

London Borough of Lewisham Contaminated Land Reporting Advice to Applicants

1. Where no SGV is available

Where SGVs are not available the applicant must undertake site specific risk assessments using UK recognised software on these contaminants, and provide worksheets to justify target concentrations derived. WRAS or Dutch guidance is not acceptable. CLR7 paragraph 4.15 states that where no SGV has been published, a risk assessment at the site using site-specific criteria should be considered, and refers to CLR 9 and 10 in this respect.

2. Hydrocarbons

This Authority will not accept the Dutch intervention value for mineral oils as a Health Criteria Value for hydrocarbons. The applicant must use the methodology outlined in 'The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soil' Environment Agency Science Report P5-080/TR3. Analysis and risk assessments must be undertaken on the 'indicator compounds' and for the hydrocarbon fractions. It is the responsibility of the risk assessor to ensure that the analytical strategy adopted is informed and appropriate, taking into account factors such as site history, geology and end use.

3. Remediation Strategy

It is the responsibility of the applicant to inform Environmental Health when sampling has been completed and submit a report detailing the findings. If contamination is found at the site then the applicant must submit a Remediation Strategy and Options Appraisal. Any proposed remediation MUST be sustained for the life of the development.

4. Cover systems

This describes a potential remediation option, involving the containment of contamination, whereby the contaminated material itself is covered by layer(s) of clean material designed to break the pollutant linkage between contaminated soil and sensitive receptors.

Cover systems are either simple structures comprising a single layer of topsoil of a minimum thickness or more complex engineered systems that commonly comprise Validation Guidance for Contaminated Land capillary breaks to prevent contaminant migration through capillary pressure and barrier membranes to block excavation or warn of contamination.

When using a cover system in contaminated land remediation, the following areas will require validation:

- Any material used to form a cover system must undergo validation testing to confirm its suitability for use on site. See Imported Material for more details. This testing must be agreed in advance with the Regulator.
- Cover system thickness will be agreed prior to validation. The agreed thickness of a capping layer and/or its engineered components must be verified before and after installation. This is to ensure that sufficient cover thickness has been applied throughout. The verification can take the form of a topographic survey or visual inspection supported by photographic evidence.
- The use of photographic evidence during the installation of a cover system is highly recommended and often the best source of evidence for Validation purposes. Failure to

provide satisfactory evidence will automatically require verification through intrusive investigation, eg: window sampling logs, borehole logs.

Quality assurance documentation and warranties will be required from all contractors involved in the installation of a cover system or supply of material used in a cover system.

References:

Building Research Establishment Report 465, Cover systems for land regeneration – thickness of cover systems for contaminated land
Environment Agency/DEFRA Guidance Document (CLR11), Model Procedures for the Management of Contaminated Land, pp40-42, 130-147
ODPM Report PPS23, Planning Policy Statement 23: Planning and pollution control

5. Imported material

This describes any material that is brought onto the proposed development site from an outside source. Whether this material is to be used as fill to construct landscape features or as part of an agreed remediation proposal, the following areas are subject to validation:

- All imported material must be subject to validation testing to determine its suitability for on-site use. If the material is obtained from a known 'primary' or 'Greenfield' source, testing should be at a frequency of one sample for every 100m³ of material imported. If the imported material is from an unknown or potentially contaminated source, then testing should be at a frequency of one sample per 50m³ of imported fill.
- Sampling of imported material should adhere to established guidelines for 'composite sampling', while working within the sampling frequencies detailed above. This describes a method of sampling mounded material, so that representative samples are taken from the entire mound, including material buried at its centre. This is to reflect the fact that imported material is sometimes not homogenous and maybe subject to local variation.
- Testing should cover a standard range of contaminants (see Appendix 2 for list of contaminants), unless material is obtained from a source of known industrial usage, in which case, potential contaminants should be profiled and sampled.
- The volumes of all imported material must be noted and catalogued. This data should be verifiable through the appropriate documentation, such as daily activity logs, consignment notes and other waste/material transfer documentation
- The source of all imported material must be determined prior to the material being brought on site. The appropriate validation testing schedule can then be agreed with the Environmental Protection Officer dealing with the case.
- All locations on site where imported material is placed must be noted and catalogued. This includes areas where exported material has been removed for levelling purposes. The approximate volumes and export destinations of exported fill (at specific locations on site) must be noted and should be verifiable through appropriate documentation, photographic evidence and site plans.

References:

Environment Agency R & D Publication 66, Guidance for the safe development of housing on land affected by contamination, pp42-44
British Standards Institution (BS10175), Investigation of potentially contaminated sites – code of practice Environment Agency Guidance Document, Verification of treatment performance – how sure can you be?

6. Exported material

This describes any material that is removed from the proposed development site and taken to another site for disposal. Whether this material is to be land-filled or sent for further treatment, the following areas are subject to validation:

- Exported material can describe material that is removed from the site completely as well as material that is moved around site. Material that is moved from one site location to another should be treated as *imported material* when relocated and should be subject to the same validation testing, especially if to be used in landscaped areas or cover systems.
- Exported material must be disposed of appropriately. The quality and eventual destination of material removed from site must be verifiable through supporting documentation and should include details of carrier and waste disposal site (consignment note) for material moved off-site.
- The volumes of all exported material must be noted and catalogued. This data should be verifiable through the appropriate documentation.
- All locations on site where exported material is excavated/removed must be noted and catalogued. This includes areas where imported material has been used for levelling purposes as well as the construction of gardens and landscaping. The approximate volumes and depths of imported fill at specific locations must also be noted and should be verifiable either through appropriate documentation or photographic evidence.
- Where material is excavated to remove a contamination hot-spot, removal of said hot-spot must in turn be validated. The validation samples should be taken at equally-spaced locations directly around the perimeter, sides and base of the hot-spot excavation, using the original sampling point that identified the contamination as a centre. A minimum of four samples, one covering each of the four aspects surrounding the hot-spot are required.
- It should also be noted that any site where exported material could be regarded as 'waste', may require a Waste Licensing Exemption from the Environment Agency. Any enquiries should be directed to the following telephone number: 0870 8506506.

References:

CIRIA Special Publication 105, Remedial treatment for contaminated land: excavation and disposal

ODPM Report PPS23, Planning Policy Statement 23: Planning and pollution control

7. Verification Report

The purpose of this stage of the site development is to ensure that the selected remediation methodology is carried out in a safe and effective manner. Verification, or *Validation* as it is better known, is an important stage of the risk assessment process as it provides assurance that remediation undertaken as part of site works has been implemented and completed in accordance with the *agreed* design and amendments. *Validation* also ensures that the site is suitable for the proposed end use and that the requirements of all stakeholders, chiefly the Regulator are met.

- Data collection for validation purposes should begin as soon as the site investigation is complete and remedial works begin on site, whether these works be applied to buildings or to

the ground conditions on the site itself. Data collection from this early stage will expedite verification of agreed works.

- If remedial works are carried out on site, whether applied to buildings or the site itself, a validation report (see *Appendix 1* for report structure) will be required to verify that agreed works have been carried out. Upon review and approval of this report, discharge of the contaminated land condition can be recommended by the Environmental Protection Officer.
- All remedial works and data collection for validation purposes shall be carried out by a suitably qualified and experienced individual. This individual will be appointed by the applicant to oversee and verify (as an independent party) that remedial work on site is carried out in accordance with the agreed remediation statement; that work on site is carried out in line with best practice; and that validation data collection is accurate and representative of works implemented.
- All remedial works and the data requirements for Validation should be agreed in advance of site works commencing.

References:

Environment Agency/DEFRA Guidance Document (CLR11), Model Procedures for the Management of Contaminated Land, pp40-42, 130-147

Environment Agency R & D Publication 66, Guidance for the safe development of housing on land affected by contamination, pp42-44

ODPM Report PPS23, Planning Policy Statement 23: Planning and pollution control

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- The use of photographic evidence during the installation of a cover system is highly recommended and often the best source of evidence for Validation purposes. Failure to provide satisfactory evidence will automatically require verification through intrusive investigation, eg: window sampling logs, borehole logs.
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9. Gas Monitoring & Gas Protection Measures

Sites affected by ground gas or that are suspected of being affected must undergo gas monitoring. The pre-emptive installation of gas protection measures *without* gas monitoring is not considered appropriate. Determining the on-site ground gas regime is essential when selecting the appropriate gas protection measures. Whatever level of gas protection is eventually agreed, the following areas are subject to validation:

- Where gas monitoring has been agreed for a proposed development site, all site building works are prohibited for the duration of the monitoring period. Where site works are to continue during gas monitoring, a 'programme of works' or other suitable site activity logs must be submitted as part of validation.
- The installation of *all* gas protection measures shall be overseen and verified by a suitably qualified and experience individual, ideally NHBC-qualified or a Local Authority Building Control Officer. This individual will be appointed by the applicant and will ensure installation is both in line with the agreed remediation statement and the manufacturer's guidelines/instructions.
- The use of photographic evidence during the installation of gas protection measures is recommended from the outset of installation. Failure to provide satisfactory evidence will automatically require verification of measures through intrusive investigation, eg: verification of ground slab thickness or that gas membranes bridge wall cavities.
- If the characteristic situation represented by the gas regime demands the installation of a gas membrane, documentary evidence will be required to confirm the:
 - *Condition/quality* of the membrane, prior to installation. This is to ensure that the membrane is not damaged or torn and is suitable for installation.
 - *Suitability* of said membrane for the ground gas conditions present. The Council recommends agreeing membrane specification with the Authority prior to installation. If this is the case, supporting documentation will still be required to verify the agreed membrane specification has been installed.

- Installation of the membrane has been in line with best practice and/or the manufacturer's guidelines. Quality assurance documentation and warranties will be required from all contractors involved in the installation of gas protection measures or supply of materials used in the installation of gas protection measures.
- Documentary evidence will be required to confirm adequate gas venting of confined spaces if the characteristic situation represented by the gas regime demands it.
- Documentary evidence will be required to confirm minimum services penetration of floor slabs if the characteristic situation represented by the gas regime demands it.

References:

CIRIA Report C659, Assessing Risks Posed by Hazardous Ground Gases to Buildings
CIRIA Report 149, Protecting developments from methane
CIRIA Report 151, Interpreting measurements of gas in the ground
CIRIA Report 152, Risk assessment for methane and other gases from the ground
Environment Agency/Building Research Establishment Report 414, Protective measures for housing on gas-contaminated land
British Standards Institution (BS10175), Investigation of potentially contaminated sites – code of practice
ODPM Report PPS23, Planning Policy Statement 23: Planning and pollution control
Wilson. S.A. & Card G.B. (1999), Reliability and risk in gas protection design, Ground Engineering, pp33-3