

Clovelly Park Mitchell Park Environmental Assessment results: Frequently Asked Questions

The Environment Protection Authority's (EPA) assessment program in Clovelly Park and Mitchell Park has now been completed, with the Clovelly Park Mitchell Park Environmental Assessment report providing us with a clearer understanding of the environmental conditions in the area and whether a potential health risk from soil vapour exists. This Frequently Asked Questions document provides you with some additional information.

How can Trichloroethene (TCE) potentially enter a property through the soil?

Chemical vapours are the most likely contaminants to reach the indoor environment because of their ability to evaporate from contaminated soil and groundwater and move through the soil in a gaseous state as vapour.

These vapours are then capable of entering buildings through openings in the building foundation or basement walls such as cracks in the concrete slab, gaps around utility lines (power, gas, water, sewage), and sumps (for water collection).

It is also possible for vapours to pass through concrete, which is naturally porous.

This is known as vapour intrusion.

Factors impacting soil vapour movement

How do I know if vapour intrusion is occurring at my property?

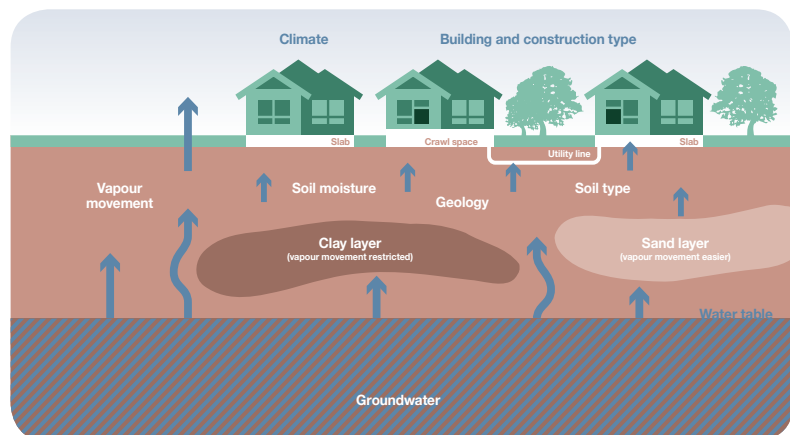
Vapour intrusion is not common, and it does not occur in every instance of contaminated soil or groundwater. Often, the concentrations of chemicals from underground contamination are hard to distinguish from common chemicals used and stored indoors.

Many variables affect the movement of contaminated vapours from below ground to indoor air. This makes understanding vapour intrusion pathways and movements a complex process.

Typically no data set for a single variable (for example, groundwater, soil vapour, sub-slab vapour, or indoor air) is adequate to accurately assess vapour intrusion.

The National Environment Protection Measure (Site Contamination), 1999 (ASC NEPM), provides the framework for the assessment of vapour intrusion. The ASC NEPM outlines that the assessment program needs to be based on multiple lines of evidence.

By using multiple lines of evidence, it is possible to predict if vapour intrusion is likely to occur. This is the process of analysis that has been applied to the Clovelly Park Mitchell Park assessment area.



Assessment and computer modelling

How was the predicted indoor air level for my house calculated?

In the case of the Clovelly Park and Mitchell Park assessment area, the following multiple lines of evidence have been considered:

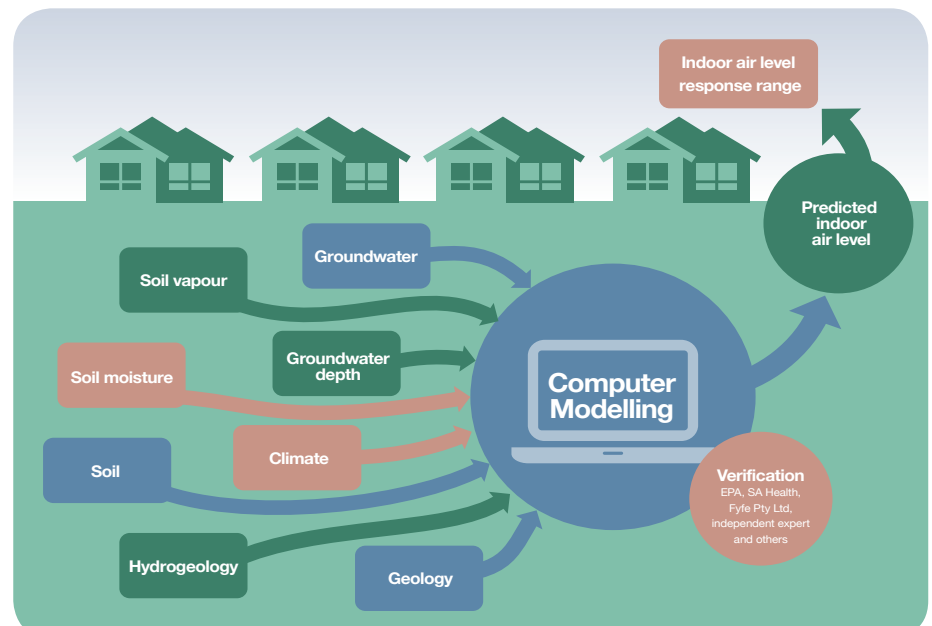
- Data from previous testing and assessment studies,
- Depth to groundwater,
- Soil type,
- Soil moisture,
- Building construction and condition,
- Climate data,
- Site geology and history,
- Hydrogeology,
- Indoor air data,
- Sub-slab soil vapour data,
- Soil and soil vapour data from the area more broadly to allow for a better understanding of the source areas,
- Groundwater data.

Computer modeling is used to analyse these multiple lines of evidence.

Computer modelling typically gives the best results when used with high-quality data inputs, such as the ones generated by the assessment process in Clovelly Park and Mitchell Park.

A small number of indoor and outdoor air tests were undertaken as lines of evidence to support the computer model.

Assessment and computer modelling process



What is the Indoor Air Level Response Range?

The key tool that has been used to interpret the assessment process findings and report is the Indoor Air Level Response Range.

The Indoor Air Level Response Range is a decision making tool that indicates what steps should be taken when TCE has been found to be at a particular level in the indoor environment from vapour intrusion.

The associated actions that accompany the ranges are intended to ensure that any potential risks to health from TCE, present at that level, are managed as far as possible.

The indoor air level response range is a sensible balance between the highly conservative approach of the US EPA and the widely validated (slightly

less conservative) approach of the World Health Organisation (WHO).

The indoor air levels and associated actions are deliberately flexible to allow varying levels of action, as the health risk is dependent upon a range of factors including property location, construction type, living patterns and the environmental contamination in the vicinity of the individual property location.

These guidance levels are intended to be protective against cancer and other health risks over the course of a lifetime of continuous TCE exposure (70 years).

This approach is also consistent with Australian approaches to chemical assessment and regulation where the WHO is identified as a preferred source of guidance, in an absence of national regulatory standards.

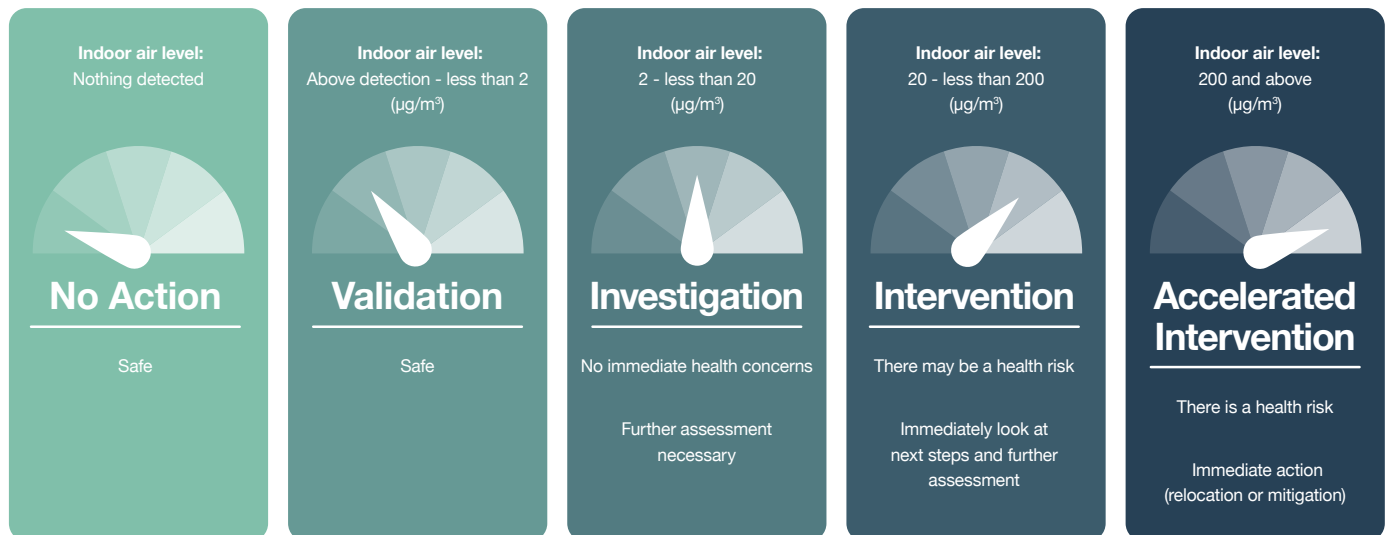
While there is international consensus around the reference concentration of $2 \mu\text{g}/\text{m}^3$ of TCE in indoor air as the trigger for further investigation, decision making frameworks for levels above this vary considerably and are the subject of ongoing scientific and public debate.

The results of the current environmental assessment program were applied to the indoor air level response range.

A prediction of the indoor air TCE concentration for houses (grouped by response range) is a key outcome of the assessment program.

Large areas have been identified where no further action is required. These areas are considered safe. For the remaining areas of interest, possible actions have been developed against each indoor air level range.

Indoor Air Level Response Range



About the Clovelly Park Mitchell Park Environmental Assessment Report

Who compiled the Clovelly Park Mitchell Park Environmental Assessment Report?

The Report has been compiled by Fyfe Pty Ltd – the EPA’s environmental consultant.

Fyfe Pty Ltd has utilised the services of a range of experts from within their organisation, as well as external specialists and the scientific know-how of the EPA to compile their report.

The EPA and SA Health have reviewed the report and have had input into its development.

Where can I find the full Clovelly Park Mitchell Park Environmental Assessment Report?

The Report can be downloaded from the project website at:

www.CPMPproject.sa.gov.au

A link from the website frontpage will take you directly to the report.

If you are unable to download the report, please contact a member of the project team on 1800 770 174 or at CPMPproject@sa.gov.au

The report comprises the following key sections of information:

- Background information,
- Approach used for assessment and analysis,
- Quality assurance and quality control information,
- Analytical results,
- Vapour intrusion risk assessment,
- Conceptual site model,
- Appendices with tabulated data, assessment results and modelling used.

A report summary will also be released in coming days that outlines the key report findings and results.

Where can I find the data relating to the groundwater wells, soil and soil vapour bores near my house?

The Report contains the data relating to the individual groundwater wells, soil and soil vapour bores. However, it is vital to understand this information is only raw data and is meaningless if not considered in context.

No data for a single variable (such as groundwater, soil or soil vapour) is typically adequate to accurately assess vapour intrusion and predicted indoor air levels.

In the Report, raw data has been analysed together with information about the soil, soil moisture, groundwater depth, hydrogeology, geology, historical data, sub-slab soil vapour data and more to draw conclusions about the source, extent and the possible health risk associated with the contamination.

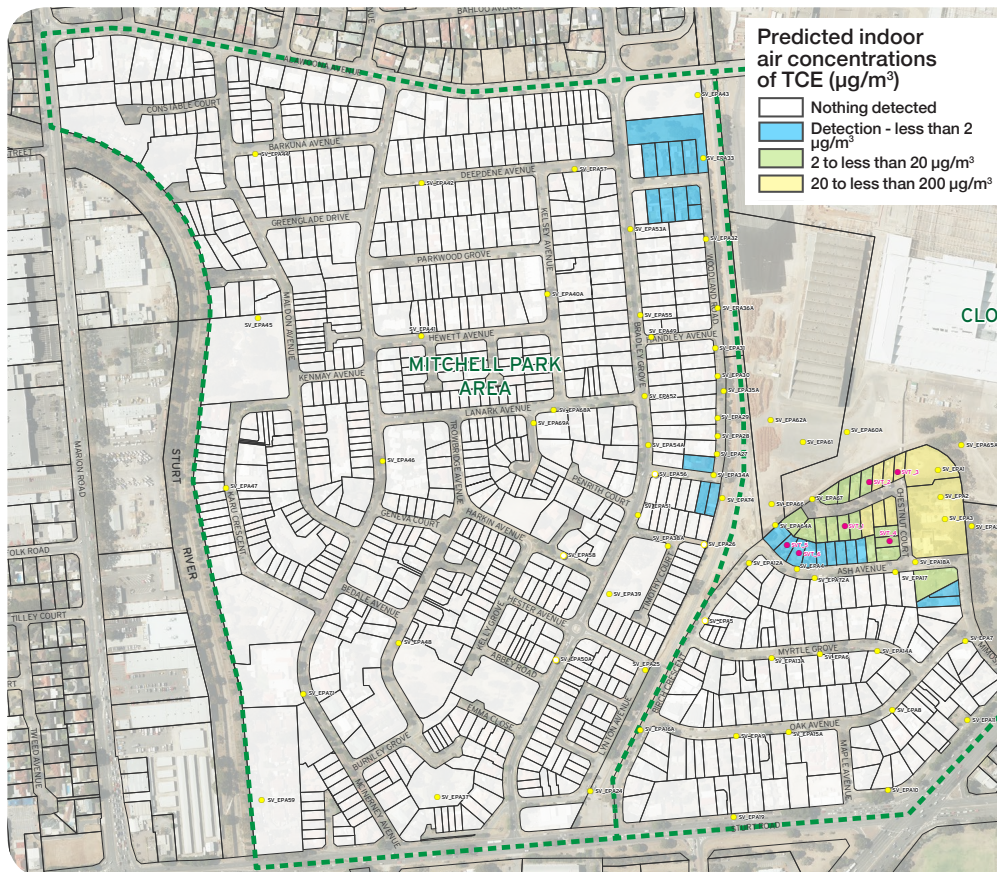
Are there ongoing issues with groundwater in the area?

The Report identifies four separate “plumes” (or areas) of groundwater contaminated with TCE across the assessment area. The contaminated groundwater is moving very slowly in the same direction as the overall groundwater flow in the area (north-west to west).

Varying levels of TCE have been detected within these plumes - or areas - and the EPA advice to not use groundwater for any purpose will remain in place until further notice.

This action will prevent any risk to human health that could result from using contaminated groundwater.

Predicted indoor air level result map extracted from the Clovelly Park Mitchell Park Environmental Assessment report



The majority of the assessment area is safe and there is no human health risk.

- 1,352 properties are considered safe and no further action is required.
- 25 properties fall within the detection – less than 2 micrograms of TCE per cubic metre range.
- 15 properties fall within the 2 - less than 20 micrograms of TCE per cubic metre and require further investigation.
- 8 properties fall within the 20 - less than 200 micrograms of TCE per cubic metre and require further investigation.

The total number of properties in the “No Action” range is an estimate only. All totals include vacant properties, reserves and houses.

Response and next steps

Will any more assessment work be required in the future?

The boundaries of the contamination within the assessment area have been identified, enabling defined areas to be declared safe, with no further action or assessment required.

However, EPA and SA Health will seek to validate the report results and findings and will work with individual property owners to develop a validation plan, to be implemented in 2015.

Whilst details of the validation program are yet to be determined, it is likely to include works in the relocation area, the areas with properties in the 0 – 2 micrograms of TCE per cubic metre range and in other defined areas.

The EPA may also resample existing groundwater wells and soil vapour probes in future as part of ongoing monitoring of groundwater and soil vapour.

Will I get an official letter from the EPA confirming the assessment program results?

Property owners in the “nothing detected” Indoor Air Level Response Range will receive a letter from the EPA confirming the result for their property.

The Project Team and relevant experts will meet with all other property owners to discuss next steps.

How will banks, real estate agents, the Valuer General and the general public find out about the assessment program results?

The Project Team will be making every effort to ensure the assessment program results are widely available, through communication channels such as targeted personal briefings, letters, information packs, the project website and via relevant government agencies.

The enclosed Indoor Air Level Response Range summary results and a report summary (which will also be released in coming days) will be key tools used to communicate the findings as broadly as possible.