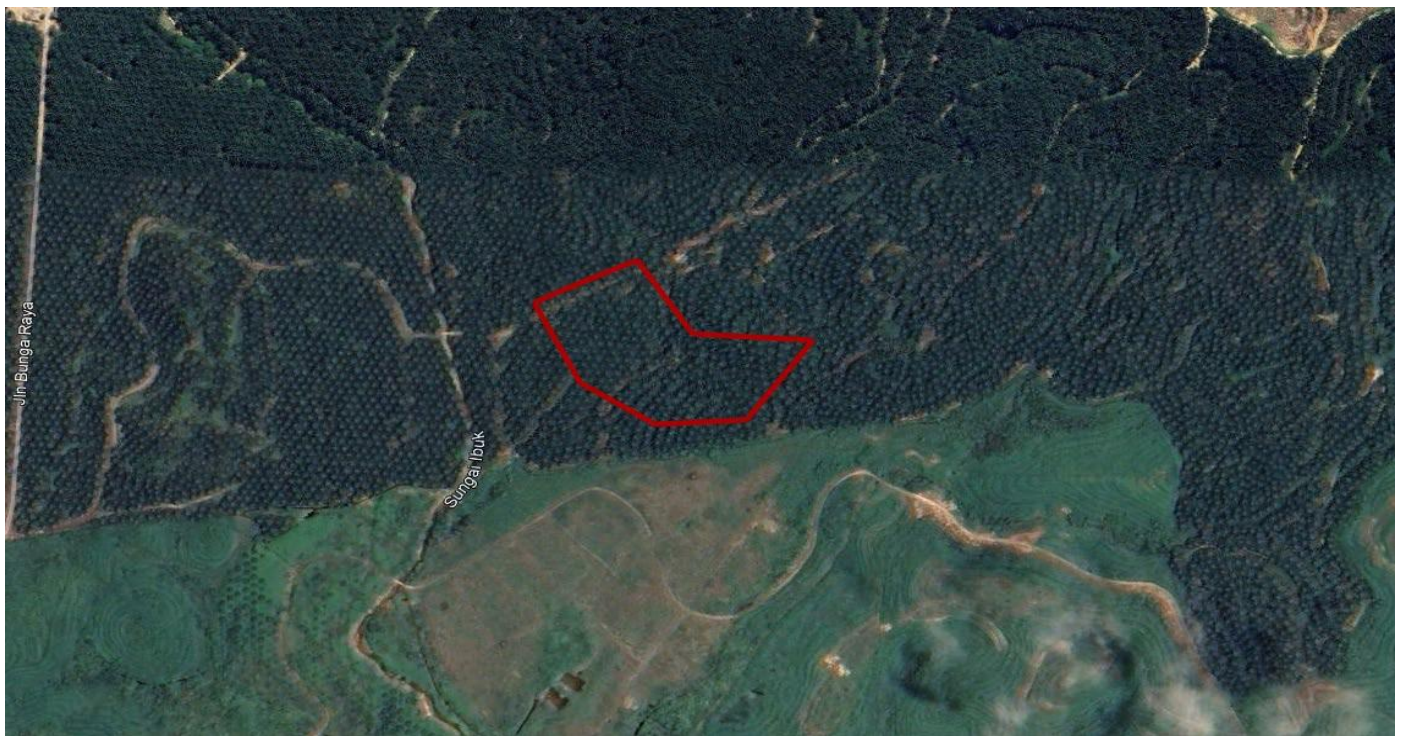


PROPOSED IRON ORE PROCESSING OUT OF THE TENEMENT AREA ON PART OF LOT 2081 MEASURING 2.68 HA (6.62 ACRES) AT MUKIM HULU CUKAI, KEMAMAN DISTRICT, TERENGGANU DARUL IMAN STATE.

EXECUTIVE SUMMARY

The proposed project site is located on part of **Lot 2081** Measuring **2.68 ha (6.62 acres)** at Mukim Hulu Cukai, Kemaman District, Terengganu Darul Iman. The current proposed project site is zoned under '**Agricultural Zone Landuse**' in Blok Perancangan (BP) 3: Hulu Chukai and Blok Perancangan Kecil (BPK) 3.3: Bandar Seri Bandi. It also confirmed that the proposed project location is **not classified as within an Environmental Sensitive Area**.



PROJECT PROPONENT

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PROJECT DESCRIPTION



Type of construction:

Iron Ore Processing



Construction method:

Installation of Processing Plant



Construction Life Span:

7 years



Location:

4°25'44.19"N, 103°20'15.71"E



Project activities:

Construction Stage

- Site Survey and Installation of Iron Ore Processing Infrastructure and Best Management Practices (BMPs)
- Site Clearance and Disposal of Spoils
- Very Minimal Earthwork
- Site Drainage Installation
- Iron ore Processing's Logistics and facilities

Operation Stage

- Sewage management
- Processing Wastewater Management
- Wastewater management
- Water and Air pollution control system management

Abandonment Stage

- Removal of structures and machinery
- Rehabilitation

- Proposed Iron Ore Processing out of the Tenement Area on part of Lot 2081 measuring 2.68 ha (6.62 acres) at Mukim Hulu Cukai, Kemaman District, Terengganu Darul Iman
- The proposed site is in a hilly terrain area and classified as NOT within an Environmental Sensitive Area (ESA).
- The area within a one (1) kilometer radius from the proposed project site is predominantly surrounded by plantation land.
- The nearest residential area is Taman Maaruf (in Bandar Seri Bandi), which is approximately 4.6 km away from the project site.

NEED FOR PROJECT



- Iron ore is a recent addition to the list of other mines and metals found in abundance in the east coast states of Terengganu and Kelantan.
- Assist the state government in achieving the milestones that were set in the Kemaman District Local Plan 2035 (Amendment 2).
- Provide employment opportunities to the community, benefit the project proponent, and the state as well.

PROJECT TIMELINE



PROJECT TIMELINE

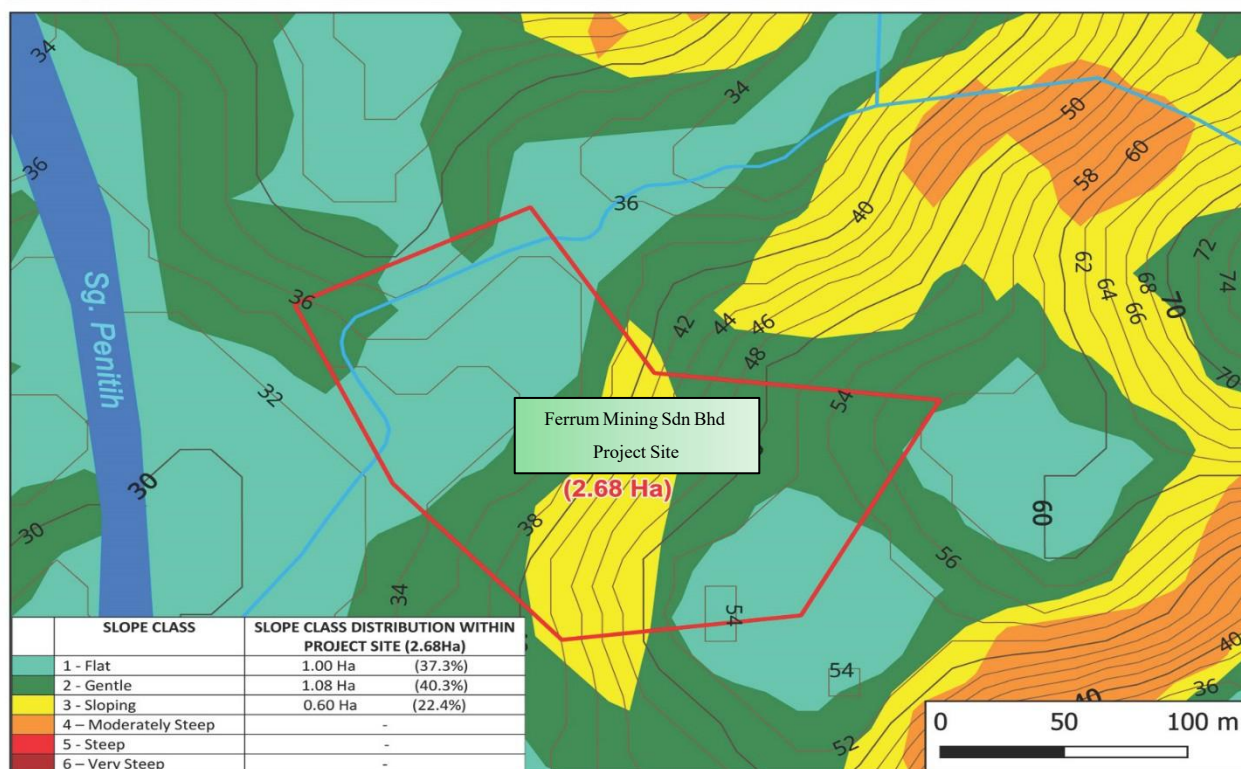
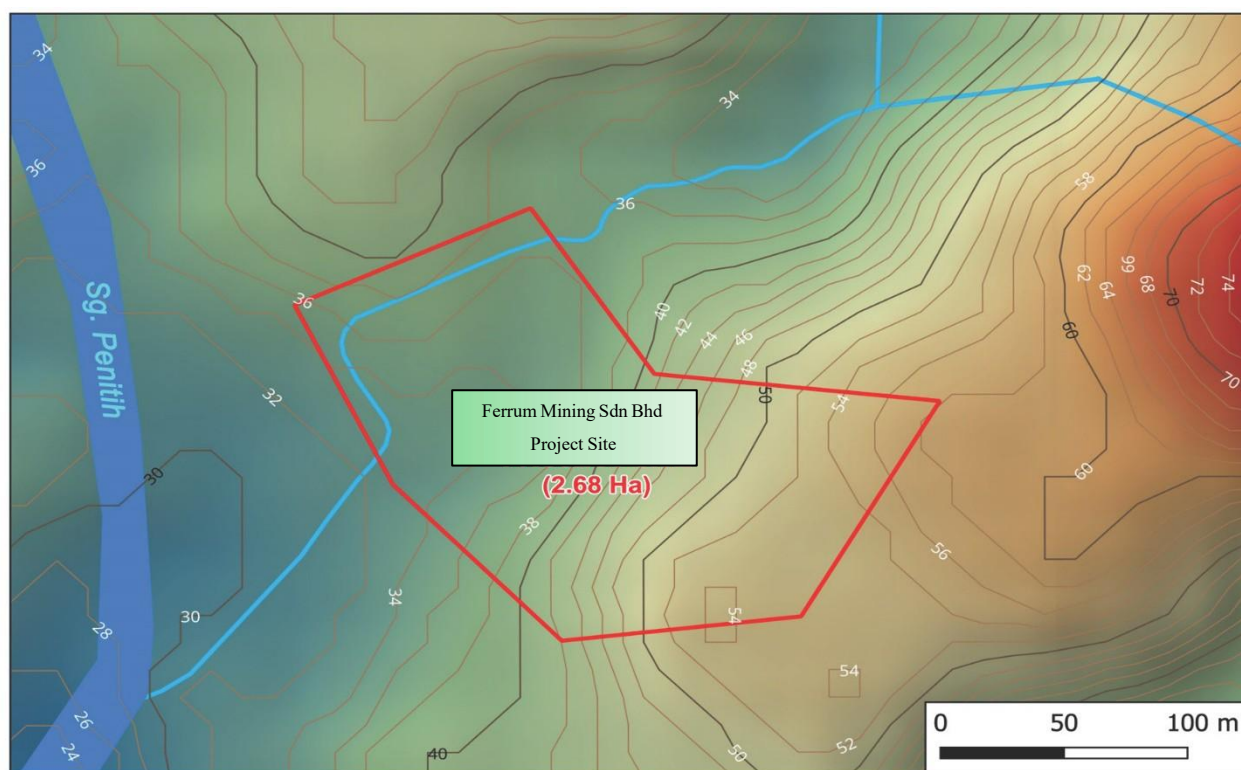
| Phase | Activity | Month 1 April | Month 2 May | Month 3 June | Month 4 July | Month 5 August | Month 6 Sept | Month 7 Oct | Month 8 Nov | Month 9 Dec | Month 10 Jan | Month 11 Feb | Month 12 Mar |
|---------------------------|--|------------------|----------------|-----------------|-----------------|-------------------|-----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| Pre-Development | Environmental Impact Assessment (EIA) | X | X | X | | | | | | | | | |
| | Operation Mining Scheme | X | X | X | | | | | | | | | |
| | Land Survey & Geotechnical Investigation | X | X | X | | | | | | | | | |
| Site Preparation | Regulatory Approvals & Permits | X | X | X | | | | | | | | | |
| | Site Clearance | | X | X | | | | | | | | | |
| | Earthwork & Land Grading | | X | X | | | | | | | | | |
| | Access Road Construction | | X | X | | | | | | | | | |
| | Drainage & Erosion Control Measures | | | X | | | | | | | | | |
| | | | | | X | | | | | | | | |
| Mining & Processing Setup | Machinery & Equipment Procurement | | | X | | | | | | | | | |
| | Machinery Installation & Commissioning | | | X | | | | | | | | | |
| | Infrastructure Setup | | | X | | | | | | | | | |
| Processing Preparation | Preparation for Processing Operations | | | | X | | | | | | | | |
| | Iron Ore Washing & Purification System setup | | | | X | | | | | | | | |
| | Quality Control & Laboratory Setup | | | | X | | | | | | | | |
| Operational Phase | Iron Ore Washing & Processing | | | | | X | X | X | X | X | X | X | X |
| | Stockpiling & Sales | | | | | X | X | X | X | X | X | X | X |
| | Water & Waste Management | | | | | X | X | X | X | X | X | X | X |
| | Dust & Air Pollution Control | | | | | X | X | X | X | X | X | X | X |
| Closure & Rehabilitation | Rehabilitation | | | | | | | | | | | | |

*The operation phase will continue for approximately 7 years. Once the operation is ceased, then rehabilitation will start.

PHYSICAL ENVIRONMENT

Topography

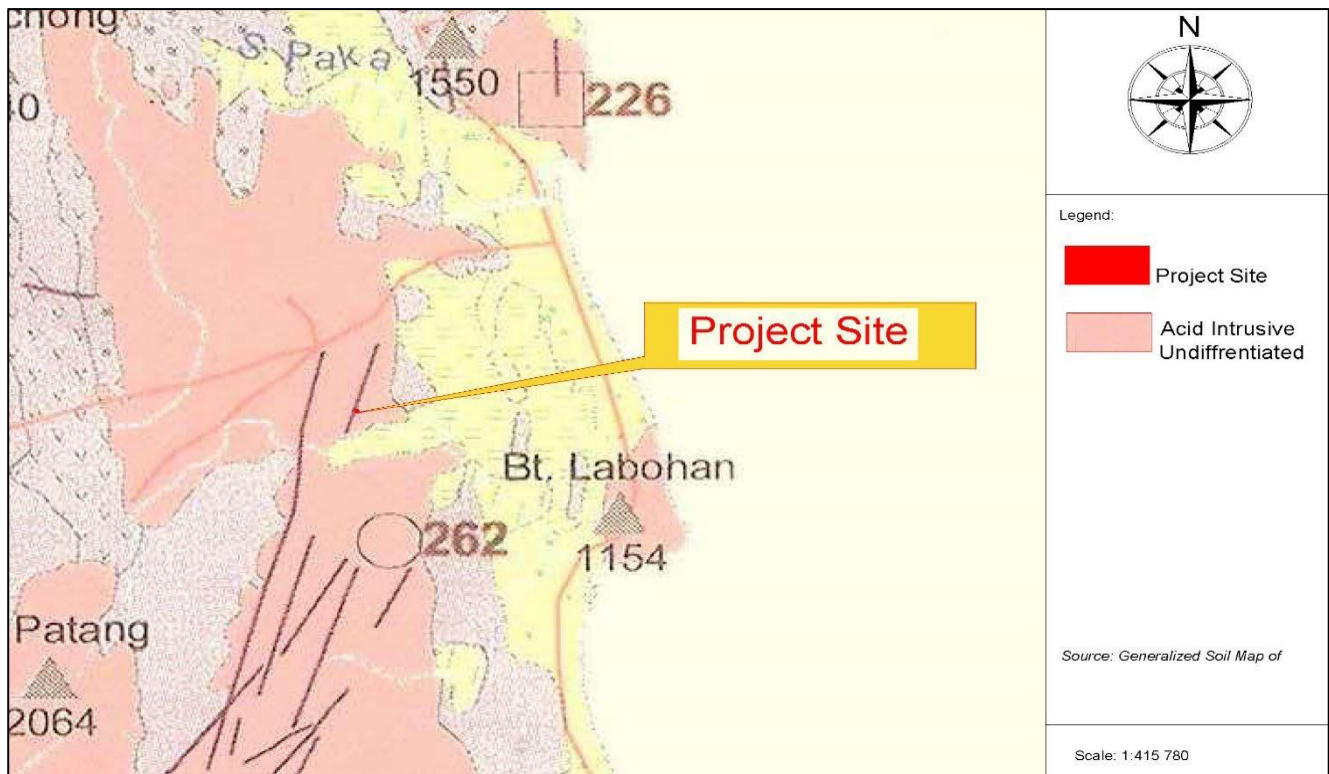
The proposed project spans over 6.62 acres, which is relatively small and has very high undulation, rising from **32 - 58m** mean sea level (MSL). The gradient is steep, as indicated in the elevation contours consist of slope class 1 (Flat) in the northwest of the project boundary, slope class 2 (gentle) in the southeast, and slope class 3 (sloping).



Source:
 - JUPEM Toposheet 4362
 - U.S.A. SRTM DEM

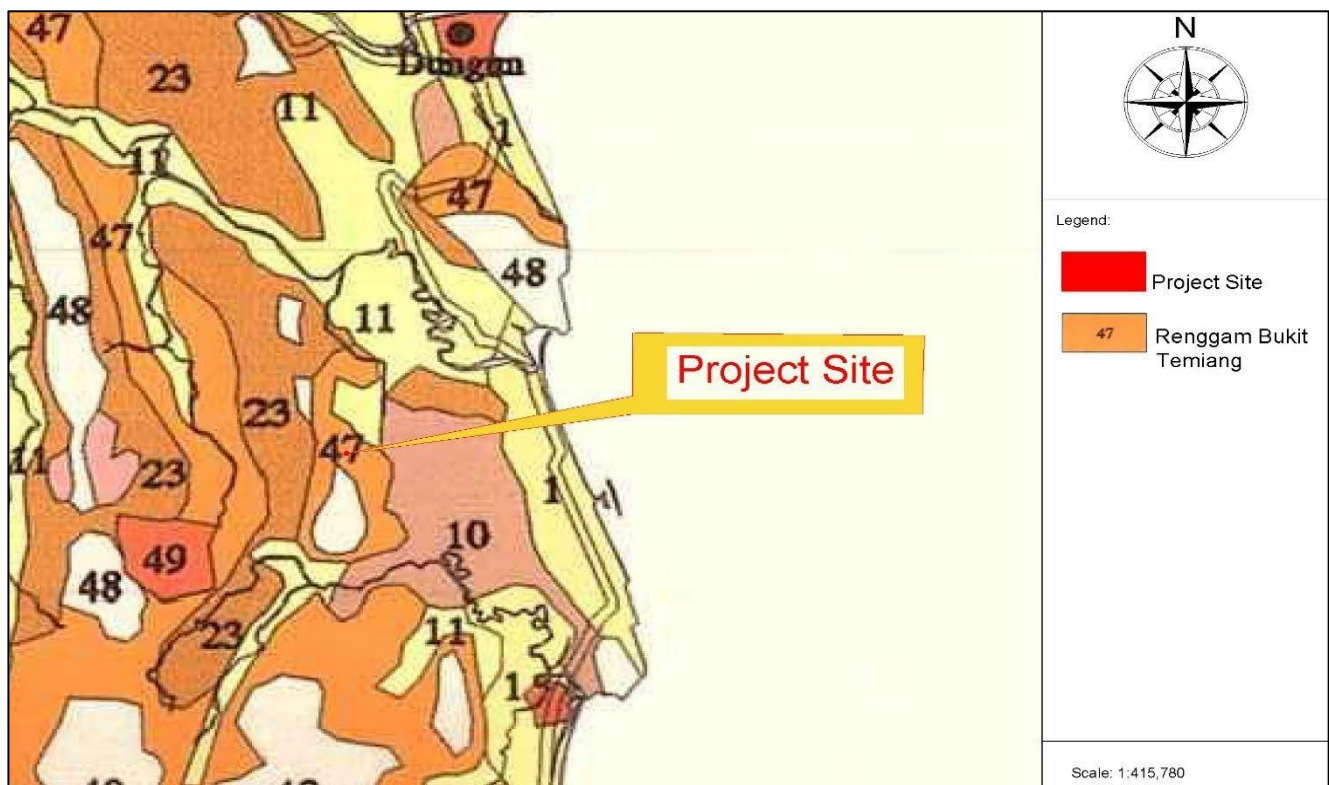
Geology

The lithology of the proposed project is Acid Intrusive (Undifferentiated).



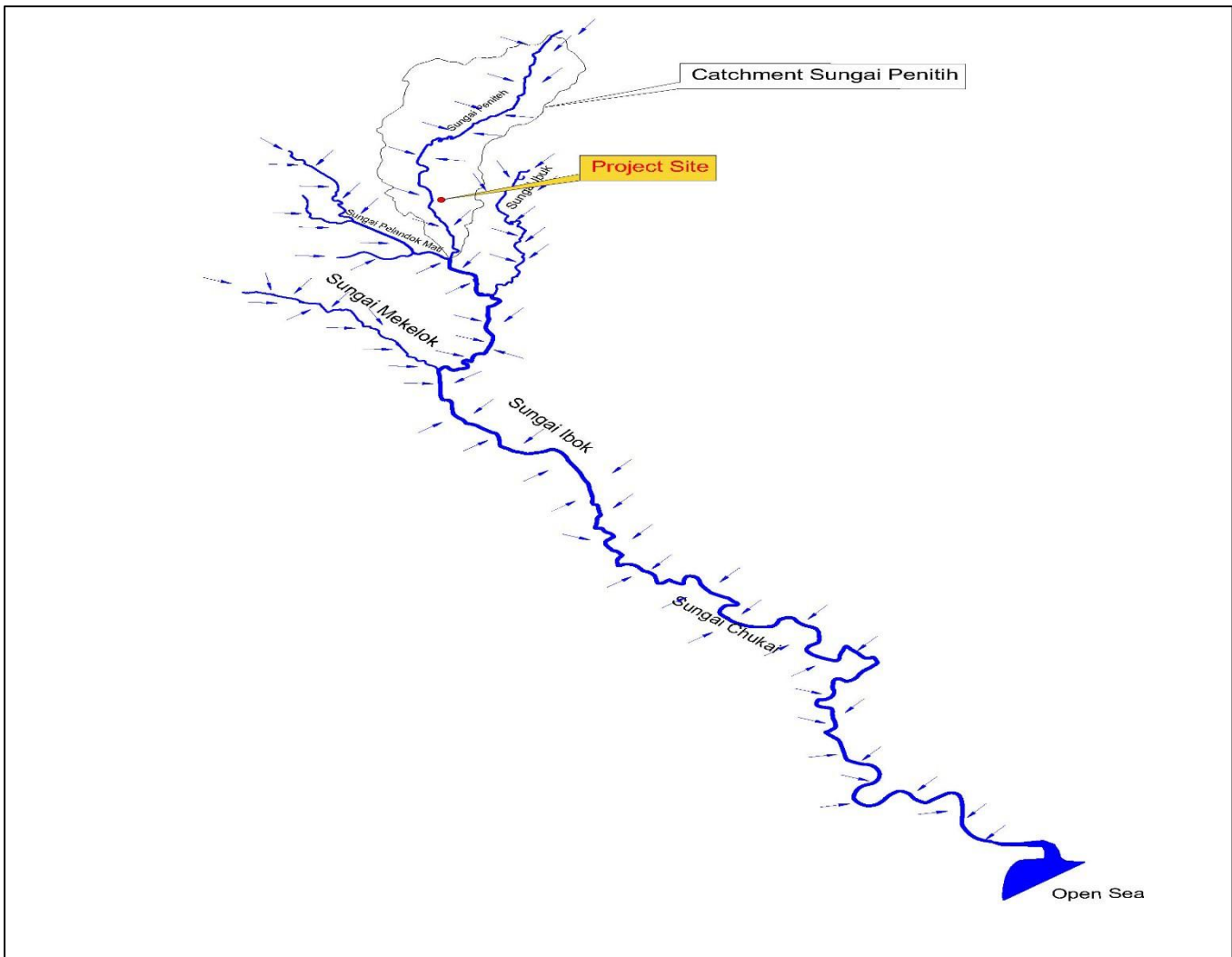
Soil

Based on the Generalized Soil Map of Peninsular Malaysia (1970), published by the Ministry of Agriculture Malaysia, the soil series is Renggam Bukit Temiang.



Catchment Delineation

All surface runoff generated from the site will be naturally directed into nearby earth drains, which are strategically aligned to channel the flow in accordance with the site's topography. These runoffs will be conveyed through a designed network of earth drains into a sediment basin, ensuring effective sediment control and stormwater management. From the sediment basin, the treated water will be discharged via a designated outflow route, ultimately entering the nearest receiving water body, identified as Sungai Penitih.



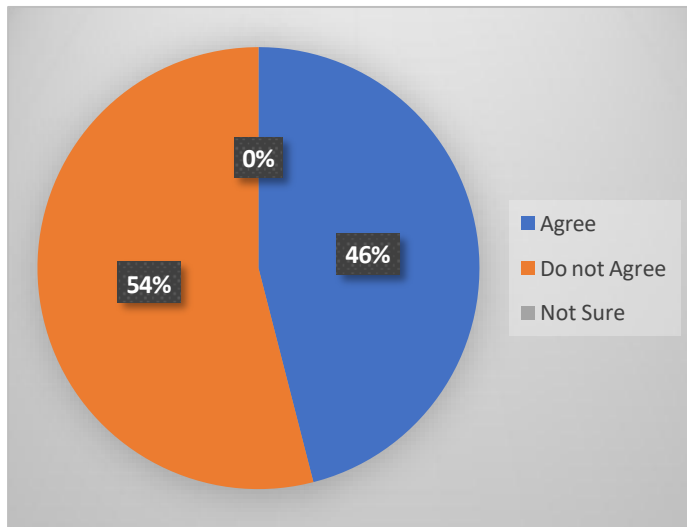
SOCIO-ECONOMICS

Distribution of Respondents

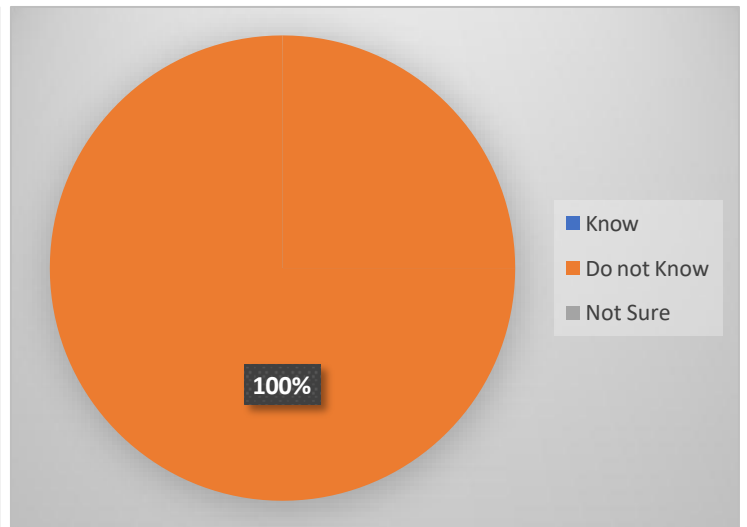
| State | Population | Percentage (%) |
|-------------------|-------------------|----------------|
| Johor | 4,009,670 | 12.36 |
| Kedah | 2,131,427 | 6.57 |
| Kelantan | 1,792,501 | 5.52 |
| Melaka | 998,428 | 3.08 |
| Negeri Sembilan | 1,199,974 | 3.70 |
| Pahang | 1,591,295 | 4.90 |
| Perak | 2,496,041 | 7.69 |
| Perlis | 284,885 | 0.88 |
| Penang | 1,740,405 | 5.36 |
| Selangor | 6,994,423 | 21.56 |
| Terengganu | 1,149,440 | 3.54 |
| W.P. Kuala Lumpur | 1,982,112 | 6.11 |
| W.P. Labuan | 95,120 | 0.29 |
| Sarawak | 2,453,677 | 7.56 |
| Sabah | 3,418,785 | 10.54 |
| W.P. Putrajaya | 109,202 | 0.34 |
| MALAYSIA | 32,447,385 | 100 |



Public Acceptance



Project Awareness



Reason People Agree with Project

i. Employment Opportunities

Supporters of the project believe that it will generate new employment opportunities for the local population, thereby stimulating the local economy and helping to reduce unemployment rates in the area.

ii. Location Away from Residential Areas

The project site is located away from established residential zones. As such, it is perceived to pose minimal disturbance to the daily lives of nearby communities.

iii. Economic Benefits

The project is regarded as a potential contributor to economic growth for both the state government and local entrepreneurs. Increased industrial activity is expected to attract more business opportunities and stimulate the local economy.

Reasons for Not Agreeing with the

i. Environmental Concerns

Opponents of the project have expressed concerns regarding potential water and air pollution, which may adversely affect the local ecosystem and pose risks to public health.

ii. Disruption to Flora and Fauna

The construction and operational phases of the project are perceived as threats to local biodiversity, as they may result in the destruction of wildlife habitats and long-term ecological imbalance.

iii. Health Risks

There are growing concerns over the possible health implications associated with pollution, particularly the risk of respiratory illnesses and waterborne diseases affecting nearby communities.

iv. Social Issues

Some residents are apprehensive about possible social challenges arising from the project, such as the influx of foreign workers, which may lead to concerns over community integration, security, and social harmony.

ENVIRONMENT BASELINE QUALITY

Water Quality



5 Monitoring Locations

- The parameters are compared with Class III in the National Water Quality Standards.
- For water quality, all parameters below the limit except for W1 (DO, Fe, AN and Al), for W2 (DO, Mn, and Al) for W3 (DO, and Al) for W4 (DO, Mn, AN and AL) and for W5 (DO, and Al)
- The WQI is within 81.548 to 86.693, and the status is "Clean".

Noise Level



3 Monitoring Locations

- Daytime limit: 60 dBA
- Night Time limit: 55 dBA
- All results complied with the limit for daytime and night time



3 Monitoring Locations

- Results are compared to Malaysian Ambient Air Quality Standard.
- All comply with allowable limit.

| Parameters | Result | Limit |
|--|--------|------------------------------|
| PM10, $\mu\text{g}/\text{m}^3$ | 32-44 | 100 $\mu\text{g}/\text{m}^3$ |
| PM2.5 $\mu\text{g}/\text{m}^3$ | 16-20 | 35 $\mu\text{g}/\text{m}^3$ |
| SO ₂ , $\mu\text{g}/\text{m}^3$ | < 5 | 80 $\mu\text{g}/\text{m}^3$ |
| NO ₂ , $\mu\text{g}/\text{m}^3$ | <0.5 | 70 $\mu\text{g}/\text{m}^3$ |
| CO, mg/m^3 | 0.7 | 10 mg/m^3 |
| O ₃ , $\mu\text{g}/\text{m}^3$ | < 5 | 100 $\mu\text{g}/\text{m}^3$ |

POTENTIAL IMPACT: AIR QUALITY

ACTIVITIES: Site preparation, construction, iron ore processing operation

SENSITIVE RECEPTOR: Plantation workers and personnel involved in iron ore processing activities

IMPACTS

- Dust generation and dispersion.
- Sensitive receptors are quite away, however can have residual impacts due to prevailing wind

MITIGATION MEASURES

1. Transporting vehicles should be covered to prevent the spillage of materials.
2. Regular dampening of the earthwork area and access road
3. Wash trough is to be provided
4. Water sprinklers and periodic water browsing will be applied along access roads and other exposed surfaces where dust generation is anticipated
5. No open burning.
6. Set speed limit of vehicles.
7. Corrective actions for public complaints.

POTENTIAL IMPACT : NOISE POLLUTION

ACTIVITIES: Transport and vehicular movement, processing of iron ore using various types of equipment and machinery.

SENSITIVE RECEPTOR: Personnel involved in iron ore processing activities

IMPACT

- Very minimal impact expected on the workforce within the site

MITIGATION MEASURES

- Working hour is limited to daytime
- Regular inspection and maintenance of equipment, machinery, and transport vehicles.
- Set the speed limit of trucks to 20 km/hr.
- PPE to be provided for workers.
- Hoarding to be constructed.

POTENTIAL IMPACT: WATER QUALITY

ACTIVITIES: Site preparation, construction activities for iron ore processing

SENSITIVE RECEPTOR: Plantation workers and personnel involved in iron ore processing activities

IMPACTS

- Water quality impairment

MITIGATION MEASURES

- Provision of sediment basin
- Provision of drainage system
- Proper management of solid waste and scheduled waste
- Cease operation during high rainfall
- Toilet facility to be approved by SPAN will be provided.
- Illegal disposal of solid waste and scheduled waste is prohibited.
- Stabilize loose soil

POTENTIAL IMPACT : SOIL EROSION & SEDIMENTATION

ACTIVITIES: Site preparation, pond construction, iron ore processing, and infrastructure activities

SENSITIVE RECEPTOR: Sg Penitih and Sg Ibok

IMPACTS

- Degradation of river water quality

MITIGATION MEASURES

- Stabilize site access and install sediment basin, BMPs within the project site and earth drain all along the perimeter of the proposed site

POTENTIAL IMPACT : TRAFFIC & TRANSPORTATION

ACTIVITIES: Transportation of raw iron ore, equipment and machinery, wet dump (waste), and processed iron ore.

IMPACTS

- Increased in traffic during construction and operation stage

MITIGATION MEASURES

- Avoid transportation at peak hours
- Water browsing on the access road
- Sprinklers on the key dust dispersion area
- Wash trough
- All access roads and public roads are to be maintained and cleaned.
- Suitable warning signs and traffic guides
- A speed limit shall be imposed
- The max permissible laden weight is limited by JKR

POTENTIAL IMPACT : OCCUPATIONAL, SAFETY & HEALTH

ACTIVITIES: Construction of iron ore processing facilities and logistics, and operating equipment and machinery

SENSITIVE RECEPTOR: Site worker

IMPACTS

- Risk towards health.
- Accident
- Dispersion of dust during construction stage

MITIGATION MEASURES

- Ensure health, safety and general welfare of the employees
- CHRA, health and safety check by Health and Safety Officer regularly
- PPE to be provided
- Prepare ERP involving local police, bomba, and project management
- Hands on training on personnel involved in the processing operation
- Establish a health surveillance system for workers.

POTENTIAL IMPACT: SOLID & SCHEDULED WASTE MANAGEMENT

ACTIVITIES: Illegal Management of Solid and Scheduled Waste

SENSITIVE RECEPTOR: Iron ore processing worker, Sg Penitih and Sg Ibok

IMPACTS

- Water quality degradation and pollution.
- Hygiene issue

MITIGATION MEASURES

- Waste management plan shall be prepared
- Wastes to be stored at an appropriate location
- Adopt 5R concept (Refuse, Reduce, Reuse, Repurpose and Recycle)
- Scheduled waste must be managed in accordance with Environmental Quality (Scheduled Wastes) Regulation 2005
- The storage area shall be equipped with a bunded containment system capable of holding at least 110% of the volume of the largest drum stored.
- Warning sign board shall be placed.

POTENTIAL IMPACT: SOCIO ECONOMY

ACTIVITIES: Construction activities and iron ore processing operation

SENSITIVE RECEPTOR: Worker involved in plantation and iron ore processing, Bandar Sri Bandi

IMPACTS

- Job Opportunities

- Public safety & healthy

- Affect cultural and aesthetic

- Dust and noise disturbance

MITIGATION MEASURES

- Employing local workers as part of the workforce
- Local contractors and subcontractors are recommended

- Public anxieties and concerns should be reduced and addressed.
- Effective community involvement can be carried out through consultation, public meeting and consensus discussion

- Landscaping and replanting of trees and shrubs

- Works that remove dust and trigger air pollution can be curbed with stricter regulations
- Works that emit noise shall be limited to operating hours not exceeding 6pm.

PROPOSED ENVIRONMENTAL MONITORING PROGRAMME

Rehabilitation Program – Scope of Work

- Fill all Tailings Ponds (TL).
- Dismantling all machinery on site, mobile and stationary structures
- Sealing all inlets and outlets of the sediment basin
- Removing all sources of toxic and hazardous materials
- Testing for contaminants, if any, at ground level in areas where diesel, oil, lubricants, and hydraulic fuels are stored.
- Ensuring soil preservation and the provision of organic fertilizers for future planting, landscaping, and replanting of forests.
- Make the terrain as green as possible with trees, plants, grass, with free-flowing natural drainage as it was before.

Work – Rehabilitation Work

- An initial reclamation that includes the removal of all heavy equipment and machinery, washing plants, crushers, conveyor belts, excavators, showers, electrical installations, trucks, skid tanks and other fixed structures. This will be done by a licensed removal specialist.
- The site will be free from any traces of table waste, oil, diesel, and lubricants. The shape of the soil will be graded to acceptable standards in relation to environmental criteria.
- Progressive restoration while the operation is underway, such as, landscaping works at the main access and other important locations on the site along with planting, sowing will be carried out without waiting for the cessation of operations.

Post-Operation Stage

- Detailed 'Ecological and Soil Mapping' of existing degraded sites.
- Existing plants and trees in the periphery and buffer zones will be listed as inventories as part of the ecological restoration plan.
- Identification and preparation of an inventory of plants, medium trees and creeping plants suitable for site rehabilitation.
- Identification of suitable overburden/soil types for greens and buffers of all existing slopes and gradients. The volume of soil/excess load will be estimated to cover all that is vulnerable.
- The location and distance need to be calculated. Currently, however, there is unused land/overburden along the site that will be transported to cover the earth's crust made of solid granite.
- Existing drainage will be reviewed to ensure that all runoff water is properly retained and channeled.
- Detailed assessments shall be conducted for potentially contaminated or high-risk areas, including slip tank zones, scheduled waste storage sites, and any other locations requiring physical or chemical treatment as part of the site exit strategy.
- Proper perimeter drains, ground drains, end drains, and sediment pools shall remain operational throughout the project lifecycle until the complete shutdown of operations, ensuring effective surface runoff control and sedimentation management.

PROJECT PROPONENT

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