Executive Summary

Cadangan Pembangunan Sebuah Stesen Pemindahan Sisa Pepejal 2 Tingkat Serta Kemudahan Utiliti Di Atas Sebahagian Lot PT 27065, Mukim Batu, Jalan Lingkaran Tengah II, Taman Beringin, Wilayah Persekutuan Kuala Lumpur untuk Tetuan Bumi Segar Indah Sdn. Bhd

Project Proponent
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Mr. Kingston Loo

EIA Consultant
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Ir. Mohammad Fadhli Bin Mat Shah

Overview

Location : PT 27065
(partial of 265,555 sq.m)

Solid Waste Management :
2,700 tonnes per day

Leachate Generation :
126.4 m3/day

Proposed LTP Design:
360 m3/day

Phasing
Phase 1 : Development of double story transfer station building including utilities & upgrading of LTP
Phase 2 : Development for bulk waste activities

Zoning : None

Legislative requirement

Environmental Quality Act (EQA, 1974), Environmental Impact Assessment (EIA, 2015): Second Schedule, Activity 14: Waste Treatment and Disposal, b(iii): Construction of Transfer Station.

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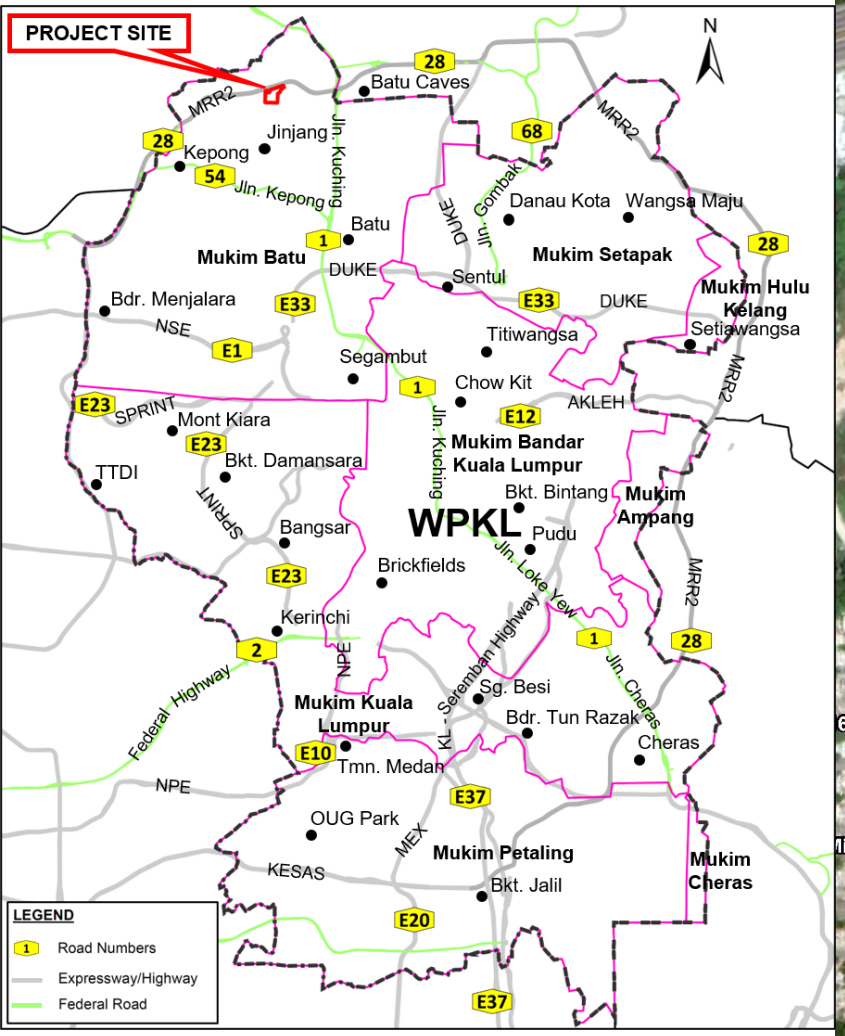
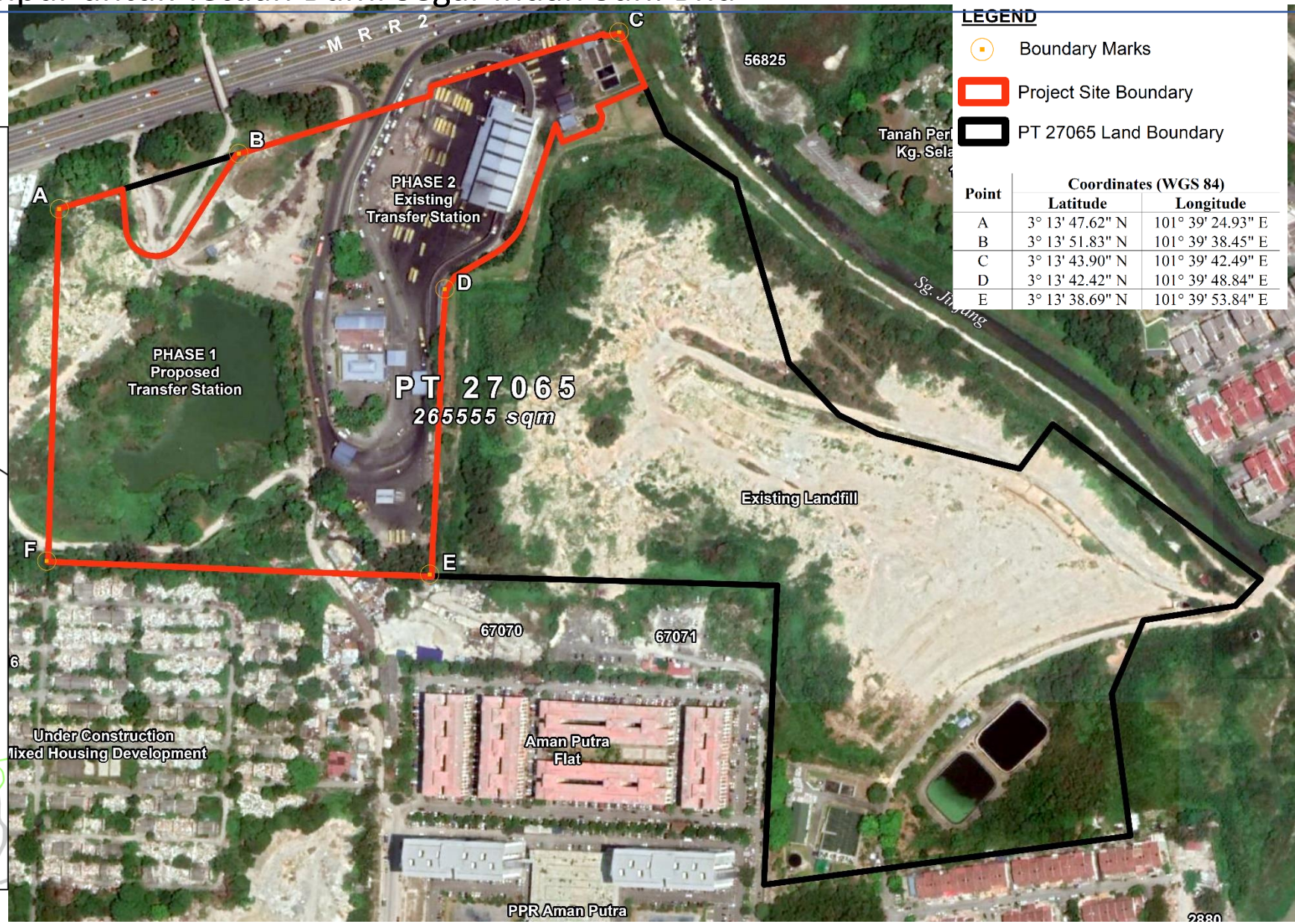
Project Location





Point	Coordinates (WGS 84)	
	Latitude	Longitude
A	3° 13' 47.62" N	101° 39' 24.93" E
B	3° 13' 51.83" N	101° 39' 38.45" E
C	3° 13' 43.90" N	101° 39' 42.49" E
D	3° 13' 42.42" N	101° 39' 48.84" E
E	3° 13' 38.69" N	101° 39' 53.84" E

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Project Layout

Cadangan Pembangunan Sebuah Stesen Pemindahan Sisa Pepejal 2 Tingkat Serta Kemudahan Utiliti Di Atas Sebahagian Lot PT 27065, Mukim Batu, Jalan Lingkaran Tengah II, Taman Beringin, Wilayah Persekutuan Kuala Lumpur untuk Tetuan Bumi Segar Indah Sdn. Bhd

Executive Summary

Nearest Sensitive Receptor within 500 Meters to 1 Kilometers from Project Site

* No water intake point in 1 km radius from the Project site.

LEGEND

- Project Site
- 500 m to 1 km Radius
- River & Water Bodies

Executive Summary

Cadangan Pembangunan Sebuah Stesen Pemindahan Sisa Pepejal 2 Tingkat Serta Kemudahan Utiliti Di Atas Sebahagian Lot PT 27065, Mukim Batu, Jalan Lingkaran Tengah II, Taman Beringin, Wilayah Persekutuan Kuala Lumpur untuk Tetuan Bumi Segar Indah Sdn. Bhd

Project Description

- Develop and operate new double story transfer station.
- Cease the operation of existing transfer station.
- Compactor design: Vertical Compression Waste principle.
- Design with lighter constructions, less maintenance of the equipment, and less required space.

Executive Summary

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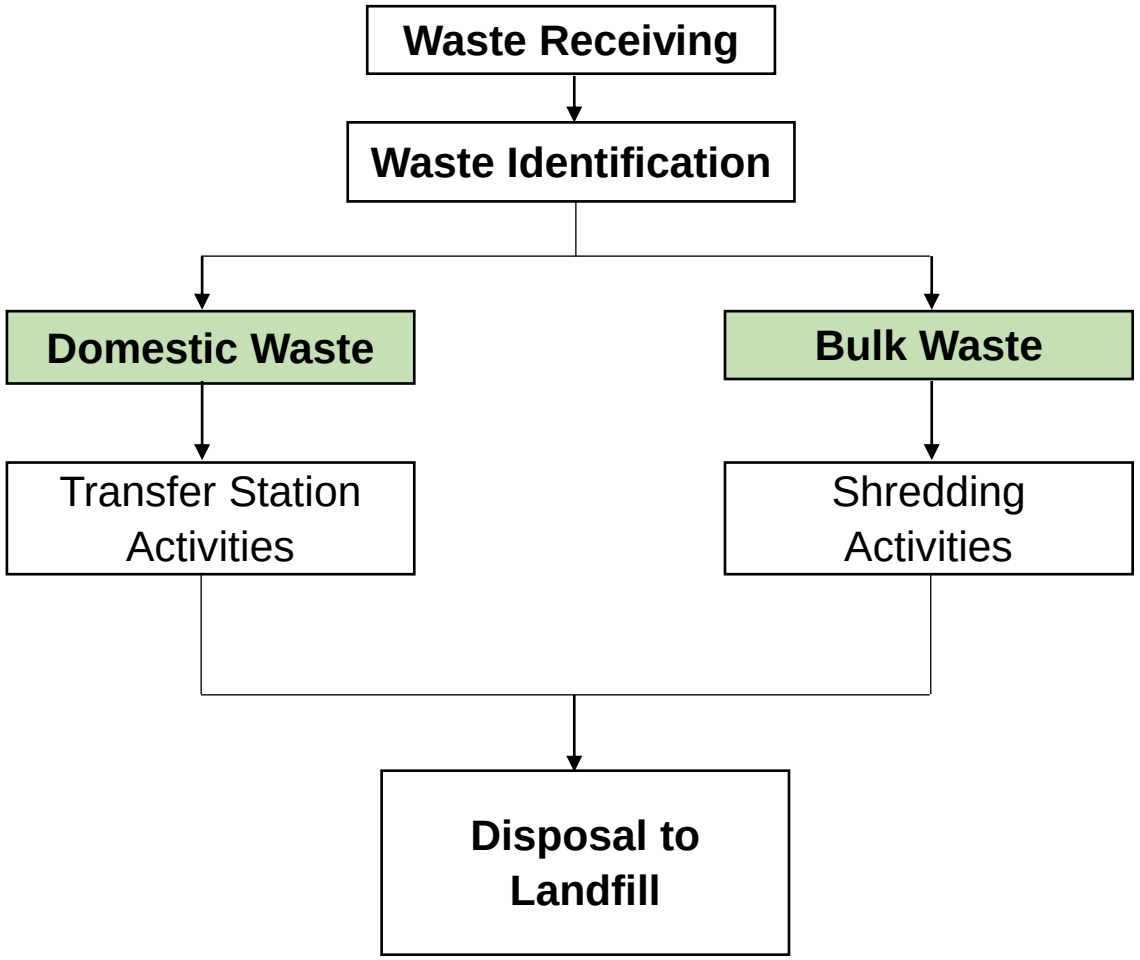
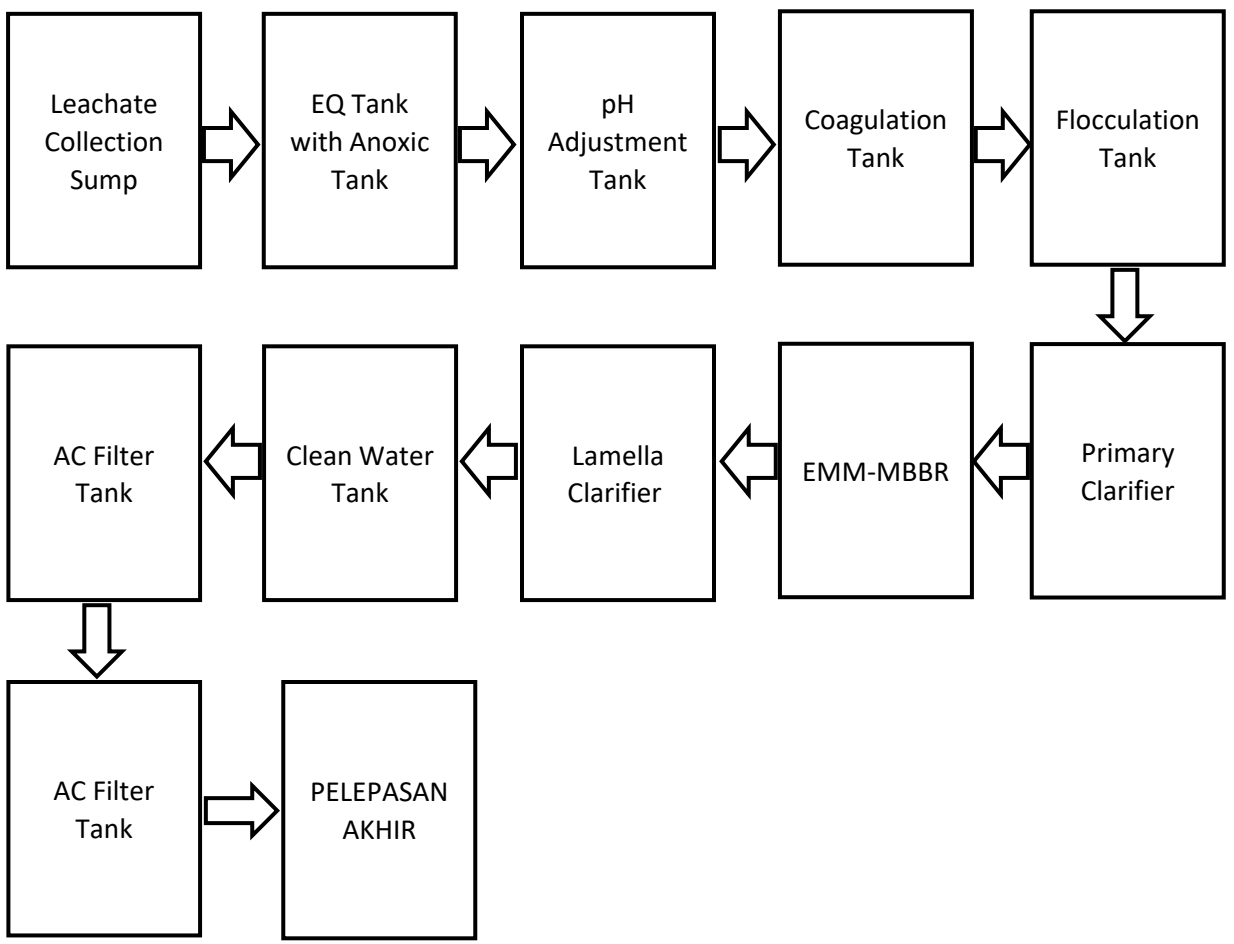
Waste Handling Process



Leachate Treatment Plan Process



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Project Activities

Pre-Construction

- **Desk studies**
- **Site investigation.**

During Construction

Phase 1: Construction of KLTS

- **Site Clearing**
- **Earthwork**
- **Commencement of Structure**
- **Establishment of Access Road & Drainage**
- **Landscaping & Revegetation.**

During Construction

Phase 2: Development of Existing KLTS Area

- **Transition Work**
- **Relocation of Washing Bay**
- **Silo Parking**
- **Bulk Waste to Phase 2 Area**

During Operation

- **Waste Receiving**
- **Transfer Station Activities**
- **Washing Activities**
- **Leachate Treatment**
- **Bulk Waste Activity**
- **Waste Disposal to Bukit Tagar Landfill**
- **System Breakdown**

Executive Summary

Cadangan Pembangunan Sebuah Stesen Pemindahan Sisa Pepejal 2 Tingkat Serta Kemudahan Utiliti Di Atas Sebahagian Lot PT 27065, Mukim Batu, Jalan Lingkaran Tengah II, Taman Beringin, Wilayah Persekutuan Kuala Lumpur untuk Tetuan Bumi Segar Indah Sdn. Bhd

Existing Environment

Land use

Within 5km, dominant land use is residential : 25.9%
Followed by transportation : 22.7% & Forest : 13.9%

Climate

Rainfall
- Highest in 2018 (3,535mm)
- Lowest in 2005(2,292mm)

24-Hour Temperature
- Highest mean in May (28.6 °C)
- Lowest mean in Nov & Dec (27.2°C)

Relative Humidity
- Maximum mean in Nov (82.6 %)
- Lowest in February (75.8 %)

Mean Daily Evaporation
- Highest rates in March (4.8 mm)
- Lowest rates in December (3.8 mm)

Surface Winds
- Dominant from Northwest (17.5 %)

Topography

- Terrain is flat and slightly undulating
- Elevation range of 5 - 550m.

Soil

Underlain by mined land, rengam, steepland telemong & urban land.

Hydrology

Located within Sg. Klang river basin
Main tributaries: Sg. Batu & Sg. Gombak
Major tributaries: Sg. Ampang, Sg. Kerayong, Sg. Kuyoh, Sg. Jinjang, Sg. Rasau, Sg. Damansara and Sg. Air Hitam.
2 Dams present North of Project Site Klang Gates Dam & Batu Dam.
Nearest Water Intake Point located upstream.

Geology

- Project site is geologically stable
- Underlain by sedimentary rocks from Silurian-Ordovician to Permian-Jurassic period.
- Located above KL Limestone formation:
  - Plagioclase, K-feldspar & Quartz

Hydrogeology

Located within high groundwater potential.
Groundwater present in alluvial & hard-rock aquifers.
Average water table ranges from 0.21-0.54m below ground level.
Groundwater flows from west to east.

Executive Summary

Cadangan Pembangunan Sebuah Stesen Pemindahan Sisa Pepejal 2 Tingkat Serta Kemudahan Utiliti Di Atas Sebahagian Lot PT 27065, Mukim Batu, Jalan Lingkaran Tengah II, Taman Beringin, Wilayah Persekutuan Kuala Lumpur untuk Tetuan Bumi Segar Indah Sdn. Bhd

Existing Environment

Odour Intensity

- 5 sampling station.
- No odour detection for sample station OU4.
- Barely recognizable odour for OU1, OU2 & OU3 at point below than 3.9 OU/m3
- Strong indicator for OU5.

Noise

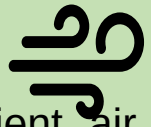
5 sampling analysis on ambient noise level (L_{Aeq})

Result of L_{Aeq} were within the recommended limit as per Guidelines for Environmental Noise Limits and Control, Third Edition, DOE (2019).

Water Quality

- Water quality study at 11 points along Sg. Jinjang and ponds near Project Site.
- DOE WQI Classification for all sampling stations are in Class III except for WQ1 (Class II), WQ2 & WQ5 at class IV while WQ4 at class V.
- Non-compliance from standard limit: COD, BOD5, pH, and TSS, heavy metals (Manganese), phosphorus, colour, ammoniacal nitrogen and Total Escherichia Coli.

Air Quality

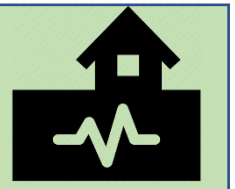


5 sampling station for ambient air monitoring.
Results for PM_{10}, $PM_{2.5}$, SO_2, NO_2 and CO were within the MAAQS Interim Target 2 (IT-2 in 2018) and Interim Target 3 (IT-3 in 2020).

Groundwater Quality

- 9 sampling points in Project Site vicinity.
- The result indicate non-compliance for bicarbonate alkalinity, BOD & COD as per Standards and Groundwater Index Malaysia, DOE (2019) & National Standard for Drinking Water (NSDW), KKM (2004).

Vibration Level



5 sampling station.
Results were within the DOE recommended limit as per Caution Level; Schedule 1: Recommended Limits for Damage Risk in Buildings From Steady State Vibration, The Planning Guidelines for Vibration Limits and Control in the Environment, DOE (2007).

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Existing Environment

Traffic

Existing Road Network

Main route: MRR2

Traffic Survey

Peak hour:
Morning (0700 – 0800)
Afternoon (1700 – 1800)

Traffic Composition

Car: >70%; heavy vehicle: 5%

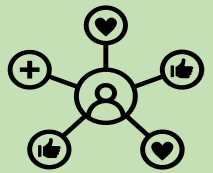
Leachate Discharge

- 1 Sampling Point taken at existing LTP discharge point.
- Results show all parameters were within DOE limit as per Second Schedule; Acceptable Conditions for Discharge of Leachate, Environmental Quality (Control of Pollution from Solid Waste Transfer Station and Landfill) Regulations 2009.

Public Health Study

- Majority of local community have very good basic amenities.
- Main chronic diseases:
  - Adult: hypertension and diabetes.
  - Children: cough, cold & diarrhea.

Socio-Economy



- Population of WPKL: 1.78million people (2020).
- Mukim Batu: 2nd highest number of population

Awareness

Aware: 24.6%; Not aware: 75.4%

Acceptances

Agreed: 34.1%; Disagree: 49.2%; Not sure: 16.7%

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Evaluation of Impact

During Construction

- Existing condition soil loss rate 89.9 ton/ha/yr
- Worst case condition soil loss rate of 181.4 ton/ha/yr
- With mitigation measures, soil loss rate reduced to 72.5 ton/ha/yr
- During operation soil loss rate is 9.1 ton/ha/yr

- Impact: release of pollutant from exhaust emission such as CO2, SO2 and NO2 due to the use of vehicles during construction

- Noise and vibration will be increase during construction work.
- The impact predicted minimal

- Activities: transportation activities, handling of machinery and abandonment. Impact: Poor safety practices may lead to accidents.
- Activity: transition of bulk waste location. Impact: carelessness of handling machinery contribute to risk of injuries.

- Increase surface runoff generation.
- Water body contamination due to waste disposal & potential disease due to improper sewage management.

- Increase employment
- Inflow investment
- Better technology & infrastructure
- Temporary influx of migrant worker
- Potential friction between members of community due to different backgrounds
- Increase health & road safety risks

<u>Solid Waste Generation</u>

- Domestic Waste: estimated 60 kg/day; pollute surface water, vermin breeding ground & fire hazard.
- Construction Waste: safety impact.
- Biomass: fire hazard.

<u>Scheduled Waste</u>

- Generation of SW204, SW306, SW408, SW409 & SW410.

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Evaluation of Impact

During Operation

Pollution Source:

- Leachate: spillage during operation.
- Sewage from workers: Poor handling or failure of desludging individual treatment system.
- Domestic waste from workers

Impact: Polluted river body.

Water Modelling:

Summary: Sg. Jinjang is polluted with organics, to effectively minimize impact:

BOD = <10 mg/L.	DO = 3 – 5 mg/L.
TSS = < 50 mg/L	NH_3-N = < 3 mg/L
NO_3-N = < 10 mg/L	Pb = < 0.05 mg/L

Source: Transportation of waste:.
Impact: Increase road risks accident such as reckless driving & overloading the transport vehicles.

Source: Handling equipment or machineries
Impact: risk of injury or fatality.

Source: Improper waste management
Impact: Provides breeding ground for vermin

Pollution Source:
exhaust emission from machineries, compression of domestic waste and grading of bulk waste
Impact: Increased air pollutant

Pollution Source: Leachate spill off, waste transportation and domestic waste unloading and compaction inside the KLTS building.
Impact: Anxiety, headache, vomiting, eye irritation and respiratory problem.

Pollution Source: Solid Waste Generation
Impact: Breeding ground for vermin, odour & fire hazard.
Pollution Source: Scheduled Waste: SW110 & SW204.
Impact: Water, soil & groundwater contamination

Pollution Source:
truck mobilization and operation of heavy machinery.
Impact: Public nuisance

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Mitigating Measures (During Construction)

Soil Erosion

- Site clearing done in dry season.
- Prepare construction schedule.
- Restricted clearing areas only.
- Biomass generated temporarily stockpile and disposed at authorized landfill.
- Construct BMP's before earthwork.
- Equipped with earth drain & silt fence along existing retention pond.
- Re-vegetation/landscaping will be carried out upon completion of earthworks

Water Quality

<u>At Site:</u>

- Mitigating measures as recommended in the LDP2M2
- Regular maintenance of temporary drainage.
- Repairing & servicing of machineries conducted outside from the Project site.
- Provide scheduled waste storage area.
- Temporary storage areas for construction material shall be covered with plastic sheet
- Implement portable self-contained toilet.
- <u>During monitoring:</u>
- Surface water monitoring will be conducted on quarterly basis.
- Take corrective action if discharge of water quality is not complied with the regulatory limits.

Air Quality

<u>At Site</u>

- Regular damping on exposed area.
- Open burning is prohibited.
- Covered construction material with plastic sheet
- Install tire washing facilities.

<u>On vehicle</u>

- Lorries not be overloaded & properly covered.
- Practices strict compliance with speed restriction.
- Regular maintenance of all vehicles & machineries
- Avoidance of unnecessary machineries operation

<u>On the roads</u>

- Water bowser implemented twice per day

<u>Monitoring:</u>

- Ambient air monitoring will be conducted at two sampling station on quarterly basis.

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Mitigating Measure (During Construction)

Noise

<u>Equipment/machineries</u>:
- Utilize equipment with low levels of noise.
- Conduct regular maintenance.

<u>Construction activity</u> :
- Limiting noisy construction activities to daytime.

<u>Monitoring</u>:
- Noise monitoring will be conducted at two sampling station on quarterly basis.
- Avoid simultaneous noisy activities.
- Investigate complaints promptly with remedial measures implemented.

Waste Management

Solid Waste Generation

<u>Domestic & Construction Waste</u>:
- Do not accumulate & burn waste.
- Provision of designated collection point and waste bin.

<u>Biomass</u>:
- Prohibit biomass open burning

Scheduled Waste
- Manage scheduled waste based on EQA 2005.
- Container of scheduled waste shall be labelled & stored in separate storage.
- Trained on the safety and ERP at least once a year.
- Inspection of storage area conducted on weekly basis

Social & Economic

<u>Wellbeing</u>:
- Periodic monitoring program.
- Health screening and swab test must be done.
- <u>Quality of Surrounding Environment</u>:
- Contractor to be mindful and act on public complain with regards to the Project

<u>Disrupt Traffic Flow and Risk Local's Safety</u>:
- Provision of appropriate road signages and safety measures.
- Limiting material transport outside peak hours.

<u>In-Migration of Foreign Workers</u>:
- Appoint a SHO in monitoring the activities.
- Allocating the construction workers at the base camp

Health & Safety

- <u>Transportation:</u>
- Strict adherence to road transport regulations.
- Allocate traffic controller/ flagmen at the access point.

<u>Machineries Handling:</u>.
- Provided related construction work training.
- Provision of Personal Protective Equipment (PPE)
- Regular housekeeping.
- Provision of firefighting equipment and first aid kit.
- Prepare ERP.

<u>Abandonment:</u>
- Submit comprehensive closure plan to DOE..
- Maintain periodic photographic records.

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Mitigating Measure (During Operation)

Water Quality

<u>i) Upgrading of LTP:</u>

- a) Maintenance and desludging of LTP shall be conducted regularly.
- b) Operation of LTP supervised by a competent person.
- c) Performance monitoring of LTP will be conducted every month.
- <u>ii) Transportation of Waste</u>:
- a) Leachate from KLTS will flow into LTP.
- <u>iii) Sewage from workers</u>
- a) Desludging regularly.
- <u>iv) Domestic waste</u>
- a) Do not accumulate and burn waste.
- b) Provision of designated collection point and waste

Air Quality

- Avoidance of unnecessary running of vehicle and equipment.
- Regular damping on the exposed area.
- Regular inspection of the bulk waste storage area.
- Proper installation of air pollution control system.
- Performance monitoring of APCS shall be conducted regularly.
- The APCS supervised by appointed competent person.

Noise

- Construction activities conducted during daytime.
- Limit and control traffic movement and use of high volume intensity machinery.
- PPE provided to all workers.
- Avoiding simultaneous noisy activities

Odour

- Desludging of LTP conducted regularly.
- Application of BiOWISH to eliminate odors.
- Proper closure of container during waste transportation.
- Regular inspection on truck

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Mitigating Measure (During Operation)

Traffic

- Speed limit and warning signboard.
- Road network condition maintained regularly
- To properly schedule transport activities to reduce turn-around time and impact to local traffic.

Waste Management

Solid Waste

- Do not accumulate and burn waste.
- Provision of designated collection point and waste bin.
- Good housekeeping practice

Scheduled Waste

- Manage based on EQA 2005.
- Appoint CePSWaM.
- Container of scheduled waste shall be stored in separate storage according to its category.
- Scheduled wastes generated shall be collected by licensed scheduled waste recovery facility/ transporter.
- Inspection of storage area shall be conducted on weekly basis.

Health & Safety

- Provide training and awareness.
- PPE provided to all workers.
- Development of a formal framework

Social & Economic

- Periodic monitoring program.
- Monitor the construction workers activities and movement.
- Ensure that all mitigation measures implemented.

Proposed Environmental Monitoring Program

Phase	No. & Type of Monitoring	Performance Monitoring (PM)	Compliance Monitoring (CM)	Impact Monitoring (IM)
Construction	1 water quality monitoring station	Not Applicable	✓	✓
	1 silt trap monitoring station	✓	✓	Not Applicable
	2 ambient air quality monitoring stations	Not Applicable	✓	✓
	2 noise monitoring stations	Not Applicable	✓	✓
	2 vibration monitoring stations	Not Applicable	✓	✓
Operation	3 ambient air quality monitoring stations	Not Applicable	Not Applicable	✓
	3 noise monitoring stations	Not Applicable	Not Applicable	✓
	5 ambient odour monitoring stations	Not Applicable	Not Applicable	✓
	1 stack monitoring station	Not Applicable	✓	Not Applicable
	3 groundwater monitoring stations	Not Applicable	✓	✓
	1 leachate monitoring station	Not Applicable	Not Applicable	✓
	2 water quality monitoring stations	Not Applicable	Not Applicable	✓