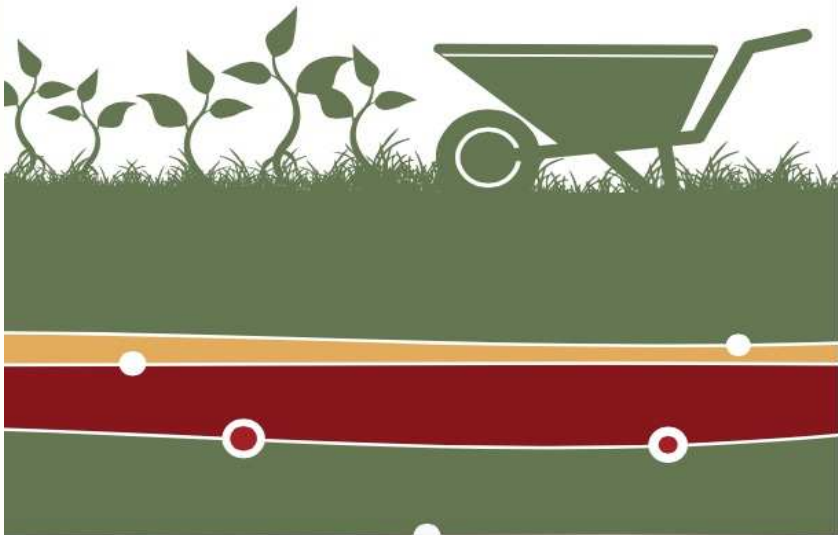




Scottish Allotments
and Gardens Society

Guide for
growing
on land which may be contaminated



**Based on - Guide for Soil
Testing in Urban Gardens
Toronto Public Health 2013**

“The most mysterious place on earth is beneath our feet”

William Bryant Logan



Previous land use	Examples of potential contaminants	Examples of related issues or health impacts
Metal mining, treating and refining, engineering works, scrap yards and ship breaking sites	Metals e.g. cadmium, arsenic, lead, mercury, copper, nickel, and zinc	<ul style="list-style-type: none"> • Inhalation of contaminated dusts • Ingestion of contaminated crops • Plant growth may be restricted if the roots take up metals
Chemical works and refineries, tar distilleries	Hydrocarbons, Oily and tarry substances, phenols	<ul style="list-style-type: none"> • Skin irritation may be caused by contact • Organic vapours may cause respiratory complaints • Pollution of water supplies, streams and groundwater
Made ground, including blast furnace slags	Sulphates, chlorides, acids	<ul style="list-style-type: none"> • Building materials, e.g. concrete foundations, weakened by chemical attack
Gasworks, power stations, railway land	Coal and coke dust	<ul style="list-style-type: none"> • Ignition in the ground
Construction and waste disposal sites	Asbestos	<ul style="list-style-type: none"> • Release of airborne fibres • Asbestos related diseases
Old waste tips and in-filled dock basins	Landfill gases, e.g. methane and carbon dioxide	<ul style="list-style-type: none"> • Plant dieback • Accumulation to hazardous concentrations in confined spaces
Agriculture	Agricultural chemicals e.g. pesticides, Biological contamination e.g. <i>e-coli</i>	<ul style="list-style-type: none"> • Pollution of water supplies, streams and groundwater
Landfill	Landfill Gases (some of the above mentioned contaminants may also be present, depending on the type of landfill)	<ul style="list-style-type: none"> • Plant dieback • Accumulation to hazardous concentrations in confined spaces
Military Use	Radium from aircraft dial, heavy metals, arsenic, PAHs, PCBs and dioxins (dependent on previous use)	<ul style="list-style-type: none"> • Inhalation of contaminated dusts • Ingestion of contaminated crops • Direct contact with contaminated soils

Source

E.g. Lead
in Soil



Pathway

Gardening
in soil
without
gloves



Receptor

Eating a
sandwich
without
washing
hands



What to do if you think you might have contamination on your site

Step 1 Establish the level of concern

Step 2 Test the soil

Step 3 Take actions to reduce risks

Low Concern
Site

Medium Concern
Site

High Concern
Site

Step 2 Test Soil

- **Local Authority advice**
- **Site investigation and sampling strategy**
- **Relevant experience**
- **Accredited labs**
- **Maybe the University?**
- **Test foods – should you be there?**
- **Interpret the results – hmmm....**

Step 3 – Take Action

- **Dig and dump**
- **Barrier methods – e.g. clay**
- **Biological treatments – biodegrade**
- **Chemical treatments**
- **Thermal treatments**
- **Stabilisation**

Case studies – RAGG - Renfrew



Soil Contamination

Common sense

Research

Appropriate expertise

Responsibility and liability

Costs

But it can be solved!

LOBBYING