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Contaminated Land Guidance Note

NR/GN/ESD037

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Version 1.0

Technical Authority

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Contents

WHAT IS THIS DOCUMENT?

The purpose of this guidance note is to outline the approach that Network rail and its contractors should follow when dealing with proposed works, design plan or consultations in relation to land subject to contamination issues, including formally designated contaminated land.

This is targeted at Network Rail roles including project managers, design contractors, and asset managers. A more detailed Contaminated Land Technical Manual (NR/TM/ESD001) can be accessed on the Safety Central for those in geo-technical or environmental roles.

(1) NR/GN/ESD037 Contaminated land guidance note

Is this what I'm looking for?

- I want to know if I have to consider contaminated land in project/planned works
- I want to know how to understand if I potentially have a contaminated site
- I want to know what to expect if I suspect my site is contaminated

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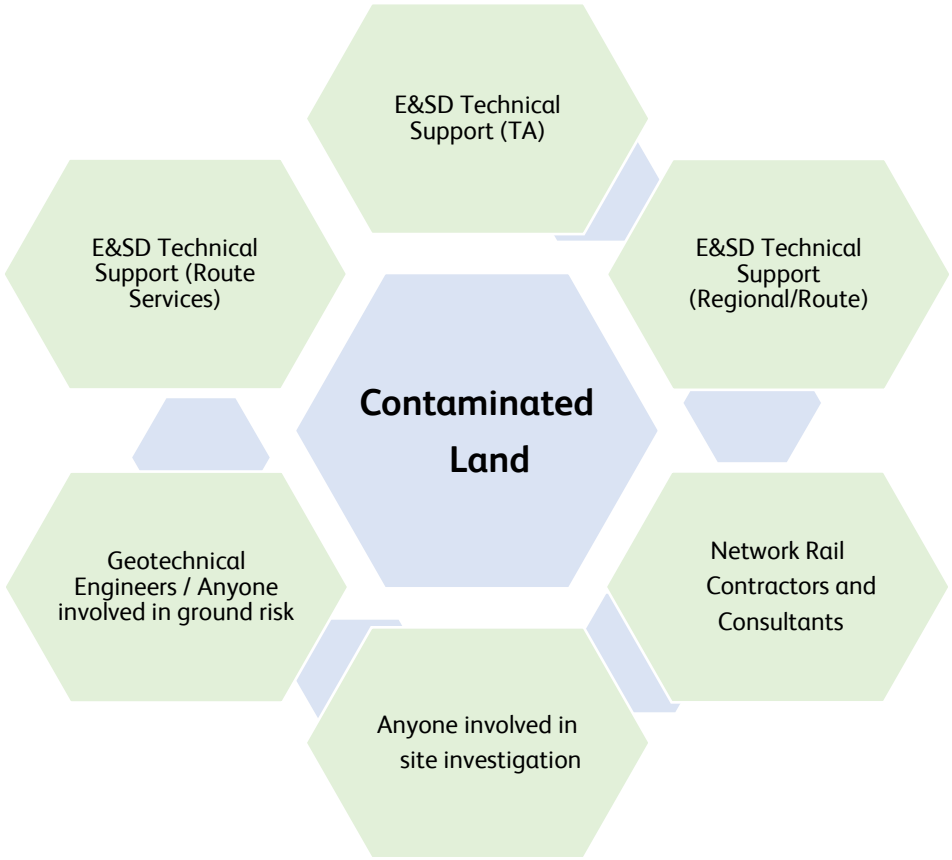
(2) NR/TM/ESD001 Contaminated Land Technical Manual



Is this what I'm looking for?

- I want to know if I need to assess contaminated land at my site
- I want to understand the process for assessment of contaminated land
- I want to know who should undertake the assessment works
- I want to know if I need to contact a regulator to contaminated land

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What is Contaminated Land?

As one of Britain's largest landowners, much of Network Rail's land surrounding the railway has historically been used for things like freight storage and refuelling. Any land that has previously been built on or used by industrial processes ("brownfield land") or land that has had artificial/man-made material placed over it ("made ground") may be contaminated with substances that are harmful to humans, wildlife and/or the surrounding environment. This is known as historic contamination and means that when Network Rail is carrying out projects or maintenance works, we need to be aware of potentially contaminated land.

NOTE 1: This may include land Network Rail have bought or land occupied by our tenants.

Contaminants could be present in solid form such as asbestos or tar residues, in liquid form such as oils or solvents, or even as a gas such as methane. Potentially contaminated material can sometimes be discovered where it is not expected, so it is important to remain observant during operations to signs of contamination. This includes (but not limited to):

- visual signs such as open oil drums, liquids/iridescent sheens collecting on the ground.
- strong smells such as methane or petrol; or
- soil or water that looks or smells different.

The nature of our business means that our operations can pose a high risk for the environment. If we are working on a designated contaminated land site, there is a risk that if we do not manage our works appropriately, we can cause further contamination to a site, causing harm to the environment, wildlife and/or human health.

It is also important that we manage our works appropriately so as not to create any new sites of contaminated land. Examples of this may be potential pollution from oil and chemical storage facilities or assets containing fuels, and oils and chemicals such as Polychlorinated Biphenyls (PCBs) and high voltage fluid filled cables.

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What is Network Rail's responsibility?

Contaminated Land is defined in Part 2A of the Environmental Protection Act (1990), as: ***"any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that – a) harm is being caused; or a) there is a significant possibility of harm being caused…"***

Under the Environmental Protection Act 1990, Network Rail have a duty to identify and manage risks and intervene / remediate where risk is unacceptable. Network Rail may be held liable for any significant possibility of pollution in, on or under land that could harm people, wildlife and/or the environment, including transboundary contamination that may affect other landholdings.

In the steps outlined in the following section, Network Rail will need to:

- identify the reasons for doing the risk assessment.
- identify potential contaminant linkages; and
- assess and evaluate the risk to establish whether there is an unacceptable risk.

For a relevant risk to exist there needs to be one or more contaminant-receptor linkages, known as a contaminant linkage. A contaminant linkage is the relationship between the contaminant (or 'source'), the pathway and the receptor (figure 1). To assess the risks from contaminated land, a source of contamination, and receptor need to be identified, together with a pathway or process for the contamination to reach the receptor, where:

- a contaminant is a substance which is in, on or under the land and has the potential to cause harm to people, wildlife and/or the environment.
- a pathway is a route or means by which a receptor can be exposed to, or affected by, a contaminant; and
- a receptor is in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body.

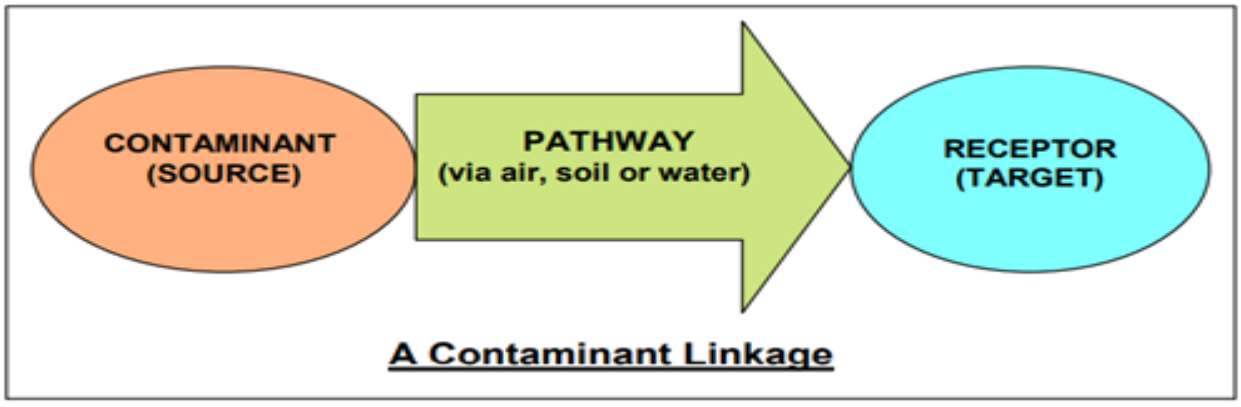

Figure 1. Example of the contaminant linkage

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What do I do if I suspect land contamination?

The Environment Agency (EA) have published a guidance document, Land Contamination Risk Management (LCRM) which supports:

- identifying and assessing if there is an unacceptable risk;
- assessing what remediation options are suitable to manage the risk;
- planning and carrying out remediation; and
- verifying that remediation has worked.

NOTE 2: Whilst the LCRM is an EA guidance document, it is recommended for use across the whole of Network Rail as there is not an equivalent for the Scottish Environment Protection Agency or Natural Resource Wales.

When land contamination is suspected (i.e., there is reason to consider it contaminated), the LCRM follows a step process to determine contaminants and potential remediation techniques. Figure 2 outlines the process that Network Rail colleagues should follow if contaminated land is suspected.

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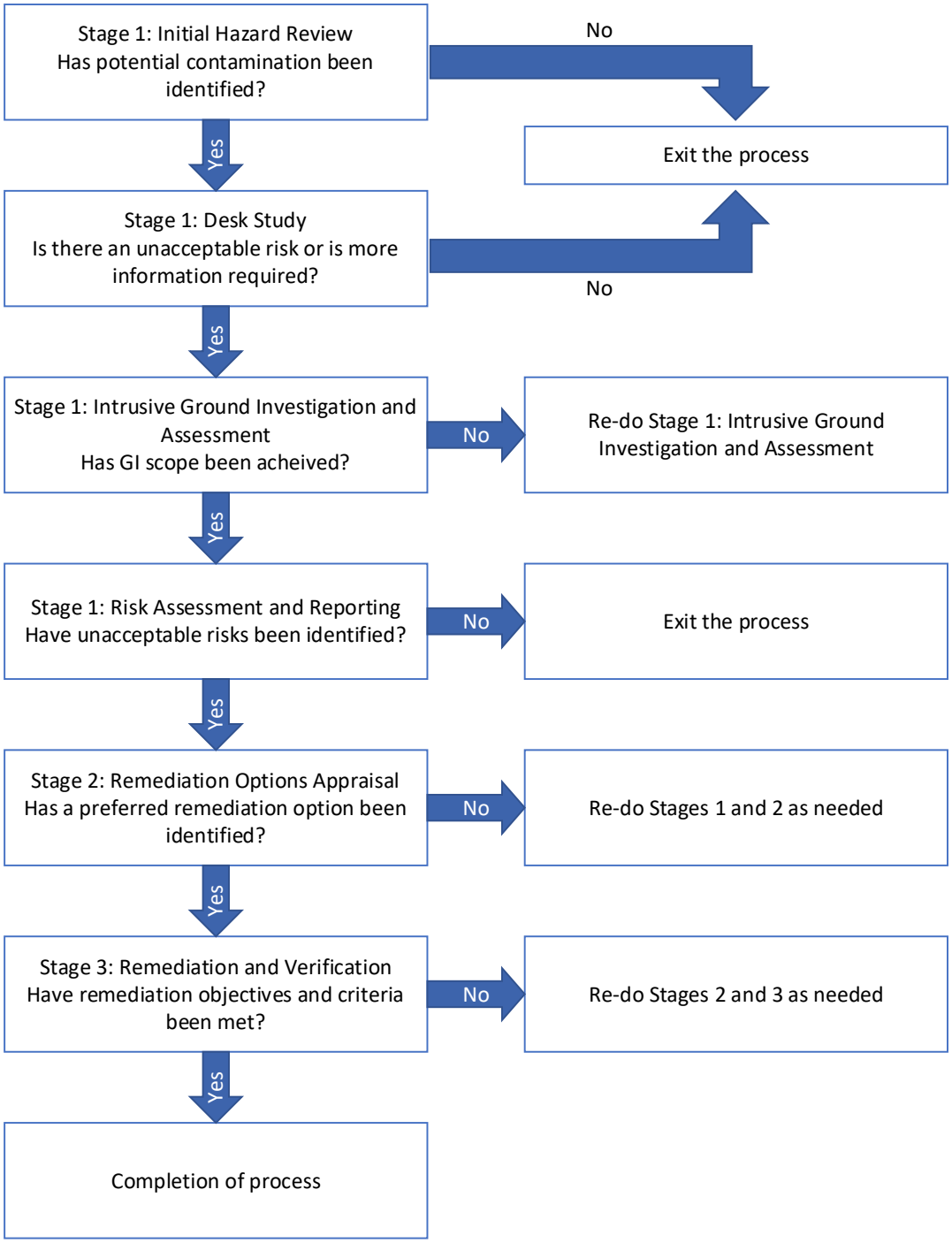

Figure 2. Network Rail's process for suspected land contamination.

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Step 1: Complete an Initial Hazard Review to analyse historical and environmental information on and within 250m around the site. If this demonstrates no risk from contamination, stop the process here and if required, planning will be released, subject to local authority agreement. If the Initial Hazard Review raises concerns, continue the Preliminary Risk Assessment (PRA) with a Desk-based Study.

Step 2: The PRA should include a completed conceptual site model and provide an outline risk assessment associated with the pollution linkages. Deliverables that could be expected from this stage include designer's works specifications and an EN1 Environment and Social Appraisal form, and if unacceptable risks to receptors have been identified, a Generic Quantitative Risk Assessment.

Step 3: Once the Desk-based Study has identified land contamination, a Phase 2 should be completed alongside the relative details requested in section 4.2 of the Environment and Social Management Plan (ESMP) template document. This should include the remediation strategies that have been put in place. Deliverables that could be expected from this stage include an Options Appraisal (may be in ESMP form) and contractor's health and safety plans.

NOTE 3: A land contamination risk assessment can only be undertaken by a competent person. Please refer NR/TM/ESD001 Contaminated Land Technical Manual to understand competencies required.

Careful consideration must be taken with proposed works on contaminated land as there could be associated risks to our employees and the possibility that our intervention could cause the contamination to spread. Network Rail should know what the land is contaminated with and what we can do to prevent the contamination spreading before undertaking any works. Without improving or fixing contamination on a site, the activities that we can undertake maybe prohibited.

Network Rail rely on good record keeping and should have up-to-date information on our sites where possible. After work on contaminated land, you should have records for any close-out licences and consents at the end of the project. The Designer/Contractor shall collate and provide information on contaminated land management to the Asset Manager on completion of the works and include them in the Health & Safety File. This includes documenting any planned works not carried out because you have identified contaminated land for complete understanding and to enable databases to be updated with new and current records.

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Appendix A. Definitions and Abbreviations

Brownfield site	Previously developed land that is not currently in use but could be potentially contaminated.
Contaminant	A substance which is in, on or under the land and has the potential to cause harm to people and/or the environment.
Contaminant linkage	The relationship between the contaminant (or 'source'), the pathway and the receptor.
Designated Contaminated land site	Certain types of contaminated land (as described in Regulation 2 of the Contaminated Land (England) Regulations 2006 are required to be designated as special sites
EA	Environment Agency, England's environmental regulator.
LCRM	Land Contamination Risk Management
Made ground	Land where natural and undisturbed soils have been mostly replaced/built up on by man-made/artificial materials.
Pathway	A route or means by which a receptor can be exposed to, or affected by, a contaminant.
PCBs	Polychlorinated Biphenyls
Receptor	Something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body

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References:

BS10175:2011 +A2:2017 Investigation of potentially contaminated sites. Code of Practice

BS EN ISO 21365 Soil quality- Conceptual site models for potentially contaminated sites

BS ISO 18400-105:2017 Soil Quality. Sampling. Packaging, transport and preservation of sample

CIRIA (2001) Contaminated land risk assessment. A guide to good practice (C552)

Contaminated Land Special Sites - data.gov.uk

EN1 Environment and Social Appraisal tool

Environment and Social Management Plan

Environment Agency (2020) Land Contamination Risk Management (LCRM)

Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance

NR/TM/ESD001 Contaminated Land Technical Manual

NR/L2/ENV/015 [Issue 9] Environment and Social Minimum Requirements – Design and Construction