Developing potentially contaminated land
A guide for developers

Ryedale District Council is increasingly dealing with planning applications for developments on previously used land. In many cases these sites are affected by the presence of land contamination due to historic industrial processes. It is essential that any contamination on a site does not pose a risk to the health of workers, to the end user or to the environment either during or after a development has finished.

To ensure safe development, all planning applications are considered for potential contamination. Sites that pose a potential risk to human health or the environment may have specific conditions relating to contaminated land attached to a planning consent. The conditions will require a site investigation to determine the level of risk posed by any contamination to any 'sensitive' receptor on the site. This will involve an initial desk top study which will gather data about the site in order to form a conceptual site model identifying possible sources of contamination, the receptor it is likely to harm (i.e. humans or controlled waters) and the pathway from the source to receptor. A risk assessment should then be undertaken to determine the risk from contamination in relation to the proposed end use of the site. Depending on the level of risk, further investigation of the site and remediation may be required to mitigate against these risks.

The following guidance states what is expected from developers proposing to carry out works on any site that may be affected by contamination.

Phase 1 Desktop Study

This is a written report that collates any data about the site in terms of site history, land use, physical characteristics (e.g. geology, lie of the land etc.) and a walk over survey. At the end a preliminary risk assessment must be undertaken to determine if the site poses a risk from contamination and if it is necessary to proceed to a Phase 2 investigation. The following information should be included in a Phase 1 investigation:

- Site location, National Grid Reference, layout plans (appropriately scaled and annotated) and site area.
- Description of the site and the surrounding area
- Intended use of the site
- Site history going back to 1850*
- Previous use of the land and buildings (including details of any changes of use)
- Details of storage tanks on or under the site, including details of contents, spillage's or leaks.
- Consultations with appropriate bodies (i.e. Environment Agency, Petroleum Licensing Officer)
- Walk over survey. This involves looking for:
    - areas or evidence of staining
    - obvious gaps in vegetation
    - unnaturally raised ground or depressions
    - type and condition of flooring materials
    - olfactory assessment

- Geology, hydrology and hydrogeology of the site
- Drainage on site and site topography
- Photographs of the site and potential areas of contamination.
- Conceptual model showing pollutant linkages
- Preliminary risk assessment
- Proposals for Phase 2 investigation (if applicable)

If the risk assessment indicates that there is a risk from contamination then a Phase 2 investigation will be required.

* Historic maps can be obtained from the North Yorkshire County Council Record Office on 01609 777585 or email archives@northyorks.gov.uk.

Phase 2 – Site Investigation

A Phase 2 investigation involves intrusive sampling and analysis to determine the concentration of contaminants at the site. The Council expects the following information to be included in a Phase 2 investigation:

- A review and summary of previous investigations (referenced)
- Scale maps showing the site as it currently is and the proposed development
- A clear and detailed sampling strategy in accordance with BS10175 (2001)
- Methods of investigation including methods used for forming exploratory holes e.g. boreholes, trial pits, window samples
- Site plan detailing exploration locations (appropriately scaled and annotated)
- Locations, depth and details of samples taken for analysis
- Who carried out the sampling and analysis
- Details on the taking, storage and analysis of the samples
- Details of the laboratory including accreditation and quality assurance
- Full analysis of the laboratory results. Results should be compared to the Defra/Environment Agency Soil Guideline Values (SGV's) if available. In the absence of an SGV a site-specific risk assessment should be carried out, utilising the relevant TOX report.
- Updated conceptual model and risk assessment, based on sampling results.
- Conclusions and recommendations
- Proposals for Phase 3 remediation, if applicable

If the sampling results, updated conceptual model and risk assessment indicate a risk from contamination then Phase 3 Remediation will be required.

Phase 3 – Remediation Statement (submitted prior to remediation)

Phase 3 requires the remediation of contamination on a site. Prior to the commencement of remedial work a Remediation Statement should be submitted to the authority for approval. The following should be included in the remediation statement:

- A summary of previous site investigations (referenced)
- The purpose and objectives of the remediation works
- Details of the remedial work to be carried out including
  - Site plan with the areas to be remediated clearly marked
  - Description of the ground conditions (soil and groundwater)
  - The type, form and scale of contamination to be remediated
  - The remediation methodology
  - The phasing of works and approximate timescales

- Description of what constitutes completion of remedial works and the proposed final levels of contaminants
- Details of any consents, agreements, environmental permits or licenses (discharge consents, waste management licenses etc)
- Details of material to be imported to the site and the proposed method of analysis to validate that it is free from contamination.
- Details of how any necessary variations from the approved remediation statement arising from the course of works will be dealt with, including notification to the council.
- Details of site management procedures to include
  - Health and Safety procedures
  - Dust, Noise and Odour control
  - Control of surface run-off

- Details of how the site will be validated
  - Post remedial monitoring work to be carried out
  - Chemical analysis
  - On-site observations (visual/olfactory)

Validation Report.

Once remedial work has been completed a validation report / post remediation report will be required to show that the remediation has been successful. The following should be included in the validation report.

- Site location, National Grid Reference and layout plans
- A review and summary of previous investigations (referenced)
- Full details of all remedial measures carried out at the site
- Details of who carried out the work.
- Details of any changes from the original remediation statement.
- Post remediation monitoring to verify that the remediation has been successful. This should include start and end concentrations of contaminants and details of laboratory results and analysis.
- Details of material removed from site (volume, final disposal site and waste transfer notes etc.)
- Details of material brought onto the site (volume, details of the source)
- All imported material must be tested to prove that it is free from contaminants
- Confirmation that all remediation objectives have been met

If post remediation monitoring indicates a problem you may be required to conduct a further investigation, including sampling, and make amendments to your existing remediation proposals.

The Council must approve each stage of the site investigation and remedial work (i.e. Phase 1, Phase 2 etc.) before commencement of the next stage to ensure that no areas have been overlooked.

THE TEXT OF THIS LEAFLET IS AVAILABLE IN LARGE PRINT

Useful Guidance Documents

The Environmental Protection Act, 1990
The Environment Act, 1995
The Contaminated Land Regulations 2000

DEFRA and the EA, Contaminated Land Research Documents 7–10
DEFRA and the EA, Toxicological Reports 1-12, 14, 16-25
DEFRA and the EA, Soil Guideline Values 1, 3, 4, 5, 7, 8, 9, 10, 15, 16
(Available at http://www.environment-agency.gov.uk/subjects/landquality/113813/672771/675330/?version=1&lang=e)

DEFRA and the EA, Model Procedures for the Management of Land Contamination CLR 11 (Available at http://www.environment-agency.gov.uk/subjects/landquality/113813/881475/?lang=_e)

D Of E, Industry Profiles (Available at http://www.environment-agency.gov.uk/subjects/landquality/113813/1166435/?version=1&lang=_e)

BS10175: 2001 Investigation of potentially contaminated sites – Code of Practice

Planning Policy Statement 23 - Planning and Pollution Control

Environment Agency Risk Assessment Fact sheets: FS-01 (SNIFFER), FS-02 (ASTM RBCA), FS-03 (RISK-HUMAN 3.1), FS-04 (BP RISK), FS-05 (Risk Assistant 1.1), FS-06 (CLEA 2002)

EA and the NHBC, 2000, Guidance for the Safe Development of Housing on Land Affected by Contamination, R & D Publication 66

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