

1. CONTAMINATION ASSESSMENT METHODOLOGY

BASIS FOR ASSESSMENT

Human Health Soil Assessment

In 2002 the Department of Environment, Food and Rural Affairs (DEFRA) and the Environment Agency (EA) launched the CLEA 2002 (Contaminated Land Exposure Assessment) model software together with associated documentation and a suite of Soil Guideline Values (SGVs). The SGVs have been derived using the CLEA model according to three typical land-uses, applicable to long-term human exposure to soil contaminants. The three types of land-use are:

- residential with plant uptake (for example, home grown vegetables) or residential without plant uptake;
- allotments; and
- commercial/industrial.

To date, Defra and the Environment Agency have released 10 CLEA SGVs comprising arsenic, cadmium, chromium, lead, mercury (inorganic), nickel, selenium, toluene, ethylbenzene and phenol.

In conjunction with the SGVs Defra has issued CLAN 2/05, which explains that SGVs may not meet the test for 'significant possibility of significant harm' under Part IIA of the EPA 1990 and should be used to form a basis for further evaluation, rather than a set of assessment criteria on which determination can definitely be carried out.

Where CLEA SGVs were not available, it was the intention of Defra and the Environment Agency that soil screening values could be calculated using the CLEA methodologies set out in CLR 7 to 10 and any relevant CLEA Briefing Notes.

In November 2005 an update to the CLEA 2002 software was released called CLEA UK. The CLEA UK software was released as a beta version and has currently only been tested by the Environment Agency for a limited range of chemicals and scenarios. Therefore the Environment Agency recommended that at the present time it is used cautiously until a final version is released. Given this statement, Atkins has not derived Soil Screening Values (SSVs) using the CLEA UK model at the date of writing.

Atkins approach has been to develop a set of screening criteria which can be applied to a broad range of sites whilst retaining the receptor parameters that define the standard land uses of residential with or without plant uptake and commercial/industrial. The process followed to derive these values has many similarities with site-specific risk assessment (which would be a natural next step), and in order for this semi-quantitative approach to be valid, the conceptual model has