

## 8 REPORTING

### General

- 8.1 Reports can be provided in an electronic medium upon agreeing the format with the ER and EPD. This would enable a transition from a paper / historic and reactive approach to an electronic / real time proactive approach. All the monitoring data (baseline and impact) shall also be submitted in diskettes. The formats for air quality, noise and water quality monitoring data to be submitted on diskette as shown in Appendix B.
- 8.2 Types of reports that the ET Leader shall prepare and submit include baseline monitoring report, monthly EM&A report, quarterly EM&A summary report and final EM&A review report. In accordance with Annex 21 of the EIAO-TM, a copy of the monthly, quarterly summary and final review EM&A reports shall be made available to the Director of Environmental Protection.
- 8.3 To facilitate public inspection of the Baseline Monitoring Report and various EM&A Report via the EIAO internet website and at the EIAO register office, these reports shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by EPD. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of these reports shall be included in the beginning of the document. Hyperlinks to all figures, drawings and tables in these reports shall be provided in the main text from where the respective references are made. All graphics in these reports shall be in interlaced GIF format unless otherwise agreed by EPD. The content of the electronic copies of these reports must be the same as the hard copies. The summary of the monitoring data taken shall be included in the various EM&A Reports to allow for public inspection via the EIAO internet website.

### Baseline Monitoring Report

- 8.4 The ET Leader shall prepare and submit a Baseline Environmental Monitoring Report within 10 working days of completion of the baseline monitoring. Copies of the Baseline Environmental Monitoring Report shall be submitted to the Contractor, the IC(E), the ER, EPD and AFCD. The ET Leader shall liaise with the relevant parties on the exact number of copies they require. The report format and baseline monitoring data format shall be agreed with the EPD prior to submission.
- 8.5 The baseline monitoring report shall include at least the following:
- (i) Up to half a page executive summary;
  - (ii) Brief project background information;
  - (iii) Drawings showing locations of the baseline monitoring stations;

- (iv) Monitoring results (in both hard and diskette copies) together with the following information:
  - ❑ Monitoring methodology;
  - ❑ Name of laboratory and types of equipment used and calibration details;
  - ❑ Parameters monitored;
  - ❑ Monitoring locations;
  - ❑ Monitoring date, time, frequency and duration; and
  - ❑ Quality assurance (QA) / quality control (QC) results and detection limits;
- (v) Details of influencing factors, including:
  - ❑ Major activities, if any, being carried out on the site during the period;
  - ❑ Weather conditions during the period; and
  - ❑ Other factors which might affect results;
- (vi) Determined of the Action and Limit Levels for each monitoring parameter and statistical analysis of the baseline data, the analysis shall conclude if there is any significant difference between control and impact stations for the parameters monitored;
- (vii) Revisions for inclusion in the EM&A Manual; and
- (viii) Comments, recommendations and conclusions.

### Monthly EM&A Report

- 8.6 The results and findings of all EM&A work required in the Manual shall be recorded in the monthly EM&A reports prepared by the ET Leader. The EM&A report shall be prepared and submitted within 10 working days of the end of each reporting month, with the first report due the month after construction commences. Each monthly EM&A report shall be submitted to the following parties: the Contractor, the IC(E), the ER, EPD and AFCD. Before submission of the first EM&A report, the ET Leader shall liaise with the parties on the required number of copies and format of the monthly, quarterly or other EM&A reports will be needed to be submitted by the operator during the operation phase, except the 12-month post commissioning monitoring, as there are no parameters, under the EM&A Manuals, that needs to be measured by the plant operator after the termination of the post commissioning monitoring.
- 8.7 The ET leader shall review the number and location of monitoring stations and parameters every six months, or on as needed basis, in order to cater for any changes in the surrounding environment and the nature of works in progress.

## Post Commissioning Monitoring Reports

8.8 The main objective of the post-commissioning monitoring work is to ensure that the water quality nearby water body due to the outfall discharge is more or less in line with the EIA predictions (i.e. no deterioration in local water quality). As a minimum, one baseline monitoring report and a total of four quarterly summary reports for the post-commissioning monitoring should be prepared with appropriate statistical analyses to show the water quality changes before and after the commissioning the outfall. The last quarterly summary report for the post-commissioning monitoring and analysis of all data collected with conclusions on whether or not the findings are in line with the EIA predictions and whether the outfall discharge is causing any adverse impacts on the receiving environment and, if so in what respects.

## First Monthly EM&A Report

8.9 The first monthly EM&A report shall include at least the following:

- (i) Executive summary (1-2 pages):
  - ❑ Breaches of Action and Limit levels;
  - ❑ Complaint log;
  - ❑ Notifications of any summons and successful prosecutions;
  - ❑ Reporting changes; and
  - ❑ Future key issues.
- (ii) Basic project information:
  - ❑ Project organisation including key personnel contact names and telephone numbers;
  - ❑ Programme;
  - ❑ Management structure, and
  - ❑ Works undertaken during the month.
- (iii) Environmental status:
  - ❑ Works undertaken during the month with illustrations (such as location of works, daily excavation rate, etc); and
  - ❑ Drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations (with co-ordinates of the monitoring locations).
- (iv) A brief summary of EM&A requirements including:
  - ❑ All monitoring parameters;

- Environmental quality performance limits (Action and Limit levels);
  - Event-Action Plans;
  - Environmental mitigation measures, as recommended in the project EIA study final report; and
  - Environmental requirements in contract documents;
- (v) Implementation status:
- Advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the project EIA;
- (vi) Monitoring results (in both hard and diskette copies) together with the following information:
- Monitoring methodology;
  - Name of laboratory and types of equipment used and calibration details;
  - Parameters monitored;
  - Monitoring locations;
  - Monitoring date, time, frequency, and duration;
  - Weather conditions during the period;
  - Any other factors which might affect the monitoring results; and
  - QA/QC results and detection limits;
- (vii) Report on non-compliance, complaints, and notifications of summons and successful prosecutions:
- Record of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels);
  - Record of all complaints received (written or verbal) for each media, including locations and nature of complaints investigation, liaison and consultation undertaken, actions and follow-up procedures taken, results and summary;
  - Record of all notification of summons and successful prosecutions for breaches of current environmental protection / pollution control legislation, including locations and nature of the breaches, investigation, follow-up actions taken, results and summary;
  - Review of the reasons for and the implications of non-compliance, complaints, summons and prosecutions including review of pollution sources and working procedures; and

- Description of the actions taken in the event of non-compliance and deficiency reporting and any follow-up procedures related to earlier non-compliance;
- (viii) Comparison with project impact predictions with actual impacts:
  - Report the latest status of compliance with environmental permit under EIAO, EP submission, implementation of mitigation measures, impact prediction review and waste generation and disposal records.
- (ix) Others
  - An account of the future key issues as reviewed from the works programme and work method statements;
  - Advice on the solid and liquid waste management status; and
  - Comments (for examples, effectiveness and efficiency of the mitigation measures), recommendations (for example, any improvement in the EM&A programme) and conclusions.

### Subsequent EM&A Reports

8.10 Subsequent monthly EM&A reports shall include the following:

- (i) executive summary (1-2 pages):
  - breaches of Action and Limit levels;
  - complaints log;
  - notifications of any summons and successful prosecutions;
  - reporting changes; and
  - future key issues.
- (ii) Basic project information:
  - Project organisation including key personnel contact names and telephone numbers;
  - Programme;
  - Management structure; and
  - Work undertaken during the month;
- (iii) Environmental status:
  - Works undertaken during the month with illustrations (such as location of works, daily excavation rate, etc.); and

- Drawing showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations.
- (iv) Implementation status:
- Advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the project EIA;
- (v) Monitoring results (in both hard and diskette copies) together with the following information:
- Monitoring methodology;
  - Name of laboratory and types of equipment used and calibration details;
  - Parameters monitored;
  - Monitoring locations;
  - Monitoring date, time, frequency, and duration;
  - Weather conditions during the period;
  - Any other factors which might affect the monitoring results; and
  - QA/QC results and detection limits.
- (vi) Report on non-compliance, complaints, and notifications of summons and successful prosecutions:
- Record of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels);
  - Record of all complaints received (written or verbal) for each media, including locations and nature of complaints investigation, liaison and consultation undertaken, actions and follow-up procedures taken, results and summary;
  - Record of all notification of summons and successful prosecutions for breaches of current environmental protection / pollution control legislation, including locations and nature of the breaches, investigation, follow-up actions taken, results and summary;
  - Review of the reasons for and the implications of non-compliance, complaints, summons and prosecutions including review of pollution sources and working procedures; and
  - Description of the actions taken in the event of non-compliance and deficiency reporting and any follow-up procedures related to earlier non-compliance.

- (vii) Comparison with project impact predictions with actual impacts:
  - ❑ Report the latest status of compliance with environmental permit under EIAO, EP submission, implementation of mitigation measures, impact prediction review and waste generation and disposal records.
  
- (viii) Others
  - ❑ An account of the future key issues as reviewed from the works programme and work method statements;
  - ❑ Advice on the solid and liquid waste management status, and
  - ❑ Comments (for examples, effectiveness and efficiency of the mitigation measure), recommendations (for example, any improvement in the EM&A programme) and conclusions.
  
- (ix) Appendix
  - ❑ Action and Limit Levels;
  - ❑ Graphical plots of trends of monitored parameters at key stations over the past four reporting periods for representative monitoring stations annotated against the following:
    - (a) Major activities being carried out on site during the period;
    - (b) Weather conditions during the period; and
    - (c) Any other factors that might affect the monitoring results.
  - ❑ Monitoring schedule for the present and next reporting period;
  - ❑ Cumulative statistics on complaints, notifications of summons and successful prosecutions; and
  - ❑ Outstanding issues and deficiencies.

### **Quarterly EM&A Summary Reports**

- 8.11 A quarterly EM&A summary report of around 5 pages shall be produced and shall contain at least the following information:
- (i) Executive summary (1-2 pages);
  - (ii) Basic project information including a synopsis of the project organization, programme, contacts of key management, and a synopsis of works undertaken during the quarter;
  - (iii) A brief summary of EM&A requirements including:
    - ❑ Monitoring parameters;
    - ❑ Environmental quality performance limits (Action and Limit levels); and

- Environmental mitigation measures, as recommended in the project EIA Final Report;
- (iv) Advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the project EIA Final Report, summarized 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 any trends in monitored parameters over the past four months (the last month of the previous quarter and the present quarter) for representative monitoring stations annotated against:
  - The major activities being carried out on site during the period;
  - Weather conditions during the period;
  - Any other factors which might affect the monitoring results; and
  - Advice on the solid and liquid waste management status;
- (vii) A summary of non-compliance (exceedances) of the environmental quality performance limits (Action and Limit levels);
- (viii) A brief review of the reasons for and the implications of any non-compliance, including a review of pollution sources and working procedures;
- (ix) A summary description of actions taken in the event of non-compliance and any follow-up procedures related to any earlier non-compliance;
- (x) A summarized record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken;
- (xi) Comments (for examples, a review of the effectiveness and efficiency of the mitigation measures and the performance of the environmental management system, that is, of the overall EM&A programme); recommendations (for example, any improvement in the EM&A programme) and conclusions for the quarter; and
- (xii) Proponents' contacts and any hotline telephone number for the public to make enquiries.

### **Final EM&A Review Report**

8.12 The final EM&A report should contain at least the following information:

- (i) executive summary (1-2 pages);



- (ii) drawing 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 of key management, and a synopsis of work undertaken during the course of the project of past twelve months;
- (iv) a brief summary of EM&A requirements including:
  - ❑ environmental mitigation measures, as recommended in the project EIA Report;
  - ❑ environmental impact hypotheses tested;
  - ❑ environmental quality performance limits (Action and Limit levels);
  - ❑ all monitoring parameters;
  - ❑ Event-Action Plans;
- (v) A summary of the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the project EIA Report, summarized in the updated implementation schedule;
- (vi) Graphical plots and the statistical analysis of the trends of monitored parameters over the course of the project, including the post-project monitoring 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 non-compliance (exceedance) 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 summons and successful prosecutions for breaches of the current environmental protection / pollution control legislation, 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 EIA recommendations; and
- (xiii) Comments (for examples, a review of the effectiveness and efficiency of the mitigation measures and of the performance of the environmental management system, that is, of the overall EM&A programme);
- (xiv) Recommendations and conclusions (for example, a review of success of the overall EM&A programme to cost-effectively identify deterioration and to initiate prompt effective mitigatory action when necessary).

### **Data Keeping**

- 8.13 No site-based documents (such as monitoring field records, laboratory analysis records, site inspection forms, etc.) are required to be included in the monthly EM&A reports. However, any such document shall be well kept by the ET Leader and be ready for inspection upon request. All relevant information shall be clearly and systematically recorded in the document. Monitoring data shall also be recorded in magnetic media form, and the software copy must be available upon request. Data format shall be agreed with the EPD. All documents and data shall be kept for at least one year following completion of the construction contract.

### **Interim Notifications of Environmental Quality Limit Exceedances**

- 8.14 With reference to the Event and Action Plan, when the environmental quality performance limits are exceeded, the ET Leader shall immediately notify the IC(E), EPD and AFCD, as appropriate. The notification shall be followed up with advice to IC(E), EPD and AFCD on the results of the investigation, proposed actions and success of the actions taken, with any necessary follow-up proposals. A sample template for the interim notifications is presented in **Appendix C**.