

**GUIDANCE DOCUMENT FOR ADDRESSING SOIL EROSION AND SEDIMENT  
CONTROL ASPECTS IN THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA)  
REPORT**

**REQUIREMENT TO ADDRESS SOIL EROSION AND SEDIMENT CONTROL  
ASPECTS IN ALL EIA REPORTS**

1. All Environmental Impact Assessment (EIA) reports are required to address the aspects of soil erosion and sediment control.

**PURPOSE OF THE GUIDANCE DOCUMENT**

2. This Guidance Document is prepared to assist project proponents and environmental consultants in addressing the aspects of soil erosion and sediment control in the EIA reports. The information required as specified in this Guidance Document is additional to that required by the EIA Guideline in Malaysia and EIA specific guidelines for different sectors.

**CONTENT OF RELEVANT CHAPTERS ADDRESSING SOIL EROSION AND  
SEDIMENT CONTROL**

3. Soil erosion and sediment control shall be discussed in the following chapters in the EIA report.

**3.1 Project Description**

The project concept shall take into consideration the following aspects amongst others: terrain, geology, natural topography, hydrology and natural features.

Specifically, the following principles shall be adopted:-

a. Plan the development to fit the particular topography, soils, drainage patterns, natural features and vegetation of the sites, which is to be reflected in the layout plan.

b. Method statement that describes how the major activities of the project that may cause erosion and sedimentation are going to be undertaken. Taking into consideration site conditions involved, the method statement shall also incorporate appropriate phasing (taking into account rainy seasons or monsoon period), preservation of green areas and buffer zones.

3.2 Project Options describe options for method statement and layout plans and the reasons why a specific method statement and layout plan has been chosen.

3.3 Description of the Existing Environment apart from the information required as described in the EIA Guideline in Malaysia, the following information shall be included:-

a. Geological terrain mapping (for development on hills and highlands) in accordance with the requirements of the Department of Minerals and Geoscience (Manual Pemetaan Geologi Terrain, JMG 2006).

b. Erosion risk map.

c. Pre development conditions taking into consideration the following factors:-

rainfall-runoff erosivity factor (R), soil erodibility (K), topographic factor (LS), cover management factor (C), erosion control practice factor (P), volume of runoff (V) and peak flow (Q) for the storm event in order to determine soil loss and sediment yield

using Universal Soil Loss Equation (USLE) and Modified Universal Soil Loss Equation (MUSLE).

All factors used in the USLE and MUSLE shall be taken from local conditions and results from studies conducted locally. R= rainfall erosivity data, must be obtained from rainfall station nearest to the project site based on average ten years records.

C = cover management factor must be taken from the published results of studies by the DID Malaysia or other researchers, if unavailable. K= soil erodibility data, must be obtained from results from tests done for the specific site. Tests must be conducted to obtain values for K (erodibility).

### 3.4 Potential Significant Impacts

Apart from the information required as described in the EIA Guideline, the information on R, K, LS, C, P, V, and Q for the storm event shall be provided and used to determine soil loss and sediment yield using Universal Soil Loss Equation (USLE) and Modified Universal Soil Loss Equation (MUSLE) for the following scenarios:

a. During development/construction:

- i. Without mitigating measures (worst case scenario).
- ii. With mitigating measures.

b. Post development conditions

The calculation to determine the soil loss (USLE) and sediment yield (MUSLE) must be performed according to the stages of construction and phases of development. Mitigation measures shall be instituted to ensure that the pre development's flow conditions at the site are maintained in the post development stage.

The details of USLE and MUSLE calculations in paragraphs 3.3c, 3.4a and 3.4b shall be included as an appendix to the EIA report.

#### **4. Pollution Prevention and Mitigation Measures (P2M2)**

##### **4.1 Principles in Erosion and Sediment Control**

To prevent erosion and control sediment, the following primary principles shall be adopted:-

- a. Integrate project design with site constraints.
- b. Preserve and stabilize drainageways.
- c. Minimize the extent and duration of disturbance.
- d. Control runoff flows onto, through, and from the site in stable drainage structures.
- e. Install perimeter controls.
- f. Stabilize disturbed areas promptly in a timely manner.
- g. Protect steep slopes.
- h. Use sediment controls to prevent off-site damage.
- i. Protect inlets, storm drain outfalls, and culverts.
- j. Provide access and general construction controls.
- k. Inspect and maintain control measures.
- l. Employ experienced and competent personnel.
- m. Conduct training on environmental requirements to relevant parties

In addition to the measures taken in conformity with the above principles, erosion and sediment loss from the site shall be effectively controlled by applying appropriate P2M2.

##### **4.2 Pollution Prevention and Mitigation Measures**

The following information shall be provided:-

A site plan (which contains existing topographical and hydrological features, and land use) to be superimposed with site development plan (which illustrates the earthwork activities) which depicts pollution prevention and mitigating measures (P2M2) to be implemented on the site. The P2M2 shall include both temporary and permanent measures as described in paragraph 4.1. The drawings shall be drawn to scale and the scale clearly indicated. Drawings shall be legible with standard coding and submitted in A1 or A3 paper depending on the size of the project.

### **PROFESSIONAL TO PREPARE WRITE-UP ON SOIL EROSION AND SEDIMENT CONTROL IN EIA REPORT**

5. The write-up on soil erosion and sediment control as required by this Guidance Document shall be undertaken by an environmental consultant who is knowledgeable and experienced in the subject matter and holds a certification as a professional in erosion and sediment control issued by the Department of Environment.

### **PROVISION OF FUND FOR SOIL EROSION AND SEDIMENT CONTROL**

6. Sufficient fund shall be made available for the implementation of P2M2 and their maintenance, including EMP preparation, auditing, monitoring and emergencies. The commitment of the project proponent on making the fund available for the above purposes shall be clearly stated in the EIA report.

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