

## EXECUTIVE SUMMARY

### 1.0 TITLE OF PROJECT

The title of the project is PROPOSED RUBBER FOREST PLANTATION ON PARTS OF COMPARTMENT 126, 131 & 132 (BLOCK 1) AND PARTS OF COMPARTMENT 125, 126, 131 & 132 (BLOCK 2) WITH AN AREA OF 1,600.00 HECTARES (3,953.67 ACRES) AT PIAH FOREST RESERVE, DISTRICT OF HUTAN KUALA KANGSAR, PERAK DARUL RIDZUAN.

### 2.0 STATEMENT OF NEED

The needs for the forest plantation activity is evident for the following reasons:

- Generate large numbers of indirect jobs and to have significant multiplier;
- Fulfilling the demand of wood based product;
- Forest plantation has been introduced in order to cater the shortage of raw timber supplies;
- Income for government to develop a growing country in different type of latest facilities.

### 3.0 PROJECT DESCRIPTION

The total project area is 1,600.00 ha. Out of the total area, approximately 1054.35 ha (65.89%) is to accommodate a plantable area that will be planted with rubber forest plantation and cover crops, establishment of 'mataui', workers camp and nursery area. Terraces will be construct at the hilly area with slope more than 12° to reduce soil erosion. The non-plantable area will consist of area with slope more than 25° and river buffer zone.

Distance from the main access road to project site is about 19 km and width of this road is about 3m. It is preferable to use a four wheeled drive vehicle to approach the project site.


Hanamurni Sdn. Bhd., a contractor registered with Perak Forestry Department, will manage the logs.

The project had been approved by Department of Forestry Perak for the forest plantation.

The existing timber trees at project site will be cut by phases and replant with Timber Latex Clone (TLC). This project site divided into 4 blocks with 5 phases each as shown in Figure ES-2

#### 4.0 CONTACT DETAILS PROJECT PROPONENT AND EIA CONSULTANT

The details of project proponent and environmental consultant for the project are as follows:

PROJECT PROPONENT/DEVELOPER	
<p><b>HANAMURNI SDN. BHD.</b> (Company No.: 471715-T)</p> <p>B-04-02, Tingkat 4, No. 42, Persiaran Greentown 1, Greentown Business Centre 30450, Ipoh, Perak Darul Ridzuan. Contact Person: Yong Kit Mun Telephone: 012 – 916 3133</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p><b>HANAMURNI SDN. BHD.</b> (Company No.: 471715-T)</p> </div>
ENVIRONMENTAL CONSULTANT	
<p><b>EIA Consultant:</b></p> <p><b>NILAIMAS SERVICES</b> (001953513-D)</p> <p>No. 17-2 &amp; 17-3, Jalan Equine 10D, Taman Equine, 43300 Seri Kembangan, Selangor Tel.: 03-8940 9959, Fax : 03-8940 9958 Contact Person: Hj. Mohd Nawahidudin Bin Mahamad Isa</p>	
	

**In Cooperation With:**

**ECA ENVIRONMENTAL CONSULTANT AGENCIES**

C-11-24, Komplek Sukan Kinrara,  
Taman Kinrara Seksyen 3,  
47100 Puchong Selangor.  
Tel: 019-3615581, Fax: 03-80703883  
Contact Person: Rosli Bin Omar



## 5.0 PROJECT LOCATION

The Project site is located on parts of Compartment 126, 131 & 132 (Block 1) and parts of Compartment 125, 126, 131 & 132 (Block 2) with an area of 1,600.00 Hectares (3,953.67 Acres) at Piah Forest Reserve, District of Hutan Kuala Kangsar, Perak Darul Ridzuan. The proposed Project area consists of valley and high hills where the highest level is 890 m above mean sea level (MSL) and the lowest level is 190 m above mean sea level (MSL). Most of the proposed area is covered with forest trees. Most of the proposed Project land is covered with forest trees. Based on Jabatan Perancangan Bandar dan Desa Negeri Perak, existing land uses of proposed site are hilly, agricultural and forest areas. The coordinates of the project boundary are as shown in Figure ES-1.

Pos Gapeh and Sekolah Kebangsaan Pos Piah are lies about 2km southwest and 2.8km southern from the proposed site, respectively. Kampung Lalang is situated approximately 2.5km southwest from the proposed site. Meanwhile, Kampung Chat and Kampung Kekabu are located about 3km southwest and 3.75km southwest from the proposed Project site. Ladang Tasik Kenering is located about 5km northwest from the proposed site. Sekolah Kebangsaan Pos Poi (Sungai Siput Utara) is located about 8.8km southeast from the proposed site. Lenggong is located about 25km western from the proposed Project site. Sungai Siput and Taiping are situated approximately 35km southern and 56km southwest from the proposed Project site, respectively.

## 6.0 EXISTING ENVIRONMENT

Generally, the elevations of the Project site vary from 190m to 890m above mean sea level. The project site is drained by rivers namely Sg. Rombai, Sg. Poi, Sg. Adu and Sg. Sira. These rivers serve as natural flood control for Sg. Piah.

Based on the terrain analysis, about 73.3% of the area is classified under Class I and II, which indicates slopes lower than 25° that make up 1,171.63 ha. While, the remaining 26.7% of the area (428.37 ha) is classified under the slope >25° which are unsuitable for plantation.

## 7.0 FOREST PLANTATION ACTIVITY

The project activities involved in this rubber forest plantations can be summarise into five stages namely site preparation, planting, operation and maintenance, harvesting and replanting. An outline of the likely project activities under these stages are as follow:

### *Site Preparation*

- Site Suitability Survey
- EIA Preparation
- Area Zoning
- Establishment of Site Office, Worker Quarters and Storage Facilities
- Extraction of Marketable Trees
- Logging Track Road Construction
- Under Brushing
- Clear Felling
- Construction of Drains, Bridges and Culvert
- Nursery Establishment
- Terracing and Platform

### *Planting*

- Green Budding
- Budded Stumps

- Nursery Maintenance
- Planting Options
- Size Suitability
- Nursery Pests and Disease
- Land Preparation
- Lining, Holing and Planting
- Establishment of Cover Crops or Legume Covers
- Electrical Fencing/Elephant Trenches

#### *Operation and Maintenance*

- Weeding
- Manuring
- Pruning and Thinning
- Growth and Yield
- Pests and Diseases

#### *Harvesting*

- Latex Extraction
- Tapping
- Processing of the Latex
- Extraction of Rubber Tree

#### *Replanting*

## 8.0 POTENTIAL IMPACTS, MAGNITUDE AND PROPOSED POLLUTION PREVENTION AND MITIGATION MEASURES (P2M2)

Table 8.1 shows the summary of potential impacts, their magnitude and its proposed pollution prevention and mitigation measures (P2M2).

**Table 8.1 : Summary of Potential Impacts, Theirs Magnitude and Its Proposed Pollution Prevention and Mitigation Measures (P2M2)**

Significant Potential Impacts	Magnitude Of Significant Potential Impacts	P2M2	Reference Page
<p><b>Soil Erosion and Sedimentation</b></p> <p><u>During Development Phase</u></p> <p>1) Declining water quality level.</p> <p>2) Reduce soil nutrients</p>	High	<p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>• Scheduling and staging of the development;</li> <li>• Maintaining stream buffers;</li> <li>• Preserving Top Soil and Other Assets;</li> <li>• Stabilized road surface with crusher run;</li> <li>• Runoff Control &amp; Management;</li> <li>• Biomass Management;</li> <li>• Cover Crops to be planted;</li> </ul>	Sub-chap 8.4.1.3, Page 461

<p><u>During Operation Phase</u> The soil has been fully stabilized with cover crop and rubber forest plantation, the access road is covered with crusher run or laterite.</p>	<p>Low</p>	<ul style="list-style-type: none"> <li>• Slope/stream stabilization;</li> <li>• Biomass management;</li> <li>• Plant cover crop;</li> <li>• Perform water quality monitoring</li> </ul> <p><u>During Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Vegetation in the riparian buffer zones and cover crops must be maintained</li> </ul>	
<p><b>Water Pollution</b></p> <p><u>During Development Phase</u></p> <p>1) Sedimentation. 2) Discharge of untreated sewage to the river – impact to the aquatic life and human utilization.</p>	<p>Medium</p>	<p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>• Implementation of LD-P2M2 tools</li> <li>• LD-P2M2 tools must be inspect and maintain regularly.</li> <li>• Land clearing and site preparation is recommended to be carried out during the dry weather.</li> <li>• Earthworks must be carried out as scheduled to reduce time exposure of the land to erosion agents.</li> <li>• The sediment collected from the wash trough must be disposed off at</li> </ul>	<p>Sub-chap 8.4.1.5, Page 468</p>

<p><u>During Operation Phase</u></p> <ol style="list-style-type: none"> <li>1) Sedimentation</li> <li>2) Fertilizers, Pesticides and Agricultural Chemicals</li> </ol>	<p>Low</p>	<p>suitable area, which is not expose to erosion risks.</p> <ul style="list-style-type: none"> <li>• Maintain riparian reserves along watercourses.</li> <li>• Placed “Do Not Disturb Riparian Buffer Zone” signage along the riparian buffer zone that can be seen by people.</li> <li>• Skid tank must be located on stable ground and equipped with containment bund water quality monitoring program must be carried out to identify possible contamination routes.</li> <li>• Conduct audit program to ensure all remedial measures implemented at the Project site will not contribute pollution to water bodies.</li> </ul> <p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>• Maintain buffer zone along watercourses with cover crops.</li> <li>• A water quality-monitoring program must be carried out to identify possible contamination routes.</li> </ul>	
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<p>3) Accident spillage from Skid Tank, Oil and Grease</p>		<ul style="list-style-type: none"> <li>• Conduct audit program to ensure all remedial measures implemented at the Project site do not contribute pollution to water bodies.</li> <li>• Fertilizers and agrochemical such as pesticides and weedicides must not be applied during the rainy season.</li> <li>• Plantation Management should closely supervise and regulate the method, dosage and frequency of application of fertilizers and agrochemicals. The dosage for fertilizers should be split to minimize losses e.g. split the annual dosage into 3-4 applications.</li> <li>• Apply weedicides while weeds are in the early growth stage for effective control.</li> <li>• Apply weedicides during clear days with 8 hours of dry atmosphere.</li> <li>• Chemicals for pest and disease control should only be applied when the outbreak is severe.</li> <li>• Mulching, planting and maintaining the cover crops and intercrops as recommended to minimize weed growth.</li> </ul>	
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		<ul style="list-style-type: none"> <li>• According to Skim Amalan Ladang Baik Malaysia (SALM) adopted by the Department of Agriculture, the pesticide container, polybag, fertilizer bottles and others should be recycled, reused or buried.</li> <li>• A storage facility to keep fertilizers, agrochemicals and pesticides must be built in proper condition at a suitable area from being exposed to the weather elements along with clear signage to reduce risks of explosions.</li> <li>• The pesticides shall be stored at a minimum distance of 90 meters from surface water bodies.</li> </ul>	
<p><b>Waste Generation</b></p> <p><u>Biomass Waste</u> : Cause blockage to the stream and river system.</p>	Low	<p><u>Biomass Waste</u></p> <ul style="list-style-type: none"> <li>• Stumps, branches, twigs and leaves shall be left on the ground to naturally decomposed and use to act as mulch to hold the soil and reduce erosion. “No Burning” signage shall be erected at the place that can be seen by workers.</li> </ul>	Sub-chap 8.4.1.9, Page 476

<p><u>Scheduled Waste</u> :Cause ground contamination and potential water pollution</p>	<p>Low</p>	<ul style="list-style-type: none"> <li>• If the volume of biomass is too much, air curtain burner can be used as alternative to manage the excessive biomass</li> </ul> <p><u>Scheduled Waste</u></p> <ul style="list-style-type: none"> <li>• Handle scheduled waste according to Environmental Quality (Scheduled Waste) Regulations 2005.</li> <li>• Labelled all containers including empty containers as Scheduled Waste.</li> <li>• Provides proper storage area.</li> <li>• Stored used lubricant oil in compatible container.</li> <li>• All container shall be closed properly.</li> <li>• Scheduled wastes generated may be stored for 180 days or less and the quantity must not exceed 20 metric tonnes.</li> <li>• Disposed schedule waste at a licensed premise.</li> </ul>	
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<p><u>Sewage and Solid Waste</u> : Degradable and non-degradable solid waste materials. Generation of sewage will cause negative impact to the environment in long term (water bodies, soil contamination, health impacts etc.)</p>	<p>Low</p>	<p><u>Solid Waste</u></p> <ul style="list-style-type: none"> <li>• Provide garbage bins on site and workers camp.</li> <li>• Separate waste types.</li> <li>• Compost waste.</li> <li>• Discharges wastes directly into the river are prohibit. No open burning on site</li> </ul> <p><u>Sewage</u></p> <ul style="list-style-type: none"> <li>• Comply with all the regulations in the Environmental Quality (Sewage) Regulations 2009.</li> <li>• Provide a proper toilets, septic tank and sanitary facilities.</li> </ul>	
<p><b>Air Pollution</b></p> <p><u>During Development Phase</u> Declining air quality level – vehicles movement disperse the particulate matter in the air. Spray pesticides and herbicides to control weeds and pest would introduce chemicals in the air.</p>	<p>Low</p>	<p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>• Limiting the vehicles speed;</li> <li>• Stabilized the road;</li> <li>• Vehicles should be regularly serviced and maintained;</li> <li>• Strictly prohibit open burning;</li> <li>• Generator set comply with the Environmental Quality (Clean Air) Regulations 2014. Regulations No. 5. Written notification;</li> </ul>	<p>Sub-chap 8.4.1.7, Page 473</p>

<p><u>During Operation Phase</u>                  1) No longer involves utilization of heavy vehicles that may contribute to air pollution;                  2) Application of pesticides and herbicides to control weeds, pest and disease would introduce chemicals in the air in the form of spray droplets suspended.</p>	<p>Low</p>	<ul style="list-style-type: none"> <li>• Use sensible biological control in managing forest plantation to reduce use of pesticides and other poisons;</li> <li>• When necessary, provide wash trough or water jet spray facility to clean vehicles before leaving the site;</li> <li>• Use water browser to control dust dispersion</li> </ul> <p><u>During Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Usage of pesticides and herbicides only if it is absolutely necessary;</li> <li>• Frequency, dosage and timing of chemicals application must be closely monitored;</li> <li>• Only approved chemicals registered under the Pesticides Act 1974 with the Pesticides Board of Malaysia should be used;</li> <li>• Workers involved in spraying activities must be equipped with appropriate protective gears.</li> </ul>	
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<p><b>Noise</b></p> <p><u>During Development Phase</u>                  1) Movement of vehicles, tractors and machineries use for construction of access road and refurbish the existing road that been used during the logging activities.                  2) Operators or workers whom handling machineries on site will more expose to the noise pollution that may cause damage their hearing system, sleep disorder, stress and annoyance.</p> <p><u>During Operation Phase</u>                  Relatively insignificant.</p>	<p>Low</p>	<p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>• Install silencers for machineries or using quieter machineries.</li> <li>• Limit working hours 7.00 am to 7.00 pm only.</li> <li>• Regularly service and maintaining vehicles and machineries.</li> </ul>	<p>Sub-chap 8.4.1.8, Page 475</p>
<p><b>Flora</b></p> <p><u>During Development Phase</u>                  Classified as logged over forest once the area been log which in turn will</p>	<p>Low</p>	<p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>• Established forest plantation to rehabilitate the logged over forest.</li> </ul>	<p>Sub-chap 8.4.1.14.1, Page 486</p>

<p>regenerates as secondary forest that will take longer duration to establish if it is not planted with proper management.</p> <p><u>During Operation Phase</u> Groundcover and TLC planted will improve soil structure, water quality in Waterways.</p>		<ul style="list-style-type: none"> <li>To reduce the impact of sedimentation, mulch, preserve understory vegetation on the slope more than 25° and maintain riparian buffer zone.</li> </ul>	
<p><b>Fauna</b></p> <p><u>During Development Phase</u></p> <ol style="list-style-type: none"> <li>1) Food shortage or deficiency</li> <li>2) Habitat loss</li> <li>3) Habitat fragmentation</li> <li>4) Human-wildlife conflict</li> <li>5) Illegal hunting and trapping</li> </ol>	<p>Medium</p>	<p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>Prohibition of Wildlife Poaching and Trapping.</li> <li>Place “No Hunting” and “No Trespassing” signage at appropriate locations.</li> <li>Built a permanent guardhouse with 24 hours surveillance.</li> <li>Inform/report Department of Wildlife and National Park (DWNP) for hunting and/or trapping.</li> <li>Development of ditch</li> </ul>	<p>Sub-chap 8.4.1.14.2, Page 488</p>

<p><u>During Operation Phase</u> Groundcover, TLC and maybe another species will provide new habitat for wildlife. However, illegal hunting are potentially to occur.</p>	<p>Low</p>	<ul style="list-style-type: none"> <li>• Apply tree tube to protect the seedlings from being disturb by wildlife.</li> <li>• Use “blue light” at night to deter night raids.</li> <li>• Plant crop that elephants don’t like such as chilies and ginger at the project boundary.</li> </ul> <p><u>During Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Control illegal hunting and trapping activities</li> <li>• Encourage usage of biological control measures to control pest</li> </ul>	
<p><b>Socio-Economy</b></p> <p><u>During Development Phase</u></p> <ol style="list-style-type: none"> <li>1) Generate employment opportunities</li> <li>2) Human Wildlife Conflict</li> <li>3) Foreign workers-social conflict</li> </ol>	<p>Medium</p>	<p><u>During Development Phase</u></p> <ul style="list-style-type: none"> <li>• Advertise to the community and sincerely approach local community heads to participate in job opportunity.</li> <li>• Demarcated boundary markers for determination of working area and avoiding unnecessary trespassing.</li> </ul>	<p>Sub-chap 8.4.1.13, Page 482</p>



<p><u>During Operation Phase</u>                  1) Job opportunity                  2) Foreign workers quarters and monitoring code of conduct</p>	<p>Low</p>	<ul style="list-style-type: none"> <li>• Consult Department of Wildlife and National Park if there is any disturbance of wildlife.</li> <li>• Provided adequate utilities and facilities to base camp.</li> <li>• Give sufficient instructions, training, advice and information of good work procedures, work ethics, and code of conduct and safety rulings during working and after working hours.</li> <li>• Operational time should be limited to 7.00 am to 7.00 pm daily for the purpose of safety and minimize noise annoyance.</li> </ul> <p><u>During Operation Phase</u></p> <ul style="list-style-type: none"> <li>• Corporate social responsibility.</li> <li>• Engaging with local communities to promote greater understanding.</li> <li>• Provide job opportunity during operation.</li> <li>• Closely monitor workers relationship with the community to avoid social conflict.</li> </ul>	
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## 9.0 PERFORMANCE MONITORING (PM) & COMPLIANCE MONITORING (CM)

This Project site will apply pollution prevention and mitigation measures (P2M2) in order to reduce disturbance on environment at the Project area. A performance monitoring (PM) is applied to monitor the effectiveness of the P2M2 while Compliance Monitoring (CM) program is used to monitor the effluent discharge and air emissions. Table 9.1 and Table 9.2 are summarized the description on PM and CM parameters

**Table 9.1 : The Performance Monitoring Components**

LD-P2M2 Tools	Performance Monitoring (PM) Parameters/ Status	Recommended Limits	Monitoring Locations	Frequencies
Silt Trap/ Sediment Basin	TSS	*50 mg/L	The locations referred to the LD-P2M2 attachment	Every day or after rain event (in-situ)
	Turbidity	*50 NTU		
	Sediment level	-		
Check Dam	Sediment level	-		Quarterly
Wash Trough	Sediment level	-		
Temporary or permanent waterway crossing (culvert/bridge)	Structure and Performance	-	Quarterly	

Note:

\*National Water Quality Standards for Malaysia (NWQS), Department of Environment, Malaysia (DOE).

**Table 9.2 : The Compliance Monitoring Components**

Activity	Regulated Parameters	Applicable Standards	Monitoring Locations	Frequencies
*Air Quality	PM <sub>10</sub>	150	Refer to Figure 6.34	Quarterly
**Noise	L <sub>Aeq</sub>	Day 55dBA Night 45 dBA	Refer to Figure 6.34	Quarterly
***Water Pollution	Total Suspended Solid (TSS)	50 mg/L	Refer to Figure 6.16	Monthly
	Biochemical Oxygen Demand (BOD)	3 mg/L		
	pH	6.0-9.0		
	Turbidity	50 NTU		
	Dissolved Oxygen (DO)	5-7 mg/L		
	Chemical Oxygen Demand (COD)	25 mg/L		

Note:

\*New Malaysia Ambient Air Quality Standard, Department of Environment Malaysia (DOE).

\*\*Annex A, Schedule 1, The Planning Guidelines for Environmental Noise Limits and Control, 2007, Department of Environment Malaysia (DOE).

\*\*\*National Water Quality Standards for Malaysia (NWQS), Department of Environment Malaysia (DOE)

## 10.0 IMPACT MONITORING (IM)

The establishment of forest plantation may result some impacts on the condition of the area. The descriptions on the monitoring parameters are shown in Table 10.1.

**Table 10.1 : The Impact Monitoring Components (IM)**

Activity	Regulated Parameters	Monitoring Locations	Frequencies
*Air Quality	PM <sub>10</sub>	Refer to Figure 6.34	Quarterly
**Noise	L <sub>Aeq</sub>	Refer to Figure 6.34	Quarterly
	L <sub>max</sub>		
	L <sub>min</sub>		
	L <sub>10</sub>		
	L <sub>50</sub>		
	L <sub>90</sub>		
***Water Pollution	Total Suspended Solid (TSS)	Refer to Figure 6.16	Monthly
	Biochemical Oxygen Demand (BOD)		
	pH		
	Turbidity		
	Ammoniacal Nitrogen (NH <sub>3</sub> -N)		
	Dissolved Oxygen (DO)		
	Chemical Oxygen Demand (COD)		

Note:

\*New Malaysia Ambient Air Quality Standard, Department of Environment Malaysia (DOE).

\*\*Annex A, Schedule 1, The Planning Guidelines for Environmental Noise Limits and Control, 2007, Department of Environment Malaysia (DOE).

\*\*\*National Water Quality Standards for Malaysia (NWQS), Department of Environment Malaysia (DOE)

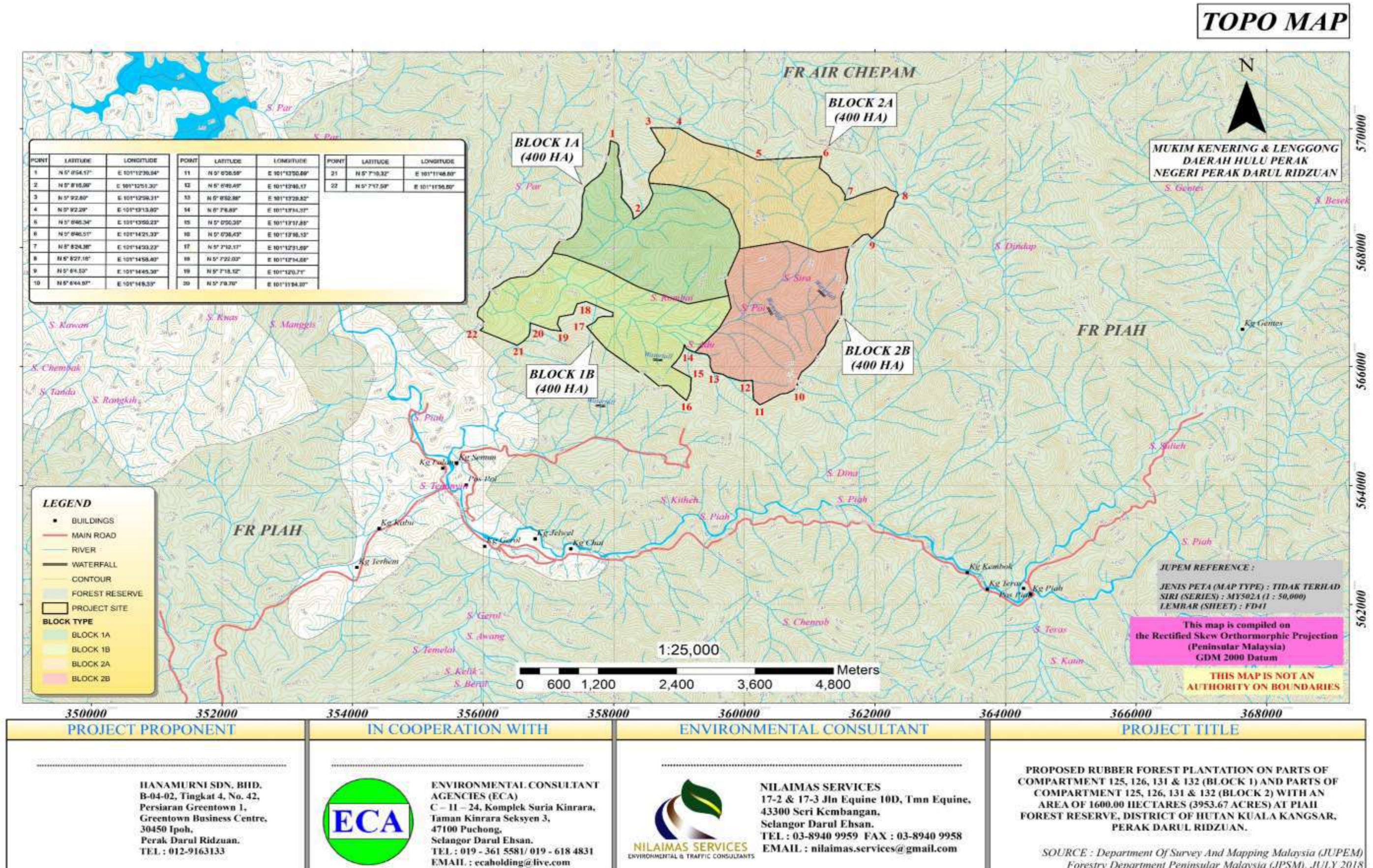


Figure ES-1 : Topo Map

## WORK BY PHASE

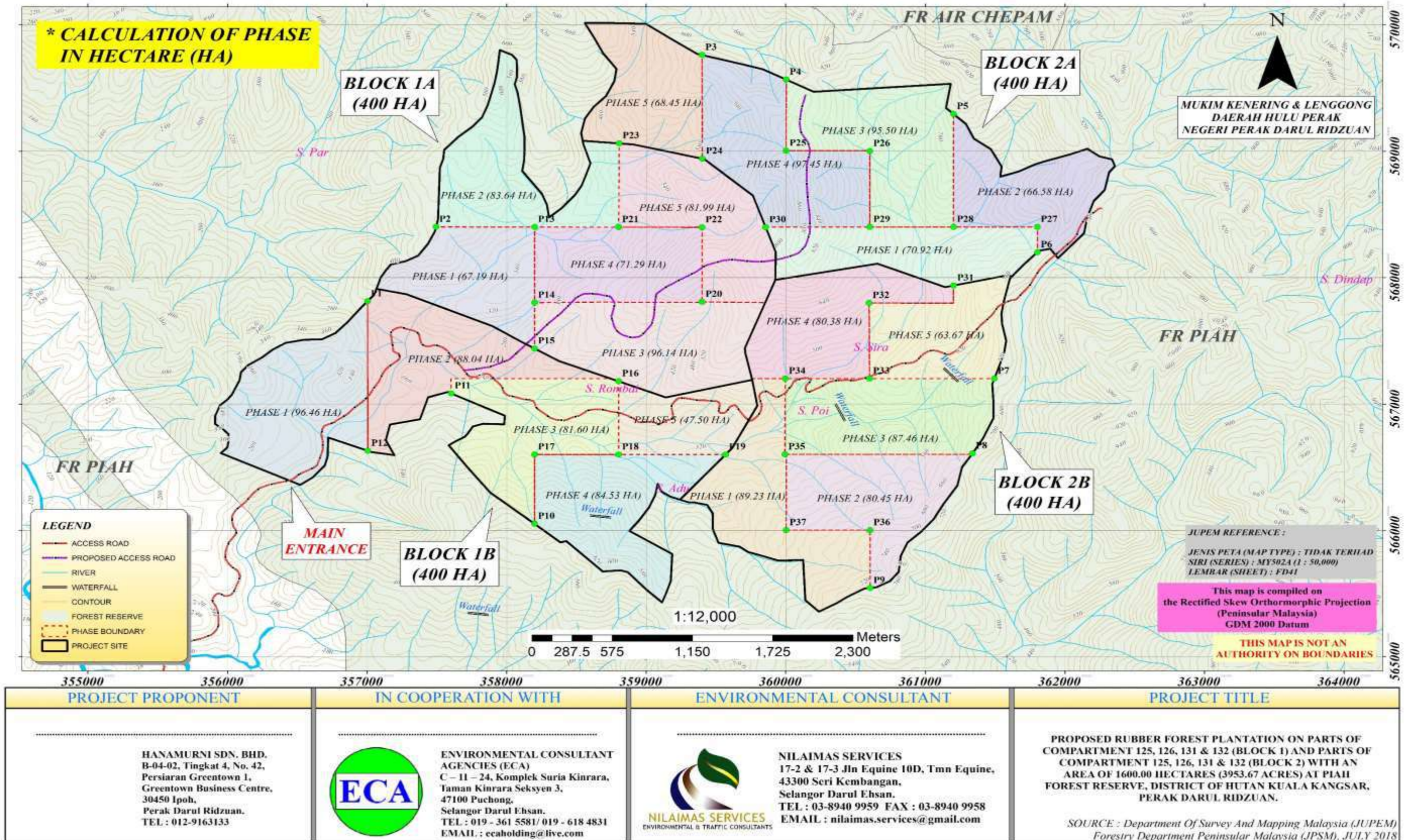


Figure ES-2 : Work by Phase