2013

Environmental Guidelines for Preparation of an Environmental Management Plan

Environmental Management Division

Environmental Protection Agency

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ENVIRONMENTAL GUIDELINES FOR PREPARATION OF AN ENVIRONMENT MANAGEMENT PLAN

1. Introduction

The Environment Protection Act 1996 (the Act) provides for the management, conservation, protection and improvement of the environment, the prevention of control of pollution, the assessment of the impact of economic development on the environment, and the sustainable use of natural resources.

One of the functions of the Environmental Protection Agency, established in the Act, is to prevent or control environmental pollution, as well as to ensure that any developmental activity which may cause an adverse effect on the natural environment be assessed before the activity commences. These functions are achieved through the execution of the Authorisations Programme of the Agency. To assist with assessing proposed and existing developments and ensure adequate mitigation measures are included in the preparation of agreements and Environmental Authorisations, the Agency may require the preparation of an Environment Management Plan (EMPs). This document should be developed by the developer, or Consultants hired by the developer, the structure which should be consistent with these guidelines.

An Environmental Management Plan (EMP) can be defined as "*an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented, and that the positive benefits of the projects are enhanced*"[1]. An EMP is recognised as a tool that can be used to provide assurance that developers make suitable provisions for counteracting negative impacts that occur through project implementation and operation.

2. Objectives of an Environmental Management Plan

An EMP provides a description of the methods and procedures for mitigating and monitoring impacts. Further, it contains environmental objectives and targets which the developer needs to accomplish in order to reduce or eliminate negative impacts. It is important to note that an EMP can be used throughout the project life cycle. However, the document should be regularly updated in an effort to remain aligned with the project as it progresses from construction to operation and to decommissioning.

[1] Lochner, P. 2005. *Guideline for Environmental Management Plans*. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

The objectives of the EMP are to:

1. Place the proposed/existing activity in the context of the local and regional environment;
2. Adequately describe all components of the proposed/existing activity, so that the Agency can consider approval of a well-defined project, and prescribe relevant and adequate Permit Conditions for the monitoring of the activity;
3. Identify the environmental issues/risks associated with the proposed/existing activity;
4. Provide the basis of the developer's environment management program, which shows that the environmental impacts resulting from the proposed/existing activity, including cumulative impacts, can be acceptably managed; and
5. Provide a document that clearly sets out the reasons why the proposed/existing activity should be considered environmentally acceptable.

3. Preparation of an Environmental Management Plan

The format of the EMP needs to fit the circumstances in which the EMP is being developed and the requirements it has to meet. The Agency encourages developers and Consultants preparing the EMP to have a close partnership with the Agency through the development of the document so as to ensure the design of the EMP is in line with the requirements.

3.1. General Requirements

The EMP submitted to the Agency is required to be presented in a professional format. Additionally, all information must be accurate, clear, unambiguous and suitable for an understanding of the treatment, control and backup methods to be employed. The EMP should provide a comprehensive description of the proposed/existing activity including its location (project address, block and section and certificate of ownership). Specific matters requiring attention are:

1. Justification and/or objectives for the proposed/existing activity;
2. The legal framework, including existing zoning and environmental approvals, decision making authorities and involved agencies; and
3. Consideration of alternative options.

3.2. Key characteristics of the proposed/existing activity

Include a description of the components of the proposed/existing activity, including the nature and extent of proposed and current works. This should include, but not be limited to, the following:

1. Life of project.
2. Total land area of site.
3. Identify any subsurface developments, and include relevant details (e.g. Water table depth).
4. Area of disturbance (including access).
5. Operating hours (during construction and business operating hours).

6. List of major components.
    i. Provide adequately dimensioned plans clearly showing the location and elements of the proposed/existing activity that are significant from the point of view of environmental protection.
    ii. Locate and show dimensions (for progressive stages of development, if relevant) of plant, amenities buildings, access ways, stockpile areas, dredge areas, waste product disposal and treatment areas, all dams and water storage areas, storage areas including fuel storage and waste oil and landscaped areas.
    iii. If appropriate, a process chart/mass balance diagram showing inputs, outputs and waste streams.
7. Solid waste management.
8. Water supply source (including maximum annual requirement).
9. Fuel storage capacity and quantity used (No. of fuel storage tanks above or underground).
10. A map showing the proposed/existing activity in the local context and in the regional context. The plan/s should include contours, north arrow, scale bar, legend, grid coordinates, the source of the data and a title.

3.3. Environmental Policy and Legal Framework

The EMP should define the Company's Environmental Policy and commitment to the protection of the Environment and the Legal Framework that will inform the design, development, and implementation of the EMP. Some aspects to consider are the following:

1. **The project developer's/company's profile, environmental management policies and commitments:** This section should include a summary of existing policies, guidelines and commitments in relation to health, safety and environment.
2. **Institutional arrangements:** This section should clearly define the responsibilities for management actions contained in the EMP, and clarify arrangements for coordination among the role players involved in implementation. Further, a flow diagram should be included showing responsibilities and communication channels.
3. **Legal requirements for the project:** The EMP should identify the legislation, standards, guidelines and associated permits or licences that apply to the project and are related to management activities specified in the EMP. This section aids in identifying the legal framework for environmental protection and the legal basis for mitigation.
4. **Definition of the environmental management objectives to be realized during the life of a project** (i.e. pre-construction, construction, operation and/or decommissioning phases) in order to enhance benefits and minimise adverse environmental impacts.
5. **Description of the detailed actions needed to achieve the environmental management objectives:** The description of actions should include how they will be achieved, by whom, by when, with what resources, with what monitoring/verification, and to what target or performance level. Mechanisms must also be provided to address changes in the project implementation, emergencies or unexpected events, and the associated approval processes.

3.4. Environmental Factors

The EMP should focus on the relevant environmental factors for the proposed/existing development, and these should be agreed in consultation with the Agency and other stakeholder agencies when necessary. The following points should be covered in the EMP:

1. **A description of the surrounding environment**, including land uses and features.
2. **Summary of impacts associated with the proposed activity:** A summary of the predicted negative and positive impacts associated that require management actions (i.e. mitigation of negative impacts or enhancement of positive impacts) should be summarised. Particular emphasis should be placed on impacts that are of medium and high significance.
3. **Description of mitigation measures:** The EMP should identify feasible and cost effective mitigation measures to reduce significant negative environmental impacts to acceptable and legal levels. Mitigation measures should be described in detail and be accompanied by designs, equipment descriptions, and operating procedures. The technical aspects of implementing the mitigation measures should be described.
4. **Description of monitoring programme:** Environmental performance monitoring should be designed to ensure that mitigation measures are implemented. The monitoring programme should clearly indicate the linkages between impacts, indicators to be measured, measurement methods and definition of thresholds that will signal the need for corrective action.

   A monitoring programme could comprise three aspects:

   i. **Baseline measuring:** This should occur prior to the start of the project or activity in order to determine the level and status of the environmental parameters prior to any impacts associated with the project or activity.
   ii. **Impact (or performance) monitoring:** This type of monitoring should be ongoing throughout the project's life-cycle. Further, impact monitoring must be implemented to ensure that environmental impacts are within the predicted levels and that specified environmental performance targets are being achieved.
   iii. **Compliance monitoring:** This type of monitoring is implemented to ensure that the prescribed mitigation measures are effective. Further, it ensures that the level of environmental parameters is compliant with the laws, regulations, and standards stipulated in the legal framework for environmental protection identified in the EMP.
5. **Implementation schedule and reporting procedures:** An implementation schedule must be prepared showing the sequence and timing (including frequency and duration) of the management actions and monitoring activities of the EMP. The measures should be specified in an implementation schedule, showing links with the overall project.
6. **Procedures to provide information on the progress and results of mitigation and monitoring measures** should also be clearly specified.
7. **Cost estimates:** This section provides cost estimates for initial and recurring expenses for implementation of the EMP, including provision for: mitigation and enhancement actions; training and environmental awareness requirements; monitoring; auditing; and corrective actions.

8. **Training and environmental awareness:** This section of the document should specify the requirements with regards to training and environmental awareness for all site and other project personnel to ensure that actions specified within the EMP are implemented effectively and efficiently.
9. **Documentation and record keeping:** The EMP should indicate what systems will be put in place to ensure proper document handling and control, for all EMP documentation.
10. **Reporting procedures:** This section should stipulate the reporting procedures and practices to be followed during EMP implementation.
11. **Auditing:** This section should provide details on the schedule for environmental auditing, auditing team, reporting of results and corrective actions when needed.
12. **Emergency response plan (ERP):** This plan is developed with a goal to protect human health and the environment to the extent possible through minimization of impacts.

3.5. EMP Submission Checklist

This checklist is presented to help improve the information being provided and as such assist in reducing the timeframe for assessments. Information should be provided on all those items that are relevant to the proposal/existing development. It should also be noted that the list presented below is by no means limited and can be modified by the Agency at any given time.

	Issues to Consider	Yes	No	NA
1	**Have you described the proposed/existing development in full and included plans showing the location of the proposed/existing development and surrounding environment (land uses/features)?**			
	a. Description of proposed activities.			
	b. Ownership details of proposed land area.			
	c. Bush land areas, other system areas and reserves.			
	d. Wetlands and waterways (e.g. declared waterways, etc.)			
	e. Priority surface and groundwater protection areas (e.g. public drinking water sources and other declared areas).			
	f. Any existing site contamination or details of previous land uses which may have contaminated the soil or water resources.			
	g. A layout of the proposed/existing development on a site plan with the current topography including contour lines and catchment boundaries, catchment areas, adjacent areas including creeks and buildings; the location of permanent storm water inlets, pipes, outlets, and other permanent drainage facilities; current vegetation on site and vegetation to be removed from the site, and detailed alterations to existing land structures.			

	Issues to Consider	Yes	No	NA
2	**Have you addressed relevant issues from the following list and identified control measures to address environmental impacts? Details on control measures identified for each particular issue must be included.**			
	a. Air.			
	b. Particulates/dust.			
	c. Odour.			
	d. Noise/vibration.			
	e. Surface water.			
	f. Groundwater.			
	g. Wastewater reuse.			
	h. Solid waste.			
	i. Hazardous waste (medical, radioactive, chemical).			
	j. Hazardous materials.			
	k. Chemical substances, management and storage.			
	l. Compressed/liquid gas.			
	m. Underground/above ground fuel storage tanks.			
	n. Discharges to land.			
	o. Discharges to surface water.			
	p. Discharges to groundwater.			
3	**Have you addressed onsite water usage? for example:**			
	a. Irrigation.			
	b. Cleaning.			
	c. Drinking.			
4	**Have you provided the following information?**			
	a. Operating hours.			
	b. Timescale for completion of construction works.			
	c. Planned timelines for construction and operation.			
	d. Risk assessment.			
	e. Environmental Protection measures required.			
	f. Detailed Monitoring Schedule			
	g. Company contact details including 24-hour emergency phone number.			

4. Submission of the Environment Management Plan

Three hard copies and an electronic copy of the Environment Management Plan should be submitted to the Environmental Management Division of the Environment Protection Agency at:
Ganges Street, Sophia.
Georgetown.
Telephone: 225 05 06.

Once the required copies of the document are submitted to the Agency, there will be a 30-day review period, after which the Agency will communicate to the developer whether the EMP is satisfactory or any additional information is required. In such cases, three hard copies and an electronic copy of the revised EMP should be submitted to the Agency.

When the Agency is satisfied with the standard of the EMP, it will provide an acceptance and approval letter to the developer and the EMP will be implemented as a condition of an Environmental Authorization.

The Environmental Protection Agency encourages companies to move towards ISO 14000 certification. ISO 14000 is a set of international environmental standard which allow companies to achieve an Environmental Management System. Although ISO 14000 is a voluntary standard, participation in this process will allow an organisation to:

- reduce environmental fines and regulatory audits;
- eliminate environmental trade barriers;
- meet customer requirements for a credible environmental management system
- expand market share;
- lower potential for liability;
- improve public and stockholder relations;
- enhance management systems;
- Increase profitability via reduction of wastes etc.

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