

EXECUTIVE SUMMARY

EIA TITLE

The Upgrading of Sewage Treatment Plant (SEN514) from 16,500 PE to 38,500 PE and Associated Works on Lot 37519 at Mukim Ampangan, Daerah Seremban, Negeri Sembilan Darul Khusus.



PROJECT PROPONENT
SPD Tech Valley Sdn. Bhd.



EIA CONSULTANT
ES Eco Smart Sdn. Bhd.

INTRODUCTION

The Sewage Treatment Plant SEN514 will be upgraded from its existing capacity of 16,500 PE to 38,500 PE, catering developments from SPD Tech Valley Sdn. Bhd.

STATEMENT OF NEEDS

The STP upgrade is required to meet future demand and regulations, supporting SPD Tech Valley Sdn. Bhd.'s 523 ac industrial zone at Lot 663 which will house industrial lots and key facilities including a solar farm, training centre, workers' quarters, commercial spaces, and essential utilities.

LEGISLATIVE REQUIREMENT

	Section 34A, Environmental Quality Act (EQA) 1974, Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015	
	First Schedule	Activity 14 (c) (i) Construction of sewage treatment plant with 20,000 population equivalent or more

PROJECT ACTIVITY



PROJECT DESCRIPTION

Type of Proposed Plant	:	Fully enclosed mechanized SBR system
Design PE	:	Upgrading STP – Ultimate 38,500 PE (Existing 16,500 PE)
Asset Number	:	SEN 514
Location	:	Lot 37519, Mukim Ampangan, Negeri Sembilan

ES-2



SEWERAGE RETICULATION PLAN

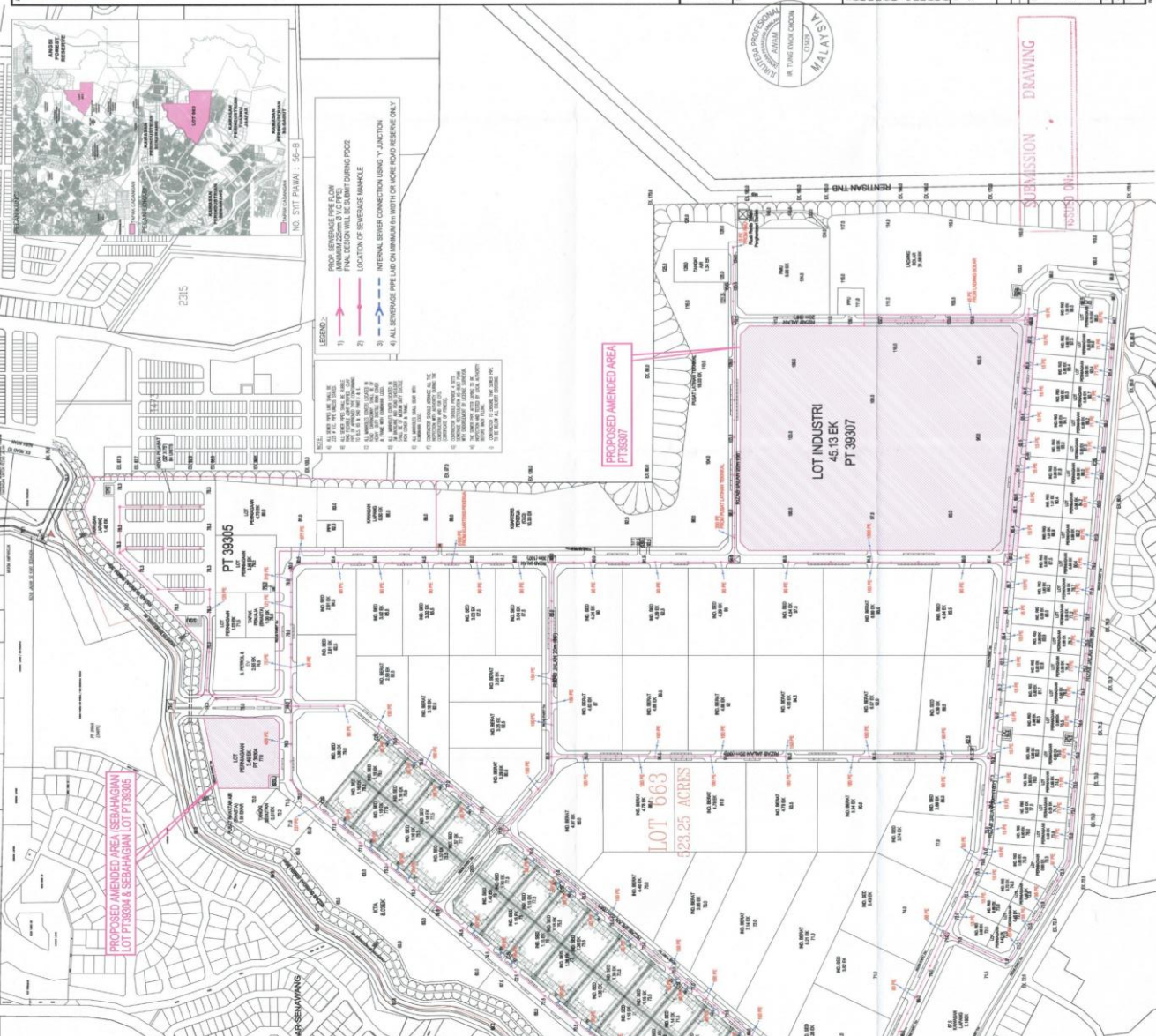
Table with 4 columns: ITEM, DESCRIPTION, EXISTING CAPACITY, and TOTAL PE. It lists various sewerage infrastructure items and their capacities.

TABLE 1: SUMMARY OF PROPOSED DEVELOPMENT LOT 663 AS PER SUBMITTAL TABLE 1.

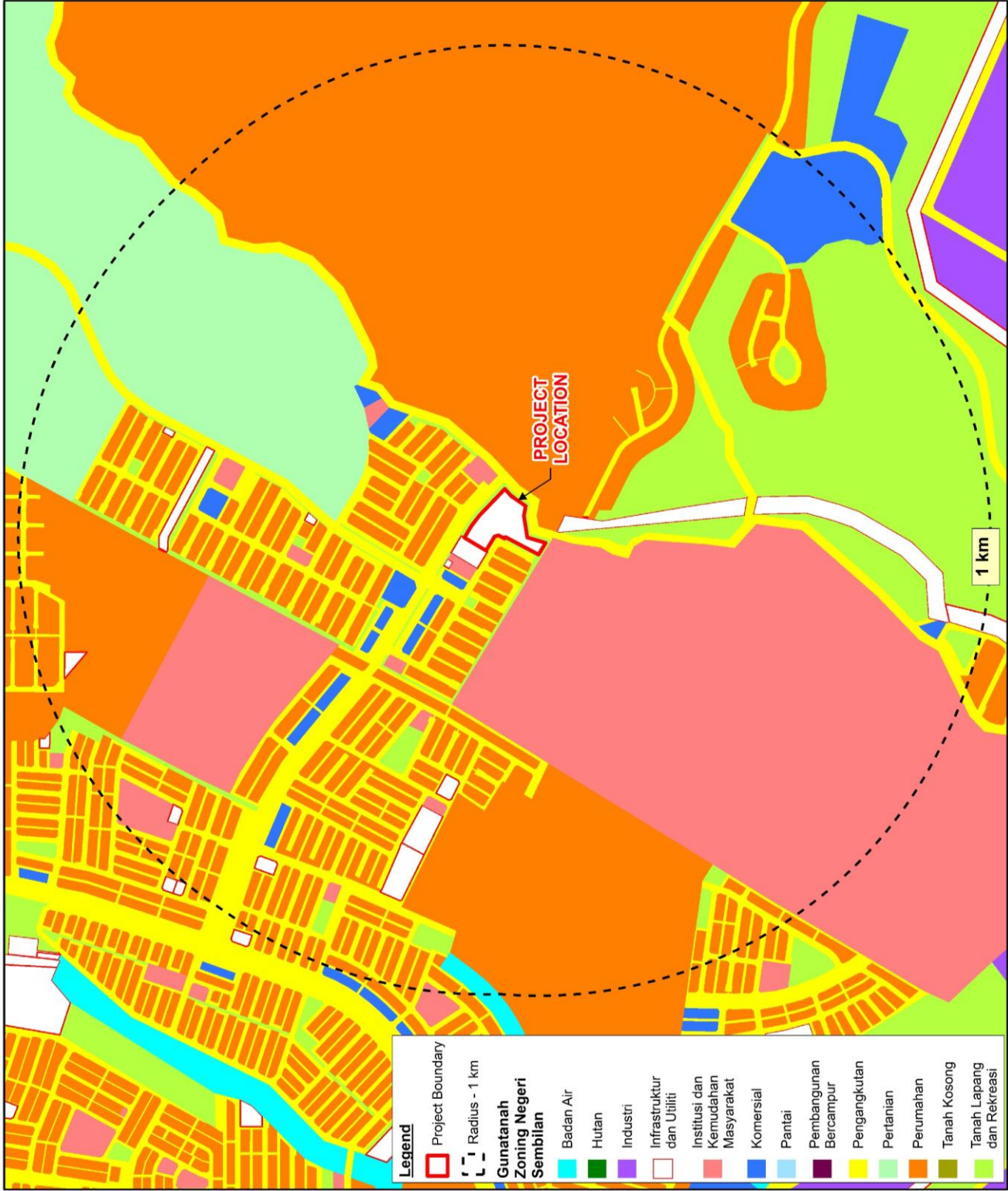
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TABLE 2: SUMMARY OF PROPOSED DEVELOPMENT LOT 663 AS PER SUBMITTAL TABLE 2.

BASED ON ABOVE CHANGES, NEW SPAN/SLAB VOLUMES, THIS EFFECTIVE SINCE 2020, BECOME SUMMARY OF CHANGES...
1) PROPOSED TO UPGRADE EXISTING EX-14 SYSTEM STP TO FULLY ENCLOSED
2) EX-14 STP DESIGN CAPACITY = 16,000 PE
3) PROPOSED TO UPGRADE EX-14 SYSTEM STP TO FULLY ENCLOSED
4) PROPOSED TO UPGRADE EX-14 SYSTEM STP TO FULLY ENCLOSED
5) EFFLUENT DISCHARGE COORDINATE = 102° 07' 00"



REGISTRATION AND SEALING AREA. Includes professional engineer's stamp, project details, and a list of project team members.



PROJECT TITLE : ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE UPGRADING OF SEWAGE TREATMENT PLANT (SEN614) FROM 16,500 PE TO 38,500 PE AND ASSOCIATED WORKS ON LOT 37519 AT MUKIM AMPANGAN, NEGERI SEMBILAN DARUL KHUSUS BY PRESTAMAJU SDN. BHD.	PROJECT PROPONENT :  SPD TECH VALLEY SDN. BHD. PT9889, Jalan BBN 1/3J, Putra Nilai, Putra Point, 71800 Nilai, Negeri Sembilan Darul Khusus, Malaysia.	ENVIRONMENTAL CONSULTANT :  ES ECO SMART SDN BHD Menara ES, No. 9, Persiaran Industri, Bandar Sri Damansara, 52200 Kuala Lumpur	 1:8,000 Coordinate System: GCS WGS 1984 Datum: WGS 1984 Units: Degree 0 80 160 Meters	Mukim : Ampangan Daerah : Seremban Negeri : Negeri Sembilan Darul Khusus Topo Sheet : AP34 Seremban	SOURCE: Sistem Maklumat Guna Tanah Perancangan Bersepadu (i-Plan), PLAN Malaysia, 2026
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EXISTING ENVIRONMENT

Land Use

The Project site is surrounded by the following establishments:

residential



educational



religious



medical



commercial



Climate

Data from Kuala Pilah Meteorological Station, 27.65 km from the Project site

Annual 24-h mean temperature (2025)	26.1 °C
Humidity	Highest : 86.3% (November) Lowest : 79.2% (March)
Average annual rainfall (2016 to 2025)	1,868.5 mm
Mean annual rain day (2016 to 2025)	168 days
Wind patterns	Predominantly southerly (15.1%)

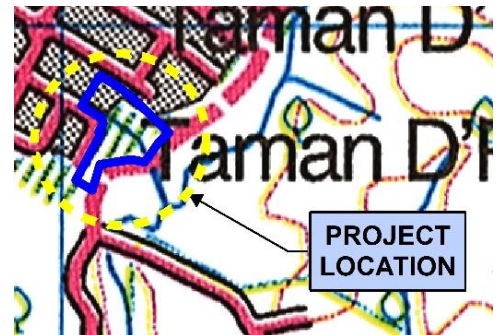
Hydrology

The Project site is in the Sungai Simin catchment.



Topography

The topography of the proposed project site in Mukim Ampangan, Seremban, is characterized by flat, low-lying terrain with minimal natural relief or steep slopes, making it well-suited for sewage treatment infrastructure and upgrading works.



Geology

The proposed project site, located about 60 m from Sungai Simin, is underlain by deeply weathered metasedimentary bedrock producing residual soils, while the surface geology has been altered by past development with fill and reworked materials from sewage treatment construction.



ENVIRONMENTAL BASELINE

Water Quality

Sampling ID	WQI	Class	Status
W2: Upstream Sg. Simin	80.45	II	Slightly Polluted
W3: Sg. Simin	32.73	IV	Polluted
W4: Sg. Simin	52.54	III	Polluted
W5: Sg. Gadut	73.75	III	Slightly Polluted
W6:Sg. Simin	71.82	III	Slightly Polluted
W7: Downstream of Sg. Simin	73.69	III	Slightly Polluted
W8: Upstream of Sg. Linggi	77.09	II	Slightly Polluted

Air

All parameters measured at the Project site were well below the Malaysian Ambient Air Quality Standards (MAAQS), 2020

Noise

Sampling Station	Time	Average LAeq	Permissible LAeq
N1	Daytime	57.3	65
	Nighttime	61.4	60
N2	Daytime	51.6	65
	Nighttime	50.0	60
N3	Daytime	54.8	65
	Nighttime	50.9	60
N4	Daytime	52.8	65
	Nighttime	47.4	60

Vibration

Monitoring Location	Monitoring Time	Vertical
		PPV, mm/s
V1	Daytime	0.386
	Nighttime	0.646
V2	Daytime	0.142
	Nighttime	0.055
V3	Daytime	0.181
	Nighttime	0.055
V4	Daytime	1.876
	Nighttime	0.173

Odor

Sampling Location	Dilution to Threshold (D/T)						Range	Enforceable Permit Odour Limits
	Night (3 Dec 2025)		Morning (4 Dec 2025)		Afternoon (4 Dec 2025)			
	1 st	2 nd	1 st	2 nd	1 st	2 nd		
OD1	7	4	4	2	4	2	2-7	Objectionable
OD2	2	2	<2	2	2	2	2	Noticeable
OD3	2	2	2	2	<2	<2	2	Noticeable
OD4	2	2	2	2	<2	<2	2	Noticeable

ECOLOGY

	Flora	Fauna	
		Mammal	Bird
Species	13	2	7
Family	11	2	6
IUCN (2025-2)	5 LC	1 EN	1 VU
Malaysia Plant Red List	2 LC	-	-
Wildlife Conservation Act (2010)	-	2 P	1 P, 1 TP
Endemic	-	-	-



Long-tailed
Macaque



Asian Palm
Civet



Javan
Myna

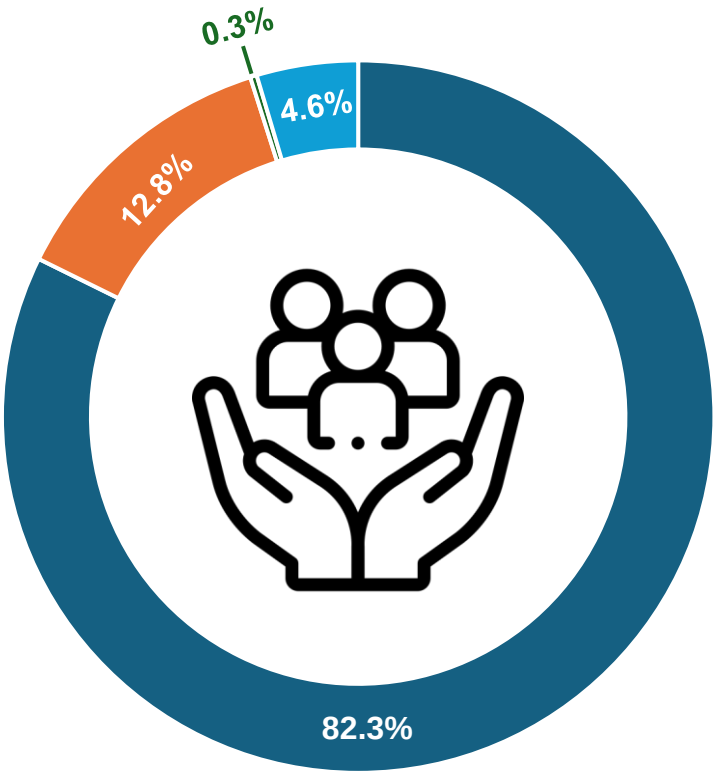


White-breasted
Waterhen



Brahminy
Kite

SOCIO ECONOMIC



PUBLIC ACCEPTANCE

Total Respondent
345 respondents

Methodology
Questionnaire Survey and
Interviews

- Support
- Support with condition
- Not support
- Neutral



Ecology

Temporary avoidance of the project area by mobile fauna, due to construction noise and machinery movement, with minor and short-term human–wildlife conflict.

Reduced by limiting disturbance, preventing harmful human–wildlife interactions, applying best management practices, and promptly restoring natural elements.



Geology

Minimal, limited to temporary soil erosion during construction and low seismic risk due to the site's location.

Geological hazards during construction are minor and manageable with erosion controls and seismic-aware design.

Erosion &
Sedimentation

When land is disturbed, the soil erosion rate will be increased. Most erosion will cause sediment problem and this can be greatly reduced by proper planning and maintenance.

Run-off, erosion, and sediment are controlled with drains, slope protection, turfing, compaction, silt traps, silt fences, and a wash trough.

Surface Water
Quality

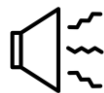
During construction, TSS may temporarily rise at discharge points but remains within baseline levels, with compliance to the 50 mg/L limit ensuring water quality is preserved.

Mitigation measures include applying LD-P2M2, installing and maintaining BMPs like drains and silt traps, monitoring water quality, protecting waterways, providing sanitary facilities, managing waste properly, and controlling oil and grease spills.

Ambient Air
Quality

Construction may cause localized, temporary air impacts from exhaust and dust, with minor pollutant increases and short-term health risks, but overall effects are nominal and brief.

Minimized through dust suppression, wheel washing, covered storage, speed limits, road cleaning, equipment maintenance, compliance, and a ban on open burning.



Noise

Key noise sources during construction include backhoes, excavators, soil compactors, lorries, generators, with excavators and lorries being the most significant contributors.

Noise is managed with barriers, low-noise equipment, silencers, daytime limits, proper maintenance, protective gear, and regular monitoring.



Vibration

Residual vibration impacts are temporary, localized, and reversible. With daytime piling, proper equipment maintenance, and advance resident notification, the impact is expected to be minor and acceptable.

Construction vibrations will be managed under DOE's 2021 guidelines through monitoring, documentation, community engagement, source control, operational limits, and corrective actions for any exceedances.



Waste

Improper waste management can cause drain blockages, safety hazards, contamination from hazardous waste, and sewage pollution affecting communities and ecosystems.

Waste management includes proper collection and disposal of municipal waste, safe handling and recycling of construction debris, strict compliance for hazardous scheduled waste, and sewage control via portable toilets and septic tanks with licensed desludging.

Safety &
Health

Temporary safety risks from accidents and supervision issues, plus community concerns over foreign workers, manageable with strict standards and practices.

Safety measures include training, PPE, clear signage, noise barriers, pest and garbage control, safe handling of hazardous and flammable materials, equipment maintenance, and strict site cleanliness.

Socio-
economy

The project brings temporary jobs and local business opportunities but also causes short-term disruptions from noise, dust, traffic, and vibration, mainly affecting residents and businesses.

The project will prioritize local jobs and business opportunities, enforce Best Management Practices to minimize impacts, and provide early community notification with details on construction, logistics, grievance channels, and STP operation timelines.



Surface Water Quality

Normal operations cause minimal impact on Sg. Simin and Sg. Linggi due to strong dilution capacity. In worst-case abnormal plant operation, water quality is affected but pollutants are diluted and improved downstream by Sg. Linggi's self-purification



Ambient Air Quality

STP operations produce negligible, localized air emissions mainly from worker vehicles, with no significant impact on air quality.



Noise

The STP's enclosed system and housed equipment keep noise low and steady, with residences over 31 meters away ensuring compliance with DOE limits. Aside from brief generator use, operational noise will be minimal and non-disruptive.



Odor

Odour modelling shows negligible impact from the upgraded STP. Enclosed processes and carbon treatment keep concentrations far below detection thresholds, making emissions imperceptible and improving ambient odour conditions.



Socio-economy

STP operations bring health and sanitation benefits plus jobs, but poor management or mechanical failure could cause water contamination, odors, and noise. With proper maintenance, impacts remain minimal and controlled.

MITIGATION

The STP complies with Malaysian sewerage and DOE regulations, meets Standard A effluent quality, and is operated by IWK with certified staff. Weekly monitoring, preventive maintenance, SCADA systems, and monthly reporting ensure reliable operations and DOE oversight.

During STP operations, air quality impacts are non-significant. No mitigation is needed beyond regular servicing of worker vehicles to keep emissions within limits, ensuring compliance and protecting ambient air quality.

Noise is minimized by the enclosed SBR system and equipment housing, with insulation, vibration isolation, and generator enclosures. Preventive maintenance, monitoring, and logs ensure compliance and control.

The upgraded STP will use DOE-compliant odour controls, with enclosed sources, local exhaust under negative pressure, ducting to an activated carbon system, and optional pre-scrubbers for specific gases. The system will achieve at least 90% removal efficiency.

During STP operations, locals will be prioritized for limited jobs and business opportunities. Community well-being will be safeguarded through implementation of P2M2, EMP, and strict compliance with BMPs to minimize negative impacts.



Abandonment

If the STP is abandoned, negative impacts may include soil erosion, sedimentation, and water pollution from unmaintained structures, deterioration of water quality due to uncontrolled runoff, and socio-economic losses from halted employment and business opportunities. Proper closure and rehabilitation measures are essential to prevent long-term environmental and community harm.

Upon project termination, the proponent must notify DOE Negeri Sembilan and submit a closure plan. Site stabilization, cleaning, dismantling, landscaping, and licensed waste disposal will follow. Contaminated areas must be remediated, standing water removed, and post-abandonment inspections conducted to ensure drainage, erosion control, and site stability until the site is fully rehabilitated.

PERFORMANCE MONITORING DURING CONSTRUCTION STAGE

LD-P2M2	Monitoring and Maintenance Guideline
Earth Drain	Inspect weekly and after rainfall event or rainfall reading of 12.5mm.
Check Dam	Inspect weekly and after rainfall event or rainfall reading of 12.5mm.
Turfing	Water the turf daily during its first week unless rainfall is sufficient.
Plastic sheeting geo-mat/blanket	Inspect weekly and after significant rainfall.
Washing Facilities	Inspect weekly or after a 12.5mm rainfall event.
Silt fence	Inspect weekly or after a 12.5mm rainfall event.
Check dam	Desilt when sediment reaches 1/3 of the dam's height.
Silt trap	Inspect silt trap inlets, outlets, and spillways weekly or after 12.5mm rainfall
Stabilized construction entrance	Maintain the stabilized construction entrance to prevent sediment discharge, inspect and clean sediment-trapping structures after rainfall, and ensure wheel washing facilities are properly maintained as outlined.

IMPACT MONITORING DURING CONSTRUCTION STAGE

Impact Monitoring

RIVER WATER QUALITY

- 3 Locations
- Monthly
- National Water Quality Standards for Malaysia (Class IIB)

AMBIENT AIR

- 4 Locations
- Monthly
- Malaysian Ambient Air Quality Standard (2020)

NOISE

- 4 Locations
- Monthly
- Guidelines for Environmental Noise Limits and Control (2021)

VIBRATION

- 4 Locations
- Monthly
- Guidelines for Environmental Vibration Limits and Control (2021)

WATER QUALITY

- Final Discharge of Silt Trap

PROPOSED MONITORING DURING CONSTRUCTION STAGE

