

FIRST SCHEDULE

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

PADUAN MUHIBBAH RESOURCES SDN. BHD
A PROPOSED OF FOREST PLANTATION (404.0 HA) AT HSK RELAI,
COMPARTMENT PART OF 13, MUKIM RELAI, DAERAH CHIKU,
JAJAHAN GUA MUSANG, KELANTAN DARUL NAIM



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FEBRUARY 2020

EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

for

PROPOSED OF FOREST PLANTATION (404.0 HA) AT HSK RELAI, COMPARTMENT PART OF 13, MUKIM RELAI, DAERAH CHIKU, JAJAHAN GUA MUSANG, KELANTAN DARUL NAIM.

PADUAN MUHIBBAH RESOURCES SDN. BHD.

1.0 TITLE OF PROJECT

The project title is proposed of forest plantation project (404.0 ha @ 998.28 acres) at HSK Relai, compartment part of 13, Mukim Relai, Daerah Chiku, Jajahan Gua Musang, Kelantan Darul Naim. The implementation of proposed project site will be undertaken by project proponent **Paduan Muhibbah Resources Sdn. Bhd. (PMRSB)** after getting approval by **Kelantan State Government** through **Department of Forestry (DOF) Negeri Kelantan** as related correspondence with reference : PHN.KN.200/1/2495 (8) dated on 31st October 2018 (refer **Appendix A**). The area has been approved was identified as secondary forest which is containing low density of valuable timber trees and has been logged before. Therefore, the purpose of this proposed project is to restore forest diversity as well as to generate income in timber sector in order to meet a large share of domestic timber demand. Accordingly, the **Kelantan State Government** has approved the proposed area with leasing period of fifty (50) years for **PMRSB** to developed with species of albizia plantation. Therefore, the reforestation activity will undergo with multiple activities which involved three (3) development phase such as pre-development, development and post-development.

2.0 PROJECT PROPONENT, EIA CONSULTANT & QUALIFIED PERSON

Paduan Muhibbah Resources Sdn. Bhd (PMRSB) is a company incorporated under Companies Commission of Malaysia. Upon approval and agreement by the State Government, the main objective of this project development is to increase and develop economic growth of Negeri Kelantan through the logging and plantation sector. Any matters pertaining to the proposed project site should be addresses to the personnel in-charge as listed below;

Paduan Muhibbah Resources Sdn. Bhd

No. 5-4-2, Jalan 2/50,
Diamond Square,
Off Jalan Gombak,
53000 Wilayah Persekutuan,
Kuala Lumpur.

Tel : 03-4142 7777
Fax : 03-4142 4977

Green Hope Consultancy Sdn. Bhd. (GHCSB) as a registered environmental consultant has been appointed by **PMRSB** on November 2019 to carry out the EIA study of the proposed project as mentioned above. The EIA report is prepared to comply with the guidelines, conditions and procedures as well as to get the approval from **DOE Negeri Kelantan**. Any inquiries pertaining to this EIA report should be directed to the following address;

Green Hope Consultancy Sdn. Bhd, (837560-H),
Lot 809, Tingkat 1,
Jalan Sri Cemerlang,
15400 Kota Bharu,
Kelantan Darul Naim.

Tel : 09-7486848 Fax : 09-7476848 Email : greenhopecsb@gmail.com

In carried out the EIA study for this proposed project site, Green Hope Consultancy Sdn. Bhd. and **PMRSB** has appointed another parties to get the multiple information and technical source as a input and information need to be enclosed in EIA report. EIA baseline environmental monitoring for air, noise and water quality was conducted by **ERALab (KT) Sdn. Bhd.**, a SAMM accredited whilst the biodiversity study was conducted by **Nature's Pixmap**. Any matters pertaining relating with the information was mentioned above can be contact to the person in-charge as listed below;

ERALab (KT) Sdn. Bhd.
Lot 34099, Wisma Tengku Ramli,
Tepoh, Jalan Kelantan,
21060 Kuala Terengganu,
Terengganu Darul Iman.
(Attn: **Wan Mohd Serry Akhry Bin Wan Zaky**)

Tel : 09-6622013 Fax : 09-6622017 Email : admin_kt@eralab.com.my

En. Zaharil Dzulkafly
Nature Pixmap,
No. 118, Jalan Puncak Jelapang 2,
Puncak Jelapang Maju,
30020 Ipoh,
Perak Darul Ridzuan.

H/P : 012-2476156 Email : zaharil_tbp@hotmail.com

3.0 PROJECT LOCATION

The general location of proposed project site is located at HSK Relai, Mukim Relai, Daerah Chiku, Jajahan Gua Musang and at point longitude 102° 19' 27.59" E - 102° 20' 28.28" E and latitude 05° 03' 57.64" N - 05° 06' 19.49" N. The proposed project site is located approximately 48.76 km southeast of Kuala Krai town area, 47.07 km southeast of Dabong town area, 81.27 southeast of Tanah Merah town area, 84.40 km southeast of Jeli town area, 45.28 km northeast of Gua Musang town area, 105.0 km southeast of Pasir Mas town area, and 112.48 km southeast of Kota Bharu town area. Meanwhile, this proposed project located approximately 1.20 km southwest of Kg. Lepar community area, 1.18 km southwest of Kg. Miak

community area, 1.53 km southwest of Kg. Laka community area, 1.81km southwest of Kg. Kosong community area, 2.37 km south of Kg. Jelutong community area, 2.53 km east of Kg. RKT Chalil community area, 4.6 km southeast of Kemajuan Tanah Chalil community area, 5.20 km northwest of Kg. Jeram Panjang community area, 5.80km northwest of Kg. Kuala Relai community area, 6.80 km northwest of Kemajuan Tanah Lebir (Felda) community area, 7.35 km northwest of Kg. Nuri community area, 7.49 km northwest of Kg. Siding community area, 80 km northwest of Kg. Sasak community area, 8.26 km northwest of Kg. Kuala Aring community area, 8.60 km northwest of Kg. Che Hussin community area, 8.62 km northwest of Kg. Juale community area, 8.90 km northwest of Kg. Olak Weir community area and 9.18 km northwest of Kg. Kuala Lebir community area. These distances are determined by using the Global Positioning System (GPS) in straight line. There is a few neighbouring plantation can be found nearby owned by Teguh Purnama Enterprise, CFK Berkat Wood Enterprise, Eco Reforestation Sdn. Bhd, Gagah Kukuh Sdn. Bhd., Azimat Pujangga Sdn. Bhd. Sigur Ros Plantation, Mimi Corporation Trading, Yusan Jaya Resources, S.B.H Timber Sdn. Bhd., Laksana Jejaka Sdn. Bhd., Kasturi Madinah Enterprise, Laksana Jejaka Sdn. Bhd., Al Falah Konsortium Padu Sdn. Bhd., Bumiharta Plantation, Perdumas Resources and Upayapadu Plantation Sdn. Bhd. As for details to reach the proposed project site, there is one (1) normal route from Kuala Krai – Gua Musang by using the Federal Route 8. From the main road is about 19.80 km to reach the proposed project site by using the Kampung Paloh 3 community area. Based on "**Rancangan Tempatan Jajahan Gua Musang (RTJGM) 2020**" which have been prepared as provided under Town and Country Planning Act 1976 (Act 172) the proposed project site is located in permanent forest reserve area known as HSK Relai and under Block Perancangan: BP2-Chiku and Block Perancangan Kecil: BPK 2.4- Hutan Simpan Ulu Lebir as well as correspondence letter from **PlanMalaysia @ Kelantan (Department of Town and Country Planning (DTCP) Negeri Kelantan)** ref : JPBD/PK/T/185/14/2/JLD10 dated on 27th November 2019 as attached in **Appendix A**.

4.0 PROJECT DESCRIPTION

The development concept of the proposed project site is to grow an area of 404.0 ha (998.28 acres) into forest plantations project at HSK Relai, Compartment Part 13, Mukim Relai, Daerah Chiku, Jajahan Gua Musang, Kelantan Darul Naim and will be carried out by **Paduan Muhibbah Resources Sdn. Bhd. (PMRSB)**. The aim of the proposed area is to replace the current forest area with albizia tree plantations which is can increase the productivity of the forest area. Firstly, the implementation of proposed project site will start with logging activities followed by site clearing, setting up (nursery, site office & quarters), planting of albizia species and cover crops at bare area, environmental mitigation and maintenance steps, harvesting and re-planting within three (3) stages of growth such as pre-development, development and post-development within fifty (50) years as provided for in agreement between project proponent and **DOF Negeri Kelantan**. Project proponent will develop the project area with twenty (20) planning block which is divided into four (4) phase of development. The project proponent (**PMRSB**) will provide infrastructure such as logging track, drainage system (if necessary) for water flow crossing in particular at Sg. Reyang and Anak Sg. Neriang. For road construction, project proponent shall be follow the **Spesifikasi Untuk Pembinaan Jalan Ladang, Ibu Pejabat Jabatan Perhutanan 1989, Syarat-syarat Tambahan**

Lesen, Jabatan Perhutanan Negeri Kelantan, 2005"and *Spesifikasi Jalan Hutan, Jabatan Perhutanan Semenanjung Malaysia, 1999.*

5.0 EXISTING ENVIRONMENT

The existing surrounding landuse of proposed project site is surrounded with **HSK Relai**, various neighbouring plantation and existing agriculture. There are various neighbouring plantation found scattered within 3-5 km radius of proposed project site owned by **Laksana Jejaka Sdn. Bhd.** (southwest), **Kasturi Madinah Enterprise.** (southwest), **S.B.H Timber Sdn. Bhd.** (south), **Gagah Kukuh Sdn. Bhd.** (north & northeast), **Yusan Jaya Resources** (east), **Mimi Cooperation Trading** (northeast), **Sigur Ros Plantation Sdn Bhd** (northeast), **Azimat Pujangga Sdn Bhd** (northeast), **Teguh Purnama Enterprise (north)**, **CFK Berkat Wood Enterprise (north)**, **Perdumas Resources** (northwest), **Bumiharta Plantation** (northwest) and **Al-Falah Konsortium Padu Sdn Bhd (northwest)**. Existing agriculture which is **Rancangan Kemajuan Tanah Chalil** located at west part and **Rancangan Kemajuan Tanah Jelutong (FELCRA)** located at north part of proposed project site. There are several local community can be found within 3-5 km radius of proposed project site known as **RKT Chalil (west)**, **Kg. Jelutong** (north), **Kg. Lepar (northeast)**, **kg.Miak** (northeast), **Kg. Laka** (east) and **Kg.Kosong** (southeast). Information gathered from **Department of Health (DOH) Negeri Kelantan** revealed that, there is one "tandak air RKT Kg. Chalil" within 3-5 km radius which located approximately 2.1 km west of proposed project site.

The topography of proposed project site consists of gently rolling hills and steep-sided hills with deep valley carved by streams and rivers ranging from 80 meters to 700 meters above sea level (ASL). The lowest surface area with elevation between 80 to 149 meter ASL which cover approximately (11%) 44.44 ha of the proposed project site. The highest surface area within the proposed project site is located at southern area of proposed project site with the elevation of 631 to 700 meter ASL. It's covered approximately 16.16 ha (14%) of the proposed project site. The slope analysis percentage are ranging from 0 - 2° (4.8% @ 19.39 Ha), 3° - 6° (3.7% @ 814.95 Ha), 7° - 12° (11.1% @ 44.85 Ha), 13° - 20° (40.8% @ 164.83 Ha), 21° - 25° (21.7% @ 87.87 Ha Ha) and >25° (17.9 % @ 72.32 Ha). The general geological profile of proposed project site is situated in the Triassic and Permian period. Lithology the proposed area consists of Intermediate to basic volcanic: mainly pyroclastics. Pyroclastics are clastic rocks that composed solely or primarily of volcanic materials. The volcanic materials has been transported and reworked through mechanical action, such as by wind or water. The clast sizes range from the largest agglomerates, to very fine ashes and tuff. In term of the mineral distribution, the nearest mineral can be found are Copper (Cu), Plumbum (Pb) and Zinc (Zn) located outside of the proposed project site which southern part. While, information gathered from **Department of Mineral & Geosciences Negeri Kelantan**, the proposed project site is located at the outside of the potential gold area and does not have significant of mineral potential.

The soil investigation has been conducted by **Department of Agriculture (DOA) Negeri Kelantan** where as the proposed project area is consists of five (5) soil series which is *Chat Series (CHT/5)* consist of (45.3

Ha @ 11.2%), *Chat Series (CHT/6)* consist of (42.7Ha @ 10.6%), *Gold Series (GOL/5)* consist of (26.4 Ha @ 6.5%), *Gold Series (GOL/6)* consist of (12.2 Ha @ 3.0%) and *Steepland (STP)* consist of (277.4 Ha @ 68.7 %). Based on the soil investigation report, 71.7 ha (17.7%) of the total project site is identified the suitable area for the planting area. While, the other 332.3 ha (82.3%) of the total area is classified not suitable for planting due to steep terrain profile and having risk of soil erosion. Based on fieldwork study within the proposed project site, there is two (2) river have been found which is tributaries of **Anak Sg. Neriang** and **Sg. Reyang**. These rivers will flow from southwest to northeast directions and later will eventually enter to **Sg. Lebir** and Sg. Lebir will enter to **Sg. Kelantan**. Baseline for EIA has been conducted by consultant on 10th December 2019 to characterize the prevailing water quality at specific locations representative of the proposed project site. The selected water quality parameters have been analyzed at nine (9) sampling stations at **Sg. A, Sg. B, Sg. C, Anak Sg. Neriang** and **Sg. Reyang** within and its tributaries within and surrounding the proposed project site. River water quality is appraised based on the Water Quality Index (WQI) consisting of six (6) parameter which is Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen, pH, Dissolved Oxygen (DO) and Total Suspended Solids (TSS). The river water sampling data then will compared with the **National Water Quality Standards for Malaysia (NWQSM)** to determine the water quality status whether classified as clean, slightly polluted or polluted category based on Class I, II, III, IV or V. Based on water quality classification (**DOE-WQI**), all sampling stations for proposed project site were classified as "**Clean**" which is fall under **Class II** and all parameters tested were in compliance with the limit stated of **NWQSM**. For air quality, there are two (2) different monitoring point (A1 & A2) has been setup within the proposed project site where the baseline data collection for air samples were conducted from 10th December to 11th December 2019. The analysis results of the PM₁₀ concentrations measured on-site were 56 µg/m³ and 28 µg/m³ for both point **A1** and **A2**. Overall result indicates that the current air quality in the vicinity of the proposed area is below than the recommendation limit set by **Malaysian Ambient Air Quality Guidelines (MAAQG)** for PM₁₀, which is 150 µg/m³ daily averages. While, ambient noise levels measurements exercise were conducted at two (2) point (N1 & N2). The noise level within the proposed project site on the day-time were **47.7 dB(A)** and **60.2 dB(A)** while the noise level on the night time were **45.3 dB(A)** and **59.7 dB(A)** at monitoring point **N1** and **N2** respectively. The noise monitoring points N1 for day-time and was within the respective noise standard limit set by DOE (**The Planning Guidelines for Environmental Noise Limits and Control** permissible sound limit for day time is 55dBA and for night time is 45dBA), however for night-level was slightly high then standard limit. Otherwise, the noise level at monitoring point N2 does not comply with standard limit for day-time and night time.

For the fauna and flora survey, information gathered in this report is done by referring "**Environmental Impact Assessment (EIA) Report for A Proposed of Reforestation with Rubber Tree (Species of Timber Latex Clone (TLC)) Plantation (400.0 Ha) at HSK Relai, at Compartment Part of 74, Part of 75, Part of 76 & Part of 77, Mukim Relai, Daerah Chiku, Jajahan Gua Musang, Kelantan Darul Naim - AL FALAH KONSORTIUM PADU SDN. BHD**" where the EIA report was approved by DOE Negeri Kelantan on August 2018 through reference letter : AS(B)D11/121/000/159(27). There are four (4) groups of terrestrial vertebrate fauna were surveyed namely, mammal, bird, reptile and amphibian. The most abundant wildlife

group that observed was 46 birds species were recorded while 9 mammals species were recorded. For reptiles and amphibians 26 species were recorded. Meanwhile, about 52 species of flora has been recorded. According to correspondence letter from **PlanMalaysia@Kelantan (Department of Town and Country Planning (DTCP) Negeri Kelantan)** reference: JPBD/PK/T/185/14/2/JLD10 dated on 27th November 2019 as attached in **Appendix A**, the proposed project site also is located within **ESA Level 1** whereas no development, agriculture or logging shall be permitted except for low impact nature tourism, research and education. For socio-economic survey, there are 87.85% of the total population at Daerah Chiku in Jajahan Gua Musang were Malays, 0.15 % people were Chinese, while Indians form 0.05 % of the population, other bumiputera is 1.90 % and 9.88 % of them were non-Malaysia citizens while for year 2010, the population for Daerah Chiku was 26,093 individuals with 14,709 male and 11,384 female. The activity of fieldwork was conducted on 10th December 2019 where there is no Orang Asli settlement was found within this proposed project site. The nearest Orang Asli settlement was found is **Orang Asli Kg. Linggi** which is within **Orang Asli Pos Lebir** that is located about 12.39 km southeast of proposed project. Based on information was obtained from **JAKOA Negeri Kelantan & Terengganu**, Orang Asli Pos Lebir encompassed of four (4) small villages known as Kg. Pasir Linggi, Kg. Machang, Kuala Koh, and Kg. Aring 5. Total population of Orang Asli Pos Lebir is 738 which is 387 male and 351 female.

6.0 EVALUATION OF IMPACT & MITIGATION MEASURES

The implementation of proposed project site is expected to have some impacts on the environment especially during early stage of the development. The activities which usually pose potential impacts are during site preparation, planting and maintenance where as these activities are considered as initial activity which normally being undertaken in any plantation project development. The potential impacts from the activities are identified as surface runoff, erosion and sedimentation, noise generation, air pollution, water pollution, solid wastes disposal, scheduled wastes, ecology (flora & fauna), forest fire, health & disease, socio-economy and traffic as described in Chapter 7 in EIA report. In order to control, minimize and resolved the possible impact the various mitigating measures has been suggested to undertaken by project proponent as described in Chapter 8 in EIA report while the summary of potential impact, their magnitude & proposed pollution prevention and mitigating measures (P2M2) were described in **Table 1.0**. Removing existing vegetation would increase any other impervious surface which will increase storm water runoff. When runoff forced directly into surface, an impact such erosion and generation of sedimentation can be major problem. During operation phase, impact from surface runoff, erosion and sediment material as well as impact from sewage, application of fertilizer and pesticides maybe impact to water quality level at the nearby water body if not properly controlled. However, the value of TSS can be reduce if project proponent implements recommended control measures as describe in EIA report such as planting of cover crops at bare area, maintain 20m buffer zone (both of sided) as (**Guidelines for River Buffer Zone Produced by DID Negeri Kelantan**), maintain natural existing trees and implement project by block basis. Accordingly, the total of developed area for this proposed project site is 353.14 ha @ 87.41% whilst 50.68 ha @ 12.59% classified as undeveloped area should be preserved as sensitive area. Besides that, implementation of **LD-P2M2** is more important to reduce the

environmental impact within and surrounding of proposed project site. The preparation of sediment basin, stockpile, check dam and diversion channel must be done at appropriate location. The implementation of proposed project site also will also forecast to have an impact to flora and fauna. Therefore, project proponent should have consultation with officer of **DWNP** if there is related issue with wildlife conflict. Besides, during project implemented it may also contribute to the disease and health impacts. Based on information gathered from **Department of Health (DOH) Negeri Kelantan**, there were four (4) infectious diseases namely malaria, dengue, leptospirosis and typhoid had been registered in Gua Musang district. Project proponent should have relationship and consultation with DOH, hospital, clinic or health care facilities in Gua Musang in order to get immediate response and assistance during any major outbreak disease without further delay. During site clearing and development phase, open burning is strictly prohibited within the proposed project site. Under Section 29A of the Environmental Quality Act 1974, open burning is prohibited except those activities which have list down under the **Environmental Quality Act (Prescribed Activity) (Open Burning) Order 2000**. Any incompliance may subject to action that can be taken by DOE Negeri Kelantan to the project proponent as stipulated clearly in the Environmental Quality Act 1974 and heavier penalty of a fine not exceeding **RM 500,000.00** or to imprisonment for a term not exceeding five (5) years or both. Implementation of proposed project also will involve the usage of heavy machineries, vehicle and other equipment. Hence, it may be generate scheduled waste on-site. As such, a retention sump is to fulfill the specification of the **Malaysian Standards MS 761 - Code of Practice for Storage and Handling of Flammable and Combustible Liquids Published by SIRIM (1982)**. Besides, project proponent shall strictly follow requirement stated in **Environmental Quality (Scheduled Waste) Regulation, 2005** and officially notify DOE Negeri Kelantan on the estimate scheduled wastes produced on site. Project proponent also shall apply the '**Electronic Scheduled Waste Information Systems (eSWIS)**' for the notification, inventory and consignment note of scheduled waste generated within the proposed project site. The registration of application is by using <http://eswis.doe.gov.my>.

Table 1.0 : Summary of Potential Impact, Their Magnitude and Proposed P2M2

SIGNIFICANT POTENTIAL IMPACTS	MAGNITUDE OF SIGNIFICANT POTENTIAL IMPACTS	POLLUTION PREVENTION & MITIGATION MEASURES (P2M2)	REFERENCE PAGE
<ul style="list-style-type: none"> • Sedimentation • Surface runoff • Soil Erosion 	High potential impact	<ul style="list-style-type: none"> ➤ Installation of sediment control devices and structures such as silt fences, silt traps, sediment basins, barriers and use of active treatment systems. ➤ Regular inspection and maintenance of the structures to ensure their performance efficiency, especially after heavy storm events. ➤ Emphasis natural vegetation as long as possible as it is one of the best and least expensive source control measures available. ➤ Preventing soil erosion by installing proper provision for drainage and the protection of soil surfaces during and after land disturbance activities. ➤ Ensuring that all drainage, soil erosion and sediment control measures are properly designed, constructed and maintained to provide water quality protection and to prevent the transportation of sediment. ➤ Implementation of activity by block basis and development phase. ➤ Installation of temporary drains to minimise concentrated water flows during construction. ➤ Channelling discharges via a series of check dams to a sediment pond to reduce velocity and peak flows. 	<p>4-8</p> <p>4-8</p> <p>6-8</p> <p>15-8</p> <p>15-8</p> <p>15-8</p> <p>23-8</p> <p>24-8</p>
<ul style="list-style-type: none"> • Water Pollution 	High potential impact	<ul style="list-style-type: none"> ➤ Fertilizers and agrochemical such as pesticides and weedicides must not be applied during the rainy days and monsoon season. ➤ Workers must use fertilizers and agrochemical following the prescribed dosage and should be split to minimize losses e.g. split the annual dosage into 3-4 applications. ➤ The septic tank facility provided shall comply with all regulations stipulated in the Environmental Quality (Sewage) Regulations 2009. ➤ The entire storage area should be surrounded by a concrete or other equivalent structure designed to contain any spillage of the waste. ➤ Skid tanks must be located on stable ground which not prone to flood phenomenon with bunding and sited at least 50m away from the waterways. 	<p>26-8</p> <p>26-8</p> <p>27-8</p> <p>27-8</p> <p>27-8</p>
<p>WASTE PRODUCTION</p> <ul style="list-style-type: none"> • Biomass wastes • Solid wastes • Scheduled wastes 	Medium potential impact	<ul style="list-style-type: none"> ➤ Zero burning technique enhances the soil organic matter status, thus help to restore and improve the fertility and physical status of soils. ➤ Solid waste must be segregated by the waste type. 	<p>29-8</p> <p>31-8</p>

Table 1.0: Summary of Potential Impact, Their Magnitude and Proposed P2M2 (continued)

SIGNIFICANT POTENTIAL IMPACTS	MAGNITUDE OF SIGNIFICANT POTENTIAL IMPACTS	Pollution Prevention & Mitigation Measures (P2M2)	REFERENCE PAGE
<ul style="list-style-type: none"> Air pollution 	<p>Low potential impact</p>	<ul style="list-style-type: none"> Project proponent should notify workers not to burn the solid waste. All scheduled wastes handling procedures must parallel with the Environmental Quality (Scheduled Waste) Regulations 2005. All empty containers must be labeled as scheduled wastes. Proper storage area must be built to store empty agrochemical and fertilizer container and must be kept away from heat to prevent explosion. Clear signage must be placed at appropriate area to reduce risks of explosions. All scheduled waste must be disposed off at a licensed premise. Reducing the dispersion of dust from unsealed road by limiting the vehicles speed. Temporary road humps/speed bumps should be installed at the road system in the project site. Maintain the sealed road with crusher run or gravel to protect the earth surface from precipitation and dry weather. Vehicles should be regularly serviced and maintained to reduce undesirable emissions. Workers are strictly prohibited to carry out open burning at site. The usage of generator set in the site has to comply with the Environmental Quality (Clean Air) Regulation 2014. Clean up dusty spills immediately. Rinsing vehicles before they leave the project site and tightly cover loaded trucks. 	<p>31-8 32-8 32-8 32-8 32-8 33-8 34-8 34-8 34-8 34-8 34-8 34-8 35-8 35-8</p>
<ul style="list-style-type: none"> Noise pollution 	<p>Low potential impact</p>	<ul style="list-style-type: none"> Installing silencers or using quieter machinery. Modifying existing old equipment with damping materials and mufflers. Work should be limited to daytime hours only. Vehicles and machineries shall be regularly serviced and maintained. The supervisor must keep a log book to compile all complaints and address the issues immediately. 	<p>35-8 35-8 35-8 35-8 35-8</p>

Table 1.0 : Summary of Potential Impact, Their Magnitude and Proposed P2M2 (continued)

SIGNIFICANT POTENTIAL IMPACTS	MAGNITUDE OF SIGNIFICANT POTENTIAL IMPACTS	Pollution Prevention & Mitigation Measures (P2M2)	REFERENCE PAGE
<ul style="list-style-type: none"> Ecology (Flora & fauna) 	High potential impact	<ul style="list-style-type: none"> Supporting conservation works by NGO's. Strictly prohibit any workers and outsiders from hunting in any part of the project area. Any information if illegal hunting or trapping of wildlife should be immediately reported to the plantation management and that information must be channeled to DWNP. Installing a non-harmful deterrent such as ditch and electric fence. 	36-8 38-8 50-8
<ul style="list-style-type: none"> Socio-Economy 	Low potential impact	<ul style="list-style-type: none"> Project proponent should advertise the job offer to the community. Have demarcated boundary markers to avoid unnecessary trespassing from local people and wildlife. Foreign workers must undergo a Fomema checkup before entering site to prevent the spread of vector disease. 	38-8 39-8 40-8 40-8
<ul style="list-style-type: none"> Health and Disease 	Low potential impact	<ul style="list-style-type: none"> Provide base camps or 'kongsi' houses for all workers. Set up an OSHA Team. All employees must undergo scheduled health screening twice a year. Provide basic facilities and utility (potable or clean water, mosquito netting (treated net) and basic hygiene amenities) for employees. Compliance monitoring report needs to be prepared by project proponent to monitor all the hygiene and health measures for each employee and contractor involve. All rubbish must be dumped at a suitable area permitted by the local authorities. Prevent stagnant water. Avoid using river water nearby. 	42-8 41-8 43-8 43-8 43-8 43-8 43-8 43-8
<ul style="list-style-type: none"> Traffic 	Low potential impact	<ul style="list-style-type: none"> The road entrance must properly maintain and have to follow Department of Forestry (DOF) guidelines. The traffic movement of vehicles should be done during working hours only. Provide a proper safety road signage system Undertake regular maintenance of road network to minimize and control road damage. 	50-8 50-8 50-8 50-8

7.0 ENVIRONMENTAL MANAGEMENT

The Environmental Management Plan (EMP) document states in explicit terms what actions will be taken, what measures will be instituted, what structures will be built, what will be installed, when the actions will be executed; etc. in order to incorporate the P2M2s in the project activities and for the project activities to be compliant with the Condition of Approval (COAs). An EMP is vital to give the Project Proponent a framework in order to mitigate effectively against any impacts which is significant and subsequently, rendering them to minimal, acceptable level which is stipulated by the DOE. With EMP it is easy to become oriented and have clear sense of propose for delivering best practice. Project proponent is suggested to assign a qualified and competent environmental consultant to undertake the preparation and submission of EMP document to fulfill the requirement in Section 34A(2) of Environmental Quality Act 1974. To ensure the effectiveness of environmental management, the **Post EIA Monitoring** such as **Environmental Monitoring Report (EMR)** and **Environmental Auditing Report (EAR)** is presented as ~~guide in implementing the recommendations to monitor the project site. The Compliance Monitoring~~ **(CM)** is one of the components which are uses to ensure that the environmental regulated requirement. It is used to monitor the regulated parameter and environmental component as listed in **Table 2.0**. While, **Performance Monitoring (PM)** is one of the systematic observation that can be used to monitor the both project implementation and environmental quality. PM also is applied to monitor the effectiveness of the P2M2 as described in **Table 3.0**. Other than that, EMP report should be attached with **Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2)** where as the LD-P2M2 document must be prepared by competent person who has **Certified Professional Erosion and Sediment Control (CPESC)** and need to submit to **DOE Negeri Kelantan**. Project proponent also is suggested to appoint an **Environmental Officer (EO)** to take care all the necessary environmental compliance as suggested by DOE Negeri Kelantan and other related agencies. EO also must clearly understand all the responsibility should be implemented at project site.

Table 2.0 : The Compliance Monitoring (CM) Descriptions

Environmental Components	Regulated Parameter	Applicable Standards	Monitoring Locations	Frequencies
River water quality	pH, Temperature, Turbidity, Dissolved Oxygen, Biochemical Oxygen Demand, Chemical Oxygen Demand, Total Suspended Solid, Oil & Grease, Ammoniacal Nitrogen, Iron, Manganese, E. Coli	<ul style="list-style-type: none"> National Water Quality Standards for Malaysia 	Nine (9) water sampling location has been selected for this proposed project site. (Refer Figure 6.15).	Quarterly
Noise Level	Leq Lmax Lmin	<ul style="list-style-type: none"> Day 55 dBA Night 45 dBA (Environmental Noise Limits & Control) 	Two (2) noise sampling location has been selected for this proposed project site. (Refer Figure 6.15).	Quarterly
Air Quality	Particulate Matter PM ₁₀	<ul style="list-style-type: none"> 150 µg/m³ (Malaysian Recommended Air Quality Guidelines) 	Two (2) air sampling location has been selected for this proposed project site. (Refer Figure 6.15).	Quarterly

Table 3.0 : Description of Performance Monitoring (PM) Program

P2M2 Tools	Performance Monitoring (PM) Parameter	Recommended Limits	Monitoring Locations	Frequencies
Silt Trap	TSS	50 mg/l	At proposed silt trap location as per shown in LD-P2M2 drawing	Quarterly
	Turbidity	50 mg/l		

8.0 STUDY FINDINGS

The EIA report is prepared for a proposed of forest plantation that will involve an area of (404.0 ha @ 998.28 acres). will be undertake by project proponent **Paduan Muhibbah Resources Sdn. Bhd (PMRSB)** at HSK Relai, compartment part of 13, Mukim Relai, Daerah Chiku, Jajahan Gua Musang, Kelantan Darul Naim ~~after getting approval by Kelantan State Government through Department of Forestry (DOF) Negeri Kelantan.~~ Forest plantation indicates its importance and also increasing role of forest plantation in supplying timber for various downstream processing of forest industries. As present shortage of timber supply from native forest is eminent, Malaysian Government believes that development and establishment of commercial forest plantation is necessary to overcome log supply deficit to our expanding wood based industries and reduce pressure on native forests. Indeed, it is one of good option as well as balances economic and environmental considerations resulting in net benefits for the industry concerned and also for the environment rather than "no project" option because it would impede the forestry industry development which can lead to the deprivation of opportunities in enhancing the quality of living at surrounding area. Thus, the aim of the project is to replace the current forest area with albizia tree plantations that can increase the productivity of the forest area. Conducting an analysis of the existing environments establishes a by which to evaluate potential impact due to implementation of the proposed project site is play vital roles to minimize and cut the loss of environment during project implementation. Hence, the project proponent strongly advice to follows all the recommendation, mitigation, abatement and control measures suggested in this EIA report to reduce the all impact during implementation of proposed reforestation with multi species forest plantation. The project proponent and all parties should be understood clearly about the pollution prevention and mitigation measures (P2M2s) recommended in the EIA report and also in Guidelines on Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2). The project proponent is advised also to consultation with relevant agencies during resolving the any kind of issues occur resulting during implementation of reforestation activities. In ensuring the effectiveness of mitigation measures during the project implementation, the environmental compliances for environmental protection is to be accomplished by a proper **Environmental Management Plan (EMP), Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2), Erosion & Sediment Control Plan (ESCP)** and post EIA Monitoring such as **Environmental Monitoring and Environmental Auditing.**