

CHAPTER 9

EMP



Chapter

9

ENVIRONMENTAL MANAGEMENT PLAN

9.1 Introduction

This chapter discusses a framework of Environmental Management Plan (EMP) for the Project. Self-Guided Regulation (GSR) and post-EIA monitoring programme is also formulated to ensure full compliance of the environmental requirements necessary for environmentally sound implementation and to safeguard the existing and future condition of the environment.

9.2 Guided Self-Regulation (GSR)

A self-guided regulation (GSR) is adopted as a long-term goal to be achieved and a culture to be inculcated by the Project Proponent through mainstreaming of the environmental agenda. The implementation of environmental mainstreaming is to promote and instil self-regulation that will be translated into regulatory requirements on compliance and performance monitoring of pollution performance monitoring of pollution control measures, scheduled repotting, record keeping, competent persons and involvement of environmental professionals with specific roles.

The objectives of GSR are as follows:

- a) Ensure the Project Proponent's commitment / initiatives for further improvement
- b) Ensure the Project Proponent will provide competent persons at all levels of the organizational structure
- c) Ensure compliance to compliance limits
- d) Conduct immediate corrective actions for any non-compliances
- e) Conduct further investigation to find root causes of non-compliances, hence to avoid reoccurrence of non-compliances

The Environmental Mainstreaming Tools (EMT) that will be implemented by the Project Proponent are further discussed in the following sub-sections and appended in **Appendix 9.2.1**.





9.2.1 Environmental Policy (EP)

The Project Proponent has developed an Environmental Management Policy in order to improve its Environmental Management System (ISO 14001: 2015). It is a commitment from the Project Proponent on its strong environmental accountability to ensure compliance to environmental related aspects.

9.2.2 Environmental Budgeting (EB)

The Project Proponent has allocate sufficient budget for environmental related costs e.g. provision of personnel and relevant trainings and installation of pollution prevention and mitigation measures.

9.2.3 Environmental Management Committee

The success of an organization to comply with the environmental requirements is depending upon the relevant personnel in different departments in the organization playing their role in an effective manner. The organisation chart of the Environmental Monitoring Committee is shown in **Figure 9.2.1**.

9.2.4 Environmental Facility (EF)

In order to get immediate results on the performance of the P2M2 on-site during construction stage, equipment for *in-situ* measurement of Turbidity in order to assist Environmental Officer as the Competent Person to carry out his duties. Wherever applicable, the Project Proponent may need to establish a mini laboratory to fulfil this requirement.

9.2.5 Environmental Competency (EC)

A Competent Person is required to ensure regulatory compliance is on a continuous basis. The CP will represent the Project Proponent to liaise with DOE on environmental related matters. List of Competent Persons are provided in **Table 9.2.1**.

Table 9.2.1: List of Competent Persons

Name	Competency Certificate Number	Category
Nadiratul Noziana bt. Abd. Majid	00111	Certified Environmental Profesional In Scheduled Waste Management (CePSWAM)
Tariq b. Fuad	00112	Certified Environmental Profesional In Scheduled Waste Management (CePSWAM)
Hazmi b. Hamzah	00096	Certified Environmental Professional In Bag Filter Operation (CePBFO)
To be appointed		Certified Environmental Professional In Scrubber Operation (CePSO)



9.2.6 Environmental Reporting and Communication (ERC)

The Project Proponent shall establish a formal communication channel for reporting environmental concerns. Internal reporting shall be initiated to report on a regular basis, the regulatory compliance status to the top management. Updates of new environmental requirements and implications can be disseminated to the relevant company personnel

9.2.7 Environmental Transparency (ET)

To foster rapport with the immediate neighbours, promote green image and improve public confidence, the Project Proponent is encouraged to be more transparent in environmental compliance and achievement. Compliance status can be displayed on company's website (WB) or billboard (BB) located at the boundary or entrance to the company's premise or communicated to the immediate neighbours through issuance of fliers on a scheduled basis. An environmental sustainability report (ESR) can be prepare to showcase its success in managing the environmental concerns of the company and minimizing the environmental footprint of its business.

9.2.8 Environmental Mainstreaming Tools Compliance

Environmental Mainstreaming Tools (EMT) Compliance Report is a new requirement set by DOE for the Project Owner to include an effective and thorough environmental self-regulation culture in the company's policy. The Report will be submitted to DOE Negeri Melaka at least thirty days before Project operation stage.

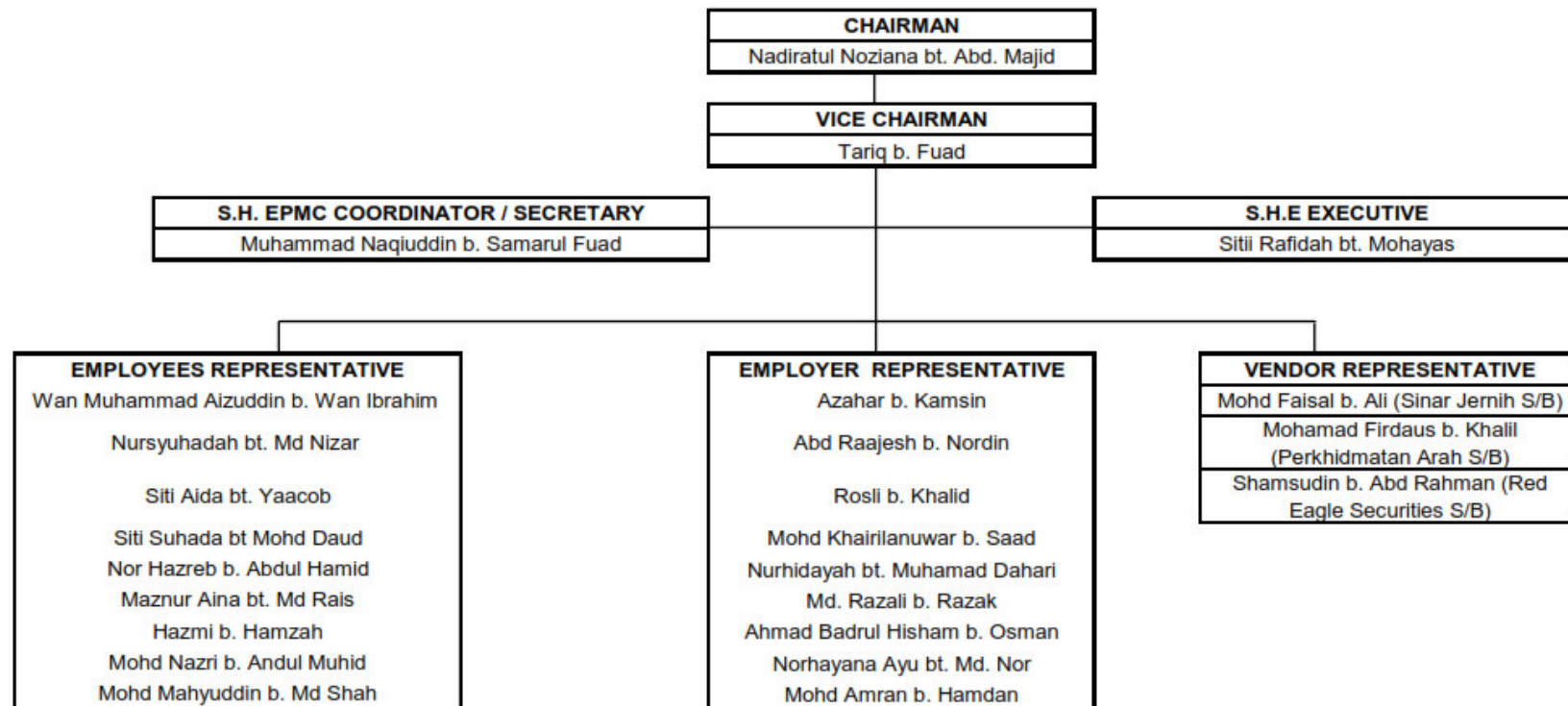


Figure 9.2.1: MSB's EMPC



9.3 Framework of Environmental Management Plan

An Environmental Management Plan (EMP) shall be established for both construction and operation stages of the Project. This is to ensure that the environmental impacts predicted are properly monitored and managed. This plan should be reviewed periodically by the Project Proponent to ensure that any changes to the Project's activities and layout, as well as new environmental requirements are updated. This review exercise should also encourage efforts for continuous improvement of environmental performances of its activities.

The EMP shall be developed around the following key principles:

- Establishment of an administrative framework by dedicating the responsibility for environment management and the associated resources including financial budget
- Integrate environmental factors and its management at various stages of the Project
- Provide a documented system for proper management and enhancement of the environmental management
- Identify the key potential environmental impacts and establish proper mitigation response procedures
- Set monitoring programme to check and report on the performances of mitigation measures
- Set standards that meet or exceed the relevant statutory requirements for the environment including requirements of DOE

To ensure a systematic Project's environmental management and to keep up with latest environmental requirement, the Project Proponent should practice the Concept of 5S (**Table 9.3.1**) during both construction and operation stages of the Project.

Table 9.3.1: Concept of 5S

Seiri	Organise, Sort - eliminate things that are obsolete and not in used, and store them away.
Seiton	Set in Order, Neatness - arrange the items or information used regularly so that they can be easily accessible and quickly store.
Seiso	Clean, Shine - everything is checked and functioning properly.
Seiketsu	Standardise - develop routine or programme to organise work areas and processes.
Shitsuke	Discipline, Sustain - create a culture that follows the steps of 5S on a daily basis.

Note: 5S was developed in Japan by Hiroyuki Hirano



9.3.1 EMP Format

The EMP shall be prepared according to the following general specifications and format as mentioned in the Guidance Document for the preparation and submission of EMP.

Chapter	Information to be included
Chapter 1: Introduction	▪ Project information ▪ Project layout as approved in the Development Order by Local Authority ▪ Project implementation schedule ▪ Name of the EMP preparer and consulting firm
Chapter 2: Policy	▪ Company's corporate policy statement on environmental management and protection ▪ Commitment by the top management on the mainstreaming of environmental agenda and instilling of self-regulation in the development project and on ensuring continuous compliance with the environmental regulatory requirements
Chapter 3: Organizational Structure	▪ Organization chart of the company's top management with responsibilities on environmental management and protection (provide names, positions, mobile phone contact numbers and e-mail addresses) ▪ Name, mobile phone contact number and e-mail address of environmental manager, environmental officer (EO), engineering consultant, contractor, site supervisor and competent person* (wherever relevant and available) (*Note: Competent person is a person certified by the DOE through the certification program administered by the Environment Institute of Malaysia, EiMAS) ▪ Name of environmental consultant and accredited laboratory conducting environmental monitoring, analysis of environmental samples and submitting reports to the DOE
Chapter 4: Training Requirement	▪ Plan for staff training in order to develop competency to discharge responsibilities on environmental requirements and compliance. The training areas shall include maintenance and performance monitoring of all pollution prevention and mitigation measures (P2M2) (land disturbing pollution prevention and mitigation measures (LD-P2M2), IETS, APCS, STS, management of scheduled waste), wherever relevant
Chapter 5: Environmental Requirement	▪ EIA Approval Conditions (COAs) ▪ Land disturbing pollution prevention and mitigation measures (LD-P2M2) ▪ Pollution prevention and mitigation measures (P2M2) that will be implemented as proposed in this EIA report and additional requirements



Chapter	Information to be included
	stipulated in the EIA approval conditions (COAs) ▪ Water Pollution Control which include performance monitoring (PM), compliance monitoring (CM) and impact monitoring (IM) ▪ Control of Air Pollution and Noise which include performance monitoring (PM), compliance monitoring (CM) and impact monitoring (IM) ▪ Materials And Waste Management ▪ Scheduled Waste Management ▪ Emergency Response Plan (ERP) ▪ Abandonment And Closure Plan
Declaration and Checklist	▪ Declaration by the Project Proponent that all actions/measures/plans outlined in the EMP will be implemented ▪ Checklist to assist in the EMP preparation and to summarize the EMP actionable items

Effectiveness of the EMP implementation is largely demonstrated by the compliances recorded during the environmental monitoring and auditing exercises.

9.4 Environmental Monitoring

Periodical monitoring is important to check on the performance of control measures initiated to control and minimise the impact to the environment. This is also to ensure that the potential impact remains insignificant.

The following sub-sections elaborate on the type of monitoring proposed for the Project.

9.4.1 Impact Monitoring

Impact monitoring proposed for implementation during the construction stage, testing and commission stage and operation stage of the Project are tabulated in **Table 9.4.1** and **Table 9.4.2**. The monitoring locations are as shown on **Figure 9.4.1** and **Figure 9.4.2**.

In order to ensure reliability of the test results, the field sampling and testing shall be conducted using relevant standard methods and performed by a SAMM accredited laboratory.



Table 9.4.1: Proposed Impact Monitoring Parameters during Construction Stage

No	Types of Monitoring	Approximate Coordinates (to be confirmed during monitoring exercise)		Compliance limit	Monitoring Frequency
1.	Water Quality Temperature (<i>in-situ</i>), pH value (<i>in-situ</i>), Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Mercury, Cadmium, Lead, Copper, Zinc, Iron, Manganese, Nickel, Total Chromium, Arsenic, Tin, Boron, Cyanide, Phenol, Free Chlorine, Sulphide, Oil and grease, Turbidity (NTU), Ammoniacal Nitrogen, Total Coliform Count, <i>Faecal Coliform Count</i> , Dioxin and furan	W1	2°16'47.6"N 102°10'50.3"E At existing drain next to the storm water drain discharge point at the southeast boundary of Project site	Class IIB of the NWQSM	Quarterly
		W2	2°16'47.3"N 102°10'50.4"E At existing drain next to the storm water drain discharge point at the west boundary of Project site		
		W3	2°16'00.9"N 102°10'37.6"E At Sg Ayer Salak located further downstream of the Project site		
2.	Ambient Air Quality PM ₁₀	A1	2°16'48.3"N 102° 10' 51.3"E At the north boundary of Project site.	Malaysian Ambient Air Quality Standard PM ₁₀ : 100 µg/m ³ over 24 hours average	Quarterly
3.	Noise Leq, L _{max} , L _{min} , L ₉₀ , L ₁₀	N1	2°16'48.27"N 102°10'50.89"E To represent the ambient noise level at the north boundary of the Project	Day time: 70 dB(A) Night time: 60 dB(A)	Quarterly
		N2	2°16'46.08"N 102°10'51.06"E To represent the ambient noise level at the west boundary of the Project site.		
		N3	2°16'44.7"N 102°10'52.9"E At the south boundary of the Project site.		

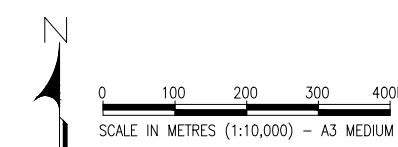


ENVIRONMENTAL IMPACT ASSESSMENT

PROPOSED NEW INSTALLATION OF
THERMAL TREATMENT FACILITY
FOR CENTRE OF HEALTHCARE
WASTE TREATMENT PLANT FOR
MEDIVEST SDN BHD AT LOT 6939,
6940, 6947 & 6948, MUKIM TANJUNG
MINYAK DAERAH MELAKA TENGAH,
MELAKA.

LEGEND:

- PROJECT SITE
- NOISE (N1-N3)
- AIR (A1)
- WATER (W1-W3)



**MONITORING LOCATIONS -
CONSTRUCTION STAGE**

SOURCE: Google Earth 2018

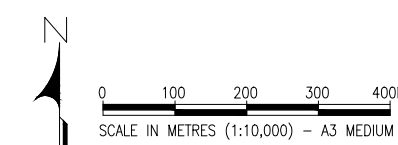
FIGURE: 9.4.1



ENVIRONMENTAL IMPACT ASSESSMENT
 PROPOSED NEW INSTALLATION OF
 THERMAL TREATMENT FACILITY
 FOR CENTRE OF HEALTHCARE
 WASTE TREATMENT PLANT FOR
 MEDIVEST SDN BHD AT LOT 24, 25, 32
 & 33, JALAN PBR 37, KAWASAN
 PERINDUSTRIAN BUKIT RAMBAI,
 FASA 4C, MUKIM TANJUNG MINYAK
 MELAKA

LEGEND:

- PROJECT SITE
- NOISE (N1-N3)
- AIR (A1-A4)
- WATER (W1-W3)



**MONITORING LOCATIONS -
 TESTING, COMMISSIONING &
 OPERATION STAGE**

SOURCE: Google Earth 2018

FIGURE: 9.4.2



Table 9.4.2: Proposed Impact Monitoring Parameters during Testing and Commissioning Stage and Operation Stage

No	Types of Monitoring	Approximate Coordinates (to be confirmed during monitoring exercise)		Compliance limit	Monitoring Frequency
1.	Water Quality Temperature (<i>in-situ</i>), pH value (<i>in-situ</i>), Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Mercury, Cadmium, Lead, Copper, Zinc, Iron, Manganese, Nickel, Total Chromium, Arsenic, Tin, Boron, Cyanide, Phenol, Free Chlorine, Sulphide, Oil and grease, Turbidity (NTU), Ammoniacal Nitrogen, Total Coliform Count, Faecal Coliform Count, Dioxin and furan	W1	2°16'47.6"N 102°10'50.3"E At existing drain next to the storm water drain discharge point at the southeast boundary of Project site	Class IIB of the NWQSM	Quarterly
		W2	2°16'47.3"N 102°10'50.4"E At existing drain next to the storm water drain discharge point at the west boundary of Project site		
		W3	2°16'00.9"N 102°10'37.6"E At Sg Ayer Salak located further downstream of the Project site		
2.	Ambient Air Quality PM ₁₀ , SO ₂ , NO ₂ , CO	A1	2°16'48.3"N 102° 10' 51.3"E At the north boundary of Project site.	Malaysian Ambient Air Quality Standard PM ₁₀ : 100 µg/m ³ (24 hour average) SO ₂ : 80 µg/m ³ (24 hour average) NO ₂ : 280 µg/m ³ (1 hour average) CO: 30 µg/m ³ (1hour average)	Quarterly
		A2	2°16'53.7"N 102°11'15.9"E At Taman Tg Minyak Utama located northeast of Project site.		
		A3	2°16'36.6"N 102° 10' 25.5"E At Kg Ayer Salak located southwest of the Project site.		
		A4	2°15'47.0"N 102° 11' 3.2"E At Taman Rambai Jaya located south of Project site.		
3.	Noise Leq, L _{max} , L _{min} , L ₉₀ , L ₁₀	N1	2°16'48.27"N 102°10'50.89"E To represent the ambient noise level at the north boundary of the Project	Day time: 70 dB(A) Night time: 60 dB(A)	Quarterly
		N2	2°16'46.08"N 102°10'51.06"E To represent the ambient noise level at the west boundary of the Project site.		
		N3	2°16'44.7"N 102°10'52.9"E At the south boundary of the Project site.		