



GPLC3 – Reporting checklists

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Introduction

The importance of producing good quality reports is emphasised throughout our document *Model Procedures for the Management of Land Contamination*. This document contains eight example checklists, listed below, which correspond to the key reporting stages.

These checklists describe some important elements of a report but are not exhaustive. Some circumstances will demand more extensive reporting, while in other cases less may be appropriate (with suitable explanations).

How should I use these checklists?

You may find using these checklists gives you confidence, or helps demonstrate to others that the key stages in the management process have been completed and documented. Alternatively, you may have developed your own equivalent checks as part of your procedures and quality management system.

Remember that local authorities might also have their own reporting requirements and that you need to consider all receptors present, not just controlled waters.

If the Environment Agency has agreed to comment on my project, what will they expect?

In such cases, we will expect submissions to contain the type of information detailed in these checklists. It should also be clear that reports have been checked and signed off by an appropriately-qualified person. We may refuse to comment on reports if it becomes clear that important information is absent or has not been appropriately checked.

Repetition can be minimised if reports are combined or properly cross-referenced. For example, site investigation and quantitative risk assessment reports can often be combined or submitted together and we would not normally want to review a site investigation report without the associated interpretative assessment.

Model procedures key activity stage	Checklist
1. Risk assessment	1. Preliminary risk assessment 2. Quantitative risk assessment (including site investigation)
2. Options appraisal	3. Combined options appraisal
3. Implementation of the remediation strategy	4. Implementation plan 5. Verification plan 6. Monitoring & maintenance plan 7. Verification report 8. Monitoring reports

GPLC3 – Reporting checklists

1.0 Risk assessment (focusing on risks to water)

Checklist 1. Preliminary risk assessment

Contents	Included?
Report objectives	Yes /No
Site location map and National Grid reference	Yes /No
Site layout plans*	Yes /No
Site area in hectares	Yes /No
Description of site and surroundings	Yes /No
Details of desk study research undertaken	Yes /No
Information on past and current activities at the site	Yes /No
Details of intended future use of the site	Yes /No
Unique references for all relevant planning applications or permissions at the site	Yes /No
Historical Ordnance Survey maps* and site plans* and if available, aerial photographs	Yes /No
Environmental setting including: <ul style="list-style-type: none"> • superficial deposits and solid geology • hydrology • hydrogeology (including the interaction between all relevant shallow and deep groundwaters and how they flow to potential receptors) • location and status of relevant surface water and groundwater receptors, including all abstracted uses and natural discharge such as springs, river baseflow and wetlands 	Yes /No Yes /No Yes /No Yes /No

Contents	Included?
Information on site drainage and other man-made potential pollutant pathways, for example underground services	Yes /No
Identification of potential contaminants of concern and source areas	Yes /No
Consultations with the local authority	Yes /No
Consultations with the Environment Agency	Yes /No
Consultations with other appropriate bodies	Yes /No
Review and summary of previous reports, with report references	Yes /No
Outline conceptual model with nature and location of controlled waters receptors clearly identified	Yes /No
Description of possible pollutant linkages for controlled waters	Yes /No
Identification of potentially unacceptable risks to controlled waters, including criteria used to identify those risks	Yes /No
Discussion of uncertainties and gaps in information	Yes /No
Description and justification of next steps proposed at the site, for example carry out site investigation and quantitative risk assessment	Yes /No
* All plans and historical maps extracts should be large scale, to scale, with a north point, and clearly show the site boundary.	

1.0 Risk assessment (focusing on risks to water) (continued)

Checklist 2. Quantitative risk assessment (including site investigation)

Contents	Included?
Report objectives	Yes/No
Site location map and National Grid reference	Yes/No
Site layout plans*	Yes/No
Review and summary of previous reports, with report references	Yes/No
Outline conceptual model with nature and location of controlled water features clearly identified	Yes/No
Results of preliminary risk assessment	Yes/No
Details of any preparatory enabling works, for example moving mounds of waste, breaking out concrete	Yes/No
Site investigation:	
Investigation objectives	Yes/No
Summary of work done	Yes/No
Site investigation strategy, including:	
• rationale for investigation	Yes/No
• methods used for forming exploratory holes, for example boreholes, trial pits, window samples	Yes/No
• details of any borehole sampling undertaken	Yes/No
• methods used for collecting, preserving and transporting samples to the analytical laboratory	Yes/No

Contents	Included?
Site sampling strategy, including:	
• rationale for strategy	Yes/No
• description and explanation of monitoring programmes for groundwater and, if encountered, surface waters (upstream and downstream conditions should be represented)	Yes/No
• monitoring and sampling locations, depths (metres below ground and AOD) and frequencies	Yes/No
Analytical strategy, including:	
• rationale for selection of analytical parameters	Yes/No
• selection of samples for leachability testing	Yes/No
• description of chemical analyses, in accordance with the MCERTS performance standard for soils	Yes/No
• quality assurance and quality control requirements for laboratory analyses	Yes/No
Plan showing monitoring and sample point locations*	Yes/No
Details of in-situ tests and geotechnical tests required to provide data for quantitative risk assessment	Yes/No
Description of site works and on-site observations	Yes /No
Measures undertaken to prevent pollution of controlled waters as a consequence of site investigation methods used	Yes /No

1.0 Risk assessment (focusing on risks to water) (continued)

Checklist 2. Quantitative risk assessment (including site investigation) (continued)

Contents	Included?
Presentation and interpretation of investigation results, including: <ul style="list-style-type: none"> • description of ground conditions encountered at the site, including groundwater regime and surface water features • cross-sections showing site strata and shallow and deep groundwater levels • summary tables of chemical analyses, site monitoring and geotechnical test results • description of type, nature and spatial distribution of contamination, with plans where appropriate* • evaluation of site investigation results against the outline conceptual model 	Yes/No Yes/No Yes/No Yes/No Yes/No
Annexes containing: <ul style="list-style-type: none"> • exploratory hole logs including grid co-ordinates and ground elevation (logged by suitably qualified professionals) • construction details for monitoring boreholes or other type of monitoring installation, for example response zone, method of sealing borehole annulus • monitoring results • groundwater levels • description of samples submitted for analysis • laboratory analytical reports, completed in accordance with the MCERTS performance standard for soils • chain of custody records 	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No

Contents	Included?
Quantitative risk assessment:	
Risk assessment objectives	Yes/No
Description of proposed development	Yes/No
Conceptual model, revised following site investigation, with nature and location of controlled waters receptors clearly identified	Yes/No
Rationale for the chosen risk assessment approach and explanation for why it is valid for the site	Yes/No
Discussion of relevant exposure scenarios	Yes/No
Assessment criteria selected for the site, with justification for all criteria used	Yes/No
Description of model, if used, and: <ul style="list-style-type: none"> • input parameters • safety factors • assumptions • any sensitivity analysis undertaken 	Yes/No Yes/No Yes/No Yes/No
Calculation worksheets provided	Yes/No
Constraints and limitations relating to data quality and risk assessment method	Yes/No

1.0 Risk assessment (focusing on risks to water) (continued)

Checklist 2. Quantitative risk assessment (including site investigation) (continued)

Contents	Included?
Identification of pollutant linkages that present an unacceptable risk of pollution to controlled waters	Yes/No
Discussion of uncertainties and their impact on the outcome of the risk assessment	Yes/No
Results of risk estimation if detailed quantitative risk assessment is undertaken	Yes/No
Evaluation of unacceptable risks to controlled waters taking into account both the current use of the site and details of the proposed development, for example foundation design, surface drainage and foul water disposal	Yes/No
Description of evaluation method and criteria used	Yes/No
Description and justification of next steps proposed at the site, for example carry out options appraisal for pollutant linkages that present an unacceptable risk of pollution to controlled waters	Yes/No
* All plans should be large scale, to scale, with a north point, and clearly show the site boundary.	

2.0 Options appraisal

Checklist 3. Combined options appraisal

Contents	Included?
Report objectives	Yes/No
Site location map and National Grid reference	Yes/No
Site layout plans*	Yes/No
Review and summary of previous reports, with report references	Yes/No
Summary of relevant pollutant linkages that require remediation	Yes/No
Statement and explanation of remediation objectives, that is, what the remediation needs to achieve, for each relevant pollutant linkage	Yes/No
Statement of remediation criteria against which compliance with remediation objectives for each relevant pollutant linkage can be measured	Yes/No
Statement of overall site remediation criteria (these should always be protective of controlled waters) where they differ from the criteria derived for relevant pollutant linkages.	Yes/No

Contents	Included?
Identification of feasible remediation options:	
Summary of feasible remediation options identified for each relevant pollutant linkage, including general characteristics of those options and methods used for collecting information on them	Yes/No
Shortlist of feasible remediation options to be taken forward for more detailed consideration, including: <ul style="list-style-type: none"> • an assessment of their suitability for use at the site • reasons for selecting options on the shortlist and rejecting others 	Yes/No Yes/No
Detailed evaluation of remediation options:	
Evaluation of shortlisted remediation options, including explanation of evaluation criteria used	Yes/No
Identification of the most appropriate option for each relevant pollutant linkage and justification for its selection	Yes/No
Reasons for rejecting other remediation options on the shortlist	Yes/No
Justification for any proposals to combine remediation options	Yes/No

2.0 Options appraisal (continued)

Checklist 3. Combined options appraisal (continued)

Contents	Included?
Remediation strategy:	
Description of the remediation strategy, including:	
• technical and scientific basis of the strategy	Yes/No
• requirement for preparatory works	Yes/No
• effectiveness of combining remediation options, where required	Yes/No
• proposed site zoning and phasing of remediation	Yes/No
• verification of remediation and monitoring requirements	Yes/No
• constraints and limitations to remediation	Yes/No
• timescales required for remediation options to become fully effective	Yes/No
• assessment of requirements for environmental permits, licences etc.	Yes/No
• expected durability of the proposed remediation	Yes/No
• measures to prevent pollution of controlled waters being caused by remediation activities at the site	Yes/No

Contents	Included?
Justification for any changes required under the remediation strategy to remediation criteria derived for relevant pollutant linkages	Yes/No
Summary of alternative remediation strategies considered	Yes/No
Justification for selection of the preferred remediation strategy	Yes/No
Description of how the remediation strategy will deliver remediation criteria derived for all relevant pollutant linkages	Yes/No
* All plans should be large scale, to scale, with a north point, and clearly show the site boundary.	

3.0 Implementation of remediation

Checklist 4. Implementation plan

Contents	Included?
Report objectives	Yes/No
Site location map and National Grid reference	Yes/No
Site layout plans*	Yes/No
Review and summary of previous reports, with references	Yes/No
Description of ground conditions at the site, including controlled water features	Yes/No
Remediation objectives for each relevant pollutant linkage	Yes/No
Remediation criteria for relevant pollutant linkages	Yes/No
Overall site remediation criteria	Yes/No
Remediation methodology, that is, what is to be done by way of remediation	Yes/No
Phasing of the remediation works and approximate timescales for each phase	Yes/No
Site preparation and operational constraints	Yes/No
Site procedures for managing the remediation works in a manner that will not cause pollution of controlled waters	Yes/No

Contents	Included?
Discussion of permitting requirements and proposals for obtaining the appropriate permits, for example: <ul style="list-style-type: none"> • Environmental Permit (EP) • exemption from EP • mobile treatment licence • abstraction licence or consent • discharge consent • Groundwater Regulations authorisation • flood defence consent • other permits 	Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No Yes/No
Details of how any variations from the implementation plan that have the potential to impact on controlled waters (including any areas of unexpected contamination encountered) will be dealt with during the site works	Yes/No
Construction details of proposed monitoring boreholes	Yes/No
Cross-reference to the verification plan and, if required, monitoring and maintenance plan for the site	Yes/No

3.0 Implementation of remediation (continued)

Checklist 4. Implementation plan (continued)

Contents	Included?
Plans* showing: <ul style="list-style-type: none"> • areas to be remediated • proposed locations and phasing of remediation works • areas to be used for stockpiling segregated contaminated and clean, site-derived and imported materials • location of areas to be remediated in relation to any proposed development • proposed monitoring locations 	Yes/No Yes/No Yes/No Yes/No Yes/No
* All plans should be large scale, to scale, with a north point, and clearly show the site boundary.	

3.0 Implementation of remediation (continued)

Checklist 5. Verification plan

Contents	Included?
Report objectives	Yes/No
Site location map and National Grid reference	Yes/No
Site layout plans*	Yes/No
Review and summary of previous reports, with references	Yes/No
Scope of remediation works to be undertaken and any design details required to inform the verification plan	Yes/No
Description of what constitutes completion for the remedial works and how completion will be verified.	Yes/No
Data gathering requirements to demonstrate that site remediation criteria are achieved for each relevant pollutant linkage, such as:	Yes/No
<ul style="list-style-type: none"> • sampling and monitoring strategy, including: <ul style="list-style-type: none"> a) validation testing of excavations to remove contaminated materials b) validation testing of materials excavated, treated and deposited at the site c) validation testing of materials imported as ‘clean fill’ d) post-completion verification testing of the remediated area e) background water quality testing in groundwater and nearby surface waters f) water quality testing of any treated groundwater and surface waters g) site sampling and monitoring methods and frequency 	Yes/No

Contents	Included?
<ul style="list-style-type: none"> • how on- and off-site observations will be recorded • explanation and schedule of chemical analyses, to be undertaken in accordance with the MCERTS performance standard for soils • laboratory quality assurance and control requirements 	Yes/No
Performance testing required, for example for contaminant barriers and capping layers	Yes/No
Plans showing proposed sampling and monitoring point points*	Yes/No
Explanation of how compliance with discharge consents, abstraction licences, etc. will be demonstrated	Yes/No
Proposed actions in case: <ul style="list-style-type: none"> • test results and monitoring data show that the remediation activities will not achieve the remediation criteria derived for relevant pollutant linkages • site works vary from those anticipated in the implementation plan 	Yes/No
Timing for preparation of the verification report, particularly if any remediation activities will extend beyond substantial completion of the main site works	Yes/No
* All plans should be large scale, to scale, with a north point, and clearly show the site boundary.	

3.0 Implementation of remediation (continued)

Checklist 6. Monitoring and maintenance plan

Contents	Included?
Report objectives	Yes/No
Site location map and National Grid reference	Yes/No
Site layout plans*	Yes/No
Scope and explanation of site monitoring (this is taken to include sampling for ease of reference) and/or maintenance work required following completion of site works	Yes/No
Statement and justification of end-point for the site monitoring programme	Yes/No
Proposed monitoring assessment criteria and reasons for their selection	Yes/No
Measures for ensuring that the required monitoring and/or maintenance is undertaken	Yes/No
Schedule of maintenance activities required to ensure that measures undertaken to remediate relevant pollutant linkages continue to be effective	Yes/No

Contents	Included?
Schedule of monitoring required	Yes/No
Construction details of monitoring boreholes or other type of monitoring installation	Yes/No
Method of collecting, preserving and transporting samples to the analytical laboratory	Yes/No
Type and suitability of monitoring equipment to be used	Yes/No
Plans showing proposed monitoring point locations*	Yes/No
Description of chemical analyses required, to be undertaken in accordance with the MCERTS performance standard for soils	Yes/No
Laboratory quality assurance and control requirements	Yes/No
* All plans should be large scale, to scale, with a north point, and clearly show the site boundary.	

3.0 Implementation of remediation (continued)

Checklist 7. Verification report

Contents	Included?
Verification work objectives	Yes/No
Site location map and National Grid reference	Yes/No
Site layout plans*	Yes/No
Review and summary of previous reports, with references	Yes/No
Description of relevant pollutant linkages addressed	Yes/No
Description of remedial works undertaken	Yes/No
Details of and justification for any variations from the verification plan	Yes/No
Results of verification, validation and performance testing specified in the verification plan and any subsequent variations	Yes/No
Provision of laboratory analytical reports, completed in accordance with the MCERTS performance standard for soils.	Yes/No
Plans* showing remediated areas, indicating any variations from those shown in the implementation plan	Yes/No
Details of permits, licences, authorisations and consents obtained for the site and evidence of compliance with them	Yes/No

Contents	Included?
Description of reinstatement works, including methodology for decommissioning groundwater monitoring boreholes	Yes/No
Description of the final condition of the site at completion	Yes/No
Assessment of the potential impact of the site at final condition on controlled waters when put to the proposed end use	Yes/No
Details of any permanent installations required as part of the remedial works, that are to be left in place after completion of site works	Yes/No
Confirmation of post-completion monitoring and/or maintenance requirements	Yes/No
* All plans should be large scale, to scale, with a north point, and clearly show the site boundary.	

3.0 Implementation of remediation (continued)

Checklist 8. Monitoring report

Contents	Included?
Report objectives	Yes/No
Site location map and National Grid reference	Yes/No
Site layout plans*	Yes/No
Scope of site monitoring (this is taken to include sampling for ease of reference) and sampling activities required to ensure that remediation of relevant pollutant linkages continues to be effective and controlled waters continue to be protected	Yes/No
Plans* showing monitoring point locations	Yes/No
Schedule of monitoring activities undertaken since the previous report	Yes/No
Schedule and results of chemical analyses	Yes/No

Contents	Included?
Laboratory analytical reports, completed in accordance with the MCERTS performance standard for soils	Yes/No
Assessment of ongoing compliance with remediation criteria	Yes/No
Report on actions taken in response to exceptional monitoring results	Yes/No
Recommendations for future monitoring, including any variations required from the monitoring programme provided in the monitoring and maintenance plan	Yes/No
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