



## NATURAL RESOURCES AND ENVIRONMENT BOARD SARAWAK

[Incorporated under the Natural Resources And Environment Ordinance (Chapter 84 - Laws of Sarawak 1958 Ed.)]

### BIOMASS REMOVAL PLAN (BRP) REPORT APPROVAL

Terms and Conditions of Approval in accordance with the provisions of the Natural Resources & Environment Ordinance 1993 (Cap. 84 - Laws of Sarawak) and Natural Resources & Environment (Prescribed Activities) Order, 1994

**NAME OF PROJECT** : BALEH HYDROELECTRIC PROJECT


**MAIN ACTIVITY** : BIOMASS REMOVAL WORKS

**PROJECT PROPONENT** : SEB POWER SDN. BHD.  
LEVEL 6, MENARA SARAWAK ENERGY,  
NO. 1, THE ISTHMUS,  
93050 KUCHING, SARAWAK

**DATE OF APPROVAL** : 27 JUNE 2022

**REFERENCE NO.** : ( 41 ) NREB / 600-4 / 7F / 4



  
[ PAUL BOND ANAK CHAMBERLIN ]  
for Controller of Environmental Quality,  
Sarawak

## GENERAL TERMS AND CONDITIONS

### 1. COMPLIANCE

- (a) The project proponent shall adhere to the general operation and maintenance procedure that has been planned.
- (b) If any changes are to be made, the NREB shall be duly informed.
- (c) The project proponent shall sign an undertaking with the NREB to adopt and comply with all the *Terms and Conditions of Approval* contained herein for the protection and enhancement of the environment in its project site.
- (d) The project proponent shall display a copy of the document, i.e. *Terms and Conditions of BRP Report Approval for Environmental Protection*, at its site office. The document shall be made available for inspection by officers of the NREB when they carry out the monitoring or auditing.
- (e) The NREB reserves the right to amend, delete or add any of these approval conditions as and when it deems fit.
- (f) If there is no development within 3 years in the Project Area after approval has been granted, the Proponent shall undertake another environmental study and submit the report to this Board.

### 2. CONTRACT AGREEMENT

The project proponent must ensure that the Terms and Conditions for the protection and enhancement of the environment shall be included in all contract agreements with respect to the development and operation activities of the project; for further, the project proponent shall ensure that all these Terms and Conditions are observed, complied with and implemented by all contractors, their agents and servants, appointed to carry out the activities.

### 3. DATA AND REPORTS

- (a) The Project Proponent shall engage an Environmental Consultant to carry out environmental monitoring and provide environmental reports and data on the state of the environment *once every three months* upon commencement of the project.
- (b) The report shall be in the form and format as outlined in the **ANNEX II - "Environmental Monitoring Report" (EMR) or "Environmental Compliance Audit" (ECA) Report**
- (c) The water sampling points shall be in the locations as recommended in the BRP Report.

### 4. MONITORING

- (a) The officers of the NREB shall monitor the project development to ensure that all conditions herein are complied with.
- (b) The project proponent or its contractors shall give full cooperation and support to the officers of the NREB who shall carry out the monitoring and supervision on the development activities of the project.

### 5. CONSULTATION

The project proponent, the NREB and relevant parties as determined by the NREB shall hold consultations as and when required with regard to the protection and enhancement of the environment in the project site.

### 6. SPECIFIC TERMS AND CONDITIONS

The specific terms and conditions for the environmental protection at the project are as outlined in **ANNEX I**.

## SPECIFIC TERMS AND CONDITIONS

LIST OF ISSUES AND MITIGATING MEASURES RECOMMENDED BY THE BIOMASS REMOVAL PLAN (BRP) CONSULTANT AS CONTAINED IN "THE BIOMASS REMOVAL PLAN REPORT FOR BALEH HYDROELECTRIC PROJECT" AND ENDORSED BY THE NATURAL RESOURCES AND ENVIRONMENT BOARD (NREB) SARAWAK

ITEM	MITIGATING MEASURES RECOMMENDED BY THE BRP CONSULTANT	REFERENCE IN THE BRP REPORT	ENDORSED BY NREB WITH THE FOLLOWING VARIATION	
			IN TOTAL	
<b>1.0 SEDIMENTATION AND EROSION IMPACTS</b>	(a) Contractors performing Salvage Logging activities shall strictly adhere to all items included in the Salvage Logging Guidelines issued by the Forest Department Sarawak. This includes adhering to guidelines concerning construction/maintenance of roads, trails and landings.	Page 228	√	
	(b) The existing logging roads shall be reused and maintained as much as possible. This includes re-using all road accessories including all river/stream crossings and side drains between slopes and the roads.	Page 228	√	
	(c) The number of new skid trails and landing points shall be minimized. Where skid trails and landing points are discernible, they shall be reused as much as possible to avoid the creation of new skid trails and landing points.	Page 228	√	
	(d) If the creation of new skid trails and landing points is unavoidable, the new skid trails and landing points shall be shared by several adjacent blocks. This will ensure that there is minimal land disturbance.	Page 228	√	
	(e) All heavy machinery shall not be allowed to range freely within the Project area to scout for logs. Scouting shall strictly be done on foot by the felling crew. All logs shall be winched from felling site to the landing site to reduce unnecessary land disturbance.	Page 228	√	
	(f) No heavy machinery shall be allowed within any buffer zones and no logs shall be skidded across any stream. If stream crossing is unavoidable, crossing shall be done at a stable site with rocks or gravel beds.	Page 228	√	
	(g) The buffer specifications within the Salvage Logging Guidelines shall be maintained while performing the salvage logging activities.	Page 228 Page 231	√	Refer to Section 7.1.3 in the BRP Report for the Pre-Salvage Logging Activities.
	(h) When possible, all Project activities shall only be performed in dry weather. In the case of heavy downpour rain, all activities shall be stopped.	Page 228	√	

ITEM	MITIGATING MEASURES RECOMMENDED BY THE BRP CONSULTANT	REFERENCE IN THE BRP REPORT	ENDORSED BY NREB WITH THE FOLLOWING VARIATION	
			IN TOTAL	
	(i) Tree felling and removal methodologies shall follow those that are listed in Section 7.1 for Salvage Logging and Section 7.2 for biomass removal to ensure that slope and land disturbance is performed with minimal impact.	Page 228	√	
	(j) Areas of certain degree of slopes shall be considered prior to performing any biomass removal be it salvage logging or actual biomass removal works. For Salvage Logging, the harvesting system for log and debris extraction within the area of different slope categories shall be: <ul style="list-style-type: none"> <li>i. Slope less than 35° – Ground-based system using tractors.</li> <li>ii. Slopes between 35° and 45° – Modified excavator, skyline or other cable systems.</li> <li>iii. Slopes greater than 45° – No logging allowed.</li> </ul>	Page 229	√	Refer to Section 7.1.4 and 7.2.2 in the BRP Report.
	(k) No salvage logging shall be permitted at the area overlapping between the reservoir and the Baleh National Park, at the southern banks of the extreme eastern tip of the reservoir along Btg. Baleh.	Page 229	√	
	(l) A buffer strip of 100 m along both sides of Btg. Baleh, between the dam and the confluence of Sg. Mengiong, shall be preserved. Salvage logging and any kind of biomass removal activity shall not be permitted in this area. The remaining areas contracted for clearing, between the dam and the confluence of Sg. Mengiong, shall be totally cleared of woody vegetation except for areas exceeding 35° gradient, which may not be cleared of vegetation.	Page 229	√	
	(m) If Phase 1, salvage logging, is carried out simultaneously with the Phase 2 clearing, cable-based salvage logging may still be carried out on slopes 35°–45° and logging debris shall be removed but there shall be no Phase 2 total clearing allowed to take place on area with slopes 35°–45°.	Page 229	√	
	(n) Reduced Impact Logging (RIL) practices shall be adopted as much as possible to minimise disturbances and soil erosion.	Page 229	√	
	(o) Quarterly monitoring of water quality throughout the Project duration shall be undertaken.	Page 229 & Page 231	√	Refer to Section 7.6.3 in the BRP Report for the criteria of the Internal Environmental Compliance Audit
<b>2.0 WATER QUALITY IMPACTS</b>	(a) The refuelling of trucks, machinery, portable tanks shall be carried out in a designated area with close supervision.	Page 230	√	

ITEM	MITIGATING MEASURES RECOMMENDED BY THE BRP CONSULTANT	REFERENCE IN THE BRP REPORT	ENDORSED BY NREB	
			IN TOTAL	WITH THE FOLLOWING VARIATION
	(b) Formal procedure for reporting oil leaks and nomination of individual responsible for addressing, acting and repairing the problem shall be carried out.	Page 230	√	
	(c) All the stationary equipment and machinery (such as generators) shall be checked routinely for leaks.	Page 230	√	
	(d) Oil leakage shall be stopped immediately by removing the machinery from the site or to carry out on-site emergency repair.	Page 230	√	
	(e) Vehicles and machinery maintenance shall be carried out away from any source of surface water. All the maintenance equipment shall be stored properly to avoid spillage.	Page 230	√	
	(f) Any spillage shall be contained immediately and the spillage shall be prevented from getting into the waterways, using spill kit or sand. The removed spilt material shall be placed in sealed container and kept in a designated temporary storage area with proper labelling prior disposal. The scheduled waste shall be disposed by engaging a DOE approved contractor and sent only to DOE-licensed disposal site.	Page 230	√	
	(g) Salvage logging activities shall be performed while maintaining the buffer specifications mentioned in Section 7.1.3 and within the Salvage Logging Guidelines.	Page 230	√	
	(h) The waterways shall be kept clean from any kind of earth spoils or waste.	Page 230	√	
	(i) No raw or untreated sewage discharge into existing water body shall be allowed.	Page 230	√	
	(j) The earth drainage shall be regularly inspected for blockages. Any blocked drains shall be cleared as soon as possible.	Page 230	√	
	(k) To prevent prevalence of floating debris during the biomass removal phase, all logging residues, off-cuts and remnants shall be collected and removed from the inundation area. These residues/remnants shall be transported and stored outside the catchment.	Page 230	√	
	(l) "Logs and debris" booms shall be installed at the downstream end of the catchments for major river systems within each coupe for the purpose of trapping the floating wood debris coming down from the blocks located upstream and collecting them for disposal.	Page 230	√	



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			IN TOTAL	
	<p>(m) The sewage treatment facilities shall be maintained regularly. This includes the temporary pit latrines used in temporary log camps and ponds. Pit latrines shall be dismantled and filled in upon movement of the camps.</p> <p>(n) Water quality monitoring shall be conducted at the recommended locations and frequencies.</p>	<p>Page 230</p> <p>Page 230</p>	<p>√</p> <p>√</p>	<p>Refer to Section 7.6 in the BRP Report for the Monitoring Recommendations.</p>
<b>3.0 GREEN HOUSE GAS (GHG) AND AIR QUALITY IMPACTS</b>	<p>(a) The Proponent and Contractor shall adhere to all applicable requirements when deploying vehicles and machineries.</p> <p>(b) Vehicles and associated equipment shall be properly maintained through regular servicing to reduce the emission of pollutants. Visual inspection shall be performed to determine if excess black emissions are exhibited from the vehicle.</p> <p>(c) Open burning of any type of waste without written permission from the NREB shall be strictly prohibited.</p> <p>(d) If controlled burning is opted for disposal options, the Project Proponent or relevant contractors shall comply with the terms and conditions set by the NREB.</p> <p>(e) When stacking biomass for natural decomposition, biomass shall be stacked appropriately in a way that minimises ground contact to avoid excess moisture accumulation for complete oxygenated decomposition.</p> <p>(f) Weather stations shall be set up at two (2) locations to provide meteorological information to support fire risk rating. The locations are at the dam construction facilities and at the WTK camp and major bridge on Upper Baleh.</p>	<p>Page 232</p> <p>Page 233</p> <p>Page 233</p> <p>Page 233</p> <p>Page 233</p>	<p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p>	<p>Reference shall be made to the Environmental Quality (Control of Emission from Diesel Engines) Regulations, 1996.</p> <p>Refer to Section 3.7.1 in the BRP Report for the Methods Involving Burning for Disposal Options.</p>
<b>4.0 HEALTH AND SAFETY IMPACTS</b>	<p>(a) A health and safety plan shall be prepared for the general operation of the Baleh HEP area.</p> <p>(b) Safety procedures and regulation shall be incorporated into contract agreement with contractors and subcontractors.</p>	<p>Page 234</p> <p>Page 234</p>	<p>√</p> <p>√</p>	<p>Refer to Page 231 for the location of the weather stations.</p>

ITEM	MITIGATING MEASURES RECOMMENDED BY THE BRP CONSULTANT	REFERENCE IN THE BRP REPORT	ENDORSED BY NREB WITH THE FOLLOWING VARIATION	
			IN TOTAL	
	(c) An Occupational, Safety and Health committee shall be set up to plan, implement, enforce and evaluate all safety and health promotion programme.	Page 234	√	
	(d) The Project Proponent shall adhere to the relevant rules and regulations under the Laws of Malaysia regarding the safety, health and welfare of the workers, including adhere to the safety guidelines issued by the STIDC and DOSH.	Page 234	√	Reference shall be made to the Factories and Machinery Act 1967 (Act 139) and Occupational Safety and Health Act 1994 (Act 514).
	(e) Adequate insurance coverage and medical benefits shall be provided to workers.	Page 234	√	
	(f) Safety barriers and warning signs shall be provided at dangerous areas.	Page 234	√	
	(g) All vehicles and machines shall be maintained regularly to minimise accidents due to mechanical failure.	Page 234	√	
	(h) Workers shall be provided with suitable personal protective equipment (PPE) such as gloves, hard hats, safety boots, earmuffs, safety harness, face masks or respirators, etc.	Page 235	√	
	(i) Adequate safety features and safe operating procedures shall be implemented to reduce accidents. Competent person shall be assigned to handle and operate machinery and equipment. Competency shall at least include adequate training and supervision in handling the equipment.	Page 235	√	
	(j) A Safety and Health Committee shall be established to ensure safety procedures are observed and to promote safe conduct of work at the workplace.	Page 235	√	
	(k) The Proponent's "Monitoring Proforma" programme shall be abided to monitor the progress and performance of the operation and management teams.	Page 235	√	
	(l) Base camp and all subsequent temporary camps shall be always kept tidy and hygienic to improve aesthetic of the Project site as well as to prevent the spread of diseases.	Page 235	√	
	(m) An Emergency Response Plan (ERP) shall be established and implemented for 24-hour support to the biomass removal works in case of unforeseen emergency situations.	Page 240	√	Refer to Section 8.2 the BRP Report for the Framework for Emergency Responses.
<b>5.0 ECOLOGICAL IMPACTS</b>	(a) Biomass removal works shall only be performed within the boundaries and buffers set within the biomass removal plan.	Page 236	√	Refer to Chapter 7 of the BRP Report for the Biomass Removal Plan.

ITEM	MITIGATING MEASURES RECOMMENDED BY THE BRP CONSULTANT	REFERENCE IN THE BRP REPORT	ENDORSED BY NREB WITH THE FOLLOWING VARIATION	
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	(b) Workers shall be prohibited from hunting, trapping and killing Protected and Totally Protected animals.	Page 236	√	Reference shall be made to the Wild Life Protection Ordinance 1998.
	(c) Sighting of Protected wildlife shall be reported to Sarawak Forestry Corporation for further actions. Workers shall be educated of the species protected under the Wild Life Protection Ordinance 1998. The penalties of such offences shall be made known to the workers.	Page 236	√	
	(d) In the case where wildlife is stranded or injured, infrastructure shall be provided for the temporary sheltering and relocation of such wildlife with the consultation of authorities such as the Sarawak Forestry Corporation or Forest Department Sarawak.	Page 236	√	
	(e) Vehicles exiting the working areas shall be inspected periodically for the illegal possession of wildlife. The authorities shall be informed if such possessions have been found.	Page 236	√	
	(f) The stream disturbance in areas that not intended to be inundated shall be minimized as these will serve as gene pools for macro invertebrates.	Page 236	√	
	(g) Fishing activities within the Baleh HEP area shall be prohibited to all workers, and all staff of SEB and contractors.	Page 236	√	
<b>6.0 SOCIO ECONOMIC IMPACTS</b>	(a) Recruitment policy shall prioritise local residents who are interested to work in biomass removal works whenever applicable such as drivers, general workers, security guards, cleaners, tree fellers, etc. The recruitment of non-locals, especially foreigners shall be the last resort.	Page 238	√	
	(b) Local communities shall be allowed to utilise/collect less valuable timbers/ biomass and other useful forest products within areas to undergo biomass removal activities.	Page 238	√	
	(c) The local communities shall be notified of the lesser value timbers and other residual biomass they can use/collect/utilise. Local communities shall also be instructed of the allowable extraction procedures and methods.	Page 238	√	
	(d) All workers shall undergo pre-employment medical check-up with special emphasis on communicable or infectious diseases especially malaria, other mosquito-borne disease and tuberculosis.	Page 238	√	

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			IN TOTAL	WITH THE FOLLOWING VARIATION
	(e) In the event of any outbreak of illness/disease of an epidemic / pandemic nature, the Project Proponent shall comply with and carry out such regulations, orders, instructions, rules and SOPs as may be made by the State Government, Ministry of Health, State Health Department, local medical and health authorities.	Page 238	√	
	(f) Workers shall be educated of customs and way of life of the local communities. These customary ways of life shall be respected and upheld.	Page 238	√	
	(g) Known cultural heritage assets shall be marked and avoided during biomass removal works. The Chance-Find Procedure shall be implemented to manage the impacts to unknown cultural heritage assets or sites discovered during biomass removal.	Page 238	√	
	(h) The biomass removal works shall be carried out in ways not to cause any obstruction or danger to traffic on the river.	Page 238	√	
	(i) Any complaints from nearby residents or members of public on water quality, air quality and an matters related to the Project shall be immediately investigated and necessary action shall be taken.	Page 233 Page 238	√	
<b>7.0 FLOATING DEBRIS MANAGEMENT</b>	(a) The bi-weekly monitoring activities shall cover throughout the reservoir area, i.e., not only the area to be cleared, the occurrence of floating debris shall be monitored and if possible, be determined from where the debris comes. SEB shall ensure that the designated contractors for clearing or salvage logging shall immediately remove the debris before it creates any risk or damage. The findings from the bi-weekly monitoring activity shall be summarised in the quarterly reporting.	Page 239	√	
	(b) For total clearing, a 100 m buffer zone on either bank of the Btg. Baleh shall be imposed in the clearing area to prevent debris from entering the river system. Log booms over the major tributaries shall be required.	Page 239	√	
	(c) All cut wood debris shall be removed from the inundation area and log booms shall be cleared of logs and debris till the inundation has reached full supply level.	Page 240	√	
	(d) If SEB's monitoring reveals that the required measures are not sufficiently effective, improved measures shall be proposed to the Forest Department Sarawak.	Page 240	√	

**FORMAT OF ENVIRONMENTAL MONITORING REPORT****1.0 GENERAL INFORMATION**

- Project title
- Date of commencement
- Physical progress of construction
- Date of submission of the previous Environmental Monitoring Report

**2.0 WATER QUALITY SAMPLING AND ENVIRONMENTAL MONITORING****2.1 Particulars of Water and Air Quality Monitoring**

- Frequency
- Date of sampling / monitoring
- Weather and tidal conditions during and prior to sampling
- Geographical coordinates of the water sampling points

**2.2 Environmental Monitoring**

Compliance to the Terms and Conditions of the BRP Report approval and implementation of the prescribed Mitigating Measures on:-

- Control of air and water pollution;
- Control of soil erosion and sedimentation;
- Waste generation and management;
- Traffic disruption and hazards;
- Public and occupational safety and health issues;
- Public complaints and etc.

**3.0 RESULT AND DISCUSSION****3.1 Water and Air Quality**

- Collation and evaluation of data ( to attach Laboratory Analysis Report )
- Interpretation of data with comparison to the baseline and the previous monitoring data
- Discussion
- Recommendation(s)

**3.2 Other Environmental Parameters**

- Various environmental components as stated in section 2.2.
- Status of implementation of the recommended mitigating measures
- Proposed remedial action(s)

**3.3 Comments Or Recommendation/Amendment to the Prescribed Mitigating Measures**

- Immediate remedial actions to be taken
- Additional mitigating measures required

**4.0 APPENDICES**

- Relevant plates and maps shall be inserted