

Proposed Iron Ore Mining Operation on Lot 60772 (ML 4/2020), An Area of 54.23 Hectares (Ha) at Kg. Macang Setahun, Mukim Tebak, District of Kemaman, Terengganu Darul Iman



PULTEX ENVIRONMENT SDN. BHD.

Project Proponent

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Project Overview



Zoning

Zone: Land forest
BPK 11.3: Bandi/Tebak



Location

Lot 60772 Kg. Macang Setahun, Tebak, Kemaman, Terengganu



ESA

ESA Rank 3



Mining Lease

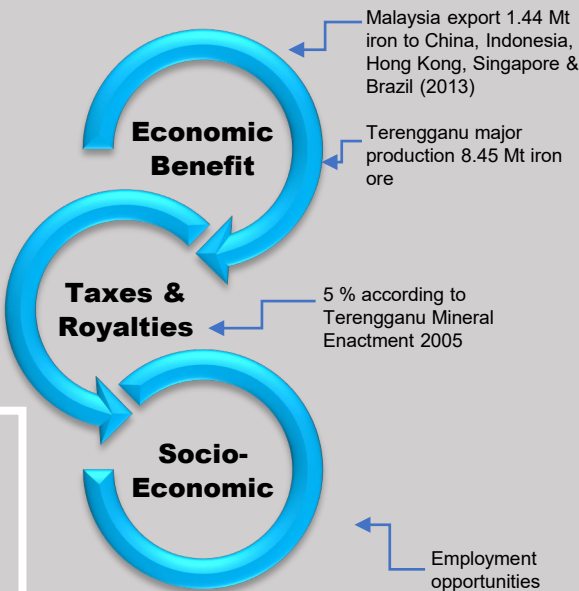
5 years
12th July 2020 – 11th July 2025



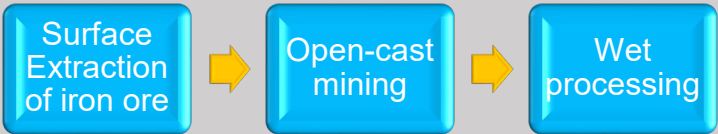
Phasing

54.23 Ha = 13.7 Ha (Phase I) + 12.4 Ha (Phase II) + 4.76 Ha (Phase III)

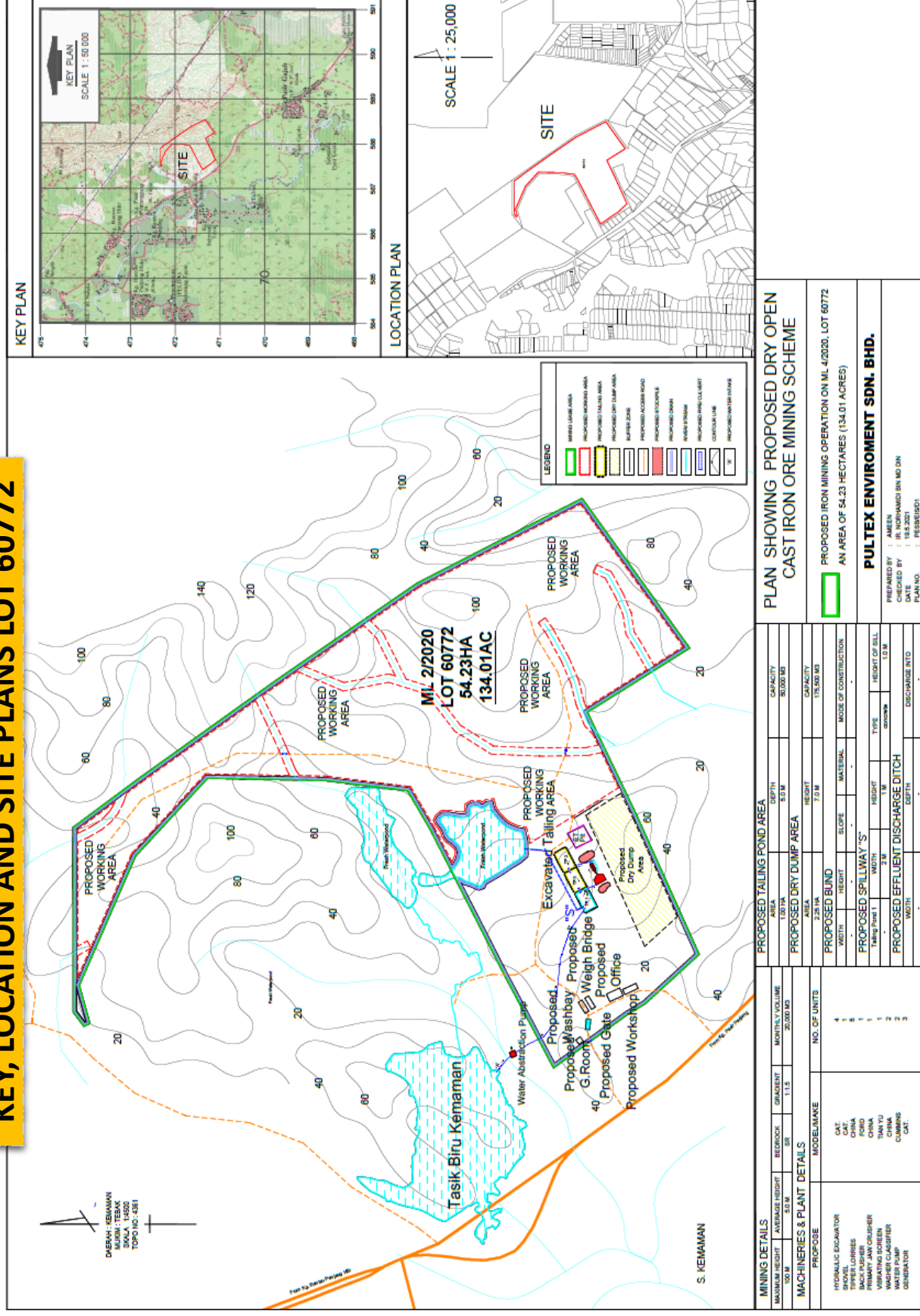
Statement of Need



Project Concept



KEY, LOCATION AND SITE PLANS LOT 60772



IRON ORE RESERVES AND
MINE OPERATIONAL LIFE

Lot	Mining Area	Estimated Fe Ore Reserves	Estimated Mine Life	Processing Plant
Lot 60772	30.86 Ha	1 792 000 T	11.7 years	1

DRY DUMP AREA

No. of dry dump	1
Area	22,500 m ²
Total Volume Capacity	157,500 m ³

TAILING POND

No. of Tailing Ponds	3
Total Volume Capacity	50,000 m ³





Open-cast Mining Operation

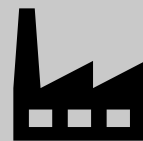
1. Excavation of the reserves around 4 m to 6 m (overburden and ores).
2. Hauling of run-of-mines (ROM) to the processing plant.
3. Hauling of overburden to dry-dump area for temporary stockpile and reuse for reclamation
4. Ore processing → products → stockpiles
→ tailings and tailing wastewater.
5. Concurrent reclamation of completed mining areas.
6. BMPs and tailing ponds maintenance and management.

Closed circuit water recirculation from tailing pond

No effluent discharge

Tailing Water Recycle and Pond Maintenance

Desilting of the ponds will be carried out periodically to restore the tailing pond retention capacity.



Production Capacity per Month

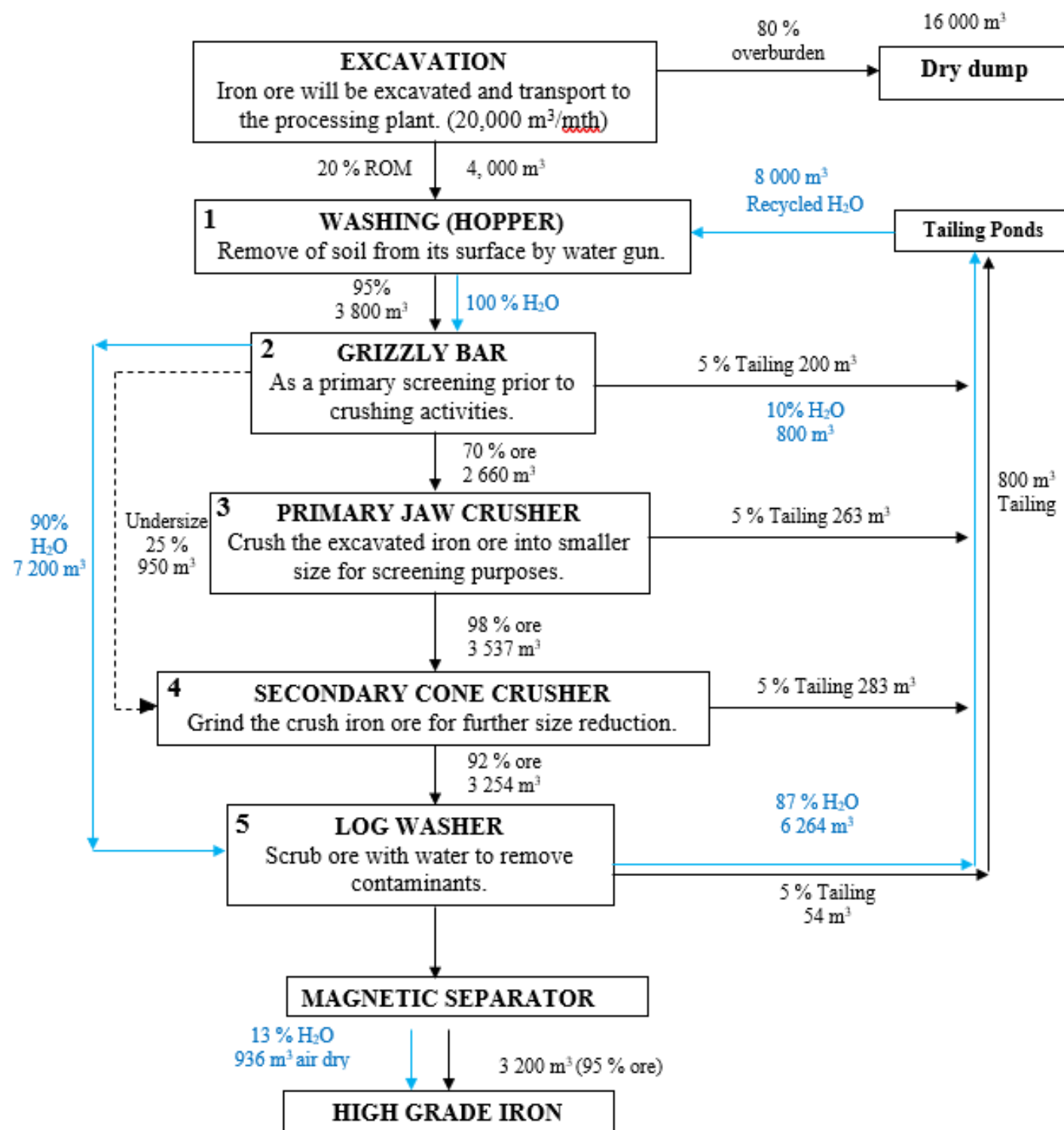
About 12, 800 T/month iron ore



The Final Product

426.7 T/day ore will be sent to Kemaman Port .

FLOWCHART AND MASS BALANCE



PROJECT ACTIVITIES

BEFORE OPERATION

EXPLORATION AND INVESTIGATION

- Pre-feasibility assessment
- Iron ore reserves determination

BEFORE OPERATION

DEVELOPMENT AND PLANNING

- Mobilization of land clearing equipment and land clearing
- Constructions of haulage road, tailing ponds, sedimentation ponds, P2M2 and BMPs
- Mobilization and equipment set up
- Infrastructure construction

DURING OPERATION

MINING AND PROCESSING STAGE

- Stripping/excavation
- Overburden haulage to dry dump
- ROM haulage to processing plant
- Ore processing (wet process)
- Product stockpiling
- Tailing and tailing pond management
- BMP maintenance
- Maintenance of haulage and access roads
- Transportation of products/traffic

AFTER OPERATION

REHABILITATION AND ABANDONMENT

- Execution of Plan for Mine Closure
- Decommissioning
- Reclamation
- Rehabilitation

EXISTING ENVIRONMENT

Land Use



- Adjacent to site: Mainly forest areas, oil palm, secondary vegetations and an ex-mining areas.
- Surrounding land mainly settlement areas and to the southeastern where the reserve forest of Bukit Kambing is located.
- Land cover on site:
37 % (bare land), 53.48 % (forest), 2.93 % (freshwater pond) and 5.53 % (secondary vegetation)
- Sensitive receptors/settlements (5km ZoS):

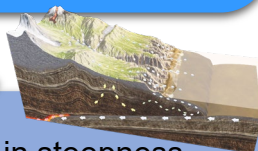
Ladang Chendana Sdn Bhd Mining Project, Tasik Biru Kemaman, Oil Palm Plantation, Masjid Sg. Mas, Sk Seberang Tayur, Madrasah Tahfiz Al-Faaiz, Sungai Kemaman, Imbangan Jaya Sdn Bhd Mining Project, Bukit Kambing Reserve Forest, Bukit Sai Reserve Forest, TCS River Terrapin Conservation Centre, Masjid Kg Pasir Gajah, Kurnia Sempurna Sdn. Bhd Mining Project

Hydrology



- Main river: Sungai Kemaman.

Topography



- Hill slopes are moderate in steepness.
- Elevation: 20 m above sea level
- Highest elevation: 100 m above sea level
- Range of slope gradient = 20% – 100%

Geology



- Underlain by the Carboniferous aged of rock.
- Mainly argillaceous facies, mudstone and pelitic hornfel; slate and phyllite; sandstone and metasandstone.
- The formation was then intruded by several acid to intermediate igneous bodies due to the volcanic activities and basinal instabilities occurred.
- The quaternary deposit along Sungai Kemaman area consisting of a clay, silt, sand and gravel.

Meteorology



Kuala Terengganu station (2013 - 2022)

Evaporation

Highest = March (5.57 mm)

Lowest = November (3.86 mm)

Kerteh, Kemaman station (2015 - 2022)

Rainfall

Highest = December (726.3 mm)

Lowest = April (111.1 mm)

Kerteh, Kemaman station (2018 - 2021)

Wind Rose

Highest = Northeast (15.6%)

Lowest = Southwest (2%)

EXISTING ENVIRONMENT

Water Quality

-13 sampling points

Water Quality Index (WQI):

Most of the sampling station at point W3, W4, W5, W11, W12 and W8 are categorized under Class III, except for station W1 which is under Class IV. River water status for all sampling points is considered as "slightly polluted".

Groundwater Quality

- 4 sampling points
- All the parameters are within the limit of National Drinking Water Quality Standards (MOH, 2004) and Malaysia Groundwater Quality Standards (DOE, 2019). COD measured exceed the standards in GW1 and GW2.

Air Quality

- 8 monitoring points
- All PM₁₀, PM_{2.5}, NO₂, SO₂, CO, and O₃ are within permissible limits as per MAAQS 2020.

Noise Level

- 8 monitoring points.
- All points are within limit Guidelines for Environmental Noise Limits 2019, First Schedule (low density), daytime 70 db(A), nighttime 65 db(A)
- Sources: vehicles movement, surrounding noise, resident activities, road widening activity.

Geotechnical

Terrain classification (based on site survey):

Terrain classes	Area (m ²)	Percentage (%)
Class 1: 0° – < 15°	257,104.43	47.41
Class 2: ≥ 15° – < 25°	188,828.86	34.82
Class 3: ≥ 25° – < 35°	76,626.99	14.13
Class 4: ≥ 35°	19,739.72	3.64

EXISTING ENVIRONMENT

Terrestrial Fauna

- Mammals: 60 species
- Avifauna: 165 species



Species	Protection Status Wildlife Conservation Act 2010 (Act 716)			IUCN Red List of Threatened Species (2020)					Red List of Mammals for Peninsular Malaysia (2017)				
	TP	P	NP	CR	EN	VU	NT	LC	CR	EN	VU	NT	LC
Mammals	15	10	35	1	3	2	11	42	1	4	7	6	42
Birds	142	13	10	1	2	5	15	142	-	-	-	-	-

(TP) Totally Protected (P) Protected (NP) Not Protected (EN) Endangered (VU) Vulnerable (NT) Near Threatened (LC) Least Concern (CR) Critically endangered

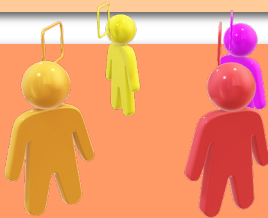
Flora

- 297 species of 84 families and 184 genera.
- Flora species found within site area:
 - *Calamus insignis*, *Anisophyllea sp.*, *Calamus castaneus*, *Polyalthia*, *Dicranopteris*, *Oncosperma horridum*, *Pandanus sp.*, *Syzygium*.



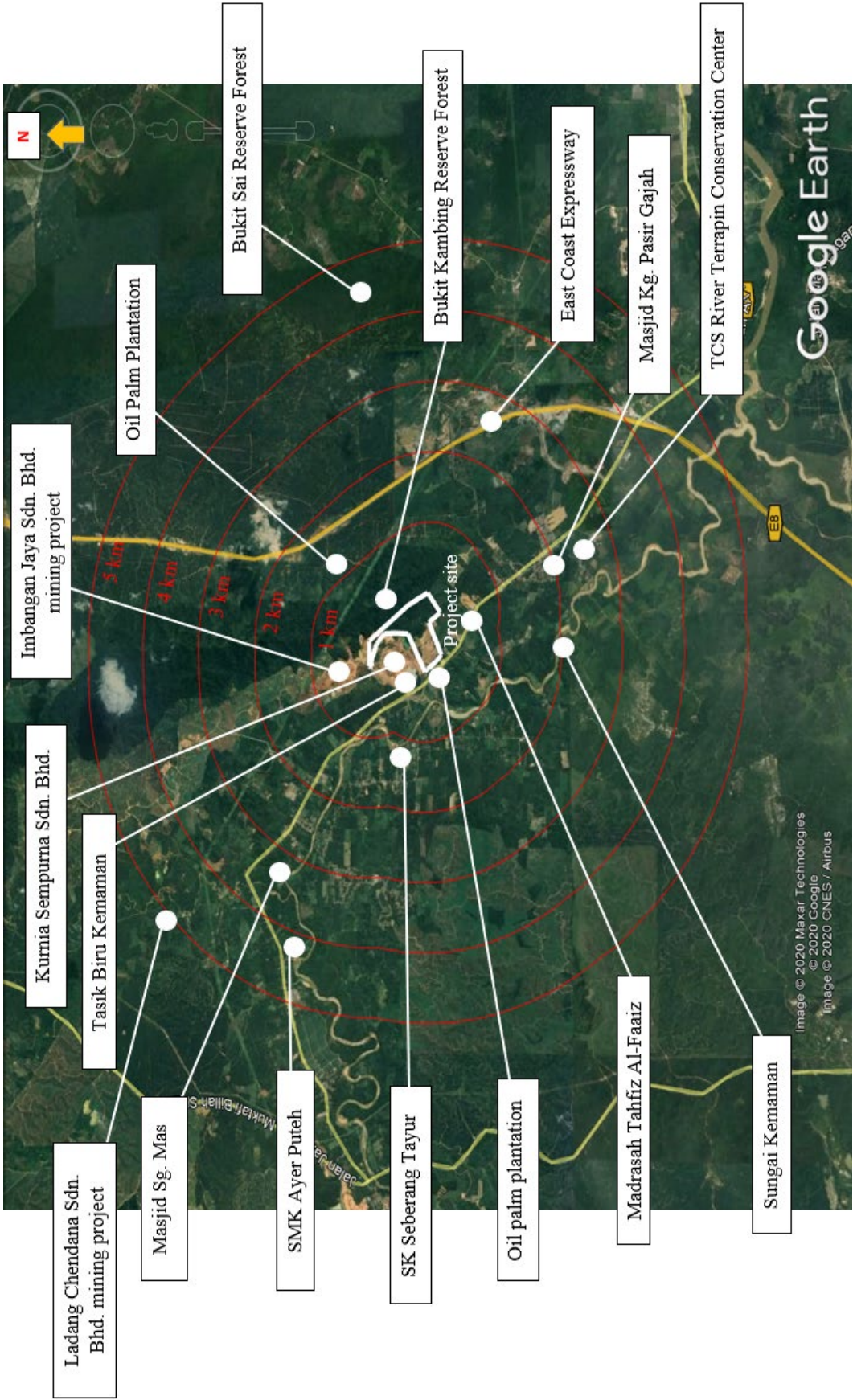
Socio-economic

The respondent agreement on the proposed

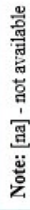


	Kg. Batu 14	Kg. Paman	Kg. Pasir Gajah	Kg. Tebak	Kg. Seberang Tayo Hilir	Kg. Seberang Tayo Hulu	Others
Agree	8.82%	80.39%	7.81%	37.74%	11.27%	18.46%	20.00%
Do not agree	70.59%	3.92%	62.50%	54.72%	61.97%	76.92%	70.00%
Do not agree (Conditional)	20.59%	15.69%	29.69%	7.55%	26.76%	4.62%	10.00%

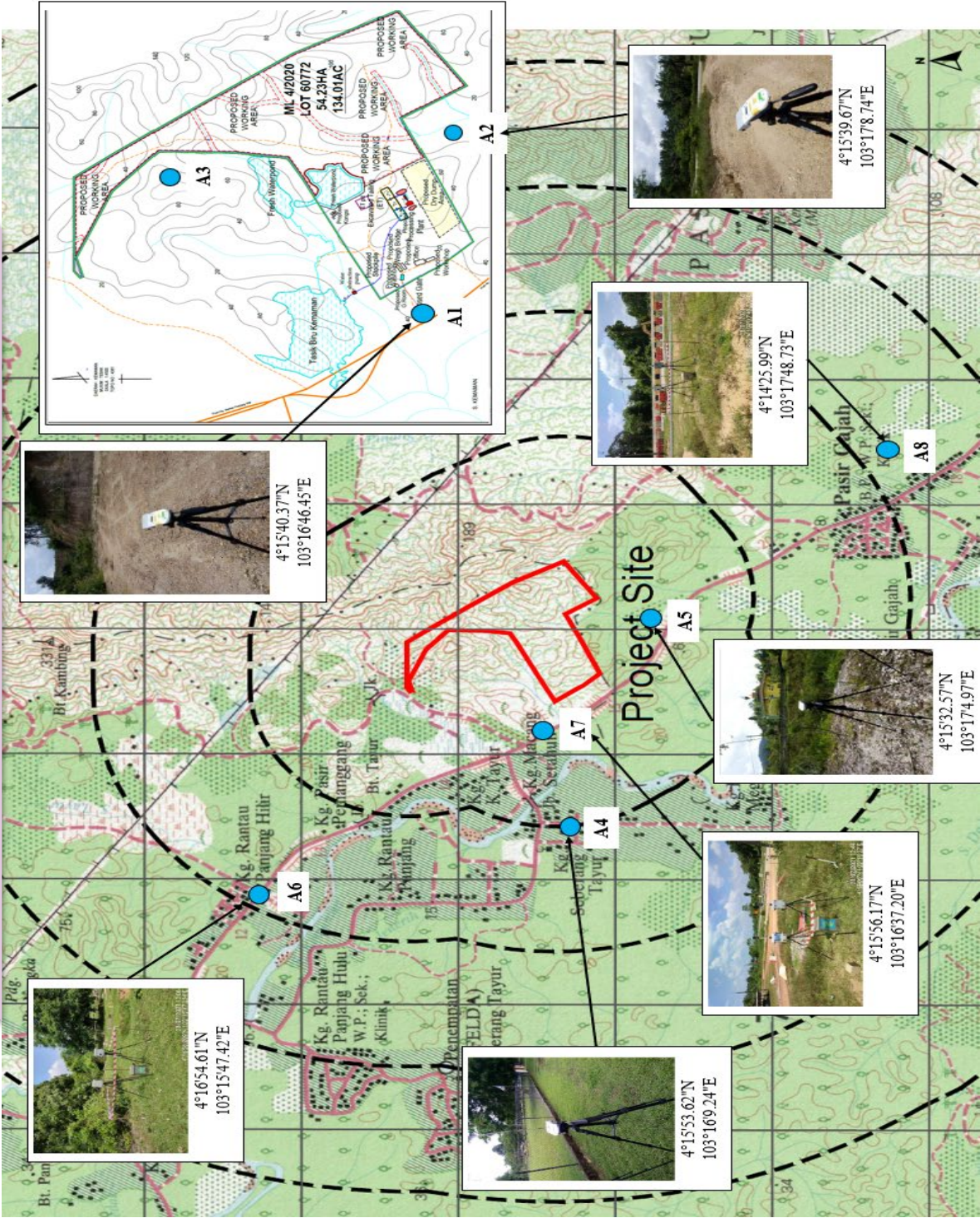
Sensitive Receptors within 5 km ZoS



Water Sampling Points Map



Air and Noise Sampling Points Map



EVALUATION OF POTENTIAL IMPACT

Hydrology (Flood)



- The project site is located within undulating area at the upstream area of Sg. Kemaman River Basin and could potentially affect the downstream area with frequent flooding.
- The land use changes (secondary forest to plantations) in the upstream areas could result in the tremendous increase in surface runoff.
- Flooding resulted in loss of income to the villagers during flood season last year.

Water Quality



- Release of sediments into rivers will impact the water quality: turbidity, total suspended solids, and mineral contaminants.
- Fine silt increases the suspended solids and turbidity of the water bodies and can be detrimental to aquatic life.
- The use of machinery and equipment on site may lead to water pollution through leakage of oil, grease, and fuel into the water courses.

Riverine Riparian Zones

- Clearing of vegetations from riverbanks can cause an increase of soil erosion and decreased in water quality through the loss of filtration services.
- Contributes to the loss of critical species habitat. A river buffer zones of 25 m or more either side of the river, will be kept along the rivers/streams

Acid Mine Drainage (AMD)



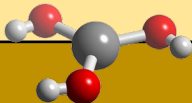
- Iron and sulphide interacts in the presence of oxygen to form Ferrous sulphide (FeS_2) (pyrite).
- Causing decrease in pH.
- Water become dark, reddish-brown due to ferric hydroxide ($\text{Fe}(\text{OH})_3$) precipitating out of the water.
- Release of AMD have low pH, high electrical conductivity, elevated concentrations of iron, aluminium, sulphur and manganese and other heavy metals.

EVALUATION OF POTENTIAL IMPACT

Soil Erosion and Sedimentation



- Indiscreet and extensive land clearing leaves the soil denude and susceptible to the weather.
- Siltation of rivers and increase TSS in the waterways especially during rainy seasons
- Excessive amounts of sediments into existing water bodies such as rivers and lakes which will in turn clogging riverbeds affecting aquatic organisms.
- Modification of surface and subterranean water flows may result in drying and flooding if not monitored and controlled.



Groundwater Quality

- High capability for acid drainage generation and release of toxic or harmful elements (Pb, Cd, Co, Cr, Cu, Ni) from the acid (high-metal waters) can cause contamination in the groundwater.
- Waste disposal affects the physical environment and waterways by contaminating groundwater.

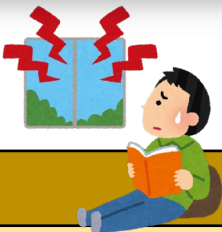
Sewage

- If the domestic sewage system is not well maintained, odor and diseases might be triggered.
- Organic matter, coliform bacteria and suspended solids is the primary contaminants in sanitary effluents which will result in decreasing dissolved oxygen content elevated organic and coliform levels in downstream watercourses.
- Proper treatment and management for sewage and sanitary effluent is essential to avoid the deterioration of the receiving water bodies quality.

Air Quality

- Direct air emissions, particulate matter and trace gases released by machineries and equipment used during mining and hauling.
- Dust formed during drier month.
- Dust generated from crusher and screening process.
- Dust generation during the backfilling of the excavated area, compaction, levelling, grading, and top soiling pollute the air.

EVALUATION OF POTENTIAL IMPACT



Noise Level

- Most of the noise is generated from heavy vehicles running during the mine operations.
- Noise pollution could also be triggered during the vegetation clearing of the Proposed Project site.
- Construction of the infrastructures and BMPs generate noise as well.
- Noise may adversely affect health state which include stress, sleep disturbance, high blood pressure and hearing loss.
- Noise generated by mining is often of higher intensity than natural noise.

Terrestrial Fauna



- Loss of habitat and impact on forest edge.
- Loss of species
- Human-wildlife conflict and food shortage.
- The presence of workers post threat to wildlife through illegal hunting (poaching).
- Noise will directly or indirectly cause a disturbance to the existing wildlife community.
- Illegal bird trapping

Solid and Hazardous Wastes



- Significant amount of solid waste (tree trunks, branches, shrubs, and other biomass) will be generated due to the land clearing and site preparation.
- Construction wastes.
- Poor management in storage and handling of general refuse resulting in odor problems, windblown litter, water quality impacts if waste enter water courses, visual impacts, attraction of pest, disease vectors and scavenging animals (insects, rodents etc.) to the site.
- Scheduled wastes such as lubricating oils, diesel and hydraulic fluids are the examples of waste liquids that will be produced from on-site workshop. These must be handled under the Environmental Quality (Scheduled Wastes) Regulations 2005 – P.U. (A) 294/2005

Overburden erosion



- Overburden mounds may be exposed to soil erosion. Surface runoffs carrying sediments from the mounds into nearby rivers.
- Dumping mound is unsightly, and more importantly, pose safety hazard to workers if landslide occurs.
- Activities carried out during the dry period can cause air pollution problems.

EVALUATION OF POTENTIAL IMPACT



Socio-economic

- Perceptions from surrounding villagers and residents.
- Human-wildlife conflict
- Forest catchment area may be disrupted.
- Affecting tourist satisfaction.
- Road damage
- Noise and water pollution



Health Impact Assessment

- Accidental injuries due to heavy vehicles during site preparation and land clearing
- Vector -borne diseases such as dengue, chikungunya, filariasis and malaria
- Respiratory effects due to air pollution from heavy vehicles
- Injuries due to animal attacks
- Poisoning from poisonous plants and animals
- Road accident
- Disturbance due to noise from the use of heavy vehicles
- Safety and health issues of employees and the public
- Hygiene and sanitation issues of workers to prevent infectious diseases
- Respiratory effects due to air pollution from dust and particles
- Pollution of river water and leading to food and water borne diseases

MITIGATION MEASURES

Flood

- Put up cover crops on the exposed area and provide drainage system to minimize potential soil erosion and flood especially in wet season.
- Riverine riparian zones act as filtration platform reduces the stormwater velocity hence avoiding overflow and flood.

MITIGATION MEASURES

Water Quality
<ul style="list-style-type: none">• Implementation of water management techniques and water quality monitoring.• Preservation and stabilization of drainage and waterways.• Minimize the extent and duration of land disturbance.• Control of runoff flows into, through and from the site via stable drainage structures.• Installation of perimeter controls (silt fence, perimeter drains, etc.)• Fuel, grease, and engine oil storage must be carefully sited to avoid contamination of the surface waters.• Proper drainage and sanitation facilities.• Ensure minimum sediment discharge. Provide vegetated filter strips between exposed soil surfaces and receiving waters.• Protect inlets, storm drain outfalls and culverts.• Inspect and maintain BMPs for control measures.• Streams must be protected with a vegetated buffer zone.• Prepare an emergency plan on oil spills and pond overflow.
Riverine Riparian Zones
<ul style="list-style-type: none">• Map and mark the riparian reserves.• Riparian management plan.• Riparian monitoring program.• Riparian restoration plan.
Acid Mine Drainage (AMD)
<ul style="list-style-type: none">• Prevent sulfuric acid from forming.• Neutralize the acid after it forms (use NaOH, Ca (OH)2 or NaCO₃).• Remove the metals (Fe, Al, Zn etc.) via precipitation, filtration etc.• AMD must be diverted for collection for treatment.
Soil Erosion and Sedimentation
<ul style="list-style-type: none">• Install perimeter runoffs control.• Protect steep slopes. Revegetate bare areas immediately.• Use sediment controls to prevent off-site damage.• Inspect and maintain control measures.• Construct sediment basin/trap and vertical silt marker to measure the depth of accumulated sediment.• Surface runoffs control measure include temporary earth drain, diversion channel and conveyance system and to be combined with installation of interval check dams to reduce the runoff velocity.• Location of the stockpiles area shall be away at a minimum distance of 20m from any watercourse.• Monitoring of slopes for signs of erosion

MITIGATION MEASURES**Groundwater Quality**

- Monitoring the water level change and early detection of contaminant movement from the developed area.
- Monitoring of groundwater conditions at the existing groundwater monitoring wells.
- Establish groundwater monitoring system to monitor the performance of soil layer as in-situ natural barrier is crucial.
- Construction of monitoring wells.
- Monitoring wells program.

Domestic Wastewater

- Use of septic tanks. The septic tanks must be maintained by regular desludging, and it will be prohibited from throwing used oil down the toilets or sinks.
- No direct discharge is allowed from any toilet facility to rivers or streams.
- Effluents to be discharged must be treated using systems approved by Ministry of Housing and Local Government and it should comply with Standard A (discharge upstream of any raw water intake) Environmental Quality (Sewage) Regulation, 2009.

Air Quality

- Reduce the number of vehicles used simultaneously.
- Minimizing the falling distance when transferring ROM to processing plant, adjusting the equipment to the respective bulk material and increasing materials humidity.
- Transport vehicles should be closed receptacles (silo vehicles, containers, tarpaulin).
- Roadways shall be enhanced with a cover asphalt concrete, concrete or similar material to reduce dust emission.
- The machine equipment or other system used to work solid substances shall be encapsulated or fitted with emission-reducing technologies.

Noise Level

- All machinery should be utilized and properly maintained during the operation.
- Restricted the speed limit on all vehicle moving within the mining site (30 km/h).
- Install effective noise suppression system.
- Provide workers with earplugs or earmuffs.
- Project proponent shall monitor and act closely on any local community complaints and concerns pertaining to the noise generation from the mining activity
- Carry out a noise monitoring program.

MITIGATION MEASURES

Terrestrial Flora

Pre and during operations

- Notices and signages will be displayed in appropriate locations informing the workers of no-tolerant to encroachment and biomass burning.
- Useable plant materials will ne utilised on-site.
- Vegetation strips will be planted in around ponds and waterways to create buffer and filter the net delivery of silt during runoff.
- Progressive rehabilitation of affected areas to restore ecosystem function.
- Removal of vegetation should be restricted to the relevant infrastructure footprints only.
- Vegetation on higher elevation and steep slope will be left undisturbed to minimise soil erosion and filter the run-off during rainy days.

Post operation

- Rehabilitation of riparian zone and the open mining area will be carried out specifically to the guidelines by the Forestry Department.
- Soil fertility and species diversity enrichment programmes will target specific locations as advice by the Forestry Department. Below are examples of forest rehabilitation being carried out in location previously being disturbed.

Disturbance and Movement of Wildlife

- Action plans referred to National Elephant Conservation Action Plan. Blueprint to Save Malaysian Elephants. Department of Wildlife and National Parks, Kuala Lumpur, Malaysia
- No physical works applicable during pre-operation phase
- Require WMP and approval by PERHILITAN.
- Project Proponent need to establish a Wildlife Monitoring Team (WMT) with the supervision of PERHILITAN
- WMT needs to conduct periodic briefing sessions to all workers about wildlife conservation, prohibited law about poaching
- Prohibition of wildlife poaching and trapping and prohibition of keeping part or derivative from wildlife
- Site clearing for mining and processing sites conducted by phase.

MITIGATION MEASURES

Solid Wastes Management

- To be segregated and disposed appropriately so as not to create potential vector source.
- No haphazard disposal on site or off site.
- No open burning.
- A good solid waste management system is to be provided. All wastes (nonscheduled) are to be disposed at approved dumping ground.
- The domestic solid waste from the basecamp and site office can be either dumped at designated area within the mining site.
- Provide dust bin and ensure all workers on-site practice regular housekeeping.
- A proper signage shall be made in order to create awareness among workers.
- A comprehensive waste management shall be prepared by project proponent before execution of the mining activity.

Overburden

- Dispose of the overburden at the designated dumping site as identified in the plant layout plan.
- Install silt fence at the base of the mounds.
- Diversion of surface runoffs into drains and silt ponds.
- Surplus excavated material will be disposed of in suitable identified areas.
- Dumping areas will be biologically reclaimed.
- Proper drainage facilities shall be provided surrounding the overburden dump sites. Location and procedure of handling overburden should be detailed in the EMP, and the disposal is avoided into any inland waterways.

Scheduled Waste Disposal

- Store all scheduled wastes in a compatible containers
- Label all scheduled waste container clearly
- Store incompatible scheduled waste in separate containers
- Always close containers containing scheduled waste
- Design, construct and maintained adequately areas for the containers storage to prevent spillage and leakage.
- Collect and keep oil waste in a seal containers with a proper label.
- Provide emergency response plan for oil spillage problem.
- Scheduled waste should be segregated and stored safely and securely as to minimize the risk.

MITIGATION MEASURES

Socio-economic

- Periodically monitor river conditions and record river water quality before mining.
- The need to increase public awareness of new mining proposals.
- Open tenders to rent local machinery, cafeterias, offer special jobs for local communities.
- Project Proponent take the initiative to improve roads and work with municipalities and local authorities.
- Follow SOPs and guidelines.
- Mine developers should make sure the roads are not damaged, lots of paved roads.
- Installing a filtration system at each place where water comes out of the mine area.
- Create a buffer zone at an effective distance.
- Provide job opportunity where local worker are given priority.

Human Intrusion

- Set up guard posts
- Block main entry to unauthorized individuals
- Off limit signposts to public
- Approved mining control limits should be marked with galvanized iron 50 mm diameter to indicate the boundary and placed at intervals of 50 meters.
- The border sign should not be less than 2.5 meters high and painted yellow.

Aesthetic

- The face of the mining area can be made in the direction away from line of vision.
- No specific mitigating measures shall be adopted as the impact is minimal, localized and insignificant.

Disease, Safety, and Health

- Vector control through removal of breeding sites and atomization for prevent any vector-borne diseases and zoonoses
- Be aware of the environment and wear appropriate personal protective equipment for avoid animal attacks
- The safety, security and health of workers are governed by the Safety Act and Occupational Health, 1994 (OSHA 1994), Factories and Machinery Act, 1967 (FMA 1967), Act Workers 'Social Security, 1969, and the Workers' Compensation Act, 1952
- Employers must comply with Section 19 of the FMA 1967 where machines include portable cranes must be registered and obtain a certificate of eligibility from DOSH before operating and must ensure that the crane will be operated by competently trained persons.
- Employers must comply with Sections 34 and 36 of the FMA 1967 mining operations and the installation of all equipment and machinery listed in the mine must notified in writing to DOSH.

MITIGATION MEASURES

Mine Closure
<ul style="list-style-type: none">Provide detailed mine closure and rehabilitation plan including conservation works of contaminated soil, uninstallation of equipment and machinery, site clearing works, tree planting, landscaping and turfing, environmental monitoring or any appropriate conservation measures proposed.
Rehabilitation
<p>Progressive rehabilitation</p> <ul style="list-style-type: none">Overburden and topsoil can be stripped from areas being opened and placed directly onto worked out areas which are being rehabilitated. <p>Post rehabilitation</p> <ul style="list-style-type: none">Ensure the rehabilitated area is left in a stable, safe, nonpolluting state; the area is suitable for the planned final use or rehabilitation objectiveRehabilitated areas are not excessively affected by erosion
Funds for Environmental P2M2 and Restoration and Rehabilitation
<ul style="list-style-type: none">Allocations of funds for pre-operation (preparation of EIA, LD-P2M2, and ESCP)Allocations of funds for during operation (BMPs and list and detail Bill of Quantities).Allocation of funds for post operation (decommissioning and removal of equipment, reclamation, rehabilitation and revegetation)

PERFORMANCE MONITORING (PM)

LD-P2M2	Performance Monitoring Parameters	Recommended Limits	Monitoring Locations	Frequencies
Silt trap	Silt marker	-	Refer LD-P2M2 Drawing by Phases: LD-P2M2 Phase-1 LD-P2M2 Phase-2 LD-P2M2 Phase-3	Weekly or after rain event
Sediment basin	Silt marker	-		
Earth drains with check dam	Sediment level	-		Quarterly
Earth bund	Performance	-		
Silt fence	Performance	-		
Roadside drain	Performance	-		
River Riparian Buffer Zone	Performance	25 m or more at both sides		
Boundary Buffer	Performance	20 m away from site boundary		

COMPLIANCE MONITORING

Item	Monitoring Frequency	Environmental Quality Standards
Water Quality	Once a month	Results will be compared with: <div><div>i.</div><div>Baseline samplings</div></div> <div><div>ii.</div><div>National Water Quality Standards (NWQS).</div></div> <div><div>iii.</div><div>Mineral Development (Effluent) Regulations 2016</div></div>
Noise Level	Once a month Daytime 15 hours (from 7.00 am to 10.00 pm) Night time 9 hours (from 10.00 pm to 7.00 am)	Results will be compared with: <div><div>i.</div><div>Baseline samplings</div></div> <div><div>ii.</div><div>Guidelines for Environmental Noise Limits & Control, Third Edition (DOE, 2019), First Schedule of Permissible Sound Levels.</div></div>
Groundwater Quality	Twice a year	Results will be compared with: <div><div>i.</div><div>Baseline samplings</div></div> <div><div>ii.</div><div>National Standard for Drinking Water Quality (Revised December 2000), Second Version (MOH, 2004).</div></div> <div><div>iii.</div><div>Malaysia Groundwater Quality Standards and Index – for Conventional use of Raw Water Treatment (Drinking Water) (DOE, 2019).</div></div>
Air Quality	Once a month	Results will be compared with: <div><div>i.</div><div>Baseline samplings</div></div> <div><div>ii.</div><div>Malaysia Ambient Air Quality Standards (Standard value by 2020).</div></div>

IMPACT MONITORING

Item	Impact Monitoring
Water Quality	<ul style="list-style-type: none"> i. Continuous water quality monitoring for turbidity and TSS. ii. If silt trap/sediment containment structure is employed to contain the resuspended particulates, this must be regularly monitored for tear and displacement from the intended location. iii. Even with a silt trap/sediment containment structure in place, the water quality beyond the silt trap/sediment must be sampled for turbidity. iv. Records regular maintenance of the drainage structure provided on site and ensure there is no blockage to the water flow or excessive siltation.
Groundwater Quality	<ul style="list-style-type: none"> i. Continuous groundwater quality monitoring. ii. Records the measured water level. iii. Records regular maintenance of monitoring well to prevents well water quantity and quality deteriorating in longer term.
Air Quality	<ul style="list-style-type: none"> i. Records to show regular maintenance of equipment, machineries and vehicles used for this project development. ii. Records of provision of adequate dust protective device to workers working in dusty areas. iii. Records of provision of dust suppression facilities (e.g., water bowser). iv. Records on air quality monitoring results. v. Checking on the soil surface to ensure proper soil compaction is practiced onsite especially on exposed area.
Noise Level	<ul style="list-style-type: none"> i. Records to show regular maintenance of equipment, machineries and vehicles used for this project development. ii. Records of provision of adequate noise protective device to workers working in high noise level areas. iii. Schedule of working hours, transportation in and out of the project site showing the type of loading and maintenance tasks carried out for vehicles.