

# Vapour Intrusion Sites

## How they can affect your land

If you have a property on the Listed Land Use Register with a history of fuel and chemical storage; or if it has previously been a service station, dry cleaners, panel beater or housed a P-lab/ clandestine drug lab, soil and groundwater may have been contaminated by spills, leaking storage tanks and burying of storage drums. Some of these chemicals can be present as harmful gases, and so these properties are known as potential vapour intrusion sites.

### Living on a potential vapour intrusion site

Because we don't have information on individual properties where the land use is unverified, we can only provide general guidance about your land. Not all land which has been used for the purposes above will be contaminated. The only way to find out is to have the soil tested by a suitably qualified and experienced practitioner.

Soil contamination may not be visible as chemicals spilt on the ground can seep through the soil. But only in rare cases will concentrations be high enough to cause acute health effects or health and safety risks.

Some chemicals including fuels, solvents and dry cleaning fluids can travel through soil and groundwater as gases, or vapours. These gases can enter houses and buildings through cracks in foundations and along pipes, floor drains and services and contaminate indoor air. The indoor air concentration of these gases will depend on the type of foundation, the number of cracks in the foundation and the amount of ventilation.

In most cases if gases are present, the indoor air concentrations will not be high enough to be detected by smell. Residents can also become used to smells and may not notice them. Testing is required to confirm if they are present. Some gases can diffuse into plastic water pipes and contaminate drinking water. If you have a household water bore or well on your property for drinking water or irrigation, you may wish to get this tested if you have any concerns. A suitably qualified and experienced practitioner will be able to advise what to test for and how to gain the necessary consents from your local council.

### Effects on people and water sources

Vapour intrusion is not common and will not occur on every site where there is contaminated soil or groundwater. People are exposed to these vapours by breathing in contaminated indoor air or drinking contaminated water. Exposure to high concentrations of these vapours can irritate the eyes, nose, throat and lungs and cause headaches, dizziness and nausea.

In most cases people would need to be exposed over a long period of time for health effects to occur. Health effects from long-term

exposure can include asthma, neurological effects, kidney damage and increased risk of developing cancer and will depend on the chemical(s) involved and the length of exposure. Elderly people, pregnant women, children and people with respiratory conditions are most at risk.

Other sources of these gases in indoor air include everyday products like paint, glues, cleaners, aerosol sprays and stored fuels. New carpets, furniture and smoking are also sources of these gases in indoor air.

### Taking care

The Canterbury District Health Board advises anyone with a garden, regardless of whether the property is on the Listed Land Use Register, to follow some common sense precautions to minimise potential health risks when gardening or when children are playing outside.

Visit [www.cph.co.nz/your-health/contaminated-land/](http://www.cph.co.nz/your-health/contaminated-land/) for more information.

If you are weighing up whether to have the soil tested, think about the way you use your garden. If you follow the health board's common sense precautions, the risks are likely to be low.

The following activities may place you at slightly higher risk:

- you eat the eggs of your free range chickens
- you grow and eat root vegetables
- young children play in and may eat your garden soil.

If these activities apply, you may like to change your garden activities, or have the soil tested.



## Responsibility for contaminated land

According to New Zealand property laws, if you own a property, you are responsible for any contamination problems with it, even if you did not cause them, or weren't aware of them when you bought your land. This is called the 'buyer beware' principle. If you are renting a property you can ask your landlord to ensure your health and safety which he/she is bound to do under the Residential Tenancies Act 1986.

## Environment Canterbury identifies land which may be contaminated from current or historical uses

Land uses which may be hazardous include former orchards and market gardens, landfills, timber treatment and other industrial sites where harmful chemicals were often used, stored or disposed of. Environment Canterbury records these sites on the Listed Land Use Register [www.llur.ecan.govt.nz](http://www.llur.ecan.govt.nz).

Not all land which has been used for these hazardous activities or industries will be contaminated. The only way to find out is to have the soil tested. For more information, visit [www.ecan.govt.nz/HAIL](http://www.ecan.govt.nz/HAIL).

