

Guideline for Reporting on Environmental Monitoring

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1 Introduction

The Northern Territory Environment Protection Authority (NT EPA) receives environmental monitoring reports for a variety of reasons, including:

- voluntarily submission by stakeholders for reference or review
- in association with special projects the NT EPA is involved with
- referrals from other government agencies, or
- in accordance with Northern Territory or Commonwealth legislation.

This guideline has been developed to outline the NT EPA's requirements for environmental monitoring reports – to establish a minimum standard and consistent approach. The guideline outlines how to report the information collected through monitoring to the NT EPA.

The guideline has been based on information contained within the:

- ANZECC & ARMCANZ, 2000: *Australian Guidelines for Water Quality Monitoring and Reporting*, National Water Quality Management Strategy Paper No. 7
- Environment Protection Authority, South Australia, 2007: *Regulatory Monitoring and Testing – Reporting Requirements*.

The NT EPA has prepared this document in good faith, exercising all due care and attention, but no representation or warranty, express or implied, is made as to the relevance, completeness or fitness for purpose of this document in respect of any particular user's circumstances. Users of this document should satisfy themselves concerning its application to their situation and, where necessary, seek expert advice.

2 General guidance for reports

Each report must stand alone and contain sufficient information to be readily understood. Reports should be succinct and written so that it can be understood by a diverse audience, including stakeholders unfamiliar with technical detail.

Relevant background or external information should be summarised and referenced. Information that is too detailed or distracting to be included in the main body of the report should be provided as appendices.

Monitoring reports should be provided electronically in widely accepted formats (such as Microsoft Word or Adobe PDF) – and in hard copy form if requested.

3 Legislative requirements

3.1.1 *Waste Management and Pollution Control Act*

Under the *Waste Management and Pollution Control Act* (WMPC Act), the NT EPA may require an environmental monitoring report to be submitted in accordance with:

- a condition of an environment protection licence or approval issued under section 34 of the WMPC Act
- a condition of a notice to carry out an environmental audit program issued under section 48 of the WMPC Act
- a requirement of an authorised officer direction issued under section 72 of the WMPC Act
- a requirement of a pollution abatement notice issued under section 77 of the WMPC Act.

3.1.2 *Water Act*

Under the *Water Act*, the NT EPA may require an environmental monitoring report to be submitted in accordance with a condition of waste discharge licence issued under section 74 of the *Water Act*.

3.1.3 *Other legislation*

An environmental monitoring plan may be submitted to the NT EPA in accordance with other Northern Territory or Commonwealth legislation, including the:

- the *Environmental Assessment Act*
- the *Litter Act*
- the *Marine Pollution Act*
- the *Northern Territory Environment Protection Authority Act*
- the *Planning Act*
- the *Environment Protection and Biodiversity Conservation Act 1999*
- the *National Environment Protection (Air Toxics) Measure 2011*
- the *National Environment Protection (Ambient Air Quality) Measure 2003*
- the *National Environment Protection (Assessment of Site Contamination) Measure 1999*
- the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure 1998*
- the *National Environment Protection (National Pollutant Inventory) Measure 2011*.

4 Monitoring report requirements

The minimum monitoring report requirements to satisfy the NT EPA are summarised in Table 1.

Table 1: Monitoring Report Requirements

Requirements	Information
Title page	<p>The title page should include:</p> <ul style="list-style-type: none"> • report name • reporting period (e.g. October 2014–October 2015) • date of submission • version number • where relevant, licence/approval number, or reference to other document the report is being submitted in relation to (e.g. environmental impact statement, pollution abatement notice) • details of report author, including company details.
Executive summary	<p>The executive summary should succinctly summarise each section of the report, and in particular, the findings of the report.</p>
Monitoring objective	<p>The monitoring objective(s) should be clearly stated in order to enable the results of monitoring to be assessed in the context of the objectives. Note: where monitoring is linked to a licence or approval, the objectives of monitoring:</p> <ul style="list-style-type: none"> • may already be specified in an approved monitoring plan, or • may simply be the specific conditions on monitoring included in the licence/approval that state monitoring point locations, analytes, analysis type, frequency and limits/trigger values.

Requirements	Information
Monitoring method	<p><u>Where there is an approved monitoring plan</u> Provide details of the approved plan (title, version number, date of submission).</p> <p><u>Where there is not an approved monitoring plan</u> Provide details including:</p> <ul style="list-style-type: none"> • current map showing sampling locations (including control/reference sites), discharge/emission points, major infrastructure, sensitive environmental receptors, key, scale bar and north arrow • a description of the receiving environment, including environmentally sensitive receptors and significant features • a description of sampling and analysis methods, including detail on reasons for selection of sampling locations (e.g. random stratified), assumptions and deviations from standard sampling/analysis methods¹ • factors that may affect variability in monitoring results (e.g. tidal movement, climate, fauna migration, peak production months).
Monitoring results–presentation	<p>The clear and concise presentation of monitoring results is a critical component of a monitoring report.</p> <p>When presenting results it is important to ensure that:</p> <ul style="list-style-type: none"> • current results are presented in a table and graph • results are presented along with: <ul style="list-style-type: none"> ▪ units ▪ assessment criteria (e.g. limits/trigger values specified in licences/approvals, or in relevant standards or guidelines²) ▪ analysis type (e.g. for filtered/unfiltered with filter pore size, five-day or three-day biological oxygen demand, wet or dry weights) ▪ analytical methods ▪ limit of reporting (LOR), or level of precision for results obtained from field instruments ▪ measures of uncertainty • necessary calculations have been made, to compare data with assessment criteria (e.g. calculation of medians, means, running averages and loads) • modification calculations (such as for hardness) have been made using the modifying parameter recorded at the time of sampling • all results that exceed the assessment criteria are clearly highlighted • summary of previous results (sufficient to highlight trends – usually a minimum of 2–5 years data) is included.
Monitoring results–quality assurance/quality control (QA/QC) evaluation	<p>Results presented in the monitoring report should be reviewed for data completeness, accuracy and precision. Some typical QA/QC questions include:</p> <ul style="list-style-type: none"> • for completeness – were all samples taken at the correct location and frequency? • for quality control – <ul style="list-style-type: none"> ▪ were all samples collected, preserved in accordance with the specified sampling method or standard sampling methods? ▪ were calibration checks made and were results within an acceptable

¹ Such as specified in: the 'Australian Guidelines for Water Quality Monitoring and Reporting' (ANZECC & ANCANZ 2000); *National Environment Protection (Assessment of Site Contamination) Measure 1999*.

² Such as: the Australian and New Zealand Guidelines for Fresh and Marine Water Quality' (ANZECC & AMCANZ, 2000); *National Environment Protection (Assessment of Site Contamination) Measure 1999*.

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	<p>range?</p> <ul style="list-style-type: none"> ▪ was analysis undertaken in accordance with relevant national standards (such as accredited under the National Association of Testing Authorities)?
Discussion and interpretation of results	<p>This section should include:</p> <ul style="list-style-type: none"> • discussion of results in context with the monitoring objective(s) • discussion of results where assessment criteria were exceeded, including likely cause of exceedances and likelihood of further exceedances • discussion of trends (consideration of spatial and temporal trends in comparison to previous monitoring data) • discussion of anomalous results, including likely cause • statistical analysis where appropriate • a table of non-conformances with monitoring method.
Conclusion and proposed actions	<p>This section should include conclusions on:</p> <ul style="list-style-type: none"> • whether the monitoring objective(s) was achieved • compliance with assessment criteria • if, and to what extent, environmental harm may have been caused (such as by emissions/discharges and/or exceedances of assessment criteria – when considering both acute and chronic effects) • major assumptions or uncertainties • conclusions about effectiveness of the monitoring method/plan and overview of any proposed changes (if any) • proposed actions to address exceedances or non-conformances.
Certification	<p>In this section the submitter of an environmental monitoring report must confirm that the report is true and accurate.</p> <p>Where the report relates to a licence/approval, confirmation must be provided by a person(s) authorised to legally represent the holder of the licence/approval.</p> <p>The wording for this section should be:</p> <p style="padding-left: 40px;">I [NAME AND POSITION], have reviewed this report and I confirm that to the best of my knowledge and ability all the information provided in the report is true and accurate.</p> <p>Note: significant penalties may apply where it is demonstrated that false or misleading information has been supplied to the NT EPA.</p>
Abbreviations	<p>Use of abbreviation should be minimised. However, if they are used to improve readability, this section should specify <u>all</u> abbreviations used in the report.</p>
References	<p>If information (facts, findings etc.) from external documents is to be included in the report, the information must be referenced.</p> <p>If references are from documents that are not freely available (e.g. internal reports, mine management plans) then such documents will need to be provided to the NT EPA on request.</p>
Appendices	<p>Appendices should be used for information that is too detailed or distracting to be included in the main body of the report (such as raw data tables, laboratory reports, QA/QC data).</p> <p>Note: raw data should be submitted electronically in a spreadsheet format (such as Microsoft Excel).</p>

5 Confidential information

The NT EPA may share monitoring reports with other Northern Territory Government agencies and authorities and may incorporate and/or provide monitoring data into broader NTG data sets, like the Darwin Harbour Integrated Monitoring Research Program.

Environmental monitoring reports submitted to the NT EPA may be published on its website, particularly where the reports have been submitted under the various legislation the NT EPA administers (e.g. *Environmental Assessment Act*, *Water Act*, *WMPC Act*).

All reports submitted to the NT EPA will be treated as public documents unless they are marked 'confidential'. Where a report, or specific section of a report is marked confidential, justification must be provided as to why the information should not be published.

A request made under the *Information Act* for access to a report marked confidential will be determined in accordance with that Act.