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Contaminated sites risk assessments

This fact sheet is provided to set out the risk assessment methods for contaminated sites. Individuals seeking a risk assessment should discuss the requirements listed below with a suitably qualified environmental consultant.

Stages of risk assessment

Where potential contamination has been identified on a site, a risk assessment should be undertaken to determine if the contamination would actually affect human health or the environment. It may only be suitable for the contaminated material to remain on site if it can be demonstrated that human health or the environment will not be affected.

A conceptual site model (CSM) should be developed for all levels of risk assessment. A CSM is a description of potential sources, pathways and receptors at a given site and is often shown using a diagram. As the risk assessment's level of complexity increases, the CSM's level of detail should also increase to reflect the knowledge of the site.

• Tier 1 – Screening Risk Assessment:

This is the simplest form of risk assessment and involves comparing concentrations of substances found in soil or water against pre-determined guidelines. These guidelines are prescribed by DEC and other regulatory organisations and are generally based on a wide range of assumptions and conditions. If concentrations of substances are below the accepted criteria, then further assessment of risk is not necessary. If substances exceed the criteria, then a simple risk assessment may be required.

• Tier 2 – Simple Risk Assessment:

A simple modification to a published criteria may be required to ensure that the criteria is relevant to a site-specific situation. This will often involve examining the underlying assumptions of the criteria and where appropriate, making simple

adjustments to them. Simple risk assessments may also include basic modelling, such as dispersion calculations. If substances fail these adjusted criteria, a detailed risk assessment may be required.

• Tier 3 - Detailed Risk Assessment:

A greater understanding of a site can be achieved by characterising the nature of substances on a site and the pathways where exposure to these substances may occur. This may involve specialised fate and transport modelling, or a detailed toxicity assessment of the specific chemicals. Site-specific criteria may be developed through these methods, however contaminated sites Auditors and regulatory authorities will review these methods to ensure they are acceptable.

It is generally expected that Tier 1 and Tier 2 assessments should adequately define elements of risk at the majority of Western Australian sites, and Tier 3 assessments will only be required at more complex sites. More details on risk assessments can be found in the DEC document, *The use of risk assessment in contaminated site assessment – guidance on the overall approach*, which is located at www.dec.wa.gov.au/contaminatedsites.

Need more information?

DEC has published a series of fact sheets and administrative and technical guidelines to assist with the assessment, management and remediation of contaminated sites in Western Australia; these are available by going to www.dec.wa.gov.au/contaminatedsites.

Further information is available by mail from the address below or by calling the Contaminated Sites Section on 1300 762 982.

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