

INTRODUCTION

Forest plantation is defined as a process of recovery for disturbed, bare or logged over forest area. Forest plantation development comprises of few activities such as site preparation, extraction of timber, replanting the trees and harvesting. The trees will grow naturally and after a period of time it will be harvested.

The development of the Project site will be implemented by Project Proponent i.e.: Premium Ace Sdn. Bhd. An approval letter from Pahang Department of Forestry (DOF) with a reference number: PHN. PHG. 100-21/0/7239 dated 26th February 2024 (refer Appendix 1-A) to Premium Ace Sdn. Bhd. stated a forest plantation development has been approved for the area of 213.18 hectares (526.78 acres) in part of compartment 6, part of compartment 7, part of compartment 13 and part of compartment 14 of Krau Forest Reserve, Mukim Jenderak, District of Temerloh, Pahang Darul Makmur

EXECUTIVE SUMMARY

PROJECT PROPONENT
PREMIUM ACE SDN BHD
 C - 34, 1st FLOOR, JALAN TENGGU ISMAIL,
 28000 TEMERLOH, PAHANG DARUL MAKMUR

ENVIRONMENTAL CONSULTANT
ECO SYNERGY SOLUTIONS SDN BHD
 2-22, KOMPLEKS SENTRAL POINT, JALAN TKS1,
 TAMAN KAJANG SENTRAL, 43000 KAJANG,
 SELANGOR DARUL EHSAN

PROJECT LOCATION

NEAREST TOWN
 Krau Town -20.8 km & Jerantut Town -17.0 km

ACCESS ROAD

The Project site can be accessed by traversing about ±40 km from the exit of Temerloh toll plaza. From Temerloh toll plaza, turn right into Krau town and straight along the route Temerloh -Jerantut (98) for about 33.9 km. Turn left to Jalan C141 for about 130 m and then turns right and goes straight for about 9.0 km. Then, turn right to the unpaved access road and continue straight to reach the project site. The unpaved access road will be used during the development phase and operation phase. The road is actively used by other heavy vehicles for activity such as oil palm plantation.

SENSITIVE RECEPTORS

- Impact to Sharing Access Road
- Impact to Human Settlement
- Impact to Water Intake

EXISTING ENVIRONMENT (WITHIN 5 KM RADIUS)

- Land Use**
- Forest Reserve
 - Oil palm plantations
 - Settlements that are within the vicinity of the project site:
 - Kg Orang Asli (KOA) Plan = 4.46 km
 - Kg Orang Asli (KOA) Lubuk Wong = 5.10 km
 - Kg Orang Asli (KOA) Pasu = 5.16 km
 - Kg Orang Asli (KOA) Sg. Mai = 5.61 km
 - Kg Orang Asli (KOA) Kuala Terbol = 6.20 km
 - Kg Orang Asli (KOA) Penderas = 6.57 km
 - Kg Paya Sok = 6.74 km
 - Kg Paya Luas = 6.79 km
 - Kg Gong Halt = 7.58 km

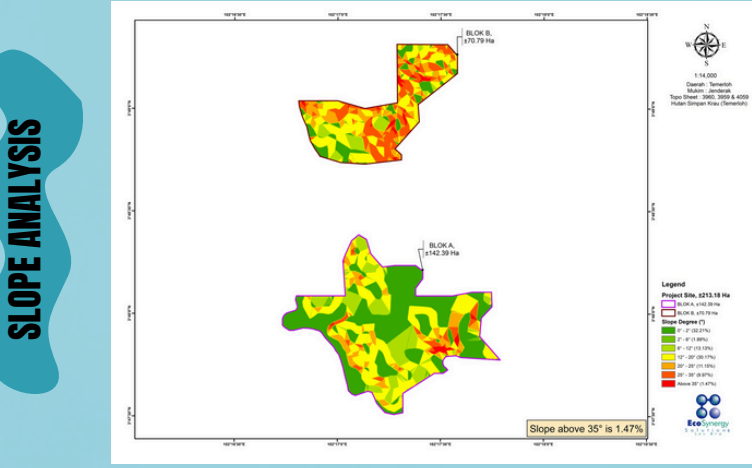
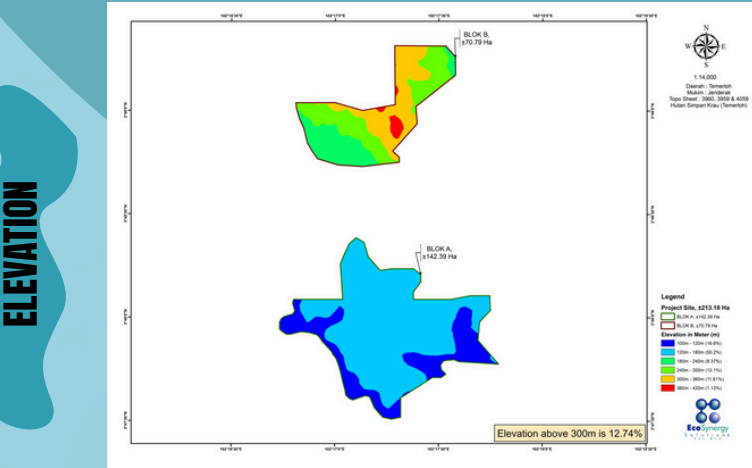
METEOROLOGY (TEMERLOH STATION) 2015-2024

Average Annual Rainfall:
 2915.0 mm highest
 1193.2 mm lowest

Average Annual Temperature:
 Highest: 27.8 °C
 Lowest: 27.1 °C

Average Annual Relative Humidity:
 Maximum: 83.9%
 Minimum: 80.6%

Wind Rose
 Percentage of Calm: 28.6%
 Highest wind blow: 14.6% (north)
 Lowest wind blow: 4.2% (southwest)



WATER QUALITY AND WATER INTAKE



There are 14 water quality stations.

Station	WQI	Class	Status
WQ1	88.93	II	Clean
WQ2	91.10	II	Clean
WQ3	90.34	II	Clean
WQ4	93.12	I	Clean
WQ5	90.11	II	Clean
WQ6	95.17	I	Clean
WQ7	89.52	II	Clean
WQ8	95.04	I	Clean
WQ9	90.61	II	Clean
WQ10	88.99	II	Clean
WQ11	90.52	II	Clean
WQ12	88.97	II	Clean
WQ13	88.66	II	Clean
WQ14	90.55	II	Clean
Average	89.31	II	Clean

Source: Consultant's Calculation

- The nearest water treatment plant from Project site:
- Kuala Krau Water Treatment Plant - approximately 19.84 km (will be affected from the Project site)
 - Jengka Utama Water Treatment Plant - approximately 27.27 km (will be affected from the Project site)
 - Felda Jenderak Utara Water Treatment Plant - approximately 9.33 km (not affected due to different catchment)

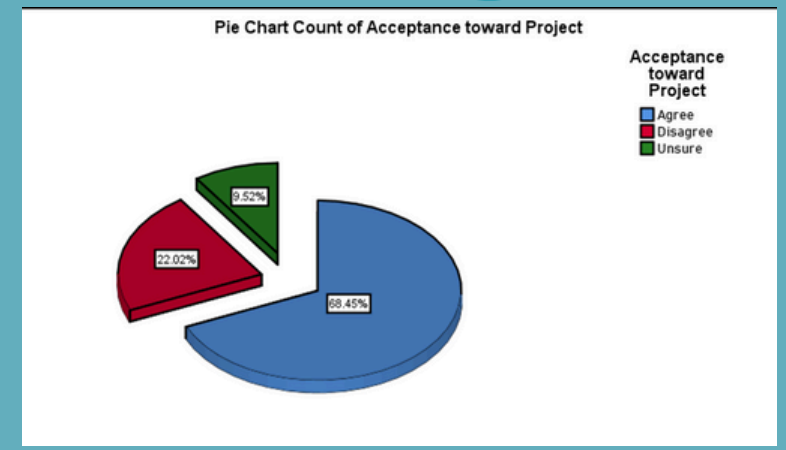
AIR AND NOISE

There are three (3) air and noise sampling stations.

Air:
 PM10: 20.16 µg/m³ to 31.22 µg/m³
 PM2.5: 12.10 µg/m³ to 19.50 µg/m³

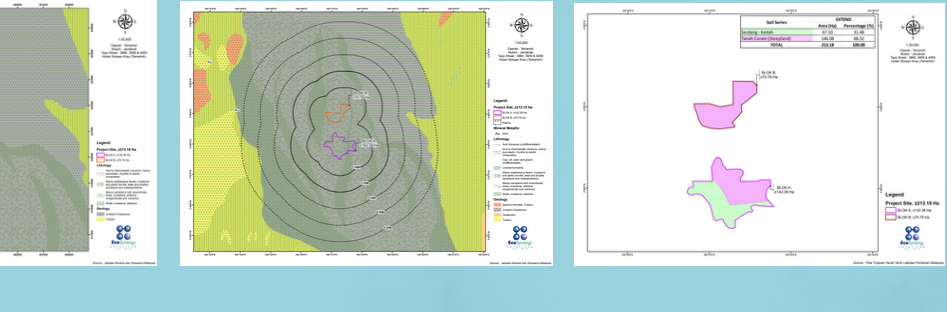
Noise: LAeq
 Day - time 50.8 dBA to 75.2 dBA
 Night - time 47.4 dBA to 64.4 dBA

SOCIO ECONOMY STUDY



GEOLOGY, MINERAL AND SOIL

Geology: Jurassic - Cretaceous
 Mineral: No mineral found within the Project site. Nearest mineral found is Gold (Au)
 Soil Series: Serdang - Kedah, Tanah Curam (steepland)



LEGAL REQUIREMENTS

Subject to Section 34A(1) of the Environmental Quality Act 1974 [127] and Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015, the Project site fall under First Schedule:

Activity 5 (e) Forestry

Development of planted forest covering an area of 100 hectares or more but less than 500 hectares

PROJECT ACTIVITIES

PRE-DEVELOPMENT (Preliminary Investigation)	DURING DEVELOPMENT	POST-DEVELOPMENT
Site Survey <ul style="list-style-type: none"> Determine Access Road Boundary Marking Riparian River Buffer Zone Marking 	Land Preparation Activity: <ul style="list-style-type: none"> Mobilization of Transport and Machineries Construction of Main Road (Associated with the Construction of Drainage System and Erosion Control, Installation of LD-P2M2 Tools) Construction of Quarters 	Maintenance of LD-P2M2 <ul style="list-style-type: none"> Field Maintenance: <ul style="list-style-type: none"> Desilting and Clearing Drain Pruning Replanting Dead Tree Pest and Disease Management Weed Management Harvesting and Post-Harvest Field Maintenance Abandonment and Replanting
Environmental Study: <ul style="list-style-type: none"> Soil Study Ecology Study Meteorology Study Socio Economy Study Water Quality, Ambient Air Quality and Noise Study 	Maintenance of LD-P2M2 <ul style="list-style-type: none"> Mulching and Planting Cover Crops 	Field Establishment: <ul style="list-style-type: none"> Holing Planting Seedling
Project Planning / Management		

FLORA STUDY



FAUNA STUDY: CAMERA TRAP

- Mammals: 9 species
- Herpetofauna: 1 species
- Avifauna: 2 species

STATEMENT OF NEED

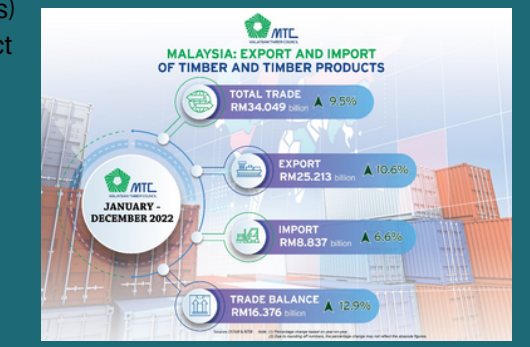


Figure 1: Export of Timber Product in Malaysia

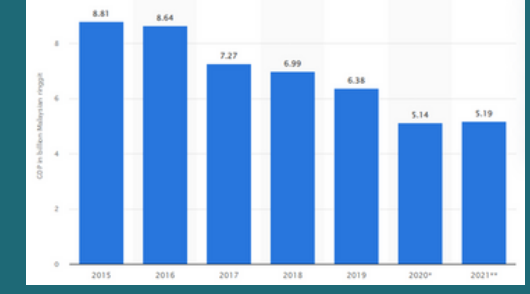


Figure 2: GDP Contribution from Forestry and Logging activity

National Timber Industry Policy (NATIP 2009-2020)

- The timber industry has been one of the main contributors to the growth of Malaysia's economy.
- Malaysia is one of the world's largest exporters of tropical timber and timber products and the ten largest exporters of furniture (second in Asia) with over 183 export destinations.
- It is estimated that at least 60 % of export earnings must be derived from downstream products and the balance 40 % from primary processed products.
- Based on statistic from Department of Statistic Malaysia and Malaysian Timber Council, it is estimated the total trade for export and import of timber in Malaysia has exceed RM 34 billion on 2022
- In 2021, the gross domestic product (GDP) from forestry and logging was expected to reach approximately 5.19 billion Malaysian ringgit. However, the GDP from forestry and logging industry in Malaysia had been steadily decreasing since 2015 as shown in Figure 2 (Statistic Department of Malaysia, 2023).

The logging activity is carried out mainly for commercial forest timber which can help in boosting the economic. Among beneficial aspects of the project would include the following:

- Avoid illegal logging that have an adverse potential environmental impact especially to soil erosion and sedimentation.
- Increase the production of raw materials for the timber industry especially for Pahang state and to increase the export volume of Malaysia.
- Supporting timber-based product will increase the economic value of the forest.
- Provide and increase job opportunities among the communities in Mukim Jenderak and District of Temerloh.



LD-P2M2 Tools	Performance Monitoring (PM) Parameters	Recommended Limits	Monitoring Locations	Frequencies
Sediment Basin/Trap	Silt Marker	2/3 depth from sediment trap		Weekly or after rain event (in-situ) or subjected to the Condition of Approval (COA)
Perimeter Drain	Performance		Refer LD-P2M2 Conceptual Plan (Attachment 1)	Subjected to the Condition of Approval (COA)
Riparian Buffer				
Cover Crop	Sediment Level			
Earth Drain with Check Dam				
Temporary or permanent waterway crossing (culvert/bridge)	Structure and Performance			

Component	Regulated Parameters	Applicable Standards	Monitoring Locations	Frequencies
*Air Quality	PM ₁₀ PM _{2.5}	100 µg/m ³ 35 µg/m ³	Refer Figure 9.5.2	Subjected to the Condition of Approval (COA)
**Noise	L _{Aeq}	Day: 60 dBA Night: 55 dBA	Refer Figure 9.5.2	Subjected to the Condition of Approval (COA)
***Water Quality (Discharged from Sediment Trap/Basin)	Total Suspended Solids (TSS) Turbidity	50 mg/L 250 NTU	Refer Figure 9.5.2 and LD-P2M2 Conceptual Plan (Attachment 1)	After 12.5 mm rainfall (using rain gauge)

Note:
 * New Malaysia Ambient Air Quality Standard, Department of Environment Malaysia (DOE)
 ** Schedule of Permissible Sound Levels, Schedule 1: Recommended Permissible Sound Level (LAeq) by Receiving Land Use for New Development. Guidelines for Environmental Noise Limits and Control, Third Edition (2019), Department of Environment (DOE)
 *** Refer to EIA Condition of Approval

Component	Regulated Parameters	Monitoring Locations	Frequencies
*Air Quality	PM ₁₀ PM _{2.5}	Refer Figure 9.5.2	Subjected to the COA
**Noise	L _{Aeq} L _{max} L _{min}	Refer Figure 9.5.2	Subjected to the COA
***Water Quality	Total Suspended Solids (TSS) Biochemical Oxygen Demand (BOD) pH Turbidity Ammonical Nitrogen (NH ₃ -N) Dissolved Oxygen (DO) Chemical Oxygen Demand (COD)	Refer Figure 9.5.2	Subjected to the COA

Note:
 * New Malaysia Ambient Air Quality Standard, Department of Environment Malaysia (DOE)
 ** Schedule of Permissible Sound Levels, Schedule 1: Recommended Permissible Sound Level (LAeq) by Receiving Land Use for New Development. Guidelines for Environmental Noise Limits and Control, Third Edition (2019), Department of Environment (DOE)
 *** National Water Quality Standard for Malaysia (NWQS), Department of Environment, Malaysia (DOE).

ELEVATION

SLOPE ANALYSIS

SEBAHAGIAN KOMPARTMEN 13 DAN SEBAHAGIAN KOMPARTMEN 14 DI HUTAN SIMPAN KRAU, MUKIM JENDERAK, DAERAH TEMERLOH, PAHANG DARUL MAKMUR

PENGANTARAN

Ladang hutan didefinisikan sebagai proses pemulihan kawasan hutan yang terganggu, terdedah atau telah ditebang. Pembangunan ladang hutan merangkumi beberapa aktiviti seperti penyediaan tanah, pembalakan, penanaman semula pokok-pokok dan pengusahaan. Pokok-pokok ini kemudiannya akan tumbuh secara semula jadi dan sehingga beberapa ketika ia akan diusahakan.

Pembangunan tapak Projek ini akan dilaksanakan oleh Pemaju Projek iaitu Premium Ace Sdn. Bhd.. Surat kelulusan daripada Jabatan Perhutanan Negeri Pahang (JPNP) dengan nombor rujukan: PHN.PHG.100-21/0/7239 bertarikh 26 Februari 2024 (rujuk Lampiran 1-A) kepada Premium Ace Sdn. Bhd. menyatakan bahawa pembangunan perladangan hutan telah diluluskan bagi kawasan seluas 213.18 hektar (526.78 ekar) di sebahagian kompartmen 6, sebahagian kompartmen 7, sebahagian kompartmen 13 dan sebahagian kompartmen 14 di Hutan Simpan Krau, Mukim Jenderak, Daerah Temerloh, Pahang Darul Makmur.

RINGKASAN EKSEKUTIF

PEMAJU PROJEK PREMIUM ACE SDN BHD

C - 34, 1st FLOOR, JALAN TENGGU ISMAIL,
28000 TEMERLOH, PAHANG DARUL MAKMUR

PERUNDING ALAM SEKITAR ECO SYNERGY SOLUTIONS SDN BHD

2 - 22, KOMPLEKS SENTRAL POINT, JALAN TKS1,
TAMAN KAJANG SENTRAL, 43000 KAJANG,
SELANGOR DARUL EHSAN

KEPERLUAN UNDANG-UNDANG

Tertakluk kepada Akta Kualiti Alam Sekeliling 1974 (Akta 127) dan Perintah Kualiti Alam Sekeliling (Aktiviti Yang Ditetapkan) (Penilaian Kesan Kepada Alam Sekeliling) 2015, kawasan kajian projek tertakluk pada Jadual Pertama

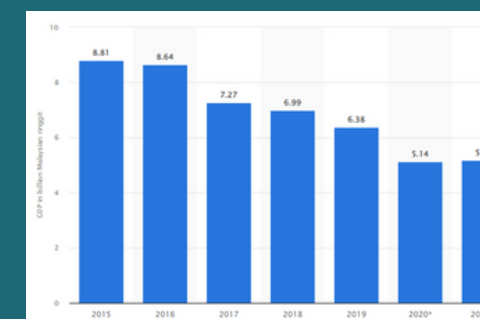
Aktiviti 5 (e) Perhutanan

Pembangunan ladang hutan yang meliputi kawasan seluas 100 hektar atau lebih tetapi kurang daripada 500 hektar

PERNYATAAN KEPERLUAN



Rajah 1: Eksport Produk Kayu di Malaysia



Rajah 2: Sumbangan GDP daripada aktiviti Perhutanan dan Pembalakan



- Industri kayu telah menjadi salah satu penyumbang utama pertumbuhan ekonomi Malaysia.
- Malaysia adalah salah satu pengeksport kayu tropika dan produk kayu terbesar di dunia dan antara sepuluh pengeksport perabot terbesar (kedua di Asia) dengan lebih daripada 183 destinasi eksport.
- Dianggarkan sekurang-kurangnya 60% dari pendapatan eksport mesti berasal dari produk hiltan dan baki 40% dari produk utama yang diproses.
- Berdasarkan statistik dari Jabatan Perangkaan Malaysia dan Lembaga Perindustrian Kayu Malaysia, dianggarkan jumlah perdagangan untuk eksport and import kayu di Malaysia telah melebihi RM 34 bilion pada tahun 2022.
- ada 2021, keluaran dalam negara kasar (KDNK) daripada perhutanan dan pembalakan dijangka mencecah kira-kira 5.19 bilion ringgit Malaysia. Walau bagaimanapun, KDNK daripada industri perhutanan dan pembalakan di Malaysia telah semakin berkurangan sejak 2015 seperti ditunjukkan dalam Rajah 2 (Jabatan Perangkaan Malaysia, 2023).

Kegiatan pembalakan dilakukan terutamanya untuk kayu hutan komersial yang dapat membantu meningkatkan ekonomi. Antara aspek yang bermanfaat daripada projek ini ialah:

- Dapat mengelakkan pembalakan haram yang berpotensi memberi kesan buruk terhadap alam sekitar terutamanya terhadap hakisan dan pemampatan tanah.
- Meningkatkan pengeluaran bahan mentah untuk industri kayu terutama di negeri Pahang dan meningkatkan jumlah eksport Malaysia.
- Menyokong produk berasaskan kayu akan meningkatkan nilai ekonomi hutan.
- Menyediakan dan meningkatkan peluang pekerjaan di kalangan masyarakat di Mukim Jenderak dan Daerah Temerloh.

LOKASI PROJEK

BANDAR BERHAMPIRAN

Bandar Krau -20.8 km & Bandar Jerantut -17.0 km

JALAN AKSES

Tapak Projek boleh diakses dengan perjalanan kira-kira ±40 km dari plaza tol Temerloh. Dari plaza tol Temerloh, belok ke kanan menuju ke pekan Krau dan terus melalui laluan Temerloh-Jerantut (98) sejauh lebih kurang 33.9 km. Seterusnya, belok kiri ke Jalan C141 sejauh kira-kira 130 m dan kemudian belok kanan serta teruskan perjalanan sejauh lebih kurang 9.0 km. Selepas itu, belok kanan ke jalan masuk tidak berturap dan teruskan perjalanan sehingga tiba di tapak projek. Jalan masuk tidak berturap ini akan berfungsi sebagai laluan utama semasa fasa pembangunan serta fasa operasi Projek. Laluan ini juga digunakan secara aktif oleh kenderaan berat lain yang terlibat dalam aktiviti ekonomi berhampiran, khususnya operasi perladangan kelapa sawit.

PENERIMA SENSITIF

- Impak kepada Jalan Akses
- Impak kepada Penduduk
- Impak kepada Muka Sauk



PERSEKITARAN SEDIA ADA (LINGKUNGAN 5 KM RADIUS)

- Hutan Simpan
- Ladang Kelapa Sawit

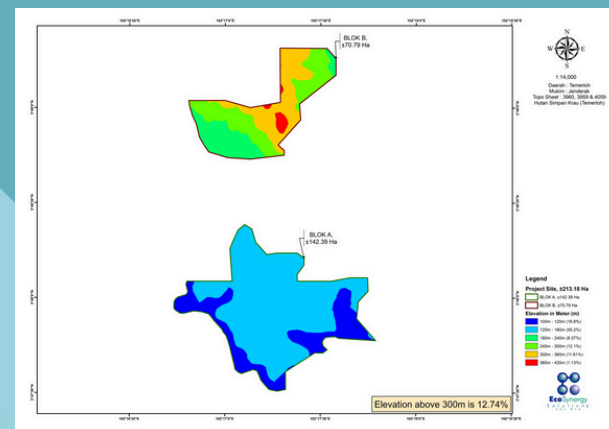
- Penempatan yang berada dalam kawasan berhampiran tapak Projek:
- Kg Orang Asli (KOA) Pian = 4.46 km
 - Kg Orang Asli (KOA) Lubuk Wong = 5.10 km
 - Kg Orang Asli (KOA) Pasu = 5.16 km
 - Kg Orang Asli (KOA) Sg. Mai = 5.61 km
 - Kg Orang Asli (KOA) Kuala Terbol = 6.20 km
 - Kg Orang Asli (KOA) Penderas = 6.57 km
 - Kg Paya Sok = 6.74 km
 - Kg Paya Luas = 6.79 km
 - Kg Gong Halt = 7.58 km

Purata Hujan Tahunan:
2915.0 mm (paling tinggi)
1193.2 mm (paling rendah)

Purata Suhu Tahunan:
Paling tinggi: 27.8 °C
Paling rendah: 27.1 °C

Purata Kelembapan Relatif Tahunan:
Maksimum: 83.9%
Minimum: 80.6%

Peratus Tenang: 28.6%
Tiupan angin paling tinggi: 14.6% (utara)
Tiupan angin paling rendah: 4.2% (barat daya)



KETIDAKSIKAPAN

ANALISA KECERUNAN

KUALITI AIR & MUKA SAUK

Terdapat 14 lokasi persampelan kualiti air.

Station	WQI	Class	Status
WQ1	88.93	II	Clean
WQ2	91.10	II	Clean
WQ3	90.34	II	Clean
WQ4	93.12	I	Clean
WQ5	90.11	II	Clean
WQ6	95.17	I	Clean
WQ7	89.52	II	Clean
WQ8	95.04	I	Clean
WQ9	90.61	II	Clean
WQ10	88.99	II	Clean
WQ11	90.52	II	Clean
WQ12	88.97	II	Clean
WQ13	88.66	II	Clean
WQ14	90.55	II	Clean
Average	89.31	II	Clean

Source: Consultant's Calculation

Loji Rawatan Air yang berhampiran dengan Tapak Projek:

- Loji Rawatan Air Kuala Krau - lebih kurang 19.84 km (berpotensi terjejas daripada aktiviti Projek)
- Loji Rawatan Air Jengka Utama - lebih kurang 27.27 km (berpotensi terjejas daripada aktiviti Projek)
- Loji Rawatan Air Feida Jenderak Utara - lebih kurang 9.33 km (tidak terjejas kerana berada dalam lembangan tadahan yang berbeza)

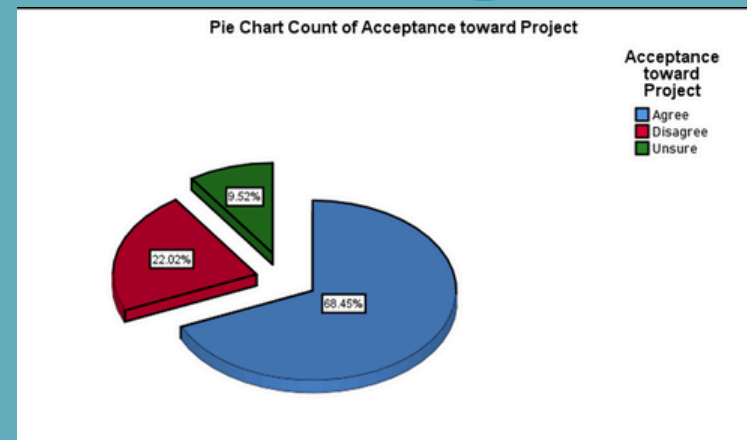
UDARA & BUNYI

Terdapat tiga (3) stesen persampelan udara dan bunyi.

- Udara:
- PM10 : 20.16 µg/m³ hingga 31.22 µg/m³
 - PM2.5 : 12.10 µg/m³ hingga 19.50 µg/m³
- Bunyi (LAeq):
- Waktu siang : 50.8 dBA hingga 75.2 dBA
 - Waktu malam : 47.4 dBA hingga 64.4 dBA

KAJIAN SOSIO EKONOMI

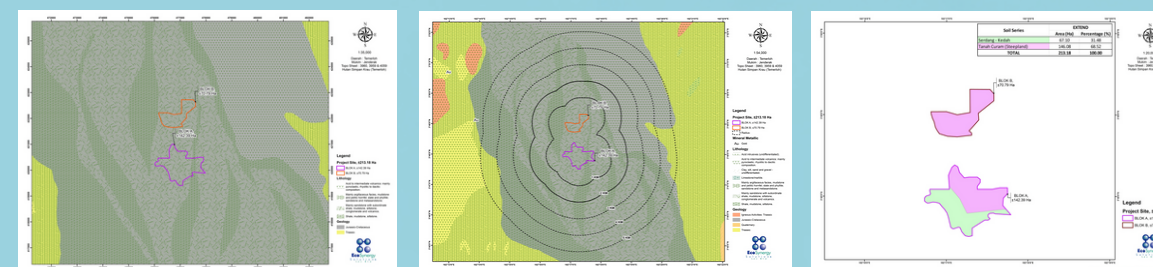
Pie Chart Count of Acceptance toward Project



GEOLOGI, MINERAL DAN TANAH

Geologi: Jurassic - Cretaceous
Mineral: Tiada mineral ditemui di dalam kawasan Tapak Projek. Mineral terdekat yang ditemui ialah Emas (Au).

Siri Tanah: Serdang - Kedah, Tanah Curam (steep land)



KAJIAN FLORA



KAJIAN FAUNA: PERANGKAP KAMERA

Mamalia: 9 spesies

Herpetofauna: 1 spesies

Burung: 2 spesies

PEMANTAUAN PRESTASI (PM)

Alat LD-P2M2	Parameter Pemantauan Prestasi (PM)	Had yang Dicapai	Lokasi Pemantauan	Kekerapan
Kolam/Perangkap Mendap	Penanda lumpur	2/3 dari kedalaman perangkap mendap	Lokasi boleh dirujuk kepada LDP2M2 (Lampiran 1)	Mingguan atau selepas hujan (in-situ) atau Tertakluk kepada Syarat Kelulusan
Zon Penampungan Sungai	Prestasi			Tertakluk kepada Syarat Kelulusan
Tanaman Tutup Bumi	Paras mendapan			
Laluan air sementara atau kekal (pembetung/jambatan)	Struktur dan Prestasi			

PEMANTAUAN PEMATIHAN (GM)

Komponen	Parameter Kawalan	Piawai yang Diaplikasi	Lokasi Pemantauan	Kekerapan
*Kualiti Udara	PM ₁₀ PM _{2.5}	100 µg/m ³ 35 µg/m ³	Rujuk Rajah 9.5.2	Tertakluk kepada Syarat Kelulusan
**Bunyi	L _{aeq}	Siang: 60 dBA Malam: 55 dBA	Rujuk Rajah 9.5.2	Tertakluk kepada Syarat Kelulusan
***Kualiti Air (Pelepasan dari kolam perangkap mendap)	Jumlah Pepejal Terampai (TSS) Kekeruhan	50 mg/L 250 NTU	Rujuk Rajah 9.5.2 dan LDP2M2 (Lampiran 1)	Selepas 12.5 mm hujan (menggunakan alat pengukur hujan)

PEMANTAUAN KESAN (IM)

Komponen	Parameter Kawalan	Lokasi Pemantauan	Kekerapan
*Kualiti Udara	PM ₁₀ PM _{2.5}	Rujuk Rajah 9.5.2	Tertakluk kepada Syarat Kelulusan
**Bunyi	L _{aeq} L _{max} L _{min}	Rujuk Rajah 9.5.2	Tertakluk kepada Syarat Kelulusan
***Kualiti Air	Jumlah Pepejal Terampai (TSS) Keperluan Oksigen Biokimia (BOD) pH Kekeruhan Nitrogen Ammonia (NH ₃ -N) Oksigen Terlarut (DO) Keperluan Oksigen Kimia (COD)	Rujuk Rajah 9.5.2	Tertakluk kepada Syarat Kelulusan