

EXECUTIVE SUMMARY



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ENVIRONMENTAL IMPACT ASSESSMENT (FIRST SCHEDULE) PROPOSED OFFSITE SCHEDULED WASTE STORAGE FACILITY ON LOT 1562, KIDURONG LIGHT INDUSTRIAL ESTATE, TANJUNG KIDURONG, BINTULU, SARAWAK

PROJECT PROPONENT

PENTAS FLORA (SARAWAK) SDN. BHD.
Lot 1003, Block 7, Demak Laut 7,
Demak Laut Industrial Park,
93502 Kuching, Sarawak.
Tel: 082-439 771
Fax: 082-439 772



Contact Person:

- **Mr. Chiau Shis Sun** [Head of Special Project]
- **Ms. Anis Farhana Kamarulzaman** [Project Manager]

Email:

- pf.specialprojects@pentasflora.com
- anis.farhana@pentasflora.com

EIA CONSULTANT

ENVSOLVE SDN. BHD.
1st Floor, No. 3,
Lorong Kilang F, Kolombong,
88450 Kota Kinabalu, Sabah.
Tel: 088-388 791
Fax: 088-388 792



Contact Person:

- **Ir. Ts. Burhanudin bin Abu Bakar** [EIA Team Leader]
- **ChM. Lo Su Mui** [Assistant Consultant]

Email:

- envsolve@gmail.com; info@envsolve.com

OVERVIEW



Location

Lot 1562, Kidurong Light Industrial Estate,
Tanjung Kidurong, Bintulu, Sarawak.



Zoning

Mixed zone land - by virtue of Gazette
Notification No.Swk.L.N. 42



Main Activity

Collection, transportation to the offsite
storage facility, storage, and
transportation of scheduled wastes to
their designated final disposal facility.



Statement of Need

- High demand for scheduled wastes for production of ecological friendly oil refinery products.
- Prevent waste generators from disposing of their wastes indiscriminately.
- Contribute to sustainable development and the local environment.

1

**Ir. Ts. Burhanudin bin
Abu Bakar**
EIA Consultant [CS0168]

2

Tsen King Foh
EIA Consultant & Subject
Specialist [CS0106]

3

**Ahmad Faez bin
Wandi Sallem**
EIA Consultant [C0681]

4

Lo Su Mui
Assistant Consultant
[AC0923]

QUALIFIED PERSON



LEGISLATIVE REQUIREMENT

Section 34A, Environmental Quality Act, 1974

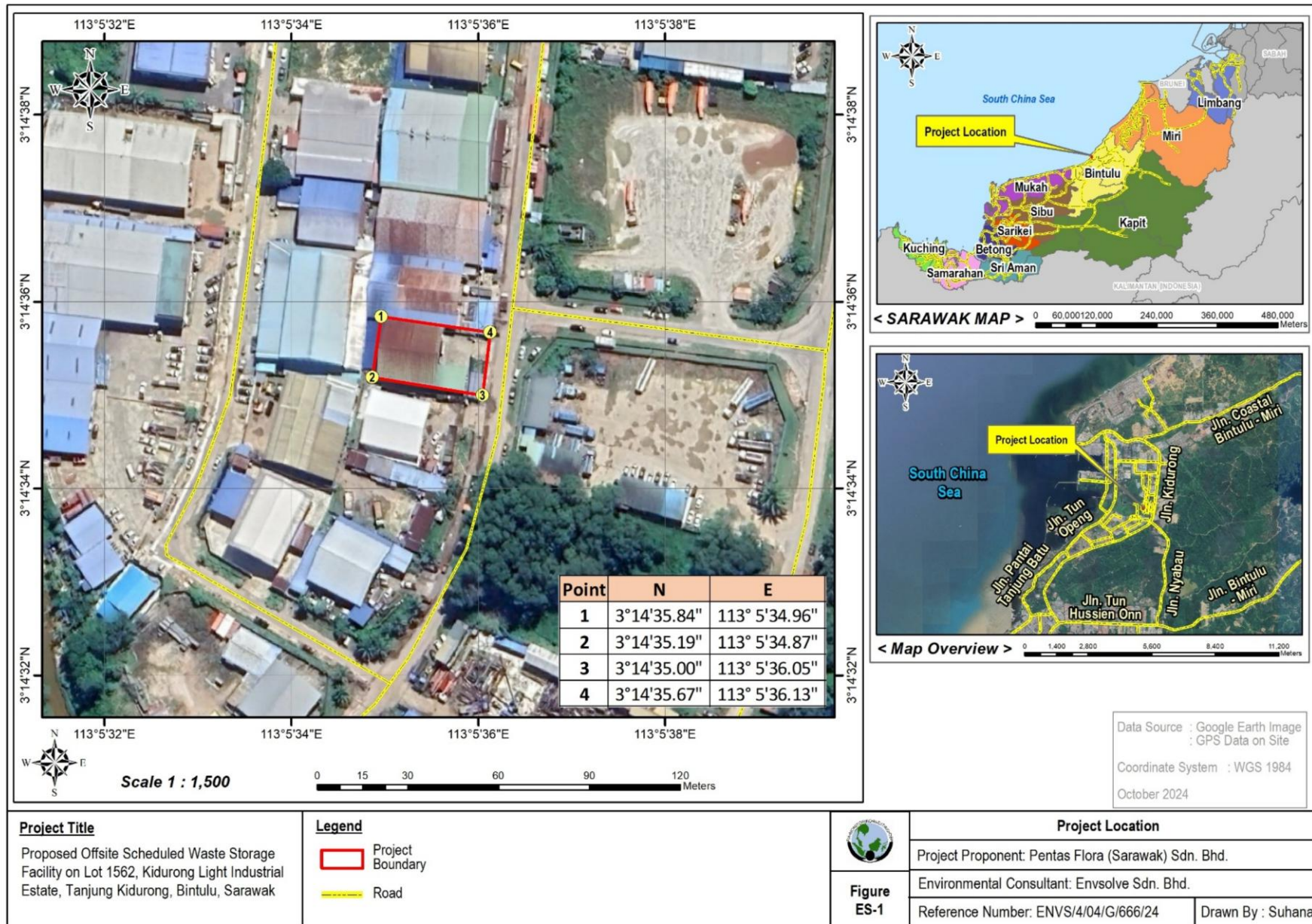
Environmental Quality (Prescribed Activities)
(Environmental Impact Assessment) Order 2015

First Schedule

14. Waste Treatment and Disposal (a) Scheduled Waste

(iii) Construction of storage facility (off-site)

EIA report is therefore required for submission to the DOE for approval prior to Project implementation.





Project Title
 Proposed Offsite Scheduled Waste Storage Facility on Lot 1562, Kidurong Light Industrial Estate, Tanjung Kidurong, Bintulu, Sarawak

Legend	
	Project Boundary
	Existing Drainage
	Existing Building
	Existing Roofing

Proposed Storage Facility Layout Plan	
	Project Proponent: Pentas Flora (Sarawak) Sdn. Bhd.
Figure ES-2	Environmental Consultant: Envsolve Sdn. Bhd.
	Reference Number: ENVS/4/04/G/666/24
	Drawn By : Suhana

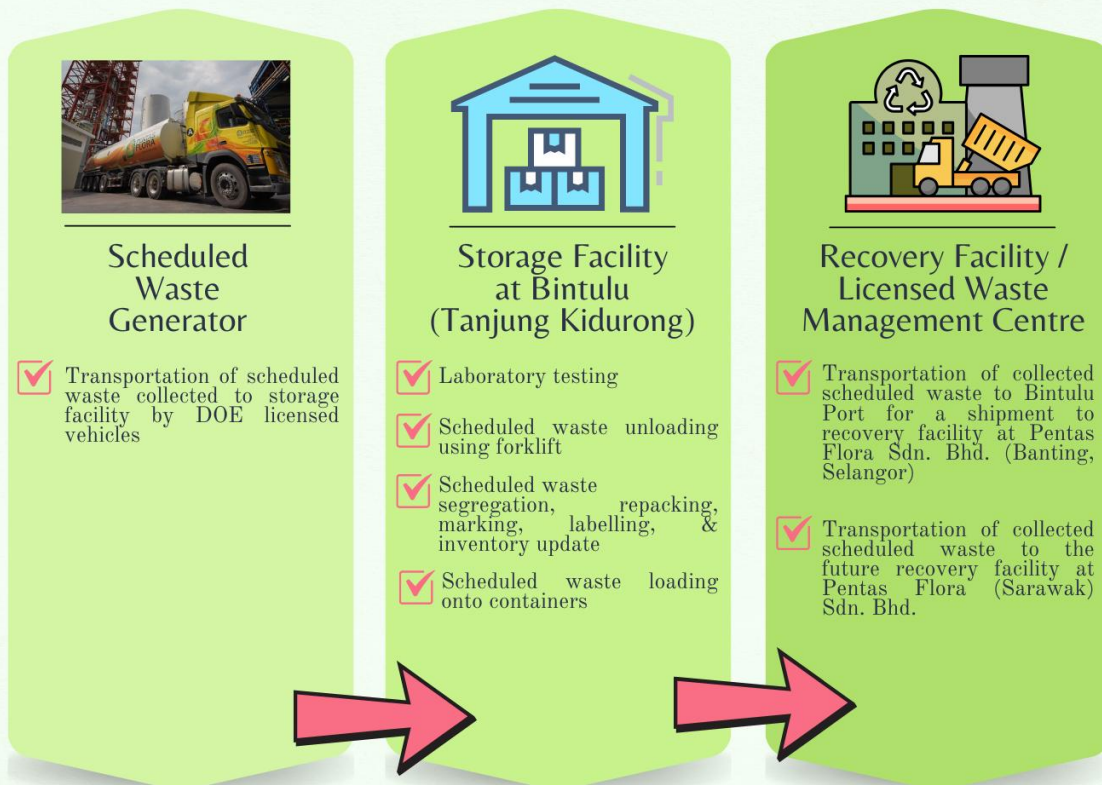


PROJECT CONCEPT

LIST OF SCHEDULED WASTE COLLECTION

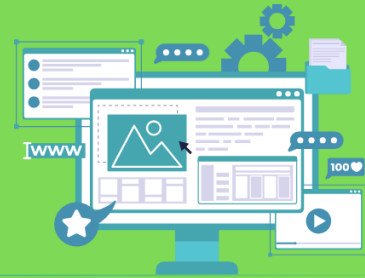
GROUP	SCHEDULED WASTE CODE	QUANTITY (MT/MONTH)
A	SW305, SW306, SW307, SW309, SW311*, SW312, SW327*	120
B	SW308, SW310, SW311*, SW313, SW314, SW315, SW408, SW411	120
C4	SW327*	16
D1	SW303, SW319, SW320, SW322, SW323, SW324, SW325	48
D2	SW416, SW417, SW418	24
E	SW409, SW410-F	64
F	SW410-R	64
G	SW103, SW110, SW204*	24
I1	SW204*, SW321, SW429*, SW429*, SW430	24
I2	SW421, SW422	8
TOTAL CAPACITY		448

PROCESS FLOW FOR OPERATION AT OFFSITE STORAGE FACILITY





PROJECT ACTIVITY



PRE-CONSTRUCTION / RENOVATION

- EIA study.
- Preparation of relevant site plans / drawings.

1

2

CONSTRUCTION / RENOVATION

- Mobilization of equipment, labor, and construction materials.
- Renovation works to convert the existing building into a scheduled waste storage facility.



OPERATIONAL AND MAINTENANCE

3

- Collection of scheduled waste from waste generators (upon request).
- Transportation of scheduled waste using DOE licensed vehicles to Project site.
- Unloading of scheduled waste into designated area.
- Storage of scheduled waste according to designated areas (liquid/solid).
- Loading of scheduled waste onto trucks or lorries using forklift.
- Transportation of scheduled waste to Pentas Flora Sdn. Bhd.'s designated licensed waste management center in Banting, Selangor, via Bintulu Port, and to its future recovery facility in Kuching, Sarawak.



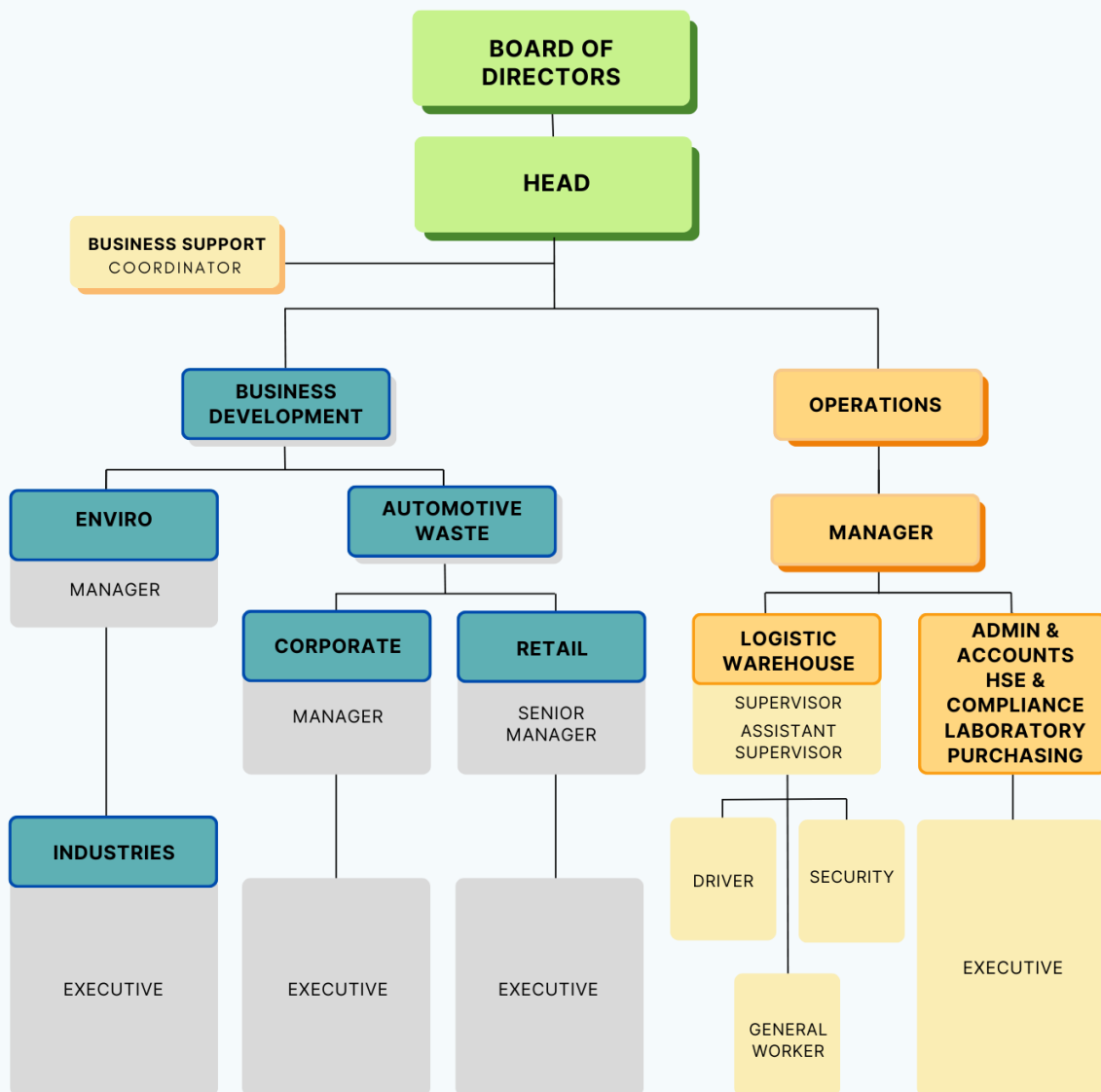
ABANDONMENT


- Site restoration.
- Submission of Abandonment Plan to DOE.

4




ORGANIZATIONAL CHART



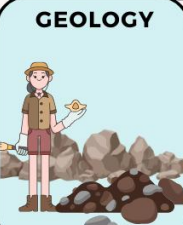


EXISTING ENVIRONMENT




TOPOGRAPHY

- ◆ Relatively flat.
- ◆ Surrounded by other industrial companies.




GEOLOGY

- ◆ **Geological setting:**
Coastal and riverine alluvium, and terraces of clay, silt, sand and gravel layers of peat.
- ◆ **Soil Component:**
Mainly deep peat soils in present floodplains with a specific area underlain by gley soils.




METEOROLOGY

- ◆ **Moderate rainfall**
 - Ranges between 3214.6 mm - 4581.8 mm
- ◆ **Uniform temperature**
 - Ranges between 25.3 °C - 27.9 °C
- ◆ **High humidity**
 - Ranges between 82.7 % - 95.9 %
- ◆ **Moderate wind**
 - Ranges between 1.3 - 2.3 m/s




HUMAN ENVIRONMENT

- ◆ Socio-economic surveys were conducted from 3rd February 2025 to 7th February 2025.
- ◆ A total of 51 respondents within 500 m radius from Project boundary were interviewed.
- ◆ The respondent have highlighted concerns regarding safety and health issues, traffic and transportation, product quality and pollution to air, water and noise.



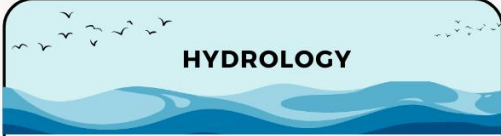
SURROUNDING LAND USE

- ◆ The nearest sensitive receptors are neighboring premises within Kidurong Light Industrial Estate.
- ◆ 500 m study boundary comprises of businesses, educational institutions and human settlements.
- ◆ 5 km study boundary comprises human settlement, educational institutions, religious places, government buildings, health centre, businesses, community centre and infrastructure/utility.




TRAFFIC AND TRANSPORTATION

- ◆ Mostly private vehicles of employees of the surrounding premises.




HYDROLOGY

- ◆ No major rivers or tributaries crossing the boundaries of the Project site.
- ◆ The nearest river, Sg. Sebatang No.2, is about 0.22 km northwest of the Project site.



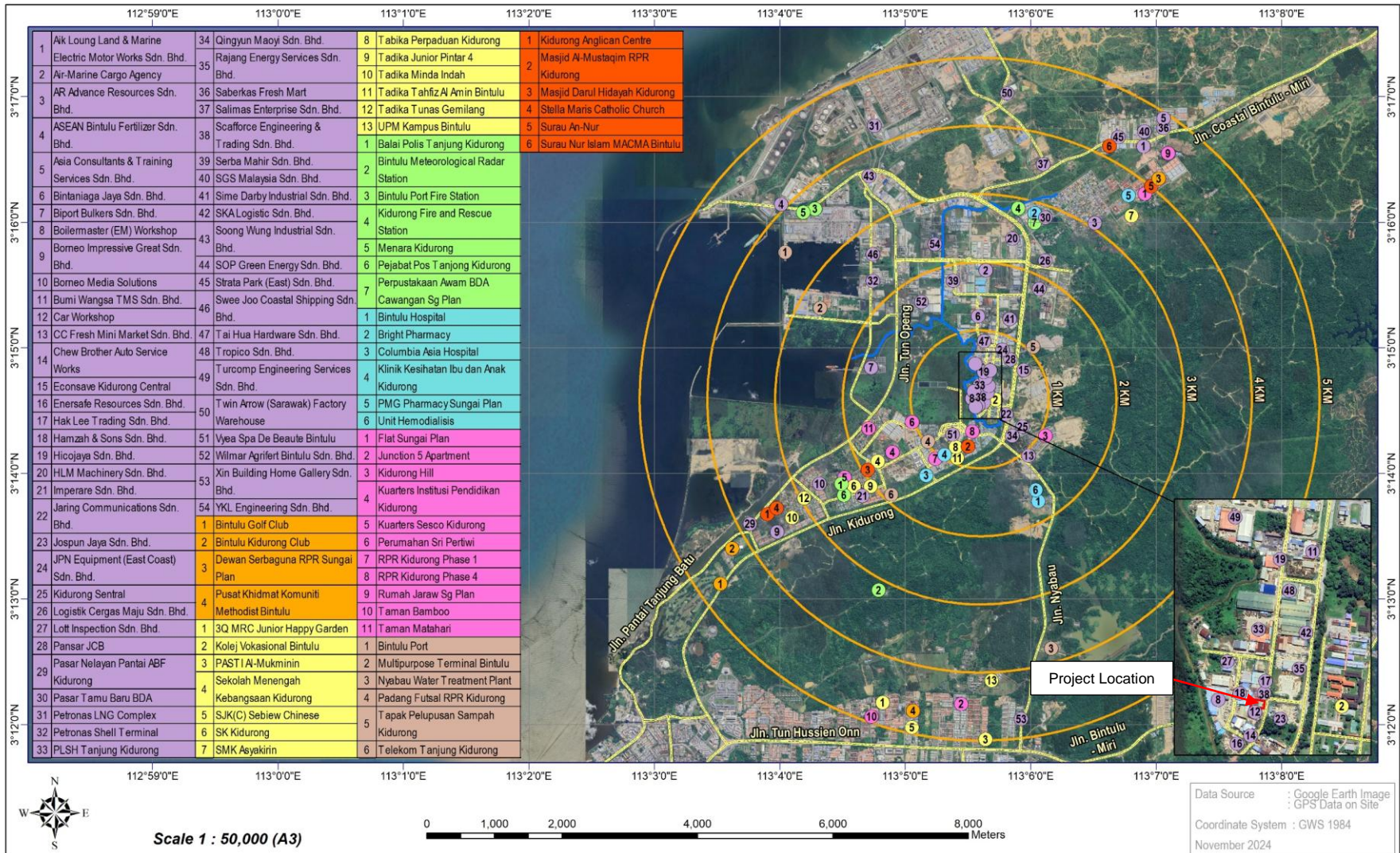
FLORA

- ◆ No rare or protected flora within Project vicinity.
- ◆ Domestic vegetation profiles, eg. grasses and shrubs.



FAUNA

- ◆ No significant fauna values found at and surrounding the Project site.



Project Title Proposed Offsite Scheduled Waste Storage Facility on Lot 1562, Kidurong Light Industrial Estate, Tanjung Kidurong, Bintulu, Sarawak	Legend <table border="0"> <tr> <td> Project Boundary</td> <td> Buffer</td> <td> Major River</td> <td> Road</td> <td>● Educational Institution</td> <td>● Human Settlements</td> <td>● Health Centre</td> <td>● Infrastructures/Utilities Buildings</td> <td>● Government Buildings</td> <td>● Religious Buildings</td> <td>● Community Centers</td> </tr> </table>	 Project Boundary	 Buffer	 Major River	 Road	● Educational Institution	● Human Settlements	● Health Centre	● Infrastructures/Utilities Buildings	● Government Buildings	● Religious Buildings	● Community Centers	Surrounding Land Use within 5 km	
		 Project Boundary	 Buffer	 Major River	 Road	● Educational Institution	● Human Settlements	● Health Centre	● Infrastructures/Utilities Buildings	● Government Buildings	● Religious Buildings	● Community Centers		
Figure ES-3	Project Proponent: Pentas Flora (Sarawak) Sdn. Bhd. Environmental Consultant: Envsolve Sdn. Bhd. Reference Number: ENVS/4/04/G/666/24	Drawn By : Suhana												



ENVIRONMENTAL BASELINE SAMPLING



SURFACE WATER QUALITY MONITORING

Most of the measured parameters comply with the **National Water Quality Standards Malaysia - Class III**.

Non-compliance was recorded for parameters:-

Sampling Location	Parameter
SW1	• BOD, COD, AN, FCC, TCC, CCE, DO
SW2	• BOD, COD, AN, FCC, TCC, CCE
SW3	• BOD, COD, AN, FCC, TCC, CCE

GROUNDWATER QUALITY MONITORING

Most of the measured parameters comply with the **National Groundwater Quality Standards for Industrial Use**.

Non-compliance was recorded for parameters:-

- Total Suspended Solid
- Iron
- Silica
- COD



AIR QUALITY MONITORING

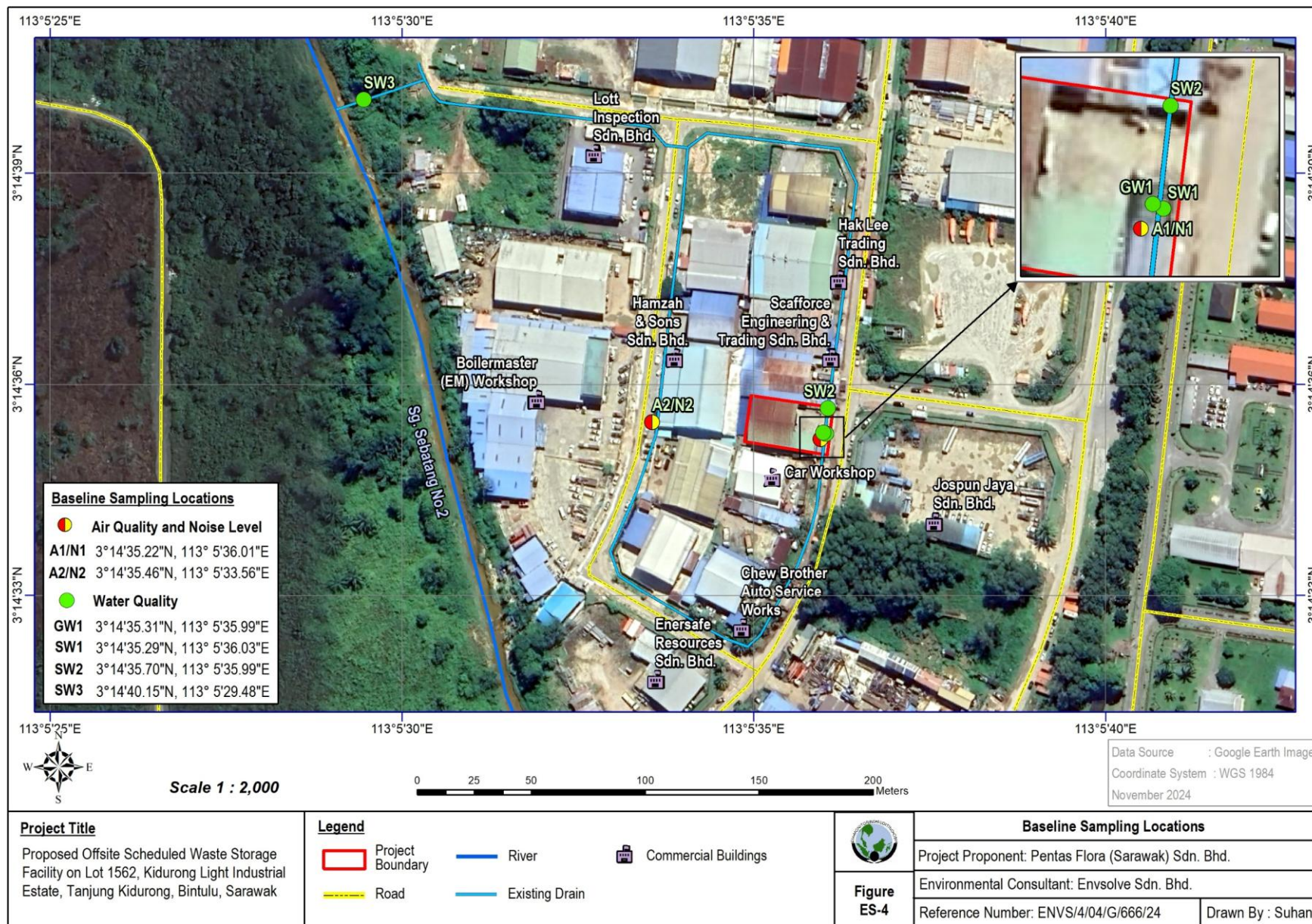
Baseline air quality monitoring was conducted, and the results for PM10, SO2, NO2, and CO were compared to the **Malaysia Ambient Air Quality Standards (MAAQS)**, whereas VOC parameter was compared to the **Arizona Ambient Air Quality Guidelines (AAAQGs)**. All parameters complied with the stipulated limits.



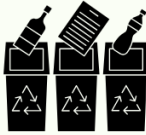

NOISE LEVEL MONITORING

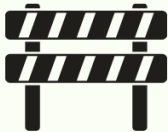

Existing noise levels for both day-time and night-time were measured and all the results complied with the recommended levels specified by DOE in the **Guidelines for Environmental Noise Limits and Control (First Schedule of the Permissible Sound Levels by Receiving Land Use for New Development for Industrial Zones)**.

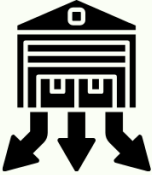
Noise level limit: Day-time = 70 dB(A); Night-time = 65 dB(A)








SIGNIFICANT POTENTIAL IMPACTS		IMPACT MAGNITUDE	P2M2	PAGES
CONSTRUCTION/RENOVATION PHASE				
1	<p><u>Air Pollution</u></p> 	Minor	<ul style="list-style-type: none"> • Avoid any construction activities during severe weather. • Speed limit restricted to 30-40km/hr at Project vicinity and main access road. • Ensure workers use the respiratory protection equipment. 	8-2
2	<p><u>Noise Pollution</u></p> 	Minor	<ul style="list-style-type: none"> • Regularly maintain the equipment. • Working hours only on daytime, ideally from 8:00 a.m. to 5:00 p.m. • Provide workers with earmuffs and earplugs at high noise level areas. • Turn off or idle machines at low noise levels when not in use. • Provide workers with proper training and briefing. • Regularly monitor noise level at Project vicinity. 	8-2 to 8-3
3	<p><u>Sewage and Solid Waste Generation</u></p> 	Minor	<ul style="list-style-type: none"> • Ensure proper segregation of waste. • Strictly prohibited indiscriminate dumping of waste. • Provide waste bin at strategic locations. • Regular disposed of waste at approved areas. • Use reusable items and avoid using disposable items like plastics often. • Conduct awareness programs for workers. • Proper maintenance for existing worker's toilets. 	8-3
4	<p><u>Occupational Safety and Health</u></p> 	Minor	<ul style="list-style-type: none"> • All workers shall attend relevant security, safety, and health courses. • Provide suitable PPE for workers. • Maintain sufficient supply of First Aid Kit on-site. • Create procedures to transport injured workers to the nearest hospital. Brief all workers about these procedures. 	8-3 to 8-4


SIGNIFICANT POTENTIAL IMPACTS	IMPACT MAGNITUDE	P2M2	PAGES	
CONSTRUCTION/RENOVATION PHASE				
		<ul style="list-style-type: none"> • Provide approved fire extinguishers in vehicles and rest areas. • Ensure no employees are exposed continuously to noise level above 90 dB(A) or legal limits. 		
5	<p>Abandonment</p> 	Minor	<ul style="list-style-type: none"> • Restore the site to its original condition as much as possible. • Remove machinery, equipment, and waste from the site. • Block the Project's entry. • Ensure all vehicles are demobilized from Project site. 	8-4
OPERATIONAL PHASE				
1	<p>Water Pollution</p> 	Major	<p>Collection and Transportation of Scheduled Waste :-</p> <ul style="list-style-type: none"> • Conduct transportation activities based on SOP. • Provide PPE for all workers. • Vehicles used for transportation should be enclosed or tightly covered while equipped with trays. <p>Spillage during Transportation :-</p> <ul style="list-style-type: none"> • Brief workers about spillage response procedures. • Vehicles must have emergency tools and equipment. • In case of an oil spill, use non-toxic absorbents. <p>Handling of Scheduled Waste :-</p> <ul style="list-style-type: none"> • Unloading and loading activity shall only be done in the designated area. • Use stopper to lock vehicle's tires. • Designated area must be stable and level ground. • Floor of loading and unloading area must be concrete, coated with non-slippery and epoxy coating 	8-4 to 8-8



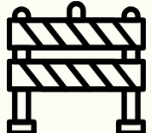
SIGNIFICANT POTENTIAL IMPACTS	IMPACT MAGNITUDE	P2M2	PAGES
OPERATIONAL PHASE			
		<p>Storage of Scheduled Waste :-</p> <ul style="list-style-type: none"> • Install oil sump within the storage building. • Build the concrete bumper system including collection sump around the storage building. • Provide worker with appropriate PPE. • The floor and the containment walls shall be made of concrete and coated with epoxy. • The floor must be designed to support the weight of the equipment and materials stored. • Regular inspection should be carried out. • Materials should be properly arranged according to compatibility, types, and size. <p>Storage Facility :-</p> <ul style="list-style-type: none"> • Build and maintain surface water drainage around the storage area. • Loading and unloading areas of scheduled waste should be covered with an impermeable surface. • Place the oil spill kits at the storage facility and the loading and unloading area. • Any spilled or leaked scheduled waste during loading and unloading must be immediately cleaned up. 	
2	<p><u>Air Pollution</u></p> 	<p>Minor</p> <ul style="list-style-type: none"> • Good housekeeping practices and regular inspection for any leakage. • Provide good ventilation systems in the storage area. • Limit vehicles speeds to 30-40 m/hr. • Respiratory protection equipment must be provided and used by on-site workers. 	8-8

SIGNIFICANT POTENTIAL IMPACTS	IMPACT MAGNITUDE	P2M2	PAGES	
OPERATIONAL PHASE				
3	<p><u>Noise Pollution</u></p> 	<p>Minor</p>	<p>Noise Control :-</p> <ul style="list-style-type: none"> • Ensure noise levels do not exceed 70 dB(A) during the day and 65 dB(A) at night. • Follow permissible exposure limits for workers and provide ear protection when needed. • Limit transportation and distribution activities to the approved schedule only. <hr/> <p>Transportation Practices :-</p> <ul style="list-style-type: none"> • Use proper transportation practices. • Do not speed or honk unnecessarily when passing through sensitive areas. <hr/> <p>Worker's Protection :-</p> <ul style="list-style-type: none"> • Work schedules should account for maximum exposure levels and durations. • Provide hearing protection devices as needed. 	<p>8-8 to 8-9</p>
4	<p><u>Traffic and Transportation</u></p> 	<p>Minor</p>	<p>Safe Road Environment :-</p> <ul style="list-style-type: none"> • Speed limits and other traffic laws should be strictly observed. <hr/> <p>Transportation Practice :-</p> <ul style="list-style-type: none"> • Drivers should practice road courtesy and safe driving at all times. • Schedules for the transportation of scheduled wastes shall avoid during peak hours. <hr/> <p>Transportation Schedule :-</p> <ul style="list-style-type: none"> • Offsite transportation of construction materials should be scheduled. 	<p>8-9</p>



SIGNIFICANT POTENTIAL IMPACTS	IMPACT MAGNITUDE	P2M2	PAGES
OPERATIONAL PHASE			
5	Socio - Economic Impact 	Minor	<p style="text-align: center;">8-9 to 8-10</p> <p>Community Well-Being :-</p> <ul style="list-style-type: none">• Prioritize hiring local workers.• Provide training programs for safe and efficient waste management.• Engage community through transparent communication.• Support local suppliers and services during construction and operational phases. <p>Health and Safety :-</p> <ul style="list-style-type: none">• Educate residents on importance of proper waste management and safety practices.• Minimize disruptions to the local community by reducing noise, traffic, and other inconvenience. <p>Operational Safety :-</p> <ul style="list-style-type: none">• Develop and implement SOP and ERP. <p>Environmental Protection :-</p> <ul style="list-style-type: none">• Address concerns on environmental pollution through appropriate and proper waste management. <p>Responding to Community Feedback :-</p> <ul style="list-style-type: none">• Consider the concerns and suggestions raised by respondents to improve Project's acceptance and effectiveness.

SIGNIFICANT POTENTIAL IMPACTS	IMPACT MAGNITUDE	P2M2	PAGES
OPERATIONAL PHASE			
6	<p><u>Waste Generation</u></p> 	<p>Minor</p>	<p>Solid Waste :-</p> <ul style="list-style-type: none"> • Waste collection bins should be provided and emptied regularly at the designated waste disposal area. • Non-recyclable materials that cannot be salvaged should be properly collected and disposed of at approved disposal area. <p>Sewage Waste :-</p> <ul style="list-style-type: none"> • Good housekeeping practices should be followed. • Regular inspection and maintenance of the sewer pipeline system should be conducted. • The Project Proponent must ensure that the Project site is clean and well-managed. <p>Scheduled Waste :-</p> <ul style="list-style-type: none"> • Scheduled waste storage areas should be shaded, have concrete bunds, and be equipped with oil sump pits. • Scheduled waste handling must comply with the related guidelines. • Train staff in oil spill response and conduct drills to ensure preparedness. • Maintenance should be done in designated areas with proper drainage and oil traps, away from surface water. • Prepare an ERP or OSRP for accidental spills or water contamination. • Notify the DOE about scheduled waste generation as required under the regulations. • Update the inventory of scheduled wastes monthly according to the regulations.
			<p>8-10 to 8-11</p>

SIGNIFICANT POTENTIAL IMPACTS		IMPACT MAGNITUDE	P2M2	PAGES
OPERATIONAL PHASE				
7	<p><u>Occupational Safety and Health</u></p> 	Minor	<ul style="list-style-type: none"> • Maintain a sufficient supply of first aid kits, medicines, and medical equipment on site. • Provide emergency response procedures at the office. • Regular visual inspection of areas between the premises and neighbouring premises. • Regular check on electrical wiring on the premises. • Equip adequate fire extinguishing equipment at storage facility. 	8-11 to 8-12
8	<p><u>Quantitative Risk Assessment (QRA)</u></p> 	Minor	<ul style="list-style-type: none"> • Provide PPE to all on-site workers. • Implement SOP with corresponding training for on-site workers. • Conduct regular training and induction sessions. • Ensure first aid kits are accessible on-site. • A photo showing the installation of relevant signage at an appropriate location. 	8-12 to 8-13
9	<p><u>Abandonment</u></p> 	Minor	<ul style="list-style-type: none"> • An abandonment plan must be submitted to the DOE at least 120 days before demolition begins. • The Project site should be cleaned up carefully, and safe work procedures should be prepared. • The project entry point should be properly barricaded. • Any remaining scheduled waste stored on-site must be collected and removed by a DOE licensed contractor. 	8-13

ENVIRONMENTAL MONITORING PLAN

PERFORMANCE MONITORING



These activities are regularly performed to maintain compliance with scheduled waste management standards and ensure the safety and appropriate handling of scheduled waste on-site.

- ✓ Scheduled Waste Storage Facility
- ✓ Water Pollution
- ✓ Air Quality Monitoring
- ✓ Occupational, Safety and Health
- ✓ Quantitative Risk Assessment

COMPLIANCE MONITORING



The proposed Project only involves the temporary storage of scheduled waste and does not entail the release of air pollutants or wastewater. As a result, there is no explicit obligation for compliance monitoring.

IMPACT MONITORING



SURFACE WATER QUALITY

- 2 surface water quality monitoring stations.
- Adhere to Class III of National Water Quality Standards for Malaysia (NWQSM).
- Report to be submitted to DOE Sarawak quarterly.

GROUNDWATER QUALITY

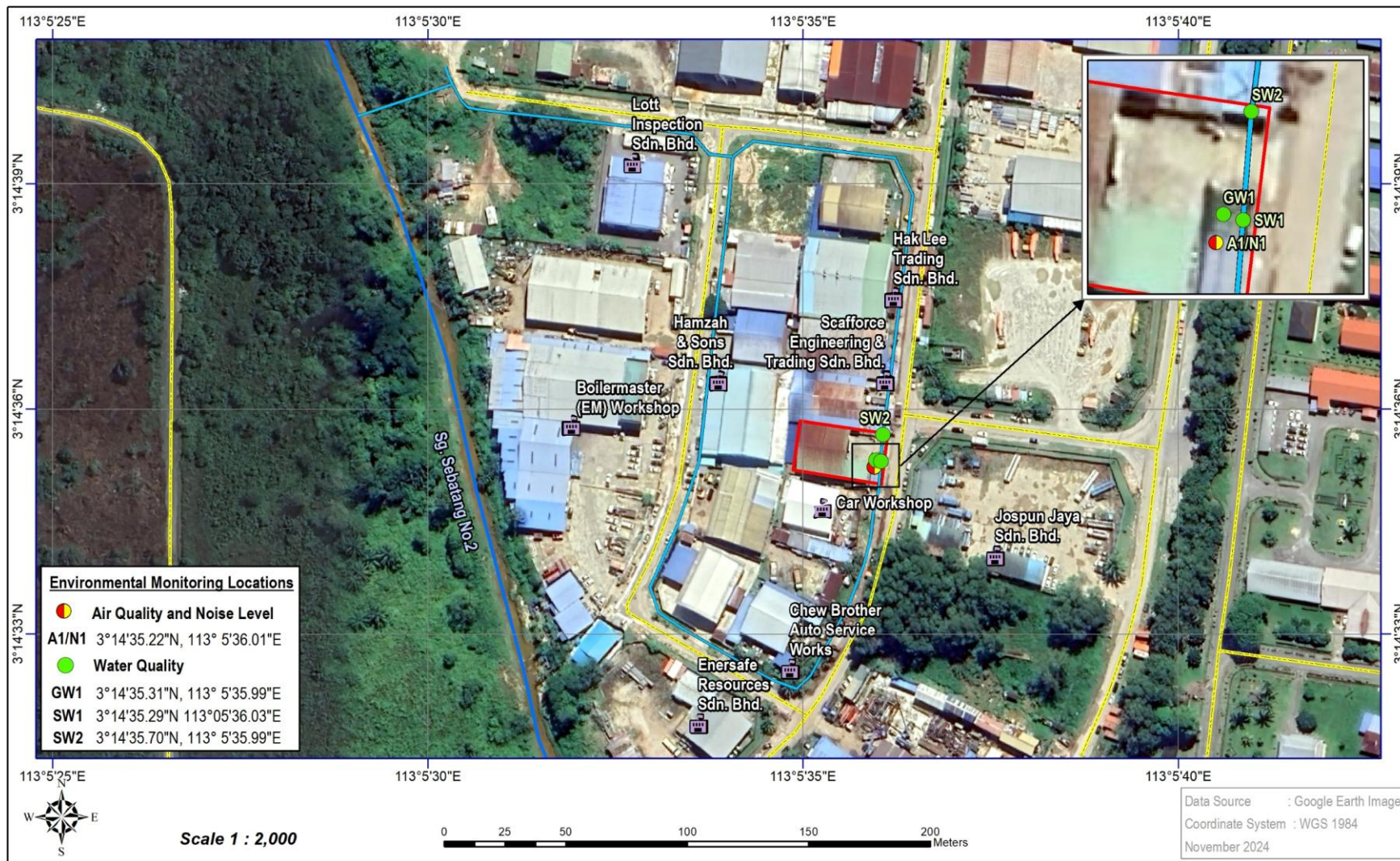
- 1 groundwater quality monitoring station.
- Adhere to National Groundwater Quality Standards for Industrial Use.
- Report to be submitted to DOE Sarawak yearly.

AIR QUALITY

- 1 air quality monitoring station.
- Monitoring parameter: VOC
- Adhere to Arizona Ambient Air Quality Guidelines (AAAQGs)
- Report to be submitted to DOE Sarawak quarterly.

NOISE LEVEL

- 1 noise level monitoring station.
- Adhere to First Schedule of Guidelines for Environmental Noise Limits and Control, Third Edition 2019
- Report to be submitted to DOE Sarawak quarterly.



Environmental Monitoring Locations	
	Air Quality and Noise Level
A1/N1	3°14'35.22"N, 113° 5'36.01"E
	Water Quality
GW1	3°14'35.31"N, 113° 5'35.99"E
SW1	3°14'35.29"N, 113°05'36.03"E
SW2	3°14'35.70"N, 113° 5'35.99"E



Scale 1 : 2,000



Data Source : Google Earth Image
 Coordinate System : WGS 1984
 November 2024

Project Title Proposed Offsite Scheduled Waste Storage Facility on Lot 1562, Kidurong Light Industrial Estate, Tanjung Kidurong, Bintulu, Sarawak	Legend Project Boundary Road River Existing Drain Commercial Buildings	 Figure ES-5	Proposed Environmental Monitoring Locations (Operational Phase)	
			Project Proponent: Pentas Flora (Sarawak) Sdn. Bhd. Environmental Consultant: Envsolve Sdn. Bhd. Reference Number: ENVS/4/04/G/666/24 Drawn By : Suhana	