



PENGGERAK PROJEK

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Ketua Perunding EIA

Ir. Dr. Selamat bin Aliman : *Quarry and Mining*
Pasukan Perunding EIA
Mohd Nawahidudin Bin Mahamad Isa : *Socio-Economic*
Lim Sze Fook : *Air Quality Modelling*
Dr Md Salim Khan : *Ecology*

KEPERLUAN PERUNDANGAN

Aktiviti 19, Jadual 1, Perintah Kualiti Alam Sekeliling (Aktiviti yang ditetapkan) (Penilaian Kesan Terhadap Alam Sekeliling), 2015

LATAR BELAKANG PROJEK

Tapak Projek

Terdiri daripada 3 bidang tanah berkeluasan 258.43 ha



Hal Ehwal Tapak

Kesemua tanah adalah di bawah PML 14/2025 Lot 15866, PML 53/2021 PT 1331 dan PML 54/2021 PT 1332 di bawah Seksyen 81(1), Mineral (Perak) Enakmen 2003. Pemegang PML ialah Perak-Hanjoong Simen Sdn.Bhd. dengan tempoh 10 hingga 30 tahun berakhir pada 2035 dan 2051.



Rancangan Tempatan

Zoning - "Rancangan Tempatan Daerah Kuala Kangsar 2035 (Pubahan 1)" - 'Blok Perancangan Kecil (BPK) 3.1 & 3.2 . Dizonkan sebagai Industri.
- Pubahan telah disahkan oleh MMK pada 8 Oktober 2025.



KEPERLUAN PROJEK

Permintaan dan Penawaran

Simpanan granit yang banyak dan juga permintaan yang tinggi memberi potensi yang amat luas. Pelbagai projek pembangunan yang meningkat di sekitar kawasan projek dijangka memberikan sumbangan yang positif kepada kuari ini.



Ekonomi

Projek adalah selari dengan salah satu daripada objektif utama dalam Pelan Induk Industri (IMP), dijangka menjadi pemangkin kepada perkembangan ekonomi di kawasan berhampiran projek pada tempoh jangka masa panjang.



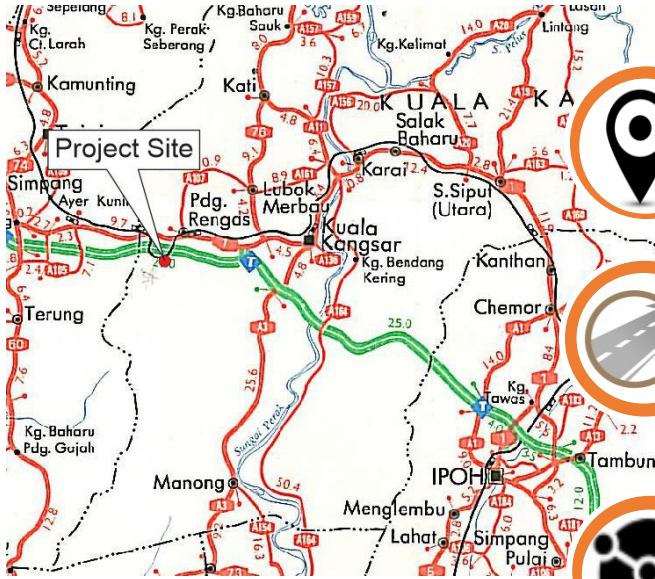
Ketersediaan Produk

Tapak kuari yang dicadangkan adalah untuk menyediakan bekalan bahan mentah untuk :

- Konkrit umum
- Kerja-kerja pembinaan jalan dan saliran.
- Balast kereta api.
- Pembuatan pra-campuran asfalt.
- Konkrit pracetak dan siap campuran.
- Tembok penahan, tebing sungai atau perlindungan pantai.
- Landskap.



LOKASI PROJEK



Tapak Projek: PML 14/2025 Lot 15866, PML 53/2021 PT 1331 dan PML 54/2021 PT 1332, Mukim Kampung Buaya, Daerah Kuala Kangsar, Perak Darul Ridzuan.

Keluasan Tapak: 258.43 ha



Akses : Melalui jalan kuari sedia ada yang menghubungkan Jalan Ipoh - Kuala Kangsar - Butterworth (Jalan Persekutuan 1) yang terletak di utara tapak projek.



Penerima Sensitif:

1. Lebuhraya Utara Selatan PLUS
2. Jalan Kuala Kangsar 3 Butterworth (FR 1)
3. Landasan Keretapi Berkembar KTM
4. Petempatan terdekat: Kampung Gapis



Tapak Projek
 Rezab Keretapi Berkembar KTM
 → Jalan Akses

REZAB, KAPASITI & HAYAT

Rezab Kuari	121,435,640 tan
Kapasiti Pengeluaran	360,000 TPM
Jangka hayat	34 tahun



WAKTU OPERASI & JUMLAH PEKERJA

Waktu Operasi	10 jam sehari, 8am hingga 6 pm 26 hari/bulan.
Jumlah Pekerja	52



BEKALAN UTILITI/KEMUDAHAN

Anggaran Penggunaan Air	
Tujuan	Kuantiti (liter sehari)
Sistem Semburan Habuk	30,000
Pembasahan Jalan	50,000
Mudah alih	Minimum
Sumber	Kolam Perangkap Mendap



Anggaran penggunaan elektrik	
Load	4,705 kW
Punca	TNB

ANGGARAN KAPASITI 'DRY DUMPING'

Parameter	Data
Quarrying Rate	
▪ Tonage (TPM)	360,000
▪ Volume (m ³ per month)	133,333
Overburden	
▪ Stripping Ratio(Rock:Overburden)	33 : 1
▪ Estimated Overburden (m ³ per month)	4,040
Dumping Area	
▪ Area (ha)	5ha=50,000m ²
▪ Average high (m)	15
▪ Dumping capacity (m ³)	750,000
▪ Expected life (month)	186



KETERANGAN PROJEK

Carta Alir Operasi Kuari



KEMUDAHAN PENSKRINAN DAN PENGHANCURAN BATU

Kapasiti Loji Penghancur	500 TPH
Saiz Produk	50 mm (crusher run), 20 mm, 10 mm dan 5 mm down (quarry dust).



TEKNIK PERLETUPAN

Kerja-kerja peletupan untuk pembangunan dan pembinaan platform akan mengaplikasikan teknik peletupan secara Lubang Mendatar ataupun Penggerudian Berbentuk Kipas. Bagi peletupan pengeluaran primer, rekabentuk peletupannya adalah berbilang baris menggunakan non-elektrik sebagai pemula. Peletupan sekunder atau pemecahan mekanikal menggunakan pemecah hidraulik akan dijalankan mengikut keperluan seperti sekiranya terdapat sejumlah tertentu batuan yang terlalu besar yang dihasilkan semasa peletupan utama dan juga kehadiran bongkah batuan sedia ada di tapak projek.



Kelulusan Tanah	Keluasan (ha)	Cadangan Penggunaan Tanah
PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332 Mukim Kampung Buaya, Daerah Kuala Kangsar, Perak Darul Ridzuan	49.9	Kawasan Pengekstrakan
	5.0	Kawasan Pembuangan Tanah Beban
	2.0	Loji Penghancuran, produk stockpile
	1.0	Pejabat tapak, Jambatan Timbang, Washing Bay
	3.0	Akses, Jalan Pengangkutan, ESC BMPs, longgokan biomas
	135.0	Zon Penampunan
	62.5	Pembangunan masa depan
Total	258.4	



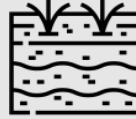
KEADAAN ALAM SEKITAR SEDIA ADA

Topografi



Berbukit dan beralun : 100m-350m di atas aras laut.
Dikelilingi pelbagai guna tanah seperti hutan sekunder dan Kawasan yang dijadikan dusun, tanaman getah, sawit dan industri kecil

Siri Tanah



Siri tanah : Rengam

Geologi Serantau



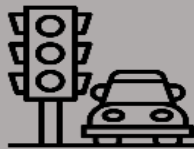
Turutan batu pasir, syal dan batu kelodak di bawah formasi Kati.

Hidrologi



Terletak dalam Kawasan Sub-basin Sungai Kangsar.
Terdapat 2 aliran Sungai dalam tapak projek- Sungai Pengasah & Sungai Papan.
Air larian dari tapak:
Masuk ke kolam perangkap mendap- Sungai Pengasah/Sungai Papan-Sungai Bawah Gunong- Sungai Kangsar
Loji Rawatan Air terhampir: Loji Rawatan Air Padang Rengas, 6 km ke timur tapak projek.

Trafik dan Pengangkutan

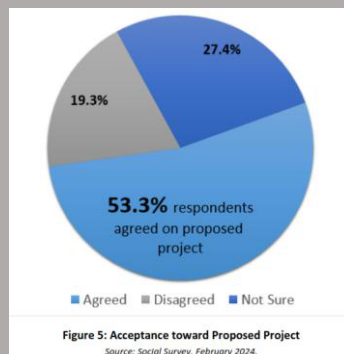


Jalan Kuala Kangsar –Butterworth (Jalan Persekutuan 1) ialah jalan utama yang terkesan daripada aktiviti projek.
Pengangkutan produk ke pasaran: Jalan darat menggunakan trak. Anggaran penggunaan trak 40 tan semasa 0800 hingga 1800, 173 trip lori dianggar untuk penghantaran aggregate setiap hari.

Sosio-Ekonomi



- Kajian Sosial dijalankan terhadap 347 responden (penduduk tempatan) dalam lingkungan 5km Zone Impak.
- Melibatkan 18 kawasan petempatan.
- Respond terhadap projek: 53.3% bersetuju, 19.3% tidak bersetuju dan 27.4% tidak pasti.



Iklm dan Metereologi



Taburan Hujan

Bacaan purata tertinggi pada 2017(3,299.9 mm)
Bacaan purata terendah pada 2016 (1,954.5 mm)

Suhu

Bacaan purata tertinggi pada 2016 (28.2°C)
Bacaan purata terendah pada 2011 (26.9°C)

Kelembapan

Bacaan purata tertinggi pada 2011 (82.5%)
Bacaan purata terendah pada 2016 (75.7%)

Kelajuan Angin

Bacaan purata tertinggi 3.3 m/s
Bacaan purata terendah 1.6 m/s

Sumber : Stesen Metereologi Lubuk Merbau 2014-2023

KEADAAN ALAM SEKITAR SEDIA ADA

Gunatanah

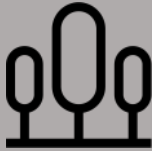


Penerima Sensitif:

1. Lebuhraya Utara Selatan PLUS
2. Jalan Kuala Kangsar - Butterworth (FR 1)
3. Landasan Keretapi Berkembar KTM
4. Petempatan terdekat: Kampung Gapis

Ekologi

Kawasan persekitaran tapak sudah sedia terganggu dengan aktiviti manusia terutamanya perlombongan 'clay'.



Flora

- Tinjauan secara umum dijalankan
- Tumbuhan tidak kritikal dan biasa dijumpai di habitat seperti ini.
- Flora : Sejumlah 30 spesis dalam 14 famili tanaman makro direkodkan.



Fauna

- Tapak merupakan hutan sekunder, sedia terganggu dengan aktiviti perlombongan 'clay'.
- Diversiti mamalia dianggap rendah dan minimal.
 - a) Mamalia- Sejumlah 12 spesis dalam 6 famili direkodkan.
 - b) Unggas - Sejumlah 8 spesis dalam 6 famili tanaman makro direkodkan.

Pemantauan Garis Dasar



Kualiti Air



Dijalankan di 6 lokasi persampelan (hulu dan hilir Sungai Papan, Sungai Pengasah dan Sungai Kangsar). Keputusan persampelan di bawah Kelas I berdasarkan 'Interim National Water Quality Standards, Department of Environment'.

Bunyi



Dijalankan di 3 lokasi persampelan (kawasan tapak projek, Kg Rengas and Kg Gapis).

Paras bunyi bising secara amnya adalah di bawah had industri iaitu 70 dBA untuk siang dan malam. Punca bunyi bising kebanyakan adalah daripada aktiviti seharian penduduk.



Kualiti Udara

Dijalankan di 3 lokasi persampelan iaitu kawasan tapak projek, Kg Rengas and Kg Gapis.

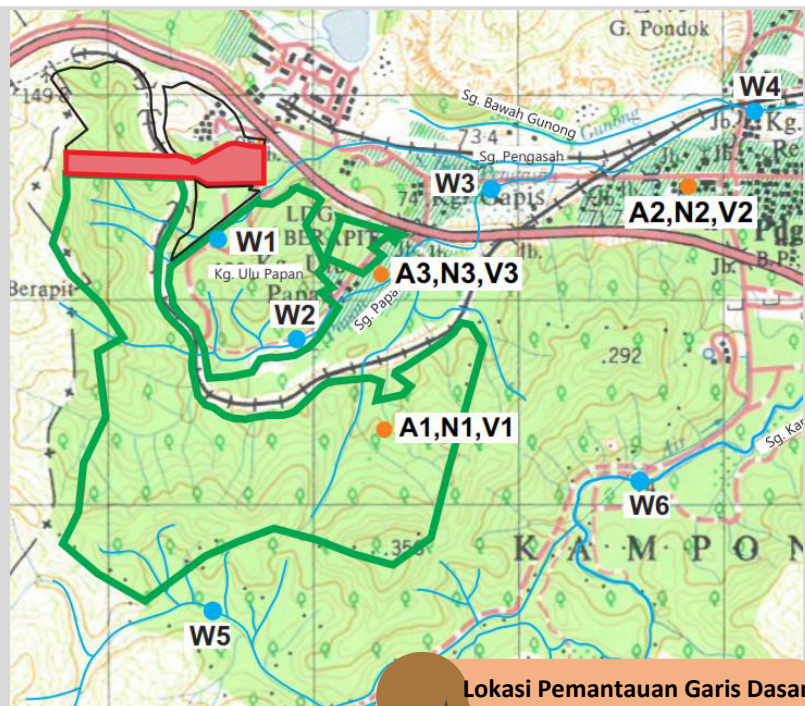
Parameter :Particulate Matter- PM10 and PM.25, SO2, NO2 dan CO.

Semua keputusan parameters adalah mematuhi had MAAQS.

Gegaran

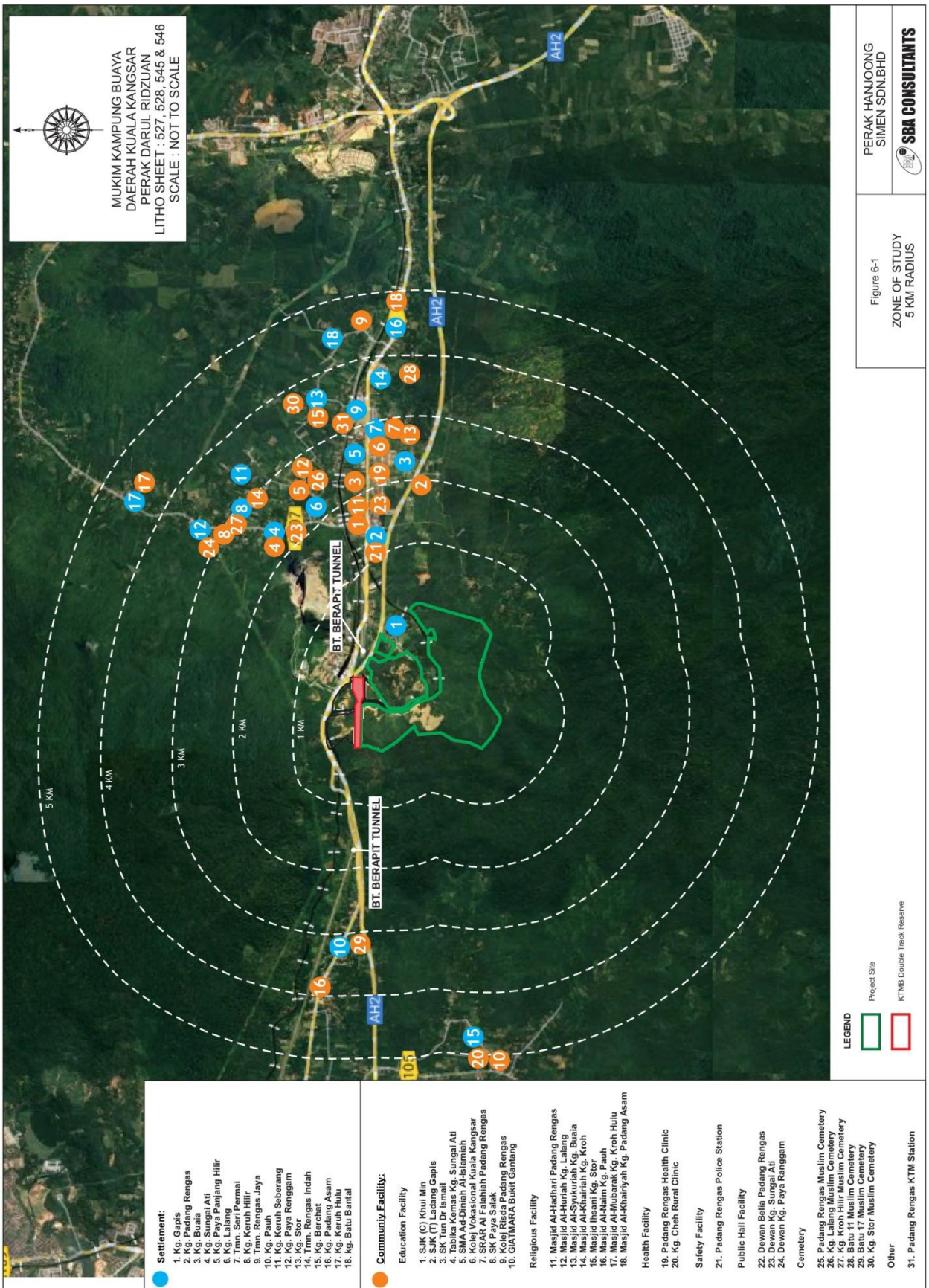


Paras gegaran ambien dianggap tipikal - jangkauan adalah daripada aktiviti kuari berdekatan. Paras gegaran semasa adalah biasa.



Lokasi Pemantauan Garis Dasar

GUNATANAH 5 KM



HAKISAN DAN KELODAKAN

PENILAIAN IMPAK

Peringkat Pembangunan

- Peningkatan hakisan tanah yang ketara semasa pembersihan tapak dan pembuangan tanah beban pada cerun.
- Anggaran hakisan tanah:
341.77 tan/tahun (tanpa mitigasi)
148.07 tan/tahun (mitigasi)

Peringkat Operasi

- Potensi hakisan semasa aktiviti perlucutan tanah dan penimbunan tanah beban.
- Masalah kelodakan semasa operasi penghancuran dan perlucutan tanah.
- Anggaran kelodakan:
5,681.59 tan (tanpa mitigasi)
23.24 tan (dengan mitigasi)

Menanam tanaman tutup bumi dan menteraskan cerun dengan sela panjang yang sesuai.

Timbunan tanah beban dibersihkan dengan kerap dan dipadatkan.

Merancang masa pembersihan tapak untuk mengelakkan musim hujan.

Menanam semula kawasan terdedah yang tidak terlibat dengan aktiviti pengekstrakan

LANGKAH TEBATAN (Pembangunan & Operasi)

Penyelenggaraan kolam perangkap kelodak.

Hadkan kelajuan kenderaan di tapak projek.

Meminimalkan gangguan tanah

PENCEMARAN BUNYI

PENILAIAN IMPAK

Peringkat Pembangunan

- Pembersihan tapak dan kerjatanah
- Perletakan infrastruktur dan pembinaan bangunan
- Perletakan jentera

Peringkat Operasi

- Operasi Penggerudian
- Operasi Perletupan
- Operasi Penghancuran Batuan
- Pengangkutan tanah beban dan hasil

Peralatan loji yang lebih senyap harus digunakan.

Operasi loji penghancur dan 'conveyor' hanya terhadap waktu siang

Jadual penyelenggaraan berkala untuk semua jentera bermotor

LANGKAH TEBATAN (Operasi)

Penggunaan palam telinga oleh penggerudi semasa operasi penggerudian.

Pemeriksaan perubatan berkala untuk penggerudi dan pekerja

Peralatan loji yang menghasilkan bunyi kuat diorientasi ke arah yang jauh dari penerima.

PENCEMARAN UDARA



PENILAIAN IMPAK

Peringkat Pembangunan

- Pembersihan tapak
- Pengangkutan dan penimbunan tanah beban
- Perletakan infrastruktur dan pembinaan bangunan (habuk dan pelepasan ekzos)

Peringkat Operasi

- Mobilisasi jentera
- Operasi Penggerudian
- Pengangkutan hasil letupan batu
- Operasi Penghancuran/ Penskrinan Batuan
- Simpanan dan penimbunan
- Pengangkutan produk dan jualan



- ✓ Lori hendaklah ditutup dengan penutup kanvas untuk mengurangkan penyebaran habuk.
- ✓ 'Washing bay' dibina untuk membersihkan roda kenderaan yang bersih sebelum meninggalkan tapak.
- ✓ Sistem semburan air perlu dipasang di 'transfer points'.
- ✓ Jalan disembur dengan air semasa cuaca kering dan berangin.
- ✓ Pembakaran terbuka adalah dilarang.

KESELAMATAN DAN KESIHATAN PEKERJA

PENILAIAN IMPAK



Peringkat Pembangunan

- Bahaya kepada pengendali kerana kawasan yang digali melibatkan kawasan curam.
- Keselamatan dan kesihatan pekerja pembinaan semasa penempatan infrastruktur.

Peringkat Operasi

- Masalah debu yang berpotensi mempengaruhi kesihatan pekerja.
- Masalah kebisingan yang berpotensi untuk pekerja di lokasi.
- Bahaya kepada pengendali kerana kawasan yang digali melibatkan kawasan curam.
- Kesihatan dan keselamatan pekerja semasa operasi penghancuran batu

- ✓ Mematuhi Akta Keselamatan dan Kesihatan Pekerjaan 1994.
- ✓ Membekalkan maklumat, arahan, latihan dan penyeliaan kepada pekerja.
- ✓ Hanya peralatan yang diselenggara dengan baik yang boleh dikendalikan di tapak.
- ✓ Peralatan Pelindung Diri (PPE) yang sesuai harus disediakan.
- ✓ Mematuhi Peraturan Kilang & Jentera (Operasi Bangunan dan Kerja Pembinaan Kejuruteraan), 1986.
- ✓ Pemeriksaan perubatan berkala untuk pekerja di tapak.



SISA BUANGAN PEPEJAL / TERJADUAL

PENILAIAN IMPAK

Peringkat Pembangunan

- Kehilangan tumbuh-tumbuhan dan penjanaan sisa vegetatif (biojisim)
- Pembuangan sisa pembinaan dan serpihan semasa penempatan infrastruktur

Peringkat Operasi

- Pembuangan bahan umum dari aktiviti pekerja di kawasan projek
- Tumpahan sisa buangan terjadual (minyak pelincir, diesel dan cecair hidraulik) boleh mempengaruhi kualiti air permukaan.

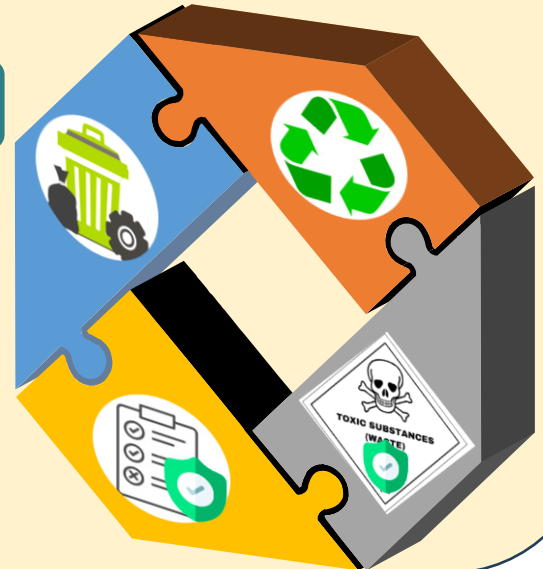
LANGKAH TEBATAN (Pembangunan & Operasi)

Sisa perlu dibuang di tempat pembuangan sampah yang diluluskan. **1**

Pemulihan dan kitar semula harus dilakukan sekiranya boleh. **2**

Buangan terjadual mesti dirawat dan dilupus mengikut undang-undang, garis panduan, dan amalan terbaik yang relevan. **3**

Mematuhi Peraturan 6(2) Kualiti Alam Sekitar, (Buangan Terjadual), 2005 **4**



TRAFIK DAN PENGANGKUTAN

PENILAIAN IMPAK

Peringkat Pembangunan

- Masalah habuk kerana pergerakan jentera.
- Bahaya kepada pengendali kerana kawasan yang digali melibatkan kawasan curam.

Peringkat Operasi

- Pencemaran udara daripada mobilisasi jentera.
- Bahaya kepada pengendali kerana berada di kawasan curam semasa mengangkut hasil letupan batu.
- Potensi penyebaran habuk semasa pengangkutan dalam kawasan tapak.
- Pemendapan, pencemaran sisa dan serpihan.

Memantau aspek keselamatan yang berkaitan dengan keadaan trak yang digunakan.

Membasahkan jalan terutama semasa cuaca kering dan berangin.

Lori hendaklah ditutup dengan kanvas untuk mengurangkan penyebaran habuk.

'Washing bay' dibina untuk membersihkan roda kenderaan sebelum keluar tapak.

LANGKAH TEBATAN (Pembangunan & Operasi)

Pengangkutan harus dilakukan pada waktu puncak, iaitu pukul 07.00 - 9.00 pagi.

Had laju trak dalam kawasan tapak hendaklah dihadkan hingga 15 km/j.

Penyelenggaraan lori yang mengikut jadual bagi kurangkan pelepasan asap kenderaan.



FLORA DAN FAUNA

PENILAIAN IMPAK

Peringkat Pembangunan

Flora

- Kehilangan vegetasi
- Penjanaaan sisa biomas.
- Impak kepada Biodiversiti Flora

Fauna

- Kehilangan dan penghijrahan fauna
- Konflik manusia-hidupan liar

Peringkat Operasi

Flora

- Kehilangan vegetasi
- Penjanaaan sisa biomas.
- Impak kepada Biodiversiti Flora

Fauna

- Konflik manusia-hidupan liar

LANGKAH TEBATAN (FLORA)

Pengurusan sisa biomas yang baik.



Merancang aktiviti pembersihan tapak.



Larangan pembakaran terbuka.

LANGKAH TEBATAN (FAUNA)

Melaksanakan Wildlife Management Plan (WMP)



Merancang arah aktiviti pembersihan tapak



Menjalankan langkah-langkah mengelakkan konflik hidupan liar-manusia.

PELEPASAN AIR BUANGAN DAN KUMBAHAN

PENILAIAN IMPAK

Peringkat Operasi

- Memberi kesan buruk kepada badan air kecuali dirawat / diuruskan dengan betul.
- Anggaran 4.16 m³ sisa kumbahan dan kebersihan (52 pekerja x 0.08 m³ pekerja⁻¹ hari⁻¹).
- Bau busuk jika tangki septik tidak berfungsi.

Pekerja harus diberi kemudahan sanitasi yang mencukupi. 1

Pekerja pembersihan bertanggungjawab untuk ke lokasi secara berkala untuk menyelenggara sisa buangan terkumpul. 2

Sekurang-kurangnya 2 tandas disediakan untuk setiap 15 pekerja. 3

Sisa hendaklah disimpan dan dikendalikan dengan betul untuk mengurangkan aliran air yang tercemar ke badan air. 4



SOSIO-EKONOMI

PENILAIAN IMPAK

Peringkat Operasi

- Meningkatkan peluang pekerjaan
- Meningkatkan peluang perniagaan dan penjanaaan pendapatan - permintaan untuk makanan, penginapan, pengangkutan dan perkhidmatan domestik
- Gangguan dan Keselamatan Awam - berpunca dari pelepasan habuk dan pergerakan lalu lintas yang berterusan.

Penduduk tempatan perlu diberi keutamaan kepada peluang pekerjaan.

Memastikan pekerja asing yang diambil mempunyai dokumentasi yang sah dan didaftarkan secara sah.



OPERASI PERLETUPAN

PENILAIAN IMPAK

Peringkat Operasi

- Masalah habuk berpotensi mempengaruhi kesihatan pekerja
- Potensi masalah bunyi kepada pekerja di tapak
- Bunyi bisikan, gegaran & perlangtangan batu - kerosakan harta benda dan gangguan kepadapenduduk berhampiran
- Pencemaran visual

Parameters	Lokasi Sensitif			
	PLUS Highway	Jalan KK- Butteworth	Railway Tunnel	Kg Gapis
Perletupan Pembangunan				
Gegaran(mm/s)	0.27-0.14	0.25-0.13	0.43-0.21	0.61-0.22
Bunyi(dBL)	104.6-100.4	104.0-99.5	107.6-102.9	109.8-103.2
Perletupan Pengeluaran				
Gegaran (mm/s)	0.46-0.24	0.42-0.21	0.73-0.36	1.02-0.37
Bunyi (dBL)	106.9-102.7	106.3-101.8	109.9-105.2	112.9-105.5

Melantik kakitangan yang berkelayakan untuk mengendalikan letupan dan bahan letupan.

Menggunakan teknik penundaan letupan yang betul.



Elakkan letupan sekunder

Pemantauan letupan untuk merancang reka bentuk letupan masa depan.

OPERASI PENGHANCURAN BATU

PENILAIAN IMPAK

Peringkat Operasi

- Perlepasan bunyi daripada loji penghancur batuan.
- Penyebaran dan pelepasan habuk dan zarah.
- Masalah kesihatan dan keselamatan pekerja akibat pencemaran udara dan bunyi bisikan.

Memasang sistem penyerapan bunyi yang berkesan.

Melaksanakan prosedur kerja yang selamat.

Memasang sistem semburan air di 'transfer points'.



Titik pelepasan dari 'conveyor belt' tidak boleh terlalu tinggi dari tanah

Wajib membekalkan peralatan keselamatan yang betul kepada pekerja

REHABILITASI

PENILAIAN IMPAK

Peringkat Peninggalan

- Kesan estetika sekiranya tapak ditinggalkan tanpa pelan peninggalan dan pemuliharaan yang baik
- Pengubahan habitat, kehilangan fauna dan flora, penurunan estetika dan nilai visual





Penutupan dan pengalihan semua binaan dan peralatan dengan cara yang betul.

Penanaman semula dengan tanaman tutup bumi yang cepat tumbuh.



Melakukan pemadatan, penerasan, penggredan dan membina lapisan atas.

CADANGAN PROGRAM PEMANTAUAN

Program	Stesyen	Parameter/Unit	Had yang Ditetapkan	Kekerapan
Pemantauan Air 	W1 – Aliran keluar, daripada sempadan utara tapak projek .Hulu Sungai Pengasah	pH, temperature, DO, BOD5, COD, Ammoniacal Nitrogen (AN) and TotalSuspended Solid (TSS).	Ph :6-9DO: 3mg/l to 7 mg/lBOD5: <5 mg/lAN: 0.1-0.3mg/lTSS: 50mg/l	Setiap bulan
	W2 - Aliran keluar, daripada tapak projek .Hulu Sungai Papan			
	W3 – Hilir Sungai Papan			
	W4 – Hilir Sungai Pengasah			
	W5- Aliran keluar, daripada sempadan Selatan tapak projek .Anak Sungai Kangsar			
	W6 – Hilir Sungai Kangsar			
Pemantauan Udara 	A1 – Tapak Projek	PM10, PM2.5, SO2, NO2 and CO	PM10: 100µg/m³PM2.5: 35µg/m³ SO2: 80 µg/m³ NO2: 280 µg/m³CO: 10 ppm	Setiap suku tahun
	A2 -Kg Padang Rengas (petempatan terdekat)			
	A3 - Kg Gapis (petempatan terdekat)			
Pemantauan Bunyi 	N1 – Tapak Projek	dBA	Siang : 65 dB(A) Malam : 55 dB(A)	Setiap suku tahun
	N2 -Kg Padang Rengas (petempatan terdekat)			
	N3 - Kg Gapis (petempatan terdekat)			
Pemantauan Gegaran 	V1 – Tapak Projek	mm/s	5 mm/s (setiap perletupan)	Setiap suku tahun
	V2 -Kg Padang Rengas (petempatan terdekat)			
	V3 - Kg Gapis (petempatan terdekat)			

Jenis Program Pemantauan

Jenis Pemantauan	Definisi
<i>Performance Monitoring (PM)</i>	Melibatkan pemantauan prestasi pengurusan alam sekitar dan sistem kawalan pencemaran serta langkah-langkah pencegahan lain yang mana boleh diaplikasi. Ini adalah berdasarkan kepada Garis Panduan, Piawaian dan undang-undang yang sedia ada. Penggerak Projek hendaklah menjalankan aktiviti pengawasan prestasi secara mingguan dan bulanan atau pada hari tertentu apabila aktiviti-aktiviti yang berkaitan sedang dijalankan.
<i>Compliance Monitoring (CM)</i>	Bertujuan memastikan langkah-langkah mitigasi yang diperlukan dilaksanakan di tapak.
<i>Impact Monitoring (IM)</i>	Bertujuan untuk mengenal pasti impak sebenar (residu) yang dikenalpasti semasa peringkat penyediaan EIA serta untuk menentukan kecekapan langkah mitigasi.



PROJECT PROPONENT

Project Proponent : Perak-Hanjoong Simen Sdn. Bhd.
Address : 13th Floor, Menara YTL
 205, Jalan Bukit Bintang,
 55100 Kuala Lumpur
Telephone : 03-20380800
Fax : 03-20380804
Contact person : Ms Cecilia Lim, *Manager*
Email : sylim@ytlcement.com



EIA CONSULTANTS

SBA CONSULTANTS

3, Medan Gopeng 3, Gunung Rapat, 31350 Ipoh, Perak Darul Ridzuan

Contact person: Ir. Dr. Selamat bin Aliman
 Tel: 05-313 6035; Fax: 05-313 6037;
 Email: sbaconsultants5a@gmail.com

EIA Team Leader

Ir. Dr. Selamat bin Aliman : *Quarry and Mining*

EIA Team Member

Mohd Nawahidudin Bin Mahamad Isa : *Socio-Economic*
 Lim Sze Fook : *Air Quality Modelling*
 Dr Md Salim Khan : *Ecology*

STATUTORY REQUIREMENT

Prescribed activity 19, First Schedule of the Environmental Quality (Prescribed Activities)(Environmental Impact Assessment) Order 2015

PROJECT BACKGROUND

The Project Site

3 parcels of land covering an area of 258.43 ha



Land Matters

The land is held under PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332 as provided under Section 81(1), Mineral (Perak) Enactment 2003. PML Holder is Perak-Hanjoong Simen Sdn.Bhd. with tenure 10 to 30 years, expiring in 2035 and 2051.



Local Plan

Zoning - "Rancangan Tempatan Daerah Kuala Kangsar 2035 (Pengubahan 1)" - 'Blok Perancangan Kecil (BPK) 3.1 & 3.2 : Zoned as Industry.
 -The amendment is endorsed by MMK on 8 October 2025.



STATEMENT OF NEEDS

Demand and Supply

In view of the abundant granite reserve and the increasing demand of aggregate, the quarry is foreseen to be promising. In addition, various development projects within the vicinity of the project areas shall positively contribute the potential of the quarry.



The Economics

Project is in line with one of the principal objectives of Industrial Master Plan (IMP), thus the implementation of this particular Project is expected to accelerate with the economic progress in the vicinity of the Project area at near future.



Availability of Products

The proposed quarry is appropriately located to give a source of supply for raw materials for :

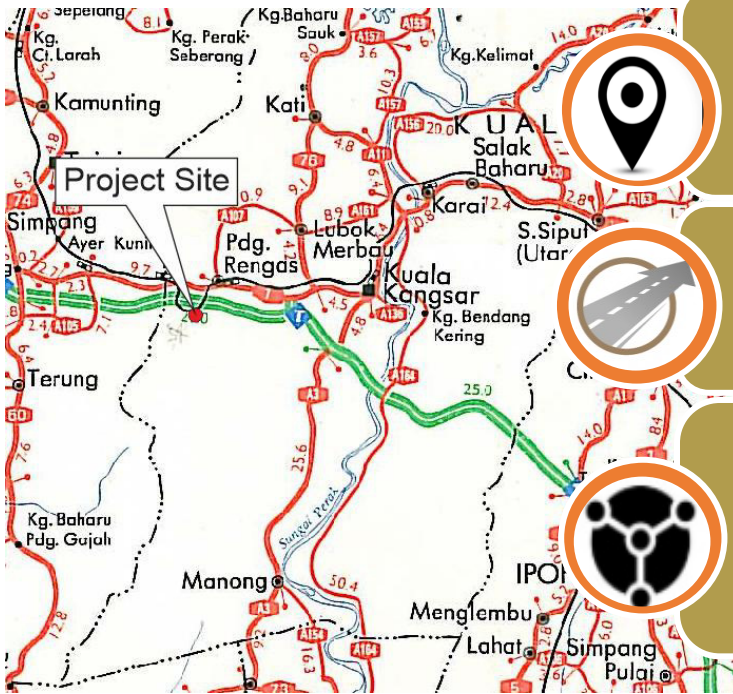
- General concreting.
- Road construction and drainage work.
- Railway ballast.
- Manufacturing of asphalt pre-mix.
- Precast and ready-mixed concrete.
- Retaining walls, river bank or seashore protection.
- Landscaping.



EXECUTIVE SUMMARY

Proposed Quarrying Operation on PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332, in the Mukim of Kampung Buaya, District of Kuala Kangsar, Perak Darul Ridzuan

PROJECT LOCATION



Location :

PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332 in the Mukim of Kampung Buaya, District of Kuala Kangsar, Perak Darul Ridzuan
Total Area : 258.43 ha

Access road :

The road connects the trunk road, Jalan Ipoh 3 Kuala Kangsar 3 Butterworth (Federal Route 1) which is located towards the north of the project site.

Sensitive receptor:

1. The North-South PLUS Highway (E1)
2. Jalan Kuala Kangsar 3 Butterworth (FR 1)
3. KTM Double Track Railway Tunnel
4. Nearest Settlement Area : Kg Gapis



Project site
 KTM Double Track Reserve
 →

EXECUTIVE SUMMARY

Proposed Quarrying Operation on PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332, in the Mukim of Kampung Buaya, District of Kuala Kangsar, Perak Darul Ridzuan

RESERVE, CAPACITY & LIFE

Quarry Reserve	121,435,640 tonne
Production Capacity	360,000 TPM
Life span	34 years



WORKING HOURS & MANPOWER

Operation hour	10 hours daily, 8am to 7 pm – 26 days/month.
Manpower	52



UTILITY SUPPLIES/FACILITIES

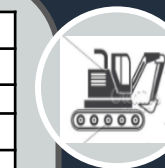
Estimated Water Quantity Requirement	
Purpose	Quantity (litre per day)
Dust Suppression System	30,000
Road Dowsing	50,000
Portable	Minimum
Source	Silt trap/ Stream at vicinity

Estimated Electric Consumptions	
Load	Quantity
Load	4,705 kW
Source	TNB supply



ESTIMATION OF DRY DUMPING CAPACITY

Parameter	Data
Quarrying Rate	
▪ Tonaqe (TPM)	360,000
▪ Volume (m ³ per month)	133,333
Overburden	
▪ Stripping Ratio(Rock:Overburden)	33 : 1
▪ Estimated Overburden (m ³ per month)	4,040
Dumping Area	
▪ Area (ha)	5ha=50,000m ²
▪ Average high (m)	15
▪ Dumping capacity (m ³)	750,000
▪ Expected life (month)	186



PROJECT DESCRIPTION

Quarry Operation Flowchart



CRUSHING AND SCREENING FACILITIES

Crusher capacity	500 TPH
Product size	50 mm , 20 mm, 10 mm and 5 mm down



BLASTING TECHNIQUES

Blasting works for the purpose of development and platform construction involve the use of Horizontal Hole or Fan Drilling Blasting. For primary production blasting, a staggered rectangular drill pattern with a row by row delay pattern utilizing non-electrical initiation system blast design shall be used. Certain percentage of oversize rock which shall be produced during blasting operation and also the existence of natural boulders at the Project site create the necessity for secondary blasting or mechanical breakage using hydraulic breaker.



Approval Reference	Area (ha)	Proposed Land Utilization
PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332 in the Mukim of Kampung Buaya, District of Kuala Kangsar, Perak Darul Ridzuan	49.9	Rock Extraction Area
	5.0	Overburden dumping area
	2.0	Crusher Plant Facility, Product Stockpiles
	1.0	Site Office, Weighbridge, Washing Bay
	3.0	Access Road, Haulage Road, ESC BMPs, Biomass Stockpile
	135.0	Buffer Zone Area
	62.5	Future development
Total	258.4	



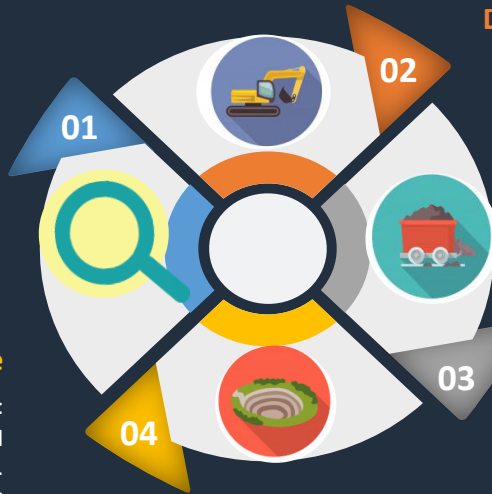
PROJECT ACTIVITIES

Planning Stage

- Exploration
- Environmental Impact Assessment preparation

Abandonment Stage

- Restoration and Rehabilitation :
- Compaction, levelling, grading and topsoiling.
 - Revegetation with suitable grasses or leguminous cover crops and fast-growing trees.



Development Stage

- Site Clearing
- Overburden Removal
- Infrastructure Construction
- Quarry Face and Benches Development
- Managing Waste at the Project Site

Operation Stage

- Rock Extraction :
 - Drilling & Blasting
- Rock Processing :
 - Crushing
 - Screening
 - Processing
 - Stockpiling
 - Transportation
- Managing Waste at the Project Site

Project Implementation Schedule

Activity	Months/Weeks																																
	Month 1				Month 2				Month 3				Month 4				Month 5				Month 6				Month 7								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Site Preparation #1	[Timeline bar]																																
EIA/ESCP/EMP COA Compliances	1	2	3	4	5	6																											
Site Demarcation and Surveying	1			2	3																												
Call Tender/Quotes	1			2	3	4																											
Awarding of Contracts/PO	1				2	3	4																										
Site Clearing	1				2	3	4	5																									
Existing Road Diversions	1				2	3	4	5																									
Drainage Construction and ESCP BMPs #2	[Timeline bar]																																
Quarry Face Development	[Timeline bar]																																
Access and Haulage Road Development	1				2	3	4																										
Overburden Stripping	1				2	3	4	5	6	7	8	9	10																				
Development Drilling and Blasting	1				2	3																											
Production Platform Development	1				2	3																											
Benching and Terracing	1				2	3	4																										
Production #3	[Timeline bar]																																
Production Drilling and Blasting	1				2																												
Loading and Hauling	1																																
Stockpiling	1																																

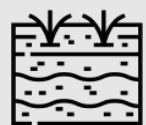
EXISTING ENVIRONMENT

Topography



Hilly and undulating : 100m – 350m above MSL. Surrounded by surrounded by various land uses such as secondary forest and alienated land which have been developed into orchard, rubber and oil palm smallholders and industrial activities.

Soils



Soils series : Renggam series

Geology



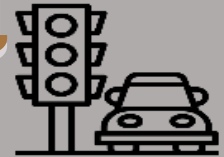
Sequence of interbedded sandstone, shale and siltstone belonging to the Kati formation

Hydrology



Located within Sungai Kangsar Sub-basin.
 2 named river within Project site- Sungai Pengasah & Sungai Papan.
 Run-off from site :
 Drained into a number of silt traps – Sungai Pengasah/Sungai Papan-Sungai Bawah Gunong- Sungai Kangsar
 Nearest water intake : Padang Rengas Water Supply Scheme, 6 km to the east of the project site.

Traffic and Transportation

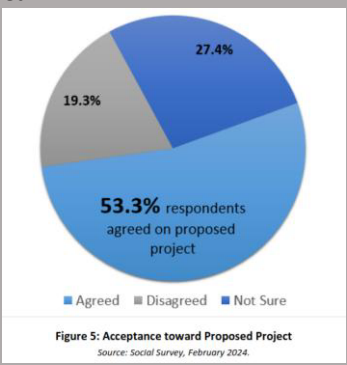


Jalan Kuala Kangsar –Butterworth (Federal Route 1) is the main road which is affected by the project.
 Transportation to the markets : Haul road by trucks.
 Assuming using 40 tonnes truck during 0800 to 1800, about 173 lorry trip are expected to transport aggregates daily.

Socio-Economy



- Social study conducted to 347 respondents (local resident) within 5km Zone Of Impact.
- Involved 18 settlements area.
- Respond towards project : 53.3% agreed, 19.3% disagreed and 27.4% not sure



Climate and Meteorology



Rainfall
 Highest in 2017(3,299.9 mm)
 Lowest in 2016 (1,954.5 mm)

Temperature
 Highest average in 2016 (28.2°C)
 Lowest average in 2011 (26.9°C)

Relative Humidity
 Highest average in 2011 (82.5%)
 Lowest average in 2016 (75.7%)

Wind speed
 Highest average 3.3 m/s
 Lowest average 1.6 m/s

Source : Meteorological station : Lubuk Merbau 2014-2023

EXISTING ENVIRONMENT

Landuse

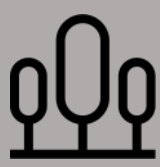


Landuse

- Nearest sensitive receptor is
1. The North-South PLUS Highway (E1)
 2. Jalan Kuala Kangsar 3 Butterworth (FR 1)
 3. KTM Double Track Railway Tunnel
 4. Nearest Settlement Area : Kg Gapis

Terrestrial Ecology

Surrounding area are greatly disturbed by human activities especially clay mining.



Flora

- Reconnaissance survey was conducted
- Plants are not ecologically critical and commonly found in such habitat.
- Flora : total of 30 species in 14 families of living macro plants were recorded.



Fauna

- Site is considered as secondary forest, disturbed by clay mining activity.
 - Mammal diversity is considered low and minimal.
- a) Mammals - total of 12 species of belonging to 6 families were recorded
 - b) Birds - total of 8 species belonging to 6 families were recorded

Environmental Baseline Monitoring



Water Quality



Carried out 6 sampling stations (upstream and downstream of Sungai Papan, Sungai Pengasah and Sungai Kangsar) . Results fall under Class I based on the Interim National Water Quality Standards, Department of Environment.

Noise



Carried out at 3 sampling stations (Within project site, Kg Rengas and Kg Gapis).

Noise level were generally below the industrial limit of 70 dBA for day and night. Noise mainly from day-to -day human activities .

Air Quality



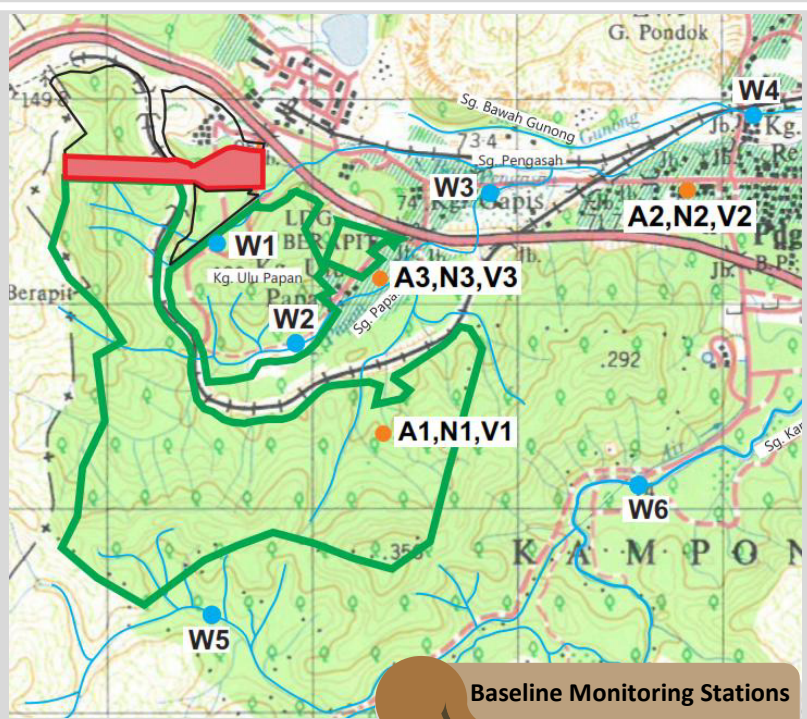
Carried out at 3 sampling stations (Within project site, Kg Rengas and Kg Gapis).

Parameters :Particulate Matter-PM10 and PM.25, SO2, NO2, and CO
All measured parameters comply with MAAQS limits.

Vibration



Ambient vibration levels are considered typical - expected contributed mainly by activities within the quarry area. Present vibration levels are relatively good

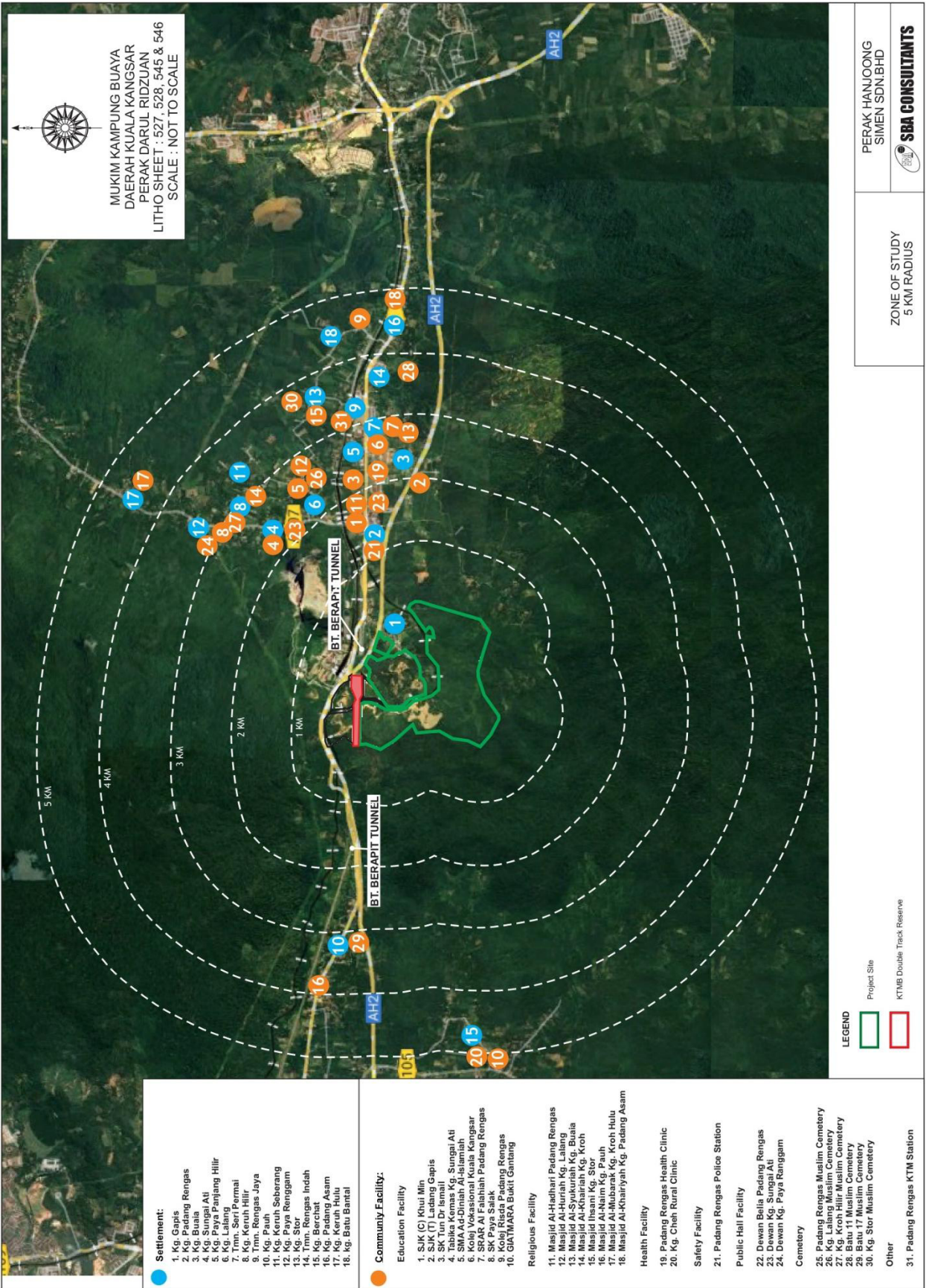


Baseline Monitoring Stations

EXECUTIVE SUMMARY

Proposed Quarrying Operation on PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332, in the Mukim of Kampung Buaya, District of Kuala Kangsar, Perak Darul Ridzuan

5 KM LANDUSE



SOIL EROSION & SILTATION

IMPACT ASSESMENT

Development Stage

- Significant increase in soil erosion during land clearing & overburden removal on hill slopes.
- Estimation of soil loss:
341.77 tonne/year (unmitigated)
148.07 tonne/year (mitigated)

Operational Stage

- Potential erosion on stripping activities and overburden stockpiling.
- Siltation problem from crushing operation and stripping activities.
- Estimation of sediment yield:
5,681.59 tonne (unmitigated)
23.24 tonne (mitigated)

Covering crop and terracing the slope with the suitable interval length of slope.

Exposed area cleared regularly and be compacted.

Timing of clearing activities to avoid the extremely 'wet' season

Revegetate and turf exposed area not affected with rock extraction activities.

Maintenance of sedimentation ponds or silt traps.

Limit speed of travel of trucks within the project site.

Minimizing earth disturbance.

MITIGATION MEASURES (Development & Operational)

NOISE POLLUTION

IMPACT ASSESMENT

Development Stage

- Site Clearing and Earthwork
- Placement of Infrastructure and Construction of Building
- Mobilization of Machineries

Operational Stage

- Drilling Operation
- Blasting Operation
- Rock crushing operation
- Haulage of overburden and Blasted Rock

Quieter plant and low noise equipment should be used..

Operations of quarry from mine face to be limited during day time only

Periodical maintenance schedule for all motorised machineries

Ear plugs to be used by drillers during drilling operation.

Periodic medical check-up for drillers and workers

Plant with strong noise emission to be orientated to a direction away from receivers.

MITIGATION MEASURES (Operational)

AIR POLLUTION



IMPACT ASSESMENT

Development Stage

- Site clearing
- Transportation & Stockpiling of Overburden
- Placement of infrastructure and construction of Building (dust and exhaust emission)

Operational Stage

- Mobilization of machinery
- Drilling Operation
- Haulage of Overburden and Blasted Rock
- Rock crushing operation/ screening
- Storage and stockpile
- Transportation and Loading of Sales and Products



- ✓ Lorries shall be covered with canvas cover to minimize dust dispersion.
- ✓ Washing bay will be constructed to clean vehicles' wheels are clean before leaving site.
- ✓ At the transfer points, water sprinklers shall be installed.
- ✓ Road sprayed with water during dry, windy weather.
- ✓ No open burning allowed.

OCCUPATIONAL SAFETY AND HEALTH

IMPACT ASSESMENT

Development Stage

- Hazard to the operators as the excavated area might be in steep terrain.
- Safety and health of construction workers during placement of infrastructure.

Operational Stage

- Potential dust problem affecting health of workers.
- Potential noise problem to on-site workers.
- Hazard to the operators as the excavated area might be in steep terrain.
- Workers health and safety during rock crushing operation

- ✓ Comply Occupational Safety and Health Act 1994
- ✓ Provide information, instruction, training and supervision
- ✓ Only well-maintained equipment shall be operated on-site.
- ✓ Suitable Personal Protective Equipment (PPE) should be provided.
- ✓ Comply with Factory & Machinery (Building Operations and Works of Engineering Construction) Regulations, 1986.
- ✓ Periodic medical check-up for site workers.



SOLID AND HAZARDOUS WASTE

IMPACT ASSESMENT

Development Stage

- Loss of vegetation and generation of vegetative waste (biomass)
- Disposal of construction waste and debris during placement of infrastructure

Operational Stage

- General refuse from workers' activities within the project site
- Spillages of schedule waste (lubricating oils, diesel and hydraulic fluids) can affect surface water quality.

MITIGATION MEASURES (Development & Operational)

- 1 Disposed garbage at approved dump site.
- 2 Recovery and recycling shall take place wherever possible.
- 3 Scheduled waste must be treated and disposed of according to relevant laws, guidelines, and best practice.
- 4 Comply Regulation 6(2) of the Environmental Quality, (Scheduled Wastes) Regulation, 2005.



TRAFFIC AND TRANSPORTATION

IMPACT ASSESMENT

Development Stage

- Dust problem due to vehicle movement.
- Hazard to the operators as the excavated area might be in steep terrain.

Operational Stage

- Air pollution due to mobilization of machinery.
- Hazard to the operators as the excavated area might be in steep terrain during haulage of blasted rock.
- Potential dust dispersion during transportation within project site.
- Deposition of spoil, wastes and debris .

Observe safety aspects pertaining to the condition of the trucks used. >

Dampened the haulage road especially during dry and windy weather. >

Lorries shall be covered with canvas cover to minimize dust dispersion. >

Washing bay will be constructed to clean vehicles' wheels before leaving the site. >



EXECUTIVE SUMMARY

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FLORA AND FAUNA

IMPACT ASSESMENT

Development Stage

Flora

- Vegetation Loss
- Impact on Flora Biodiversity
- Biomass Generation

Fauna

- Habitat Loss and Fragmentation
- Loss and Displacement of Fauna

Operational Stage

Flora

- Vegetation Loss
- Impact on Flora Biodiversity
- Biomass Generation

Fauna

Human-Wildlife Conflict

MITIGATION MEASURES (FLORA)

Proper Biomass Management



Planning of Site Clearing Activities



Restriction of Open Burning

MITIGATION MEASURES (FAUNA)



Implementation of Wildlife Management Plan (WMP)



Direction of Site Clearing Activities



Measures to Counter Human-Wildlife Conflict

SEWAGE AND WASTEWATER DISCHARGE

IMPACT ASSESMENT

Operational Stage

- May adversely affect the water bodies unless properly treated/managed.
- Estimated to generate about 4.16 m³ of sewage and sanitary effluents (52 workers x 0.08 m³ worker-1 day-1).
- Bad odour if the septic tank not working.

Workers shall be provided with adequate sanitation facilities. 1

Cleaner shall be responsible for regular site visits to collect the accumulated disposal. 2

At least 2 toilets shall be provided for every 15 workers. 3

Waste shall be properly stored and managed to minimize contaminated run-off to the water bodies. 4



SOSIO-ECONOMY

IMPACT ASSESMENT

Operational Stage

- Increase employent opportunities
- Increase business opportunities and income generation – demand for food, accommodation, transportation and domestic service
- Nuisance and Public Safety - arising from the continuous dust emission and traffic movements.

Local population must be given the first opportunity to employment.

Ensure hired foreign labour have valid documentation and legally registered.



Operators to be mindful and acts resident's complaint with regards to the project.

EXECUTIVE SUMMARY

Proposed Quarrying Operation on PML 14/2025 Lot 15866, PML 53/2021 PT 1331 and PML 54/2021 PT 1332, in the Mukim of Kampung Buaya, District of Kuala Kangsar, Perak Darul Ridzuan



BLASTING OPERATION

IMPACT ASSESMENT

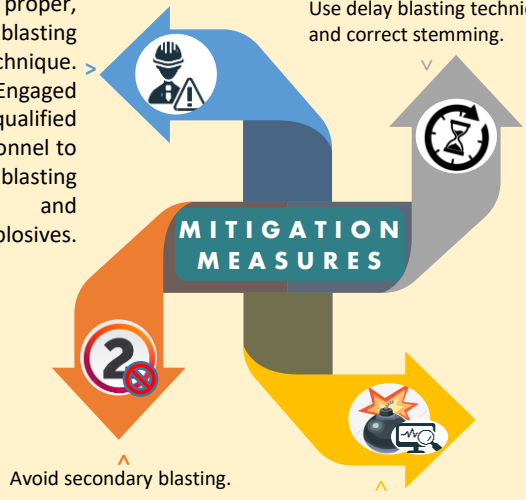
Operational Stage

- Potential dust problem affecting health of driller
- Potential noise problem to on-site workers
- Noise, vibration & flyrock causing property damage and nuisance among the nearby resident
- Visual intrusion

Parameters	Sensitive Locations			
	PLUS Highway	Jalan KK-Butteworth	Railway Tunnel	Kg Gapis
Development Blasting				
Vibration(mm/s)	0.27-0.14	0.25-0.13	0.43-0.21	0.61-0.22
Noise (dBL)	104.6-100.4	104.0-99.5	107.6-102.9	109.8-103.2
Production Blasting				
Vibration(mm/s)	0.46-0.24	0.42-0.21	0.73-0.36	1.02-0.37
Noise (dBL)	106.9-102.7	106.3-101.8	109.9-105.2	112.9-105.5

Adopt proper, safe blasting technique. Engaged qualified personnel to handle blasting and explosives.

Use delay blasting technique and correct stemming.



Avoid secondary blasting.

Monitor blast to provide feedback for future blast designs



ROCK CRUSHING OPERATION

IMPACT ASSESMENT

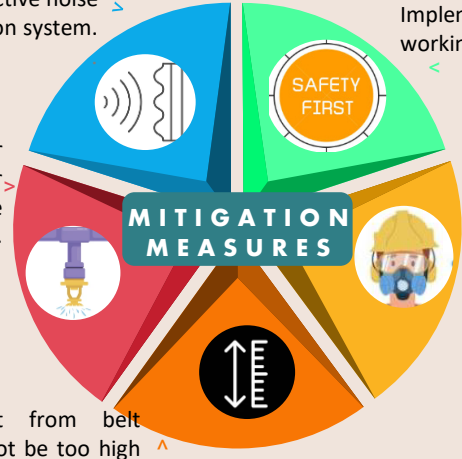
Operational Stage

- Noise emission from crushing plant.
- Dust and particulate dispersion and emission.
- Workers' health and safety due to air dispersion and noise.

Install effective noise suppression system.

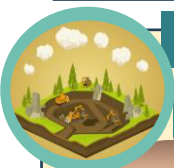
Implement safe working procedures.

At the transfer points, water sprinklers shall be installed.



Discharge point from belt conveyor shall not be too high from ground to control the blowing of dust.

Workers supplied with proper safety gears and its usage made mandatory.



REHABILITATION

IMPACT ASSESMENT

Abandonment Stage

- Unaesthetically acceptable if the site is left without proper decommissioning and rehabilitation
- Changing the habitat, loss of fauna and flora and degradation of aesthetics and visual value





Proper decommissioning and removal of all buildings and equipment.



Revegetation with suitable grasses or leguminous cover crops and fast-growing trees.

Compaction, levelling, grading and topsoiling.

PROPOSED ENVIRONMENTAL MONITORING PROGRAM

Program	Stations	Parameter/Unit	Recommended Limits	Frequency
 Water Monitoring	W1 - Outflow, from project site northern boundary. Upstream of Sungai Pengasah	pH, temperature, DO, BOD5, COD, Ammoniacal Nitrogen (AN) and TotalSuspended Solid (TSS).	Ph :6-9DO: 3mg/l to 7 mg/lBOD5: <5 mg/lAN: 0.1-0.3mg/lTSS: 50mg/l	Monthly
	W2 - Outflow, from project site. Upstream of Sungai Papan			
	W3 - Downstream of Sungai Papan			
	W4 – Downstream of Sungai Pengasah			
	W5- Outflow, from project site southern boundary. Tributary of Sungai Kangsar			
	W6 – Downstream of Sungai Kangsar			
 Air Monitoring	A1 - Proposed Quarry Site	PM10, PM2.5, SO2, NO2 and CO	PM10: 100µg/m³PM2.5: 35µg/m³ SO2: 80 µg/m³ NO2: 280 µg/m³CO: 10 ppm	Quarterly
	A2 -Kg Padang Rengas (nearest settlement area)			
	A3 - Kg Gapis (nearest settlement area)			
 Noise Monitoring	N1 - Proposed Quarry Site	dBA	Daytime : 65 dB(A) Nighttime 55 dB(A)	Quarterly
	N2 -Kg Padang Rengas (nearest settlement area)			
	N3 - Kg Gapis (nearest settlement area)			
 Vibration Monitoring	V1 - Proposed Quarry Site	mm/s	5 mm/s (every blast)	Quarterly
	V2 -Kg Padang Rengas (nearest settlement area)			
	V3 - Kg Gapis (nearest settlement area)			

Types of Monitoring Programme

Type of Monitoring	Definition
Performance Monitoring (PM)	Involves monitoring the performance of environmental management and pollution control systems and other mitigation measures were ever applicable. This mainly is based on meeting existing Malaysian Guidelines, Standards and legislations. The Project Proponent shall conduct the performance monitoring activities on weekly and monthly basis or on specific days when the relevant activities are being conducted.
Compliance Monitoring (CM)	Aims to ensure the required mitigation measures are being implemented on site.
Impact Monitoring (IM)	Aims to identify actual (residual) impacts found out during EIA preparation stage, and hence to determine the efficiency of mitigationmeasures.