

Schedule B2

Site Characterisation

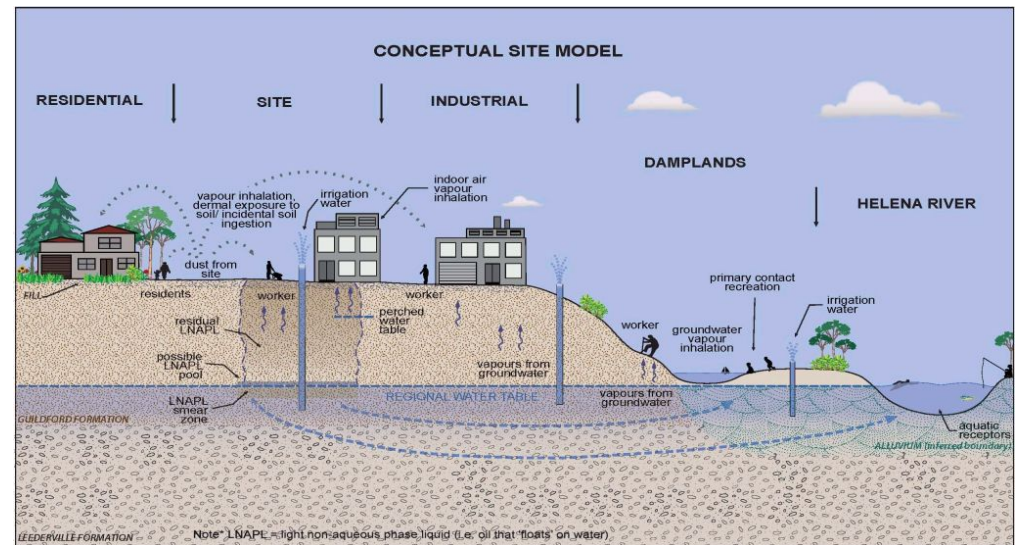
Schedule B2 provides guidance on the site characterisation process to obtain environmental data for human health and ecological risk assessments.

The proposed variation places increased emphasis on the role of the **Conceptual Site Model (CSM)**, **Data Quality Objectives (DQOs)** and **Sampling and Analysis Plan (SAP)** in site investigations. This will facilitate collection of representative site data which is essential for informed risk-based decision making.

A CSM is a representation of information on contamination sources, receptors and exposure pathways between those sources and pathways. A well-considered CSM enables data gaps and uncertainties to be identified and priorities for investigation.

The development of the CSM is an iterative process with the CSM being refined and updated as more information is collected.

The DQO process is a 7 step iterative planning approach used to define the type, quantity and quality of data needed to inform decisions relating to site contamination.



Assessing the vapour intrusion pathway

The variation introduces:

- An assessment framework for vapour intrusion including:
 - preliminary screening and
 - multiple lines of evidence approach
- Guidance on measurement of volatile organic compounds (VOCs) in soil gas, indoor air and ambient air (soil and groundwater are already covered in the NEPM).

Vapour intrusion (VI) assessment framework

For the VI pathway to be complete, there must be a source of sub-surface vapours, occupied buildings (or potential for occupied buildings), and a migration route to connect them.

Preliminary screening step

1. *Is the contaminant volatile?*

Is the Henry's law constant $> 10^{-5}$ atm/m³/mol & vapour pressure > 1 mm Hg at room temperature? Examples of volatile substances include petrol, diesel and solvents.

2. *Lateral exclusion distance for VOCs*

Are there buildings (or planned to be) within 30m from the sub-surface extent of the vapour source?

If the answer to (1) and (2) is yes, then a vapour intrusion assessment is required.

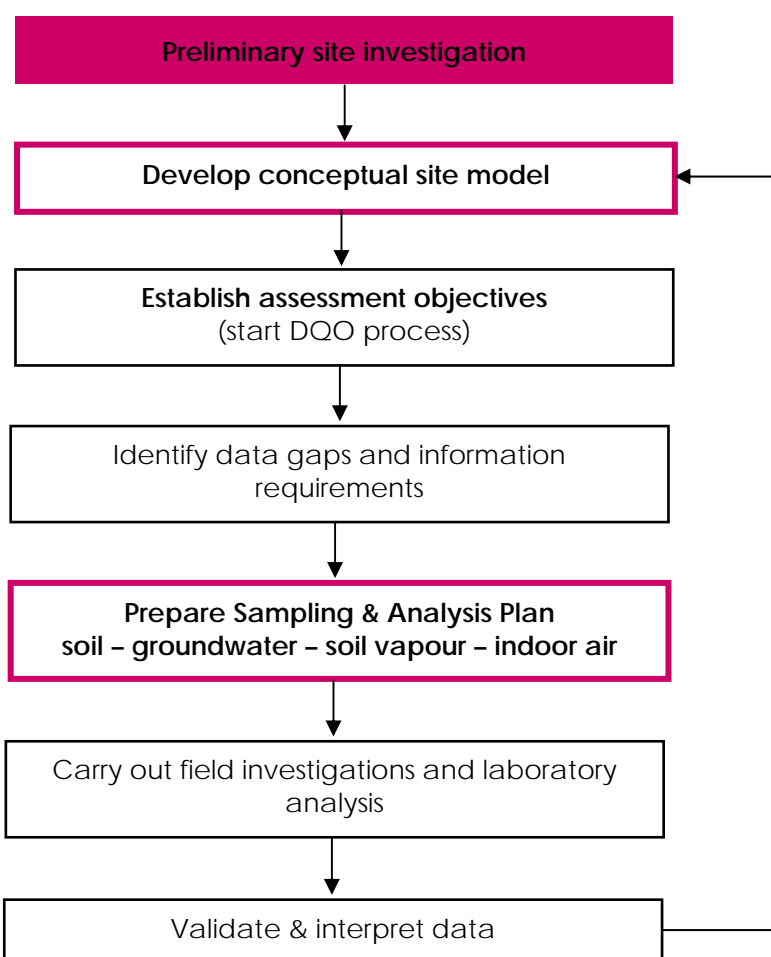
Multiple lines of evidence approach

This requires the assessor to provide more than one reasoned line of evidence to conclude whether the vapour intrusion pathway is active or not and whether it presents a significant risk. Example lines of evidence include:

- Sub-surface soil concentrations
- Soil gas concentrations - near-slab, sub-slab, or crawl space
- Groundwater concentrations
- Background (ambient) air and indoor air quality
- Comparison of vapour constituent ratios in soil gas and crawl space/indoor air

Consideration also needs to be given to environmental factors and the biodegradability of the contaminants.

Schematic of the Site Characterisation Process



Other changes to Schedule B2

SOIL	
Sampling & investigation methods	Updated
Stockpile sampling	New
Assessment of asbestos and dioxins	New
GROUNDWATER	
Sampling & investigation methods	Updated
Delineation of contamination	Updated
Contaminant fate & transport modelling	Updated