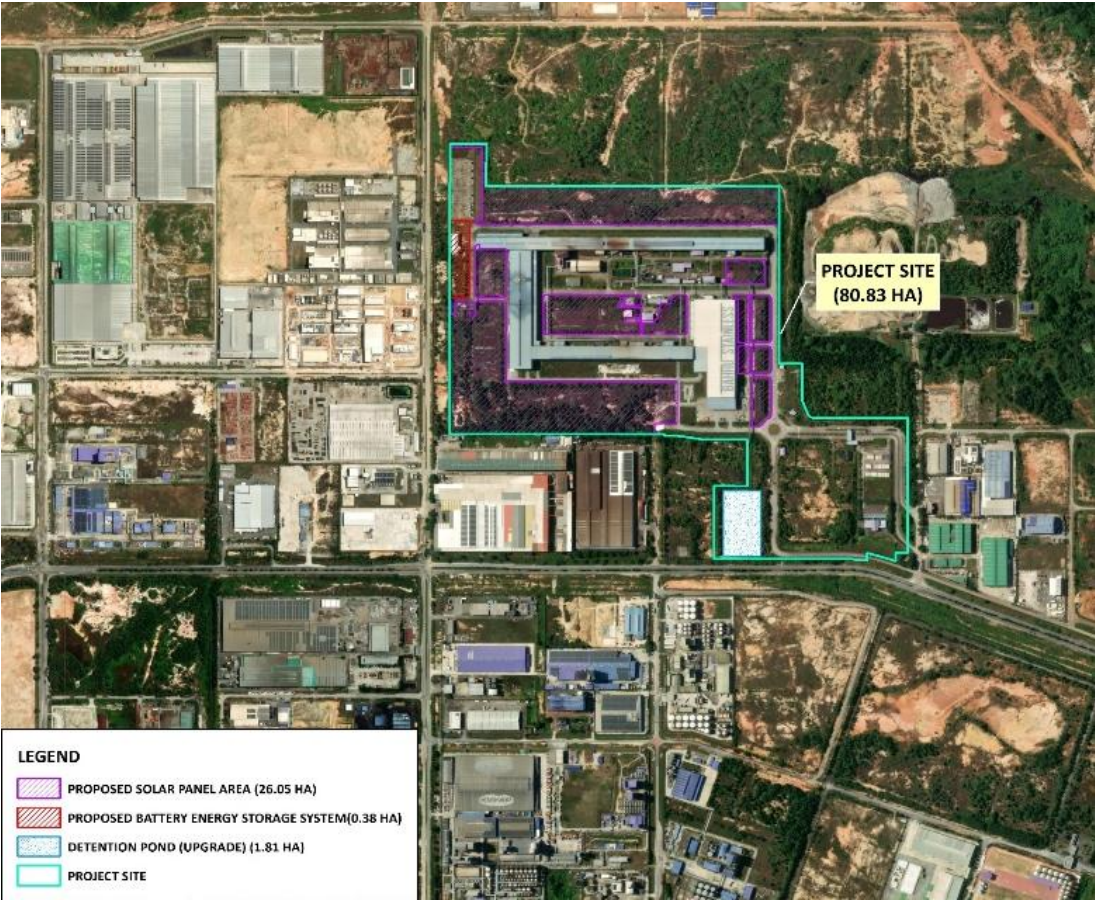


PROJECT LAYOUT



PROJECT COMPONENT

COMPONENT	UNIT	ACRE	HECTARE	%
A. Industrial (Cadangan Pembangunan Panel Solar) – Kegunaan Persendirian				
Panel Solar	100,004	64.35	26.04	32.22
Transformer	7	0.03	0.01	0.01
Plot ‘Battery Energy Storage System’ (BESS)	1	0.95	0.39	0.48
Kolam Tadahan (Dinaik Taraf)	-	4.45	1.80	2.23
Subtotal	100,012	69.78	28.24	34.93
B. Pembangunan Sedia Ada		129.96	52.59	65.07
TOTAL		199.74	80.83	100.00



6.0 EXISTING ENVIRONMENT

LANDUSE - The project site is zoned as Industrial Zone - Surrounded by industrial area, plantation areas and other facilities. - Existing land use of this project site is mostly covered with secondary vegetation and shrubs with permanent industrial building	
TOPOGRAPHY Most of the Project area falls within class I with 100% and slope ranging from 0° - <15° which covered 80.34 hectares.	
CLIMATE - The highest monthly rainfall amount reading is 699.7 mm which was recorded in November 2024. - The highest 24-hour temperature recorded is in April 2016 with 28.5 °C while the lowest mean temperature recorded is in January 2021 with 24.6 °C. - The lowest annual 24 hours mean relative humidity recorded is 84.5 % in September 2024 whilst the highest is 91.0 % in November 2024 - The maximum frequency occurrence wind speed recorded was 23.5 % from the north directions with mean speed of 1.5 m/s followed by northeast directions which recorded 15.9 % with 2.2 m/s mean speed. The minimum frequency occurrence wind speed was 3.4 % from southeast direction with mean speed of 2 m/s. The wind is calm at <0.3 m/s for 16.5 % of the year.	
WATER QUALITY 11 stations (9 River Water Quality & 2 Marine Water Quality) was compared with Class IIB NWQS and MMWQS Class 3 (Industrial) - All of the water samples classified under status polluted,slightly polluted and clean with Class II, III, IV and V.	
AMBIENT AIR, GAS, NOISE AND VIBRATION 1 location of ambient air, gas, noise and vibration samples taken within proposed project area. - PM₁₀, PM_{2.5} and all gas parameters were compared with MAAQS. PM₁₀ and PM_{2.5} are all within DOE limit while for gas only CO detected at the project site. - Noise results were compared with Recommended Permissible Sound Level (LAeq) By Receiving Land Use for Existing Built up Areas (Second Schedule). All results for noise monitoring are comply with DOE limit. - Vibration results were compared with Third Schedule of the Recommended Vibration Limits for Human Response and Annoyance from Intermittent Vibration - vibration levels measured were found to be well within the limit for a safe steady-state of 3.2 mm/s for day and night time.	
GEOLOGY AND SOIL - The geological age of the rock project site is Quaternary which consist of clay, silt, and peat with minor gravel. - The project area is not located within any of metallic or non-metallic mineral	
SURFACE HYDROLOGY - There is an existing drainage system that flows near the Project site, which eventually flow to Sungai Daing then to Sungai Kopok before discharges into the Strait of Johor. - Surface runoff from the project site will be directed towards the existing drainage network and flow into the tributaries of Sungai Daing. - The proposed Project site is located within flood prone area.	
ECOLOGY The existing project site is an industrial land consist of secondary vegetation with minor bushed and shrub. Any existing fauna within the Project site is expected to be migrating to the greener surrounding area for survival.	
SOCIO ECONOMIC 200 respondents from settlements and surrounding area were surveyed 81.5% of the respondents are agreed with the proposed project.	

WATER QUALITY STATIONS



LOCATION OF WATER SAMPLING STATION	
SAMPLING STATION	COORDINATE
W1	1° 27' 54.154" N, 103° 59' 11.908" E
W2	1° 27' 54.155" N, 103° 59' 21.318" E
W3	1° 27' 52.908" N, 103° 59' 32.143" E
W4	1° 27' 43.291" N, 103° 59' 57.080" E
W5	1° 27' 29.157" N, 104° 0' 27.033" E
W6	1° 26' 23.333" N, 103° 59' 26.881" E
W7	1° 26' 19.009" N, 103° 59' 42.334" E
W8	1° 28' 37.046" N, 103° 58' 51.053" E
W9	1° 28' 1.349" N, 103° 58' 51.462" E
MWQ1	1° 27' 57.309" N, 104° 0' 35.341" E
MWQ2	1° 26' 1.184" N, 103° 59' 29.071" E

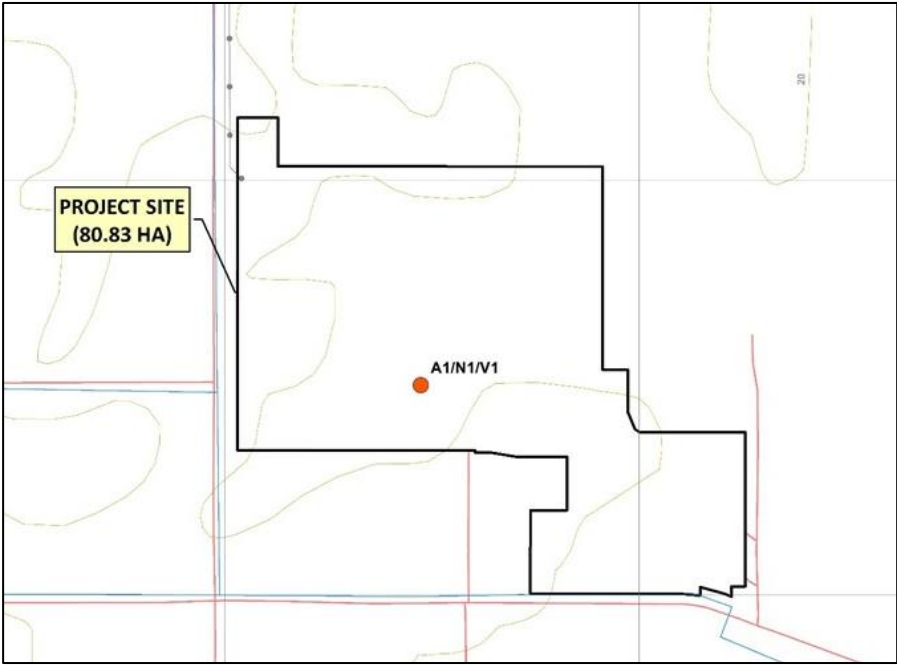
WATER QUALITY

- Parameter that are not comply; COD, DO, TSS, BOD, Turbidity, NH3N
- W1, W4 and W5 – Class V, W2 and W3 - Class IV and II respectively, W6 and 7 - Class III. While W8 and W9 are dry during baseline monitoring. For MWQ monitoring baseline, all parameter complied with standard except TSS at MQW1.

METALS

- Parameters that are not comply; *Flouride, Iron, Baron dan Manganese*

AIR, GAS, NOISE AND VIBRATION MONITORING



LOCATION OF AIR, GAS, NOISE AND VIBRATION SAMPLING STATION	
SAMPLING STATIONS	COORDINATE
A1/N1/V1/G1	1° 28' 10.490" N, 103° 59' 7.273"E

AIR

- Monitoring station comply with Malaysia Ambient Air Quality Standard (Standard 2020)

GAS

- Parameter were detected; Carbon Monoxide

NOISE

- Monitoring station is comply with Recommended Permissible Sound Level (LAeq) by Receiving Land Use for Existing Built Up Areas (Second Schedule)

VIBRATION

- Monitoring station is comply with Recommended Vibration Limits for Human Response and Annoyance from Intermittent Vibration (Third Schedule)

7.0 POTENTIAL IMPACT AND MITIGATION MEASURE

	IMPACTS	MITIGATION MEASURES
	- Erosion due to site clearing - Deteriorates water quality.	- The Project development will be done in one (1) phased - Install suitable size of sedimentation basin. - Prepare LDP2M2 prior project commencement. Maintenance of drainage system and all erosion control tools. - Small stockpiles will be protected with tarpaulin cover
	- Water pollution due to site clearing - Accidental oil / fuel leakage / spillage from storage tank.	- Proper on-site waste and oil management - Maintenance of machinery - Offs-site disposal of scheduled waste – conducted by licensed contractors - Regular water quality monitoring
	- Can increase vibration level. - Cause dust dispersion. - Improper waste management will cause air pollution.	- The load vehicles should be covered by clean impervious sheeting Open burning is strictly prohibited - All equipment and machineries shall be well-maintained - Use of vibration dampers Temporary hoarding at Project site boundary should be carried out Regular noise and vibration monitoring
	- The transportation of construction materials and waste which can disrupt traffic movement. - The movement of vehicles and heavy machineries can cause road damage.	- Appropriate road signage will be erected - Speed of vehicles will be restricted to the designated speed limits - All loads will be secured with chains or strong ropes - Proper scheduling of transportation trucks will be carried out Traffic Management Plan (TMP) must be implemented on-site - Traffic management to be utilized at junctions leading to the entry/exit point of Project site
	Generation of waste from site clearing activities, workers rest area and the use of machineries.	- Minimize extensive clearing of vegetation - Proper handling and storage procedures Utilize reusable construction materials - Recyclable waste shall be segregated - The scheduled wastes storage area shall be constructed in accordance to guidelines - Provision of recycling bins
	- Any pollution will deteriorate the health of nearby residents - The spread of disease/ Covid outbreak.	- Engagement with surrounding communities - Project Proponent and contractor shall comply with P2M2

8.0 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

TYPES OF ENVIRONMENTAL MONITORING	ACTIVITY	REGULATED PARAMETERS	GUIDELINES	APPLICABLE STANDARDS	MONITORING LOCATIONS	FREQUENCIES
Compliance Monitoring (CM)	Water Quality (Discharge from silt trap)	Total Suspended Solid (TSS) Turbidity	National Water Quality Standards (NWQS) for Malaysia	50 mg/L 250 NTU	Outlet of sediment trap	Every month and after 12.5 mm of heavy rainfall
	Air quality	PM _{2.5} PM ₁₀	Malaysia Ambient Air Quality Standard (MAAQS) (Standard 2020)	PM _{2.5} – 35 µg/m ³ PM ₁₀ - 100 µg/m ³	One (1) location at nearest sensitive receptor	Quarterly
	Noise	LAeq Lmax Lmin L10 L50 L90	Recommended Permissible Sound Level (LAeq) By Receiving Land Use for Existing Built-up Areas	Low Density - Residential Day time less than 65 dBA - Night time less than 60 dBA	One (1) location at nearest sensitive receptor	Quarterly
	Vibration	Vibration Peak Velocity	Third Schedule - Recommended Vibration Limits for Human Response and Annoyance from Intermittent Vibrations	Day time 0.8 – 1.6 mm/s Night time 0.4 mm/s	One (1) location at nearest sensitive receptor	Quarterly
Impact Monitoring (IM)	Water Quality	pH Biochemical Oxygen Demand (BOD) Chemical Oxygen Demand (COD) Dissolved Oxygen (DO) Oil & grease Total Suspended Solids (TSS) Ammoniacal Nitrogen (NH ₃ -N) Turbidity E. coli	National Water Quality Standards (NWQS) for Malaysia Class IIB	pH - 6 - 9 BOD - 3 mg/L COD - 25 mg/L DO - 5 - 7 mg/L O&G - Not Detectable (ND) TSS - not greater than 50 mg/L NH ₃ -N - not greater than 0.3 mg/L Turbidity - not greater than 50 NTU E. coli - not greater than 400 count/ 100 mL	9 locations of water bodies	Monthly
	Marine Quality	Dissolved Oxygen (DO) Faecal Coliform Ammonia (NH ₃ -N) Nitrate (NO ₃) Phosphate (PO ₄) Total Suspended Solids (TSS)	Malaysian Marine Water Quality Standard (MMWQS) Class 3 (Industrial)	Dissolved Oxygen (DO) - >3 mg/L Faecal Coliform – 70 CFU/100 mL Ammonia (NH ₃ -N) – 320.0 mg/L Nitrate (NO ₃) – 700.0 mg/L Phosphate (PO ₄) – 670.0 mg/L Total Suspended Solids (TSS) – 100.0 mg/L	2 locations of marine water	Monthly

TYPES OF ENVIRONMENTAL MONITORING	ACTIVITY	REGULATED PARAMETERS	GUIDELINES	APPLICABLE STANDARDS	MONITORING LOCATIONS	FREQUENCIES
	Air quality	PM _{2.5} PM ₁₀	Malaysia Ambient Air Quality Standard (MAAQS) (Standard 2020)	PM _{2.5} – 35 µg/m ³ PM ₁₀ - 100 µg/m ³	One (1) location at nearest sensitive receptor	Quarterly
	Noise	LAeq Lmax Lmin L10 L50 L90	Recommended Permissible Sound Level (LAeq) By Receiving Land Use for Existing Built-up Areas	Industrial • Day time less than 75 dBA • Night time less than 75 dBA	One (1) location at nearest sensitive receptor	Quarterly
	Vibration	Vibration Peak Velocity	Third Schedule - Recommended Vibration Limits for Human Response and Annoyance from Intermittent Vibrations	Day time 3.2 mm/s Night time 3.2 mm/s	One (1) location at nearest sensitive receptor	Quarterly