

9.0 REPORTING

9.1 General

9.1.1 The following reporting requirements are based upon a paper documented approach. However, the same information can be provided in an electronic medium upon agreeing the format with the ER and the DEP. The reports are required to be prepared by the ES. All reports shall be approved in writing by DEP.

9.2 Baseline Monitoring Report

9.2.1 The ES shall prepare and submit a Baseline Environmental Monitoring Report within 10 working days of completion of baseline monitoring. Copies of the Baseline Environmental Monitoring Report shall be submitted to each of the four parties: the Contractor, the IC(E), the ER and the DEP. The ES shall liaise with the relevant parties on the exact number of copies required.

9.2.2 The baseline monitoring report shall include at least the following:

- (i) up to half a page executive summary;
- (ii) background information;
- (iii) drawings showing locations of the baseline monitoring stations;
- (iv) an updated construction programme with milestones of environmental protection/mitigation activities annotated;
- (v) monitoring results (in both hard and diskette copies) together with the following information:
 - C monitoring methodology;
 - C name of laboratory and equipment used and calibration details;
 - C parameters monitored;
 - C monitoring locations (and depth);
 - C monitoring date, time, frequency and duration; and
 - C QA/QC results and detection limits.
- (vi) details on influencing factors, including:
 - C major activities, if any, being carried out on the site during the period;
 - C weather conditions during the period;
 - C other factors which might affect the results;
- (viii) determination of the Action and Limit Levels for each monitoring parameter and statistical analysis of the baseline data;

- (ix) revisions for inclusion in the EM&A Manual; and
- (x) comments and conclusions.

9.3 EM&A Reports

- 9.3.1 The results and findings of all EM&A work during the construction and operational phases required in this Manual shall be recorded in the EM&A Reports prepared by the ES and endorsed by the IC(E). The EM&A Reports during the construction phase shall be prepared and submitted within 10 working days of the end of each reporting month, with the first report due one month and 10 days after construction commences. Operational phase EM&A reports shall be completed bi-monthly and submitted 10 days after the bi-monthly landscape audit.
- 9.3.2 A maximum of 4 copies of each EM&A Report shall be submitted to each of the four parties: the Contractor, the IC(E), the ER and the DEP. Before submission of the first EM&A Report, the ES shall liaise with the parties on the exact number of copies and format of the reports in both hard copy and electronic medium.
- 9.3.3 The ES shall review the monitoring programme every 6 months or on as needed basis in order to cater for any changes in the surrounding environment and nature of works in progress and shall document all observation in the monthly report.

9.4 First EM&A Report

- 9.4.1 The first EM&A report shall include at least the following:
- (i) 1-2 pages executive summary, comprising:
 - C breaches of AL levels;
 - C complaint log;
 - C notifications of any summons and successful prosecutions;
 - C reporting changes; and
 - C future key issues.
 - (ii) Basic project information including a synopsis of the Project organisation (including key personnel, contact names and telephone numbers), a drawing of the project area showing the environmentally sensitive receivers and the locations of monitoring and control stations, programme, management structure and the work undertaken during the month.
 - (iii) Environmental status, including:
 - C works undertaken during the month with illustrations (such as location of works, daily dredging/filling rates percentage fines in the fill material used); and
 - C drawing showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations.

- (iv) a brief summary of EM&A requirements including:
 - C all monitoring parameters;
 - C environmental quality performance limits (Action and Limit levels);
 - C Event-Action Plans;
 - C environmental mitigation measures, as recommended in the Project EIA study final report; and
 - C environmental requirements in contract documents.
- (v) Advice on the implementation status of environmental protection and pollution control/mitigation measures as recommended in the Project EIA study report and summarised in the updated implementation schedule.
- (vi) Monitoring results (in both hard and diskette copies) together with the following information:
 - C monitoring methodology;
 - C name of laboratory and equipment used and calibration details;
 - C parameters monitored;
 - C monitoring locations (and depth); and
 - C monitoring date, time, frequency, and duration.
- (vii) Graphical plots of trends of monitored parameters at the representative monitoring stations annotated against the following:
 - C major activities being carried out on site during the period;
 - C weather conditions during the period;
 - C any other factors which might affect the monitoring results; and
 - C QA/QC results and detection limits.
- (viii) A summary of noncompliance (exceedances) of the environmental quality performance limits (Action and Limit levels).
- (ix) A review of the reasons for and the implications of noncompliance including a review of pollution sources and working procedures.
- (x) A description of the actions taken in the event of noncompliance and deficiency reporting and any follow-up procedures related to earlier noncompliance.
- (xi) A summary record of all complaints received (written or verbal) for each media, including locations and nature of complaints, liaison and consultation undertaken, actions and follow-up procedures taken and summary of complaints.
- (xii) A summary of notifications of summons, successful prosecutions for breaches of

environmental protection/pollution control legislation and actions to rectify such breaches.

- (xiii) An account of the future key issues as assessed from the works programme and work method statements.
- (xiv) Advice on the solid and liquid waste management status.
- (xv) Submission of implementation status proforma, proactive environmental protection proforma, regulatory compliance proforma, site inspection proforma, data recovery schedule and complaint log summarizing the EM&A of the period.

9.5 Subsequent EM&A Reports

9.5.1 The subsequent EM&A reports shall include the following:

- (i) Title page.
- (ii) Executive summary (1-2 pages), comprising:
 - C breaches of all Action and Limit levels;
 - C complaint log;
 - C notifications of any summons and successful prosecutions;
 - C reporting changes; and
 - C future key issues.
- (iii) Contents page.
- (iv) Environmental status, comprising:
 - C drawing showing the Project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
 - C summary of non-compliance with the environmental quality performance limits; and
 - C summary of complaints.
- (v) Environmental issues and actions, including:
 - C review issues carried forward and any follow-up procedures related to earlier non-compliance (complaints and deficiencies);
 - C description of the actions taken in the event of noncompliance and deficiency reporting;
 - C recommendations (should be specific and target the appropriate party for action); and
 - C implementation status of the mitigatory measures and the corresponding

effectiveness of the measures.

- (vi) Future key issues.
- (vii) Appendix, comprising:
 - C action and limit levels;
 - C graphical plots of trends of monitored parameters at key stations over the past four reporting periods for representative monitoring stations annotated against the following: major activities being carried out on site during the period; weather conditions during the period; and any other factors which might affect the monitoring results;
 - C monitoring schedule for the present and next reporting period;
 - C cumulative complaints statistics; and
 - C details of complaints, outstanding issues and deficiencies.

9.6 Quarterly EM&A Summary Reports

9.6.1 The ES shall submit Quarterly EM&A Summary Reports, during the construction phase only, which should be around 5 pages (including about 3 of text and tables and 2 of figures) and shall contain at minimum the following information:

- (i) Up to half a page executive summary.
- (ii) Basic project information including a synopsis of the Project organisation, programme, contacts of key management, and a synopsis of work undertaken during the quarter.
- (iii) A brief summary of EM&A requirements including:
 - C monitoring parameters;
 - C environmental quality performance limits (Action and Limit levels); and
 - C environmental mitigation measures, as recommended in the Project EIA study final report.
- (iv) Advice on the implementation status of environmental protection and pollution control/mitigation measures as recommended in the Project EIA study report and summarised in the updated implementation schedule.
- (v) Drawings showing the Project area, any environmental sensitive receivers and the locations of the monitoring and control stations.
- (vi) Graphical plots of the trends of monitored parameters over the past 4 months (the last month of the previous quarter and the present quarter) for representative monitoring stations annotated against:
 - C the major activities being carried out on site during the period;

- C weather conditions during the period; and
 - C any other factors which might affect the monitoring results.
- (vii) Advice on the solid and liquid waste management status.
 - (viii) A summary of noncompliance (exceedances) of the environmental quality performance limits (Action and Limit levels).
 - (ix) A brief review of the reasons for and the implications of non-compliance including review of pollution sources and working procedures.
 - (x) A summary description of the actions taken in the event of non-compliance and any follow-up procedures related to earlier non-compliance.
 - (xi) A summary record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken.
 - (xii) Comments (e.g. effectiveness and efficiency of the mitigation measures), recommendations (e.g. any improvement in the EM&A programme) and conclusions for the quarter.
 - (xiii) Proponents' contacts and any hotline telephone number for the public to make enquiries.

9.7 Annual/Final EM&A Review Reports

9.7.1 The termination of EM&A programme shall be determined on the following basis:

- (i) completion of construction activities and insignificant environmental impacts of the remaining outstanding construction works;
- (ii) trends analysis to demonstrate the narrow down of monitoring exceedances due to construction activities and the return of ambient environmental conditions in comparison with baseline data; and
- (iii) no environmental complaint and prosecution involved.

9.7.2 The annual/final EM&A report should contain at least the following information:

- (i) Executive Summary (1-2 pages).;
- (ii) Drawings showing the project area any environmental sensitive receivers and the locations of the monitoring and control stations.
- (iii) Basic project information including a synopsis of the project organization, contacts for key management staff and a synopsis of work undertaken during the course of the project or past twelve months.

- (iv) A brief summary of EM&A requirements including:
 - C environmental mitigation measures as recommended in the project EIA study final report;
 - C environmental impact hypotheses tested;
 - C environmental quality performance limits (Action and Limit Levels);
 - C all monitoring parameters; and
 - C Event-Action Plans.
- (v) A summary of the implementation status of environmental protection and pollution control/mitigation measures as recommended in the project EIA study report and summarised in the updated implementation schedule.
- (vi) Graphical plots and the statistical analysis of the trends of monitored parameters over the course of the projects including the post-project monitoring (or the past twelve months for annual reports) for all monitoring stations annotated against;
 - the major activities being carried out on site during the period;
 - weather conditions during the period, and
 - any other factors which might affect the monitoring results.
- (vii) A summary of noncompliance (exceedances) of the environmental quality performance limits (Action and Limit levels).
- (viii) A review of the reasons for and the implications of non-compliance including review of pollution sources and working procedures as appropriate.
- (ix) A description of the actions taken in the event of non-compliance.
- (x) A summary record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken.
- (xi) A summary record of notifications of summonses and successful prosecutions for breaches of the current environmental protection/pollution control legislations, locations and nature of the breaches investigation, follow-up actions taken and results.
- (xii) A review of the validity of EIA predictions and identification of shortcomings in the EIA recommendations.
- (xiii) A review of the effectiveness and efficiency of the mitigation measures.
- (xiv) A review of the success of the EM&A programme to identify any deterioration and to initiate prompt effective mitigatory action when necessary cost effectively.

9.8 Data Keeping

9.8.1 The site documents such as the monitoring field records, laboratory analysis records, site inspection forms, etc. are not required to be included in the EM&A Reports for submission. However, the documents shall be kept by the ES and be ready for inspection upon request. All relevant information shall be clearly and systematically recorded in the documents. The monitoring data shall also be recorded on disk the soft copy shall be available upon request. All the documents and data shall be kept for at least one year after completion of the construction contract.

9.9 Interim Notifications of Environmental Quality Limit Exceedances

9.9.1 With reference to Event/Action Plans, when the environmental quality limits are exceeded, the ES shall immediately notify the Contractor, the ER and the DEP, as appropriate. The notification shall be followed up with advice to each party on the results of the investigation, proposed action and success of the action taken, with any necessary follow-up proposals. A sample template for the interim notifications is shown in Drawing 9.1.

Drawing 9.1 Sample Template for Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	
Date	
Time	
Monitoring Location	
Parameter	
Action & Limit Levels	
Measured Level	
Possible reason for Action or Limit Level Non-compliance	
Actions taken / to be taken	
Remarks	

Location Plan

Prepared by : _____

Designation : _____

Signature : _____

Date : _____