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ENVIRONMENTAL MONITORING AND COMPLIANCE AUDIT REPORT

FOR

FOREST MANAGEMENT OF BENGKOKA AND TAMBALUGU FOREST RESERVES (6,467 HA), PITAS, SABAH

1st REPORT OF YEAR 2020

APRIL	AUGUST	DECEMBER
	✓	

AEC Ref. No. : JPAS/PP/15/600-1/01/3/60(36)
Report Reference : CK/MO411/1197-1/20
Date of Report : 17th August 2020
Report No. : 5



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GERAK SAGA SDN BHD

ENVIRONMENTAL MONITORING AND COMPLIANCE AUDIT REPORT

1.0 Introduction

The Project site covers an area of approximately 6,467 Ha comprising the 6,270 Ha Bengkoka Forest Reserve and the 197 Ha Tambalugu Forest Reserve. For operational purposes, the two forest reserves are managed as a single Forest Management Unit (FMU) and divided into 4 coupes. Coupes 1-3 (Bengkoka) and Coupe 4 (Tambalugu). The Project Proponent holds the license for management operation in both forest for Industrial Tree Plantation (TPP).

1.1 Monitoring Information

Project Title	: Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah		
Monitoring Period	: May - August 2020		
Date of Monitoring	Compliance Audit	:	29 th July 2020
	Water Sampling	:	29 th July 2020
EIA Consultant	Chemsain Konsultants Sdn. Bhd.		

1.2 Project Proponent Information

Project Proponent	: Gerak Saga Sdn. Bhd.		
Contact Person	: Mr. Guy Thornton		
Tel. No.	: 088 – 663492		
Fax No.	: 088 - 662494		
Environmental Officer	: Ms. Wilvia Olivia William		
Contact No.	: 019-8226958		
E-mail	: w.william@forestsolutions.com.my		

1.3 Post-EIA Consultant Information

Post-EIA Consultant	: Chemsain Konsultant Sdn. Bhd.		
Tel. No.	Office	:	088 – 381 277 / 278
	Mobile	:	019 – 812 0808
Fax No.	: 088 – 381 280		
Contact Person	: Agatha Francis / Valentine Abbie		
Email	: valentine.abbie@chemsain.com		

1.4 Project Status

Percentage Completion :

Activities	Percentage (%)
Clearing	Coupe 1
Planting	Block 67 & 72

Planted: 1340.4 ha / Harvested: 1191.7 ha
(as 31/7/20)

Chronology of Events :

Table 1.0: Chronology of Events

No.	Event	Date
1.0	Signing of AEC Ref.: JPAS/PP/15/600-1/01/3/18	23 rd October 2007

2.0 OBJECTIVE

The Environmental Monitoring and Compliance Audit (EMCA) is a requirement by the Environmental Protection Department (EPD) and to be carried out on quarterly basis, and reported in accordance to the Approval Conditions as specified in the **Syarat-Syarat Alam Sekitar [Seksyen 12(1) dan 20, Enakmen Perlindungan Alam Sekitar 2002]** of the EPD ref: JPAS/PP/15/600-1/01/3/60 (36) dated 1st November 2017

3.0 CHANGES IN PROJECT CONCEPT/ ENVIRONMENT

3.1 Project Concept

No.	Item	Changes
1.	Project Component	Nil
2.	Changes to Land Lot	Nil
3.	Land Area	Nil

3.2 Surrounding Environment

No.	Item	Changes
1.	Land Use	Nil
2.	River / Costal Morphology	Nil

4.0 MONITORING LOCATIONS

Designated monitoring and sampling location are shown in **Figure 1.0** with details tabulated in **Table 2.0**.

Table 2.0: Environmental Monitoring Locations

Monitoring Component	Key	GPS Coordinates (Datum: WGS 84)	Location Description
Water Quality	W1	N 06° 51' 18.9" E 117° 06' 41.1"	Unnamed stream downstream of Bengkoka Forest Reserve at Kg. Gumpa
	W2	N 06° 50' 40.6" E 117° 09' 18.6"	Sg. Bongkol of Safoda dam within Bengkoka Forest Reserve
	W3	N 06° 50' 40.1" E 117° 10' 38.2"	Sg. Kakarangan downstream of Bengkoka Forest Reserve
	W4	N 06° 51' 10.4" E 117° 08' 52.6"	Sg. Kisorong within Bengkoka Forest Reserve
	W5	N 06° 52' 39.3" E 117° 09' 49.8"	Sg. Malubang within Bengkoka Forest Reserve

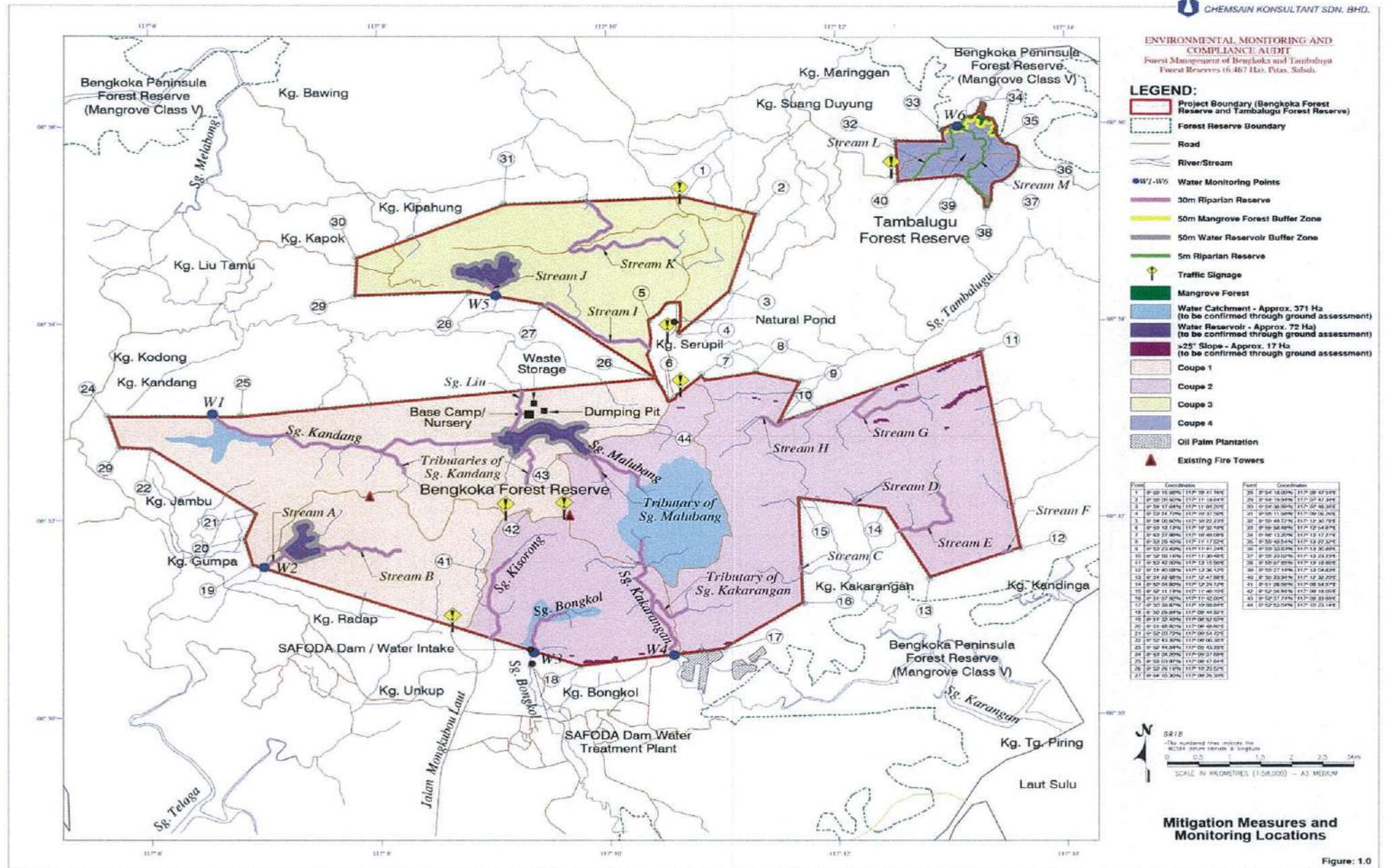


Figure 1.0: Monitoring Locations Map.

5.0 COMPLIANCE STATUS, COMMENTS, CORRECTIVE ACTION & DATE OF COMPLETION

Nama Projek	: Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah
Nama Pemaju	: Gerak Saga Sdn Bhd
Rujukan fail jabatan ini	: JPAS/PP/15/600-1/01/3/60 (36)
Tarikh Akujanji	: 1 st November 2017
Penyedia laporan pematuhan ini	: Chemsain Konsultant Sdn. Bhd.
Tempoh diliputi oleh laporan ini	: May - August 2020

AEC No.	Approved Environmental Conditions	Status	Observations / Comments	Photo No.	Corrective Action & Date of Completion
5.1	<u>Hakisan Tanah dan Pemendapan Kelodak</u>				
5.1.1	<u>Kawalan Kawasan Perladangan Hutan</u>				
i	Satu (1) salinan pelan penyukatan sempadan kawasan projek seluas 6,467 hektar dalam kawasan Hutan Simpan Bengkoka dan Tambalugu, Daerah Pitas sebagaimana ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini hendaklah dikemukakan ke JPAS sebelum aktiviti perladangan hutan dimulakan.	Comply	Project Demarcation Plan had been submitted via the 1st EMCAR of 2019 as Appendix D.	-	-
ii	Sempadan kawasan projek yang telah diukur hendaklah ditanda di lapangan serta dipasang dengan papan tanda di lokasi-lokasi yang mudah dilihat sebelum aktiviti perladangan hutan dimulakan.	Comply	- Signboard, entrance gate and coloured pegs were erected to demarcate the Project boundary on-site. - Signboard between coupes / block was erected for demarcation purposes.	Plates 1 to 6	-

iii	Semua tanda sempadan tapak projek hendaklah tidak ditimbus, dihalang, dirosakkan atau diganggu daripada kedudukan asal.	Comply	Signboard and pegs were in good condition as observed during the site visit.	Plates 1 to 6	-
iv	Aktiviti perladangan hutan adalah <u>tidak dibenarkan</u> di dalam kawasan tadahan air, takungan air dan "water intake point" sebagaimana dinyatakan dan masing-masing ditandakan sebagai "Water Catchment", "Water Reservoir" dan "Water Intake" dalam maklumat tambahan rujukan CK/EV403-4278/0199/17 bertarikh 13 April 2017 dan ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.	Comply	There is no development activity carried out within the water catchment areas, water reservoir and water intake as observed during the site visit.	Plate 7	-
v	Zon penampian dengan kelebaran tidak kurang 50 meter hendaklah disediakan di sempadan kawasan projek yang bersempadan dengan Hutan Simpan Bengkoka dan ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.	Comply	The Project Proponent had provided 50-meter width buffer zone adjacent to the Bengkoka Forest Reserves prior to Project development on-site.	Plate 3	-
vi	Sebarang aktiviti perladangan hutan <u>tidak dibenarkan</u> dalam kawasan zon penampian.	Comply	The 50-meter width buffer zone was excluded from any Project development.	Plate 3	-
vii	Sebarang aktiviti perladangan hutan <u>tidak dibenarkan</u> dalam kawasan berkecurunan 25 darjah atau lebih sebagaimana ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.	Comply	There are no signs of any activities conducted within the steep protection area ($\geq 25^\circ$ slope area) as observed during the site visit.	-	-

viii	Sempadan kawasan tadahan air, takungan air dan "water intake point", zon penampungan dan kawasan berkecurunan 25 darjah atau lebih yang dilindungi hendaklah ditanda di lapangan dan dipasang dengan papan tanda di lokasi-lokasi yang mudah dilihat sebelum aktiviti perladangan hutan dimulakan.	Comply	The water catchment areas, water reservoir area, water intake area and steep protection area ($\geq 25^\circ$ slope area), was demarcated with a signboard and colored pegs as observed during the site visit.	Plate 7	-
5.1.2	<u>Kawalan Pembinaan Jalan</u>				
i	Jalan sedia ada hendaklah digunakan bagi mengurangkan gangguan terhadap tanah.	Comply	The existing access road was fully utilized as observed during the site visit.	Plate 11, 12	-
ii	Sistem perparitan hendaklah disediakan bagi mengalirkan air keluar dari struktur jalan dan dilencongkan ke kawasan yang mempunyai tumbuhan.	Comply	The existing access road on-site was equipped with earth drainages which was diverted towards the nearest vegetated area.	Plate 12	-
iii	Aktiviti pelupusan atau pembuangan bahan tanah berlebihan <u>tidak dibenarkan</u> dalam parit, sungai atau alur air.	Comply	There are no signs of any overburden being disposed into the nearest natural waterways as observed during the site visit.	-	-

5.1.3 Pembinaan Rumah Pekerja, Kem Pekerja Atau Bengkel					
i	Sebarang aktiviti kerja tanah dan pembersihan kawasan bagi pembinaan rumah pekerja, kem pekerja atau bengkel hendaklah diminimakan.	Comply	- The staffs' quarters and workers' quarters at the base camp were fully utilised on-site. - There is no workshop facility constructed within the Project site. - According to the Project Proponent, maintenance of vehicle on-site will be carried out in an external workshop.	Plate 13	-
ii	Sistem perparitan yang berkesan hendaklah disediakan bagi mengawal larian air permukaan dan air buangan dari kawasan rumah pekerja, kem pekerja atau bengkel dan hendaklah dilencongkan ke kawasan yang mempunyai tumbuhan dan <u>tidak dibenarkan</u> dialir terus ke dalam sungai atau alur air.	Comply	The staff's quarters and workers' quarters were equipped with perimeter earth drainage which was diverted towards the nearest vegetated area.	Plate 13	-
iii	Kedudukan rumah pekerja atau kem pekerja hendaklah terletak pada jarak mendatar tidak kurang 30 meter dari tebing sungai atau alur air.	Comply	The staffs' quarters and worker's quarters were located at 30 meters away from any nearest natural waterways.	Plates 13	-
iv	Kedudukan bengkel hendaklah terletak pada jarak mendatar tidak kurang 50 meter dari tebing sungai atau alur air.	Not Applicable	Refer to the comments in AEC 5.1.3 (i).	-	-

v	Semua rumah pekerja, kem pekerja atau bengkel sedia ada yang tidak mematuhi peraturan-peraturan yang dinyatakan dalam Perjanjian Syarat-syarat Alam Sekitar ini hendaklah dipindahkan dan dikawal sebagaimana ditetapkan.	Comply	The location for the facilities were in compliance with the AEC requirement.	Plate 13	-
5.1.4	<u>Rehabilitasi Tanah Yang Terdedah</u>				
i	Semua kawasan tanah dan cerun yang terdedah hendaklah distabilkan dan direhabilitasi dengan menanam spesies tumbuhan yang diluluskan oleh Jabatan Perhutanan Negeri Sabah.	Comply	- The Project Proponent assured that cover crops will be planted at the exposed area of the Project site to reduce the risk of soil erosion. - Existing vegetation on the inactive and idle area on-site were retained and remained undisturbed.	Plates 8 & 10	-
5.2	<u>Perlindungan Sungai</u>				
i	Sebarang aktiviti pembersihan dan perladangan hutan adalah <u>tidak dibenarkan</u> dalam simpanan sungai sebagaimana ditunjukkan pada "Figure 6.2.1" dalam Perjanjian Syarat-syarat Alam Sekitar ini.	Comply	There are no development activities carried out within the Riparian Reserve area as observed during the site visit.	Plate 15	-

ii	Sempadan simpanan sungai hendaklah ditanda di lapangan dengan cat merah serta dipasang dengan papan tanda di lokasi-lokasi yang mudah dilihat sebelum aktiviti pembersihan dan perladangan hutan dimulakan.	Comply	- Trees along the Riparian Reserves belt was painted with blue colour to demarcate the Riparian Reserves belt on-site. - Signboard and coloured pegs were erected to demarcate the Riparian Reserves on-site.	Plate 15	-
iii	Sebarang pembinaan rumah pekerja, kem pekerja, bengkel, tandas atau struktur bangunan lain <u>tidak dibenarkan</u> dalam simpanan sungai.	Comply	There were no structures constructed within the Riparian Reserves area.	Plate 15	-
iv	Sebarang penyimpanan bahan minyak atau bahan toksik <u>tidak dibenarkan</u> dalam simpanan sungai.	Comply	There was no sign of any oily or toxic materials stored within the Riparian Reserves on-site.	-	-
v	Sebarang bahan tanah lebihan, sisa pepejal, sisa biomas, kumbahan, bahan minyak, kimia atau bahan-bahan toksik <u>tidak dibenarkan</u> dilupuskan dalam simpanan sungai.	Comply	There were no signs of any overburden, biomass or any types of wastes (i.e. sewage, oil, chemical, toxic, etc) being disposed within the Riparian Reserves area as observed during the site visit.	Plate 15	-

5.3	Bahan Minyak Dan Sisa Toksik				
i	Bahan minyak dan sisa toksik adalah <u>tidak dibenarkan</u> dilupuskan atau dibiarkan mengalir ke dalam parit, sungai atau alur air.	Comply	There are no signs of any oily and toxic materials being disposed into any nearest natural waterways as observed during the site visit.	-	-
ii	Bahan minyak dan sisa toksik hendaklah dikumpul dan disimpan dalam bekas yang kukuh dan tidak mudah bocor. Bekas-bekas penyimpanan tersebut hendaklah dilabel.	Comply	- Oily materials were stored in HDPE container. - Diesel was stored inside metal skid tank.	Plates 16 - 20	-
iii	Kawasan penyimpanan bahan minyak dan sisa toksik tersebut hendaklah terlindung dari hujan dan terletak pada jarak mendatar tidak kurang 50 meter dari tebing sungai atau alur air.	Comply	- Refer to the comments in AEC 5.3 (i). - The oil storage area and diesel skid tank on-site were located at more than 50 meters away from any nearest natural waterways. - The oil storage area was equipped with concretized floor, bunded and sheltered from weather exposure. - The diesel skid tank storage area on-site was equipped with concretized floor, bunded and shelter from weather exposure.	Plates 16 - 20	-

iv	Kawasan penyimpanan bahan minyak dan sisa toksik hendaklah disediakan dengan sistem saliran serta perangkap minyak.	Comply	- The diesel skid tank and oil storage area were equipped with oil trap. - The nozzle storage area of the skid tank was equipped with perimeter concrete containment bund filled with sand to prevent oil from directly seep into the ground.	Plates 16 - 20	-
v	Bahan minyak dan sisa toksik tersebut hendaklah dilupuskan mengikut keperluan Peraturan-peraturan Kualiti Alam Sekeliling (Buangan Terjadual) 2005 .	Comply	According to the Project Proponent, the Scheduled Wastes (if any) generated on-site will be brought out by the DOE licensed contractor, Petrojadi Sdn. Bhd.	-	-
5.4	<u>Kawalan Sisa Pepejal Dan Biomas</u>				
i	Sebarang aktiviti pelupusan sisa pepejal dan biomas <u>tidak dibenarkan</u> dalam parit, sungai atau alur air.	Comply	There were no signs of any solid waste and biomass being disposed into any nearest natural waterways as observed during the site visit.	-	-

ii	<i>Kemudahan mengumpul dan mengutip sisa pepejal dan biomas hendaklah disediakan. Lokasi kawasan pengumpulan hendaklah terletak pada jarak mendatar tidak kurang 30 meter dari tebing sungai atau alur air.</i>	<i>Comply</i>	• Garbage bins was provided at the staffs' quarters area and workers' quarters at the contractor base camp to facilitate solid waste collection. • Dumping pit was provided on-site. • The facilities were located at more than 30 meters away from any nearest natural waterways.	<i>Plates 22 & 23</i>	-
iii	<i>Semua sisa pepejal seperti botol, tin, plastik dan besi hendaklah dikumpul secara berasingan dan dikitar semula.</i>	<i>Comply</i>	• Recycle bins were provided at the workers quarters area to facilitate solid waste segregation.	<i>26</i>	-
iv	<i>Sekiranya tiada kawasan pelupusan yang sesuai dalam kawasan projek, sisa pepejal dan biomas hendaklah dilupuskan di kawasan yang diluluskan oleh pihak berkuasa tempatan yang berkaitan.</i>	<i>Comply</i>	• Refer to the comments in AEC 5.4 (ii).	-	-

5.5	<u>Kawalan Sisa Kumbahan/Sisa Cecair</u>				
i	Kemudahan sistem sanitasi dan sistem perawatan kumbahan / sisa cecair hendaklah disediakan di kawasan projek.	Comply	Toilet facilities on-site was equipped with septic tank.	Plate 25	-
ii	Sebarang pelepasan atau pelupusan terus sisa kumbahan / sisa cecair <u>tidak dibenarkan</u> dalam sungai atau alur air.	Comply	There is no sign of direct discharge of liquid waste or sewage into the nearest natural waterways.	-	-
iii	Sebarang effluen kumbahan yang dihasilkan hendaklah mematuhi sekurang-kurangnya Piawai B, Peraturan – Peraturan Kualiti Alam Sekeliling (Kumbahan) 2009.	Comply	Refer to the comments in AEC 5.5 (i).	-	-
5.6	<u>Kawalan Kualiti Udara Dan Kebakaran</u>				
i	Pembakaran terbuka adalah <u>tidak dibenarkan.</u>	Comply	The Project Proponent assured that no open burning will be conducted during the Project development activities.	-	-
li	Pelan pengurusan dan pencegahan kebakaran kawasan projek hendaklah disediakan dan dilaksanakan serta satu (1) salinan pelan tersebut hendaklah dikemukakan ke JPAS.	Comply	The Fire Management and Prevention Plan was attached in the previous report (3rd EMCA 2019) as Appendix C.	-	-

5.7	<u>Penghentian Atau Penamatan Projek</u>				
i	Semua struktur binaan yang tidak digunakan hendaklah dibuka secara teratur apabila berlaku penghentian atau penamatan projek tersebut.	Not Applicable	• Not applicable at the current stage of development as the Project is still on-going.	-	-
ii	Semua struktur binaan yang didapati tidak selamat atau yang tidak dapat dipastikan selamat hendaklah dibuka.	Not Applicable	• Refer to the comments in AEC 5.7 (i)	-	-
iii	Satu Laporan Pematuhan Alam Sekitar dengan format dan kandungan laporan sebagaimana dinyatakan dalam Lampiran 1 hendaklah dikemukakan apabila berlaku penghentian atau penamatan projek tersebut.	Not Applicable	• Refer to the comments in AEC 5.7 (i)	-	-

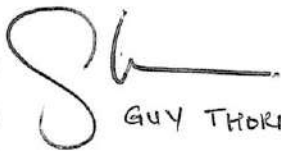
6.0 CONCLUSIONS

Overall Compliance

For the Environmental Compliance period for August 2020, the *Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah* generally complied with the EIA approval conditions, with no non-compliance recorded.

PERAKUAN PAS

Dengan ini saya mengaku telah turut serta dalam odit yang dijalankan oleh perunding alam sekitar dan telah meneliti dan bersetuju dengan isi kandungan Laporan Pematuhan Alam Sekitar bagi projek ini.

Tandatangan : 
Nama : GUY THORNTON
Jawatan : FORESTRY DIRECTOR
Tarikh : 26 AUGUST 2020
Cop Rasmi syarikat : 

PERAKUAN PERUNDING ALAM SEKITAR

Dengan ini saya mengaku dan mengesahkan semua kenyataan dan butir-butir dalam Laporan Pematuhan Alam Sekitar yang dikemukakan adalah benar.

Tandatangan : 
Nama : AGATHA FRANCIS
Tarikh : 19. August. 2020
Cop Rasmi syarikat : 

APPENDIX A

Plates



5.1.1-Kawalan Kawasan Perladangan Hutan



Plate 1

Signboard was erected to demarcate the Project site boundary.

GPS coordinates of the picture taken: N 06° 50' 53.9 E 117° 08' 39.5"



Plate 2

Signboard was erected to demarcate the project boundary between coupes / block on-site.

GPS coordinates of the picture taken: N 06° 55' 53.9 E 117° 07' 17.9"



Plate 3

Signage (red circle) was provided to demarcate the Forest buffer zone on-site

GPS coordinates of the picture taken: N 06° 50' 53.7 E 117° 08' 40.1"



Plate 4

Red painted wooden pole was erected to demarcate the Project boundary on-site.

GPS coordinates of the picture taken: N 06° 50' 53.9 E 117° 08' 39.5"

**Plate 5**

Signboard and entrance gate were erected to demarcate the Project boundary on-site.

GPS coordinates of the picture taken: N 06° 50' 53.9 E 117° 08' 39.5"

**Plate 6**

Signboard was erected at the Project base camp area.

GPS coordinates of the picture taken: N 06° 52' 53.1 E 117° 09' 07.1"



Plate 7

Overview of the water reservoir dam located within the Project site.

GPS coordinates of the picture taken: N 06° 52' 53.1 E 117° 09' 07.1"



Plate 8

View towards the newly planted area within the Project site.

GPS coordinates of the picture taken: N 06° 55' 53.9 E 117° 07' 17.9"



Plate 9

Biomass was left in-situ on exposed area of the Project site for natural decomposition, thus to reduce the risk of soil erosion on-site.

GPS coordinates of the picture taken: N 06° 52' 53.1 E 117° 09' 07.1"



Plate 10

Overview of Project site area (Coupe 3).

**Photo taken by Project Proponent.*

GPS coordinates of the picture taken: N 06° 52' 53.1 E 117° 09' 07.1"



Plate 11

Overview of *Eucalytus Pellita* sp (left) and *Acacia Crassicaarpa* sp (right).

*Photo taken by Project Proponent.

5.1.2-Kawalan Pembinaan Jalan



Plate 12

Overview of the road condition toward the project site.

Roadside drainage was provided and diverted towards the nearest vegetated area.

GPS coordinates of the picture taken: N 06° 48' 28.0" E 117° 10' 48.1"

5.1.3-Pembinaan Rumah Pekerja, Kem Pekerja atau Bengkel

Plate 13

View towards the workers' quarters at the contractors' base camp.

The facility is located at more than 30 meters away from any nearest natural waterways.



GPS coordinates of the picture taken: N 06° 52' 34.9 E 117° 08' 25.9"

Plate 14

View towards the nursery on-site.

The facility is located at more than 50 m away from any nearest natural waterways.



GPS coordinates of the picture taken: N 06° 52' 34.9 E 117° 08' 25.9"

5.2-Perlindungan Sungai



Plate 15

Signboard was erected to demarcate the Riparian Reserves on-site.

Tree trunks along the Riparian Reserves belt was painted with blue colour for demarcation purposes.

GPS coordinates of the picture taken: N 06° 50' 52.9" E 117° 08' 38.8"

5.3-Bahan Minyak dan Sisa Toksik



Plate 16

View towards the skid tank storage area situated at staff quarters area.

The facility is equipped with concretized floor, bunded and sheltered from weather exposure.

The facility was located at 50 meters away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 50' 53.8" E 117° 08' 39.5"

**Plate 17**

The diesel skid tank was equipped with perimeter concrete bund filled with sand to prevent oil from directly seep into the ground.

GPS coordinates of the picture taken: N 06° 50' 53.8" E 117° 08' 39.5"

**Plate 18**

The diesel skid tank was equipped with oil trap to contain any oil spillage.

GPS coordinates of the picture taken: N 06° 52' 34.9 E 117° 08' 25.9"

**Plate 19**

Close up view of the oil storage area situated at the site office.

Oil was stored inside HDPE container.

The facility was equipped with concretized floor, bunded and sheltered from weather exposure.

The facility is located at more than 50 m away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 49' 46.1" E 117° 09' 11.8"

**Plate 20**

The oil storage area was equipped with oil trap.

GPS coordinates of the picture taken: N 06° 49' 46.1" E 117° 09' 11.8"

**Plate 21**

View towards the fertiliser storage area on-site.

The facility is located at more than 50 m away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 49' 46.1" E 117° 09' 11.8"

**Plate 22**

View towards the agrochemical storage area on-site.

The facility is located at more than 50 m away from any nearest natural waterways.

GPS coordinates of the picture taken: N 06° 49' 46.1" E 117° 09' 11.8"

5.4-Bahan Sisa Pepejal dan Sisa Biomas



Plate 23

Garbage bin was provided to facilitate solid wastes collection.

GPS coordinates of the picture taken: N 06° 55'41.7" E 117° 06' 45.5"



Plate 24

Landfill was provided on-site to facilitate solid waste collection on-site.

GPS coordinates of the picture taken: N 06° 55'41.7" E 117° 06' 45.5"

5.5-Kawalan Sisa Kumbahan/ Sisa Cecair**Plate 25**

Toilet with septic tank was available at the project site to cater sewage waste.

GPS coordinates of the picture taken: N 06° 47'04.4" E 117° 06' 17.3"

**Plate 26**

Recycled bins were provided at the canteen area for solid waste segregation.

GPS coordinates of the picture taken: N 06° 47'04.4" E 117° 06' 17.3"

APPENDIX B

Environmental Monitoring Report



1.0 WATER QUALITY ANALYSIS

1.1 MONITORING LOCATION

Water sampling was carried out on the 29th July 2020 at five (5) monitoring locations, **W1, W2, W3, W4** and **W5** as shown in **Figure 1.0**. However, no sampling was carried out at locations **W3, W4, W5** as the Project has not progressed into these locations yet. No sample was obtained at **W2** due to inaccessible road condition.

The weather was fine and sunny throughout the sampling exercises.

1.2 ANALYTICAL RESULTS

Laboratory reports of the sample analyses are presented in **Appendix C**. Results of water quality analysis for monitoring stations **W1 – W5** are summarized in **Tables 3.0** and compared to respective limit of **Class IIB of National Water Quality Standards for Malaysia (NWQSM)**.

Table 3.0: Surface Water Quality Monitoring Results

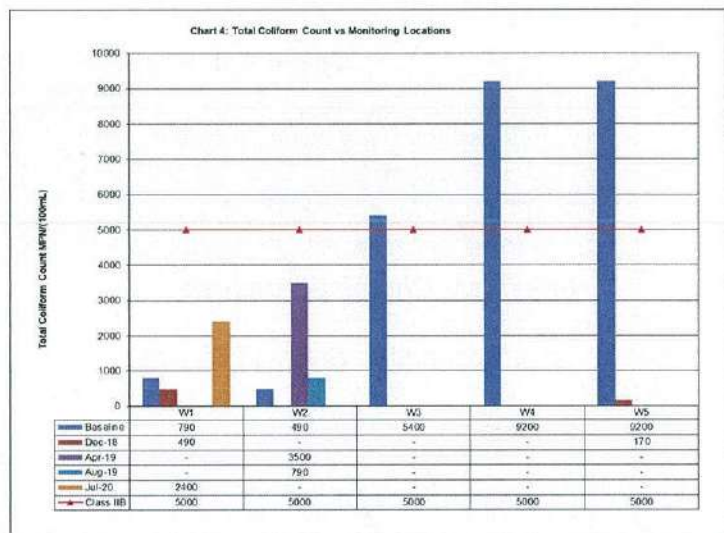
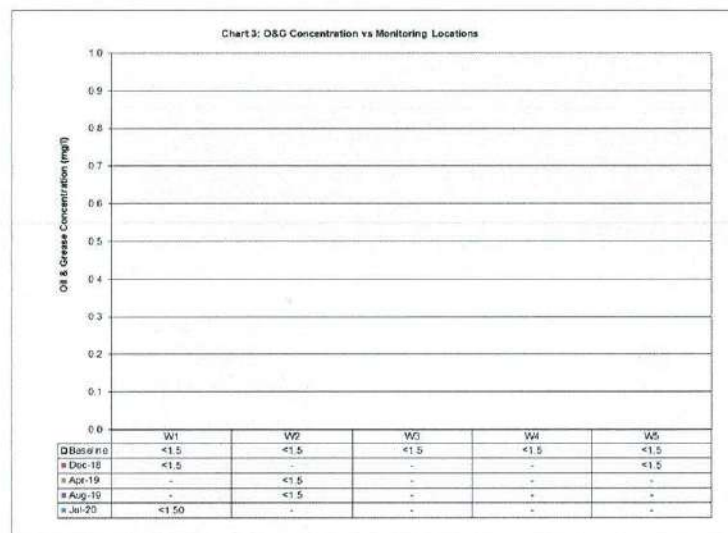
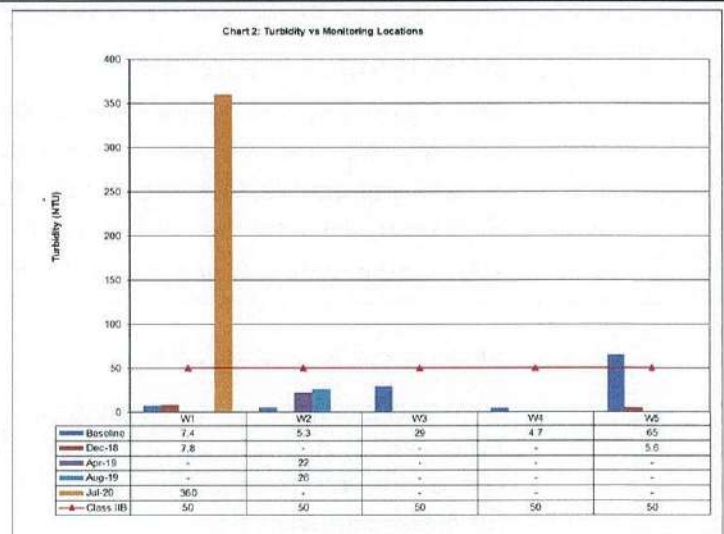
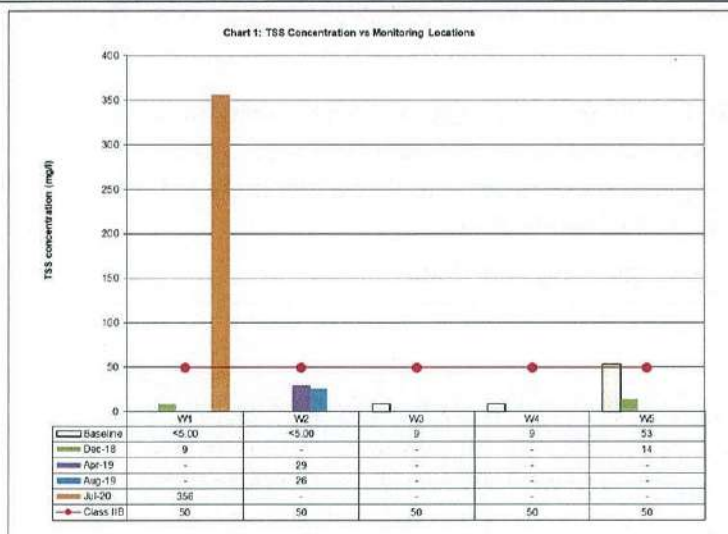
Monitoring Location	W1	W2	¹ LIMITS (Class III)
Monitoring Date / Time	29/7/20 10:26 AM	-	
<u>Physical / Chemical Analysis</u>			
Total Suspended Solids (TSS), mg/L	<u>356</u>	-	50.0
Turbidity	<u>360</u>	-	-
Oil & Grease, mg/L	<1.50	-	50.0
<u>Microbiological Analysis</u>			
Total Coliform Count (TCC), MPN/100mL	2400	-	5000

Notes: < > Below / above detection limit

¹ National Water Quality Standards for Malaysia, Malaysia Environmental Quarry Report (DOE, 2006)



HISTORICAL SURFACE WATER QUALITY GRAPHICAL REPRESENTATION



Note: * Baseline data extracted from EIA for Forest Management of Bengkoka and Tambalugu Forest Reserves (6,467 Ha), Pitas, Sabah.

1.3 DISCUSSION

Surface water quality analysis show that all the parameters measured are **above** the recommended limit and thus not comply with the limit of **Class IIB** of **NWQSM**. The high level of turbidity and total suspended solid was due to raining period a day before the sampling exercise. The Project Proponent is advice to maintain the existing mitigation measure to ensure the water quality in exceptional level.

APPENDIX C

Surface Water Test Reports
National Water Quality Standards for Malaysia (NWQSM)





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TEST REPORT

NOT FOR ADVERTISEMENT PURPOSES

Customer : Gerak Saga Sdn Bhd
L-70-7, KK Times Square,
Off Jalan Coastal,
88450 Kota Kinabalu, Sabah

Lab No. : CK/CL405/2469/20
Type (No.) of Sample : Surface Water (1)
Date Received : 03rd August 2020
Date of Report : 14th August 2020
Project Code : CK/MO411/1197/20

Parameter(s)	W1 Date: 29/07/2020 Time: 10.26 am	Test Method	* Standard Limit
Turbidity, NTU	360	APHA 2130 B, 2017	50
Total Suspended Solids, mg/L	356	APHA 2540 D, 2017	50
Oil & Grease, mg/L	<1.50	APHA 5520 B, 2017	-

* Class IIB National Water Quality Standards Malaysia.

End

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TEST REPORT

NOT FOR ADVERTISEMENT PURPOSES

Customer : Gerak Saga Sdn Bhd
L-70-7, KK Times Square,
Off Jalan Coastal,
88450 Kota Kinabalu, Sabah

Lab No. : CK/ML405/2470/20
Type (No.) of Sample : Surface Water (1)
Date Received : 03rd August 2020
Date of Report : 10th August 2020
Project Code : CK/MO411/1197/20

<u>Parameter(s)</u>	W1 Date: 29/07/2020 Time: 10.26 am	<u>Test Method</u>	* <u>Standard Limit</u>
Total Coliform Count MPN/100mL, 35±0.5°C/48 h	2.4 x 10 ³	APHA 9221B, 2017	5,000

* Class IIB National Water Quality Standards Malaysia.

----- End -----

STEPHANIE EVERETT
M. Sc.
MJMM0369
MICROBIOLOGIST



NATIONAL WATER QUALITY STANDARDS FOR MALAYSIA

Parameters	Unit	Classes					
		I	IIA	IIB	III	IV	V
Ammoniacal-N.	mg/l	0.1	0.3	0.3	0.9	2.7	>2.7
BOD	mg/l	1	3	3	6	12	>12
COD	mg/l	10	25	25	50	100	>100
DO	mg/l	7.0	5.0 – 7.0	5.0 – 7.0	3.0 – 5.0	<3.0	<1.0
pH		6.5 – 8.5	6.0 – 9.0	6.0 – 9.0	5.0 – 9.0	5.0 – 9.0	-
Colour	TCU	15	150	150	-	-	-
Elec. Cond*	μS/cm	1000	1000	-	-	6000	-
Floatables		N	N	N	-	-	-
Odour		N	N	N	-	-	-
Salinity*	%	0.5	1	-	-	2	-
Taste		N	N	N	-	-	-
Tot. Diss. Sol.*	mg/l	500	1000	-	-	4000	-
Tot. Susp. Sol.	mg/l	25	50	50	150	300	>300
Temperature	°C	-	Normal±2	-	Normal±2	-	-
Turbidity	NTU	5	50	50	-	-	-
F. Coliform**	counts/100ml	10	100	400	5000 (20000) ^a	5000 (20000) ^a	-
Total Coliform	counts/100ml	100	5000	5000	50000	50000	>50000

N = No visible floatable material / debris; or no objectionable odour; or no objectionable taste.

* = Related parameters, only one recommended for use

** = Geometric mean

± = Maximum not to be exceeded

CLASS USES

- I represent water body of excellent quality. Standards are set for the conservation of natural environment in its undisturbed state. Water bodies such as those in the national park areas, fountainheads, and in high land and undisturbed areas come under this category where strictly no discharge of any kind is permitted. Water bodies in this category meet the most stringent requirements for human health and aquatic life protection.
- IIA / IIB represents water bodies of good quality. Most existing raw water supply sources come under this category. In practice, no body contact activity is allowed in this water for prevention of probable human pathogens. There is a need to introduce another class for water bodies not used for water supply but of similar quality which may be referred to as **Class IIB**. The determination of **Class IIB** standard is based on criteria for recreational use and protection of sensitive aquatic species.
- III is defined with the primary objective of protecting common and moderately tolerant aquatic species of economic value. Water under this classification may be used for water supply with extensive / advance treatment. This class of water is also defined to suit livestock drinking needs.
- IV defines water quality required for major agricultural irrigation activities which may not cover minor applications to sensitive crops.
- V represents other waters which do not meet any of the above uses.