

Multihope Enterprise Sdn Bhd

No. 2, Jalan Likas Industries, Off Batu 5,
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ENVIRONMENTAL IMPACT ASSESSMENT

**Proposed Offsite Scheduled Waste Storage
Facility on CL.045322521, District of Tuaran,
Sabah**

Revised Report

Our Ref: CS/EV03/0013/2025
Date: July 2026



CHEMSAIN (SB) SDN BHD (1311261-M)

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EXECUTIVE SUMMARY

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"PROPOSED OFFSITE SCHEDULED WASTE STORAGE FACILITY ON CL.045322521, DISTRICT OF TUARAN, SABAH"

Project Proponent



Multihope Enterprise Sdn Bhd

No. 2, Jalan Likas Industries, Off Batu 5, Jalan Tuaran, 88450 Kota Kinabalu, Sabah



016 – 889 0858



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Mr. Eddie Tan



Project Director

Environmental Consultant



Chemsain (SB) Sdn Bhd

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088 – 381 278



088 – 381 280



Rebecca Poong/ Tommy Liew



EIA Team Leader / Project Coordinator

Location

Project measures an area of 0.083 hectare and is located on CL 045422521 at Tuaran, Sabah, accessible via Jalan Tuaran.

Brief Description

Establishment of a new offsite scheduled waste facility to cater for storage of SW102, SW103 and SW110 (100 MT/month).

Legislative Requirements

Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015. First Schedule – Item 14: Waste Treatment and Disposal.

(a) Scheduled Waste:

(iii) Construction of storage facilities (offsite).

Statement of Need

Industrial Growth in Sabah

- Expansion in, manufacturing, and SMEs.
- Increase in scheduled waste generation.

Environmental Concerns

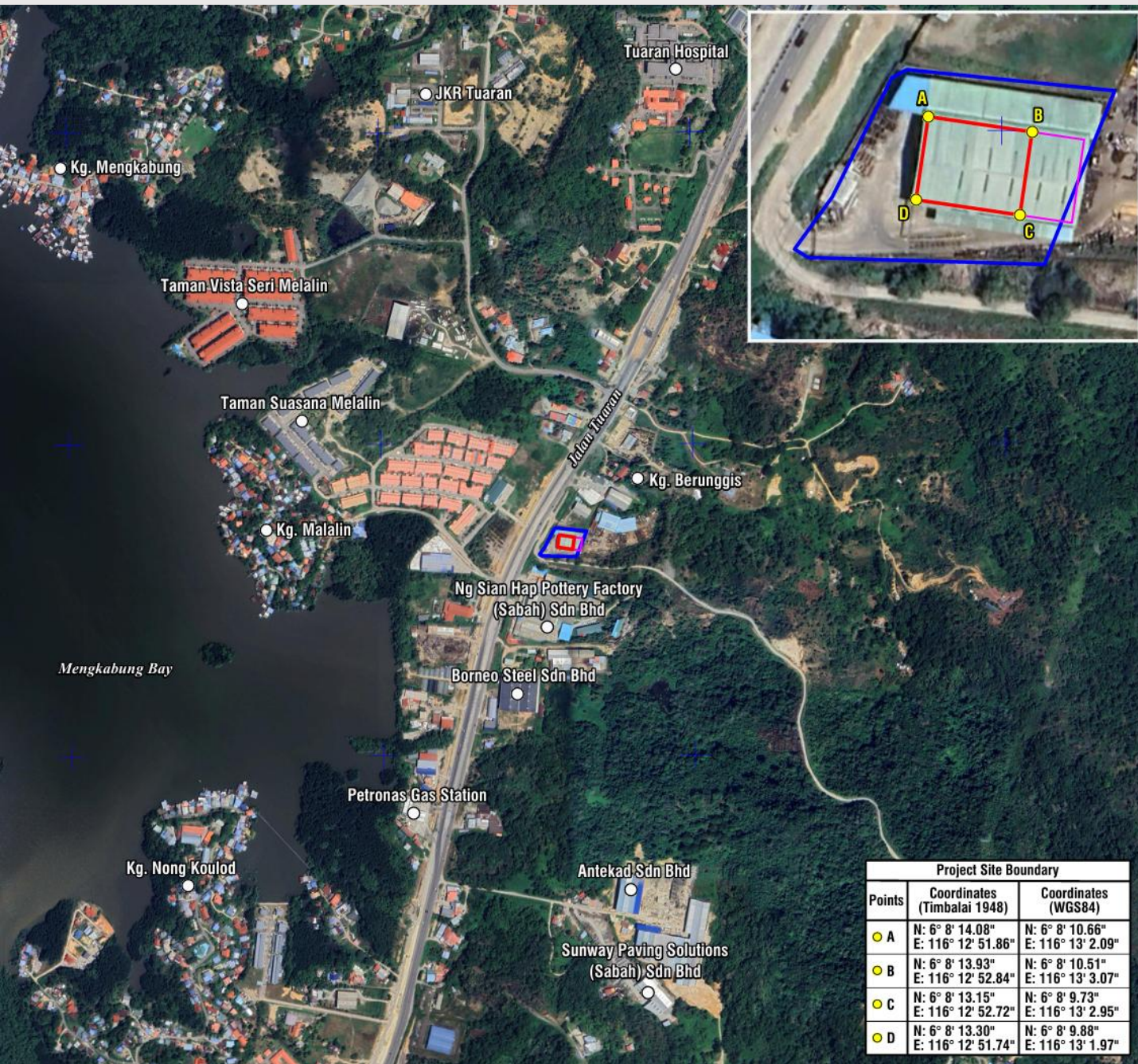
- Toxic & hazardous waste pose risks to ecosystems & human health.
- Currently, some waste must be transported out of the state for treatment.

Current Waste Management Challenges

- 103,767 MT of scheduled waste generated (DOE Sabah, 2022).

PROJECT DESCRIPTION

Site Location



Legend:

-  Land Boundary
-  Project Site Boundary



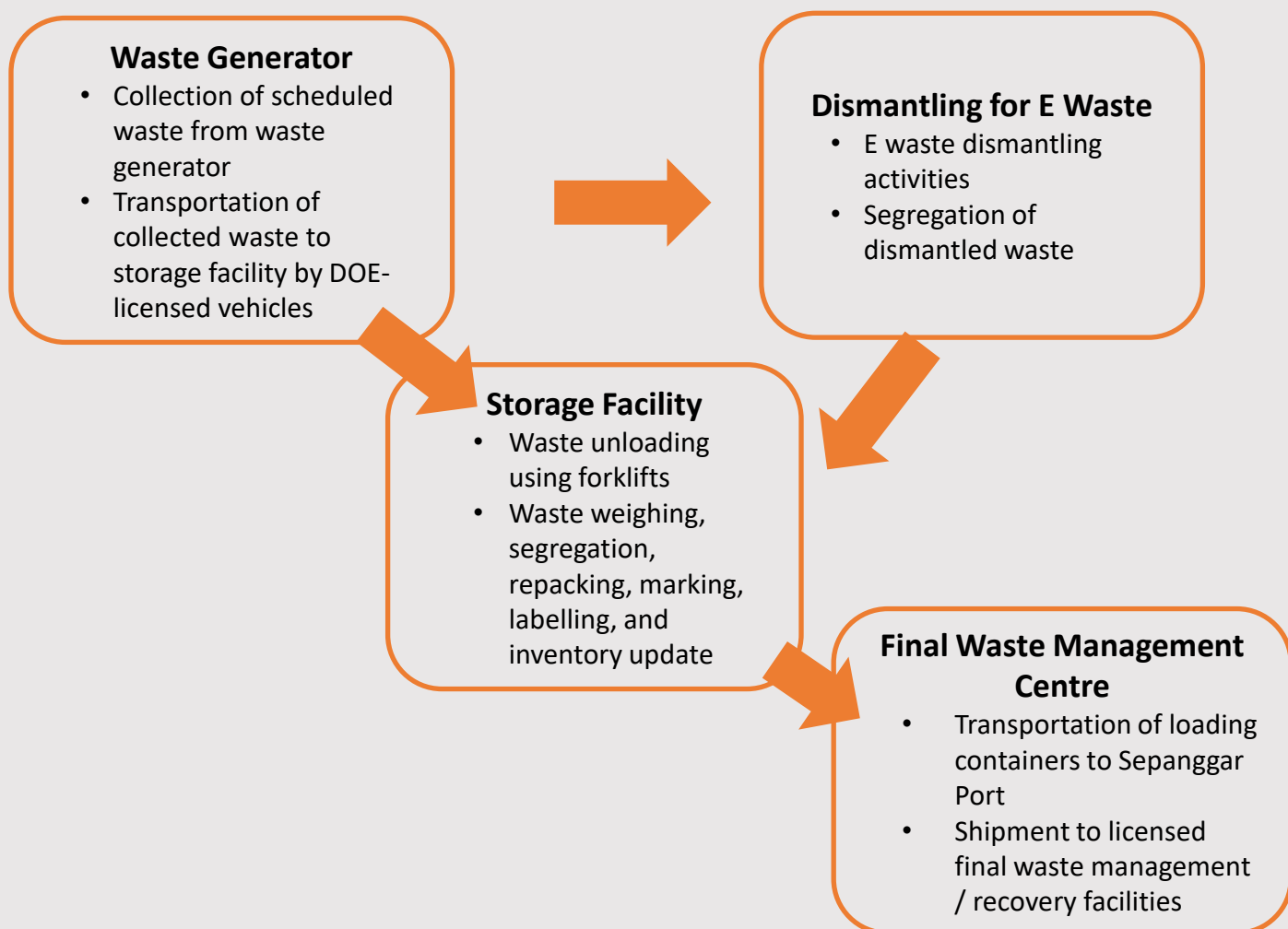
PROJECT DESCRIPTION

Concept

Existing warehouse building to store 100 MT/month of scheduled waste.

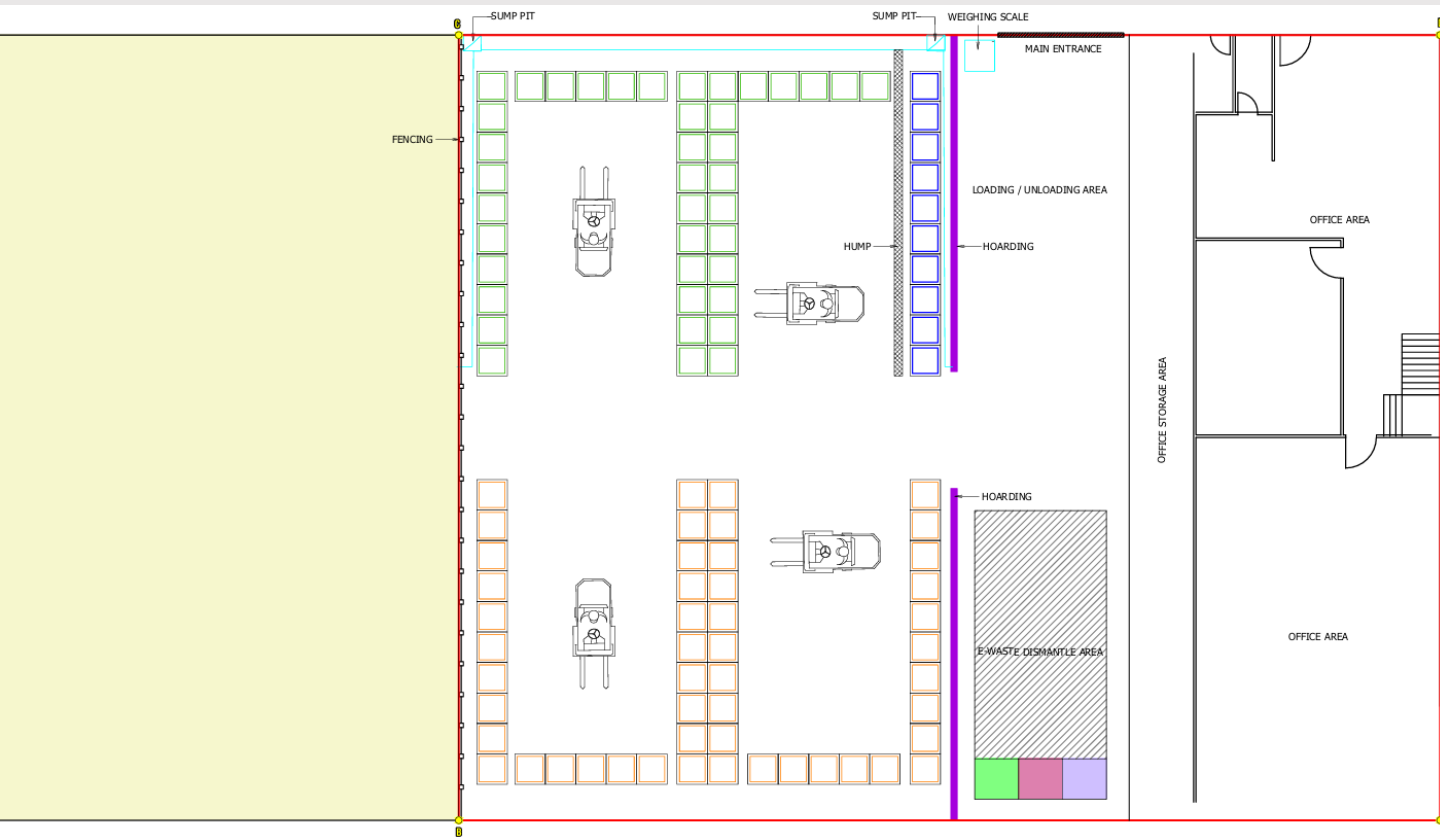
Scheduled Waste Codes: SW102 SW103 SW110

Project Flowchart



PROJECT DESCRIPTION

Site Layout Plan



Legend:

- Project Site Boundary
- Fencing
- Sump Pit
- SW102
- SW103
- SW110
- Plastic Storage Area
- Metal Storage Area
- Paper Storage Area
- Existing Scrap Metal Facility

PROJECT ACTIVITIES



Pre-Renovation Stage

- Site survey works.
- Conducting baseline environmental samplings for EIA study.
- Obtain approvals from relevant stakeholders.



Operational/ Maintenance Stage

- Collection of scheduled waste.
- Waste segregation.
- Handling and storage of scheduled waste.
- Transportation of scheduled waste.
- Manpower requirement and operational hours.
- Utilities and water Supply.
- Maintenance Requirement.



Project Abandonment

- Preparation of Abandonment Plan and submission to DOE Sabah.

EXISTING ENVIRONMENT

Physical

Topography



Concreted flat ground

Hydrology

- ❖ Surrounding grounds are fully concreted
- ❖ Surface runoff from the site is directed into the internal closed drainage system which discharge to roadside drain of Jln Tuaran
- ❖ Nearest natural waterway: Mengkabong Bay (350 m west)

Meteorology



Easterly with wind speed up to 5.4 m/s



2,794.2 mm

Geology



Crocker formation
Consists of flysch-type sandstone, shale, siltstone with rare tuff, limestone breccia and agglomerate

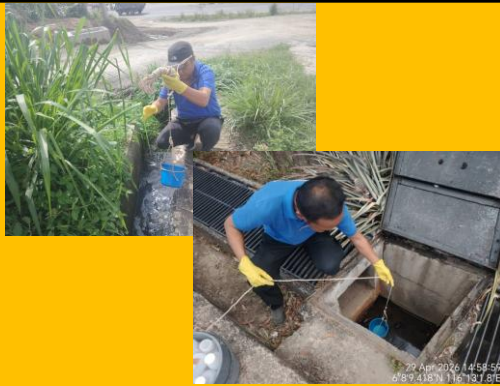
Soil



Lokan Association
Main soil: orthic Acrisol and Dystric Cambisol

EXISTING ENVIRONMENT

Baseline Environmental Sampling



- **Surface water quality sampling** at existing drainage at the upstream and downstream of the Project site.
- Results complied with Class III NQWSM, except for DO, N.
- High level of DO is considerably good for aquatic lifeform.
- Higher N (Ammoniacal-Nitrogen) indicate upstream sewage leakage from settlements.



- **Ambient air sampling** (PM₁₀, PM_{2.5}) conducted at 2 points: project site boundary (A1) and Kg Berunggis (A2).
- Results complied with MAAQS (2020).



- **Noise level monitoring** conducted at 2 points: project site boundary (A1) and Kg Berunggis (A2).
- Results complies to the Guidelines for Environmental Noise Limits and Control, 2019 for Industrial Zones and Urban Residential,



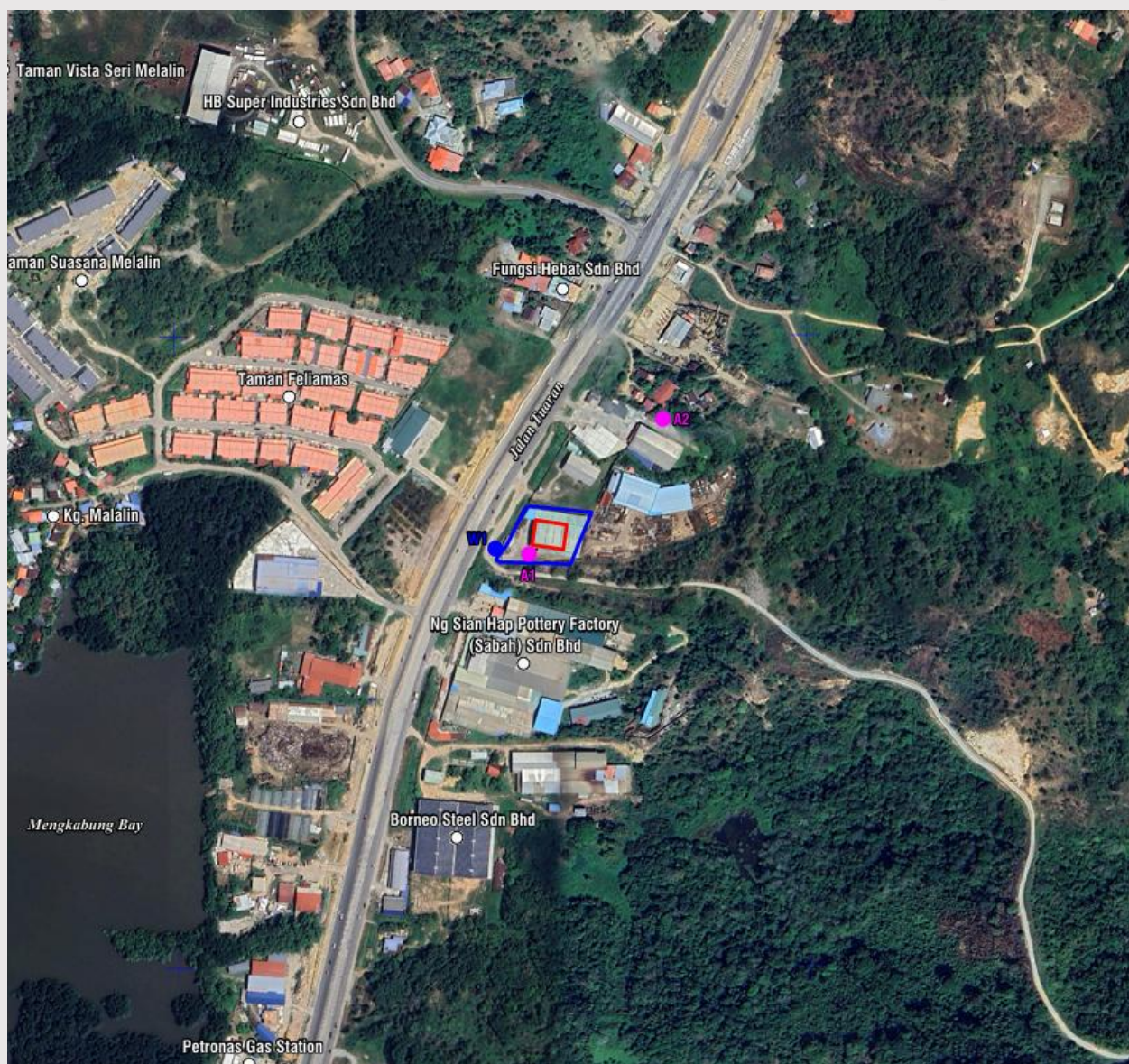
- **Noise level monitoring** conducted at 2 points: project site boundary (A1) and Kg Berunggis (A2).
- Results complies to the Groundwater Quality Standards for Convention Raw Water Treatment (Drinking Water) except COD, Sulphate, and Iron,

Biological

- ❖ The absence of natural vegetation precludes the presence of any protected species observed as the surrounding area is also a much-developed area for industries.

EXISTING ENVIRONMENT

EIA Zone of Study & Environmental Baseline Samplings



Legend:

- Land Boundary
- Project Site Boundary
- W1 Water Sampling Location
- A1-A2 Air Sampling Locations

	Land Use Feature	Approximate Distance	Direction
Residential	Kg. Berunggis	150 m	North
	Taman Feliamas 118	200 m	West
	Kg Melalin	430 m	West
	Kg Nongkolud	800 m	South West
	Taman Vista Seri Melalin	680 m	North West
Industry	Ng Sian Hap Pottery	100 m	South
	Tiong Cheong Brick Factory	250 m	South
	Borneon Steel Sdn Bhd	280 m	South
	Sriham Hardware	280 m	South-West
	Vision Cement Bricks Sdn Bhd	250 m	South West
	Bakut Hardware	500 m	South West
School	SK Pendidikan Khas Kota Kinabalu	1,250 m	South West
	IPG Kampus Kent Baru	1,280 m	South
Others	Tuaran Hospital	800 m	North
	Telibong Water Treatment Plant	2, 500 m	North East

IMPACT ASSESSMENT & MITIGATION MEASURES

Operation & Maintenance Stage



Risk Assessment

Impact: Low

- ❖ Prepare and implement Emergency Response Plan (ERP).
- ❖ Regular inspection on emergency response equipment and supplies.
- ❖ Conduct regular emergency response drills.

Reference: Page C8-4 to C8-5



Noise Pollution

Impact: Moderate

- ❖ Proper installation/ regular maintenance of of equipment.
- ❖ Install warning signs and proper PPE for workers.
- ❖ Conduct regular noise level monitoring.

Reference: Page C8-3 to Page C8-4



Water Pollution

Impact: Low

- ❖ Provision of perimeter drains with sump pits within the facility.
- ❖ Regular inspection and maintenance on the existing concrete drain.
- ❖ Practice good housekeeping.
- ❖ Engagement of CEP SWAM.
- ❖ Conduct regular water quality monitoring.

Reference: Page C8-2 to C8-3

IMPACT ASSESSMENT & MITIGATION MEASURES



Traffic & Transportation Impacts

Impact: Low

- ❖ Proper scheduling of transportation activities.
- ❖ Strictly observed the speed limits stipulated for public roads.
- ❖ Install a proper traffic signage within the facility.

Reference: Page C8-5 to C8-6



Socio-Economic Impacts

Impact: Moderate/ Beneficial

- ❖ Prioritize locals for employment/ business opportunities.
- ❖ Undergo health screening prior to employment.

Reference: Page C8-6 to C8-7



Health Impacts

Impact: Low

- ❖ Conduct regular medical surveillance for workers onsite.
- ❖ Conduct regular fogging.

Reference: Page C8-7

MONITORING PROGRAMME

Performance Monitoring

- ❖ CePSWAM competent person for scheduled waste management

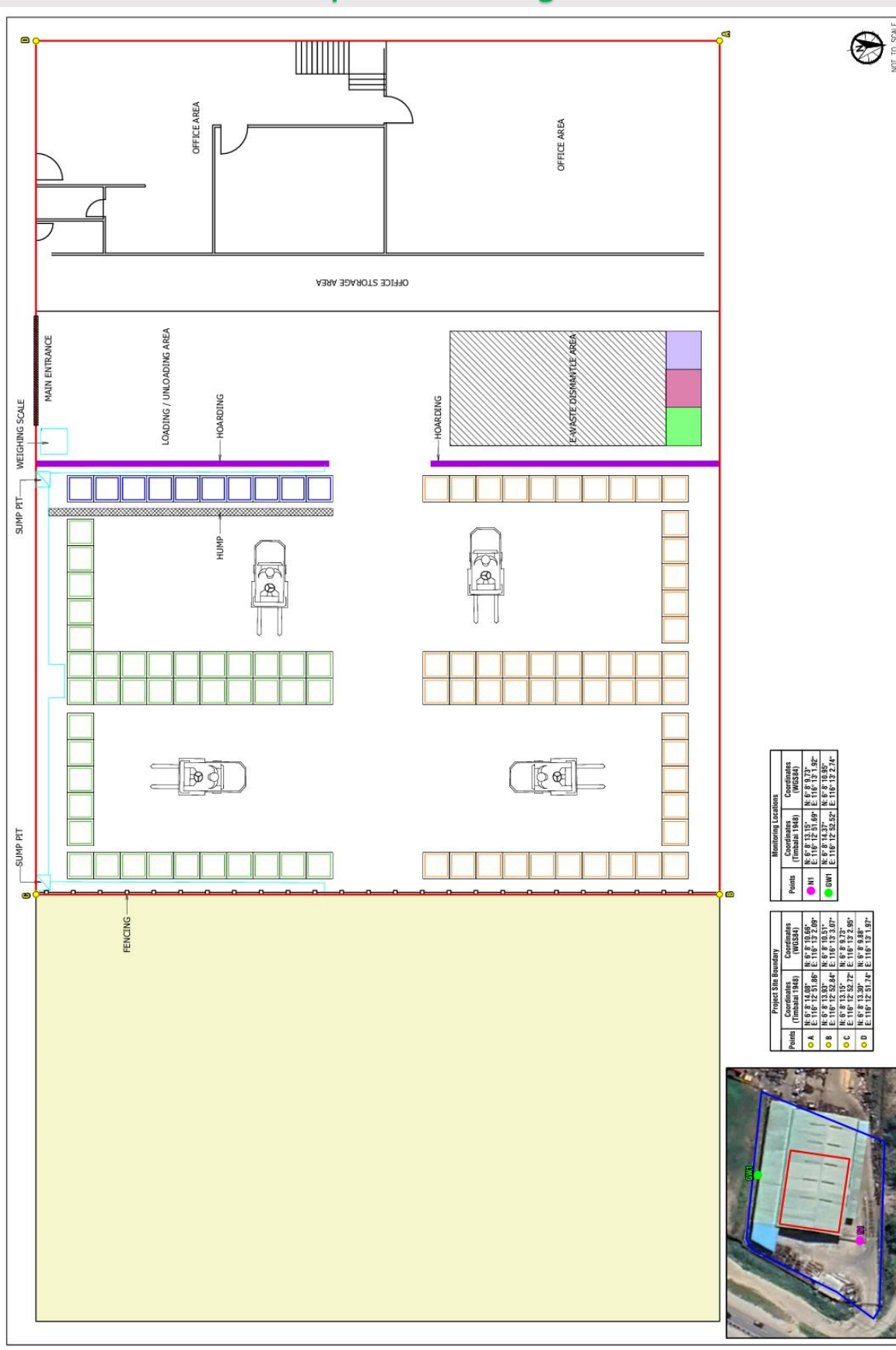
Impact Monitoring

Aspect	Parameter	Monitoring Location	Frequency	Compliance Standard/ Guidelines
Operation Stage				
Noise Level	L _{eq}	N1: N 06° 8' 13.15" E 116° 12' 251.69"	Quarterly	Second Schedule of the Guidelines for Environmental Noise Limits and Control (Industrial Zones): L_{eq}: 75 dB(A) [daytime : 0700 to 2200] 75 dB(A)[night time : 2200 to 0700]
Groundwater	pH BOD COD Total Dissolved Solids Oil & Grease Sulphate Phenol Copper Zinc Lead Iron Cadmium Chromium Nickel Arsenic E.coli	GVM1 N 06° 8' 14.529" E 116° 13' 4.947"	Annually	- Groundwater Quality Standards for Convention Raw Water Treatment (Drinking Water) - Baseline Groundwater Result

Note: GPS coordinates in Timbalai 1948 datum

MONITORING PROGRAMME

Proposed Monitoring Locations



Legend:

- Project Site Boundary
- Fencing
- Sump Pit
- SW102
- Plastic Storage Area
- Metal Storage Area
- Paper Storage Area
- Existing Scrap Metal Facility
- SW103
- SW110
- Proposed Noise Monitoring Location
- Proposed Groundwater Monitoring Location

RINGKASAN EKSEKUTIF

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"PROPOSED OFFSITE SCHEDULED WASTE STORAGE FACILITY ON CL.045322521, DISTRICT OF TUARAN, SABAH"

Penggerak Projek



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Eddie Tan



Pengarah Projek

Perunding Alam Sekitar



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Rebecca Poong / Tommy Liew



Ketua Pasukan EIA / Penyelaras Projek

Lokasi

Project (0.083 ha) di CL 045422521, Tuaran, Sabah, boleh diakses melalui Jalan Tuaran.

Penerangan Ringkas

Pembangunan kemudahan buangan terjadual luar tapak yang baru untuk penyimpanan 3 kod buangan terjadual (100MT/bulan – SW102, SW103, SW110).

Keperluan Perundangan

Perintah Kualiti Alam Sekeliling (Aktiviti yang Ditetapkan) (Penilaian Kesan Kepada Alam Sekeliling) 2015. Jadual Pertama – Aktiviti 14: Pengolahan dan Pelupusan Buangan.

(a) Buangan Terjadual:

(iii) Pembinaan kemudahan penstoran (luar tapak).

Penyataan Keperluan

Pembangunan Industri di Sabah

- Perkembangan dalam industri, pembuatan dan PKS (Perusahaan Kecil dan Sederhana).
- Peningkatan dalam penghasilan buangan terjadual.

Isu Alam Sekitar

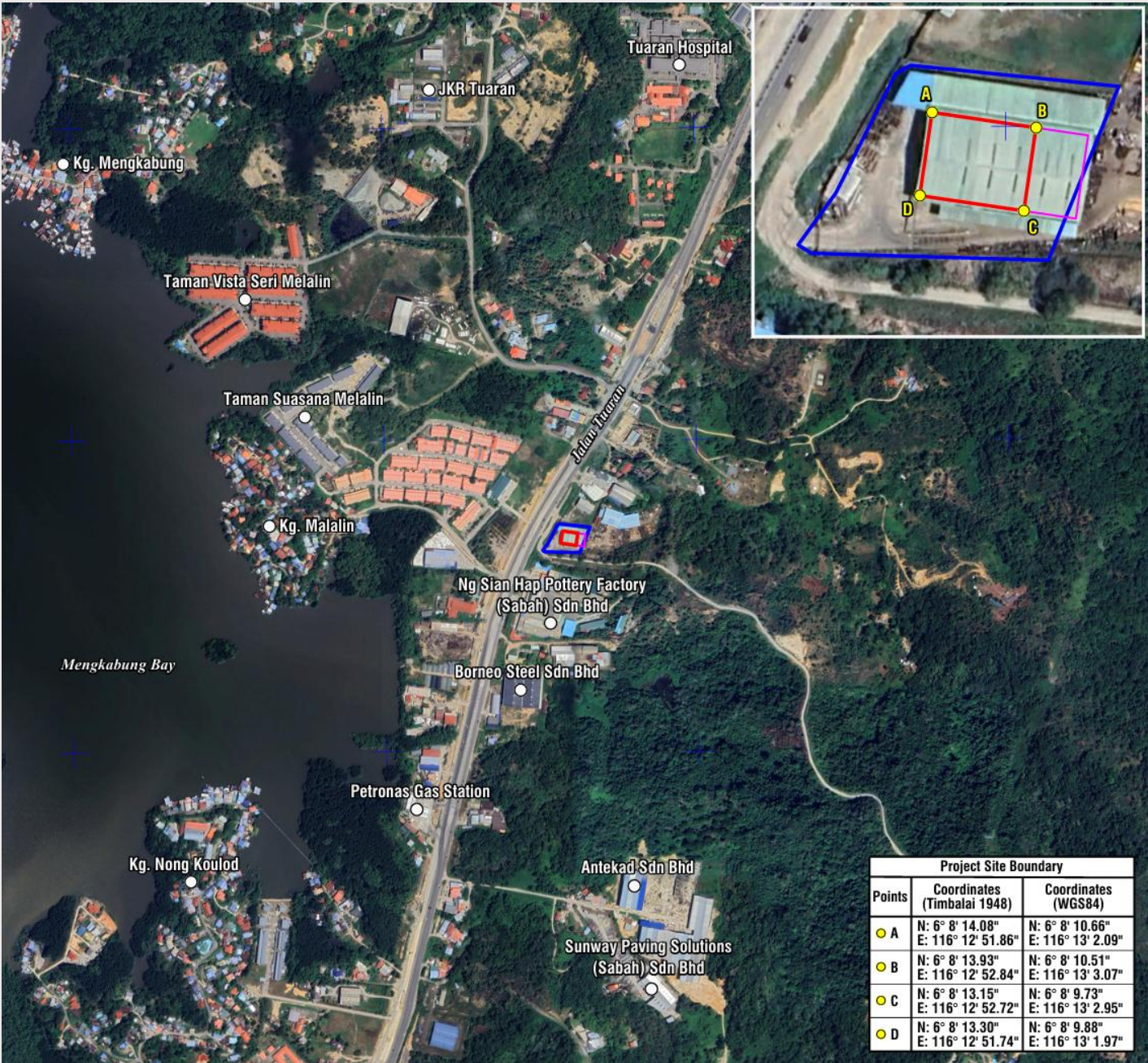
- Buangan toksik & berbahaya menimbulkan risiko kepada ekosistem & kesihatan manusia.
- Pada masa ini, sesetengah buangan perlu diangkut keluar dari negeri untuk rawatan.

Cabaran Pengurusan Sisa Buangan Terjadual

- 103,767 MT buangan terjadual dihasilkan (JAS Sabah, 2022).

PENERANGAN PROJEK

Lokasi Tapak



Legend:



Land Boundary



Project Site Boundary



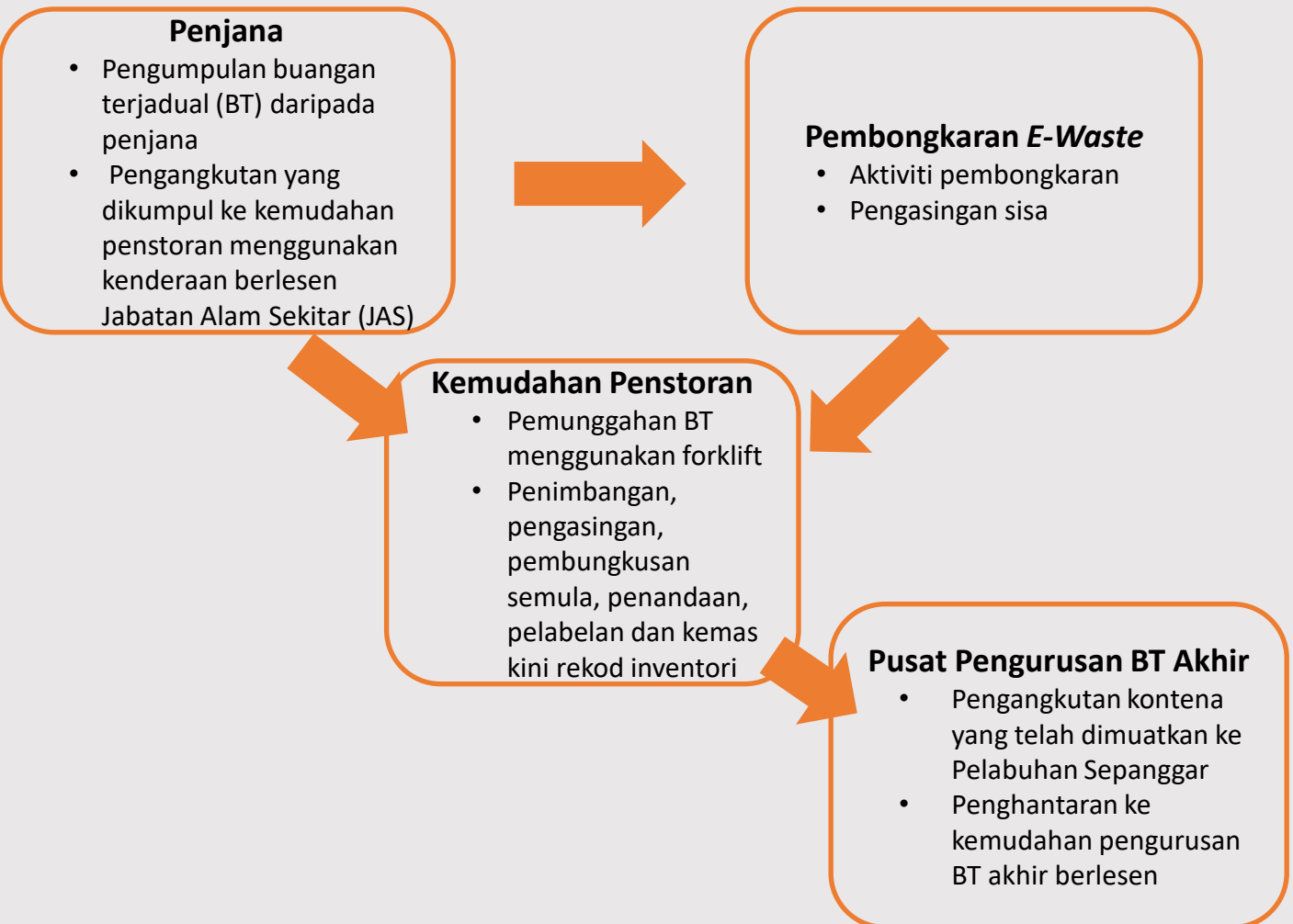
PENERANGAN PROJEK

Konsep

Bangunan gudang sedia ada untuk menstor buangan terjadual (100 tan/bulan).

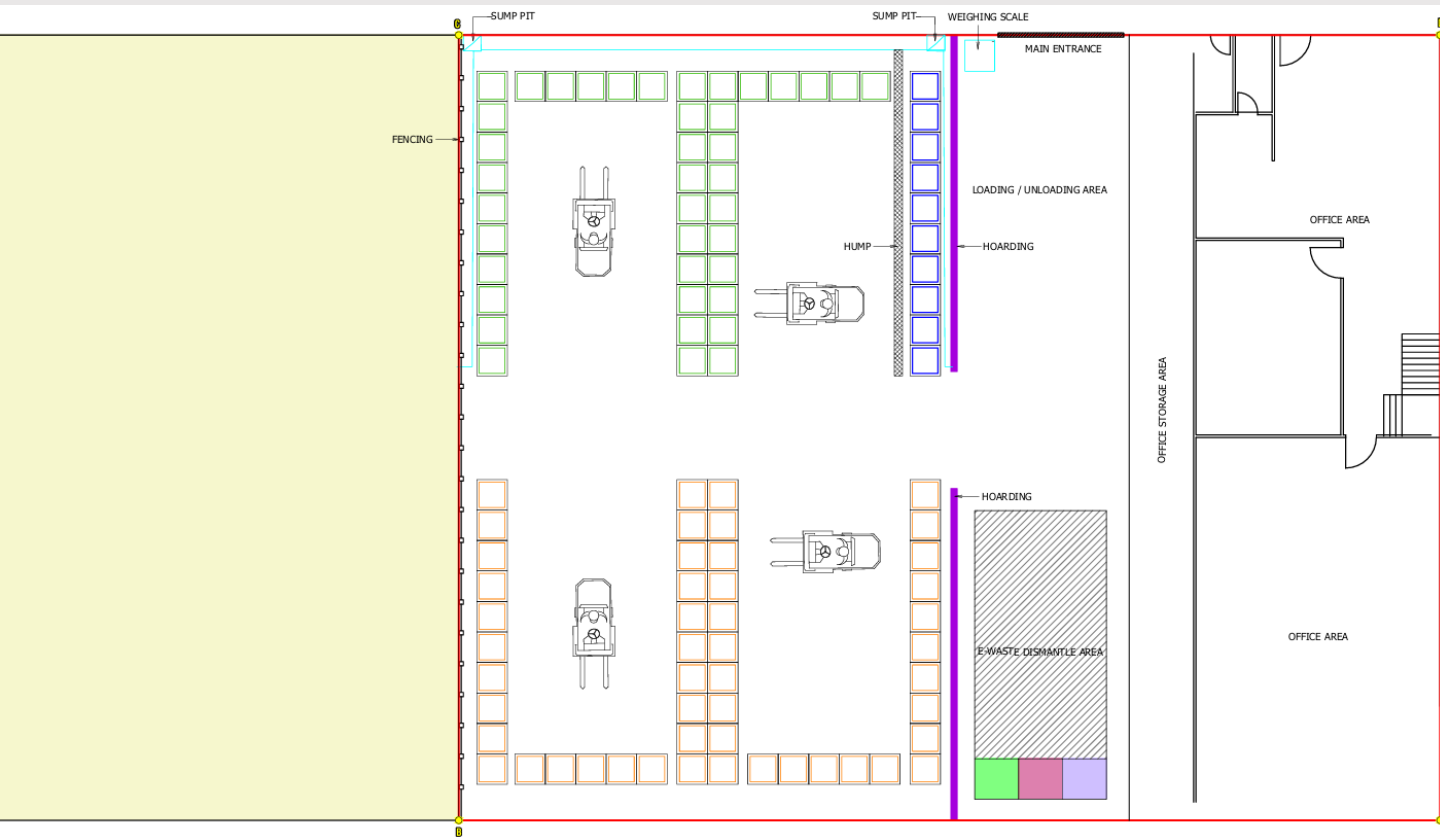
Kod Buangan Terjadual terlibat: SW102, SW103, SW110

Carta Aliran Projek



PENERANGAN PROJEK

Pelan Susunatur Tapak



Legend:

- Project Site Boundary
- Fencing
- Sump Pit
- SW102
- SW103
- SW110
- Plastic Storage Area
- Metal Storage Area
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AKTIVITI PROJEK



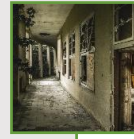
Peringkat Pra-Pengubahsuaian

- Kerja-kerja tinjauan tapak
- Menjalankan pensampelan garis dasar alam sekitar
- Kajian EIA
- Mendapatkan kelulusan daripada pihak berkepentingan yang berkaitan.



Peringkat Operasi/Penyelenggaraan

- Pengangkutan BT.
- Pengasingan BT.
- Pengendalian dan penstoran BT.
- Pengangkutan BT.
- Keperluan tenaga kerja dan masa operasi.
- Bekalan utiliti dan air.
- Keperluan penyelenggaraan.



Peringkat Pengabaian Projek

- Penyediaan Pelan Penutupan dan penyerahan kepada JAS Sabah.

PERSEKITARAN SEDIA ADA

Fizikal

Topografi



Tanah rata berkonkrit dengan bangunan industri sedia ada

Hidrologi

- ❖ Tanah di sekelilingnya berkonkrit sepenuhnya
- ❖ Aliran air permukaan dari tapak mengalir ke dalam sistem perparitan sedia ada dan akhirnya ke system perparitan Jln Tuaran
- ❖ Alur air semula jadi terdekat: Bakut Bay (350 m barat)

Meteorologi



Angin bertiup dari arah timur dengan kelajuan sehingga 5.4 m/s



2,794.2 mm

Geologi



Litologi Crocker

Terdiri daripada *flysch-type sandstone, shale, siltstone with rare tuff, limestone breccia and agglomerate*

Tanah

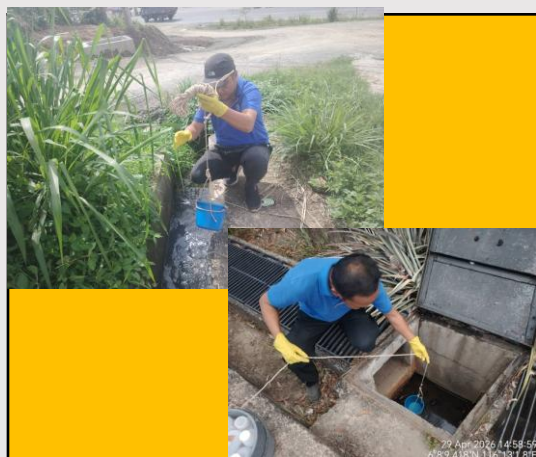


Asosiasi Lokan

Jenis tanah utama: *orthic acrisol and dystric cambisol*

PERSEKITARAN SEDIA ADA

Persampelan Garis Dasar Alam Sekitar



- **Persampelan kualiti air** di parit sedia ada di bahagian hulu and hilir projek.
- Keputusan mematuhi Kelas III NWQSM, kecuali untuk DO, dan N.
- Tahap DO yang tinggi adalah sangat baik untuk hidupan akuatik.
- Paras Nitrogen Ammonia ($\text{NH}_3\text{-N}$) yang tinggi mencadangkan kemungkinan pencemaran di bahagian hulu berpunca daripada kebocoran kumbahan dari kawasan penempatan berhampiran.



- **Persampelan udara ambien** (PM_{10} , $\text{PM}_{2.5}$) di 2 lokasi: sempadan tapak projek (A1) Kg Berunggis (A2).
- Keputusan parameter PM_{10} , $\text{PM}_{2.5}$, mematuhi MAAQS (2020).



- **Pemantauan Tahap Bunyi Bising** di 2 lokasi: sempadan tapak projek (A1) Kg Berunggis (A2).
- Keputusan mematuhi *Guidelines for Environmental Noise Limits and Control, 2019*



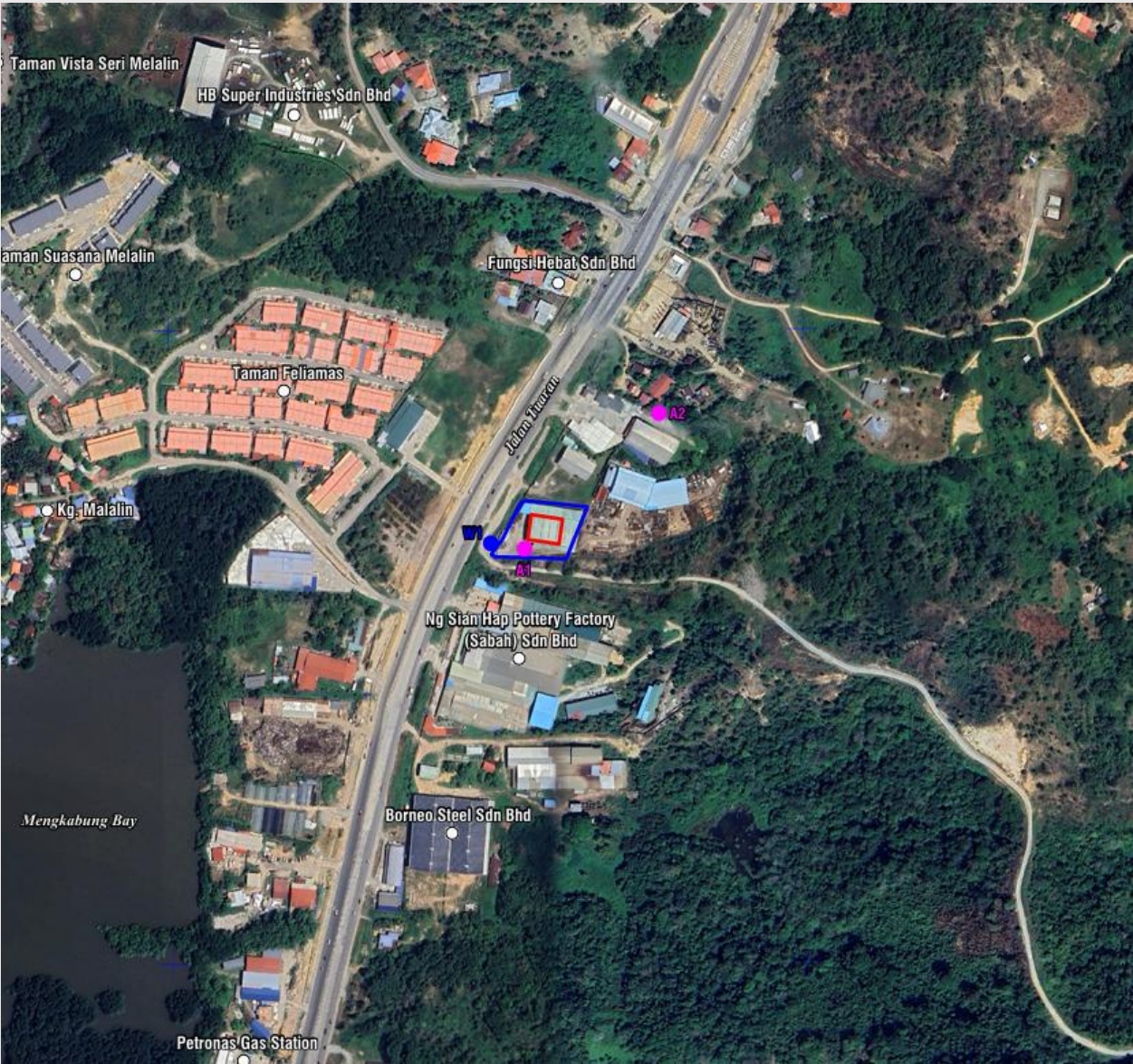
- **Pemantauan *gourndwater*** di sempadan tapak projek (GW1).
- Keputusan mematuhi *Groundwater Quality Standards for Convention Raw Water Treatment (Drinking Water)* kecuali COD, Sulphate, dan Iron

Biologiikal

- ❖ Tiada tumbuh-tumbuhan semula jadi atau mana-mana spesies terlindung yang kelihatan kerana kawasan sekitar tapak juga merupakan kawasan perindustrian.

PERSEKITARAN SEDIA ADA

Zon Kajian EIA & Lokasi Persampelan Alam Sekitar



Legend:

- Land Boundary
- Project Site Boundary
- W1 Water Sampling Location
- A1-A2 Air Sampling Locations

	Land Use Feature	Approximate Distance	Direction
Residential	Kg. Berunggis	150 m	North
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PENILAIAN IMPAK DAN LANGKAH MITIGASI

Peringkat Operasi/ Penyelenggaraan



Penilaian Risiko/ Bahaya

Impak: Rendah

- ❖ Sediakan dan laksanakan Pelan Tindakan Kecemasan.
- ❖ Pemeriksaan berkala terhadap peralatan dan bekalan kecemasan.
- ❖ Menjalankan latihan kecemasan secara berkala.

Rujukan: Mukasurat C8-4 hingga C8-5



Pencemaran Bunyi

Impak: Sederhana

- ❖ Memasang papan tanda amaran dan menyediakan PPE bagi pekerja.
- ❖ Menjalankan pemantauan tahap bunyi bising secara berkala.

Rujukan: Mukasurat C8-3 hingga C8-4



Pencemaran Air

Impak: Rendah

- ❖ Penyediaan longkang perimeter dengan *sump* di dalam fasiliti.
- ❖ Pemeriksaan dan penyelenggaraan berkala ke atas longkang konkrit sedia ada.
- ❖ Mengamalkan *housekeeping* yang baik.
- ❖ Melantik CEPSWAM.
- ❖ Menjalankan pemantauan kualiti air secara berkala.

Rujukan: Mukasurat C8-2 hingga C8-3

PENILAIAN IMPAK DAN LANGKAH MITIGASI

Peringkat Operasi/ Penyelenggaraan



Impak Trafik & Pengangkutan

Impak: Rendah

- ❖ Penjadualan aktiviti pengangkutan dengan baik.
- ❖ Mematuhi peraturan keselamatan jalan raya.
- ❖ Pasang papan tanda yang betul di dalam fasiliti.

Rujukan: Mukasurat C8-5 hingga C8-6



Impak Sosio-Ekonomi

Impak: Sederhana/ Manfaat

- ❖ Utamakan penduduk tempatan untuk peluang pekerjaan/ perniagaan.
- ❖ Menjalankan pemeriksaan kesihatan sebelum diambil bekerja.

Rujukan: Mukasurat C8-6 hingga C8-7



Impak Kesihatan

Impak: Rendah

- ❖ Melaksanakan *fogging* secara berkala.
- ❖ Pemantauan kesihatan berkala hendaklah dijalankan ke atas pekerja di tapak..

Rujukan: Mukasurat C8-7

PROGRAM PEMANTAUAN

Pemantauan Prestasi

- ❖ Perlantikan orang berwibawa CePSWAM bagi pengurusan buangan terjadual.

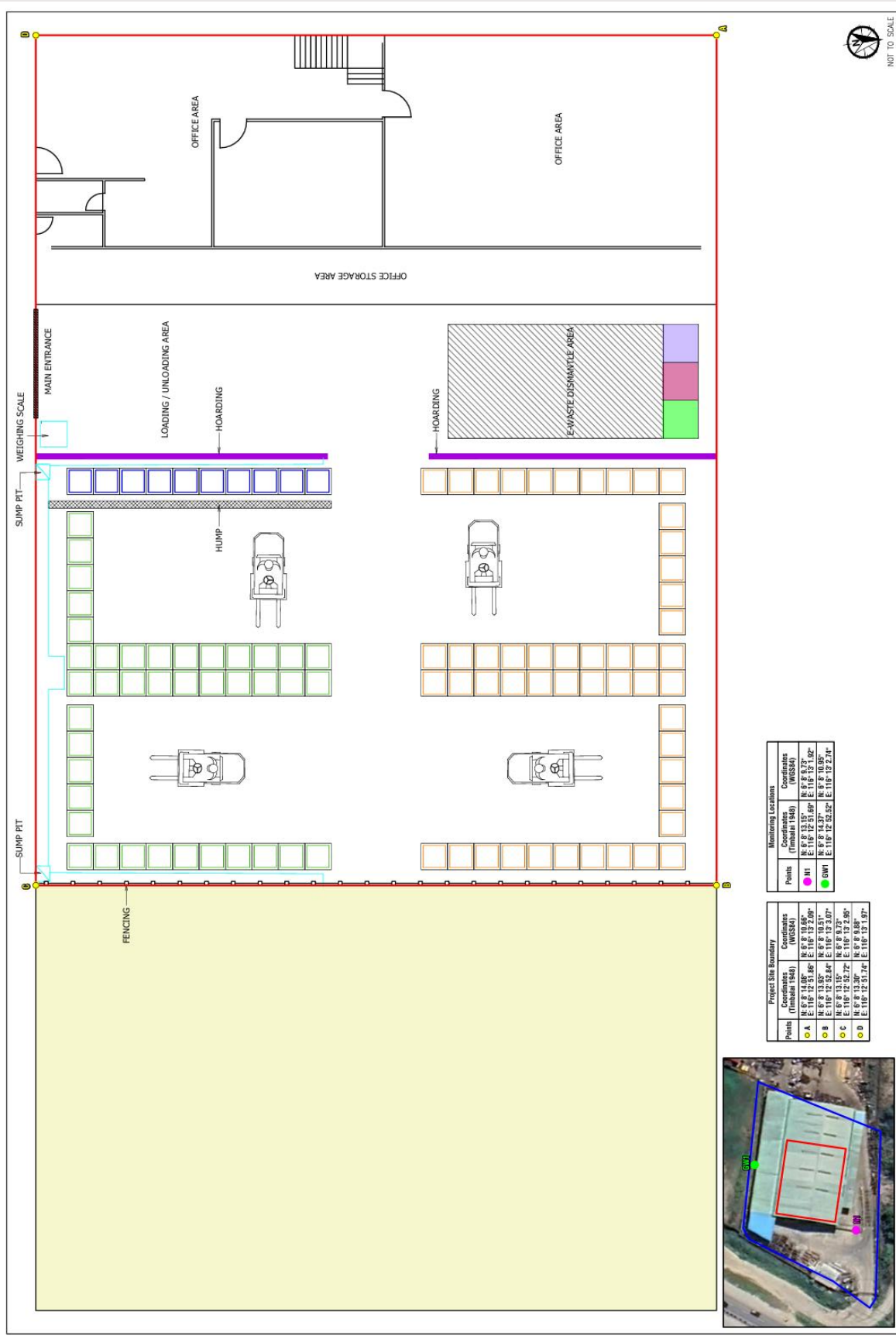
Pemantauan Impak

Aspect	Parameter	Monitoring Location	Frequency	Compliance Standard/ Guidelines
Operation Stage				
Noise Level	L _{eq}	N1: N 06° 8' 13.15" E 116° 12' 251.69"	Quarterly	Second Schedule of the Guidelines for Environmental Noise Limits and Control (Industrial Zones): L_{eq}: 75 dB(A) [daytime : 0700 to 2200] 75 dB(A)[night time : 2200 to 0700]
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Note: GPS coordinates in Timbalai 1948 datum

PROGRAM PEMANTAUAN

Lokasi Cadangan Pemantauan



Legend:

Project Site Boundary

Fencing

Sump Pit

SW102

SW103

SW110

N1

N2

Proposed Noise Monitoring Location

Proposed Groundwater Monitoring Location

Plastic Storage Area

Metal Storage Area

Paper Storage Area

Existing Scrap Metal Facility