

health

Clandestine laboratory remediation

Environmental health practice note

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Environment Protection Authority Victoria

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Contents

Contents.....	5
About this publication.....	6
Introduction.....	6
Clan lab hazards.....	6
Police investigation.....	8
Health risks.....	8
<i>Public Health & Wellbeing Act 2008</i>	9
Nuisance.....	9
Remediation.....	9
Before starting.....	9
Engaging an assessor.....	9
Remediation plan.....	10
Engaging cleaning contractors.....	10
Post remediation assessment.....	10
Roles and Responsibilities.....	11
References.....	11
Flow Chart: Remediation of a Clandestine Drug Laboratory Site.....	12

About this publication

This practice note provides guidance to help manage health risks associated with the remediation of clandestine drug laboratories (clan labs). The national *Clandestine Drug Laboratory Remediation Guidelines* (Newell *et al.* 2011) (National Guidelines) should be referred to for more detailed information.

This practice note has been written primarily for local government Environmental Health Officers (EHOs). It may also be referred to by:

- owners (or their agents) of sites found to contain clan labs
- professionals assessing or remediating clan lab sites
- other parties involved in the investigation and/or remediation of a clan lab site.

The powers and accountabilities of EHOs are explained in the Municipal Association of Victoria's (MAV) *Public Health and Wellbeing Act 2008 Guidance Manual for Local Government Authorised Officers* (the MAV manual). Sections in the MAV manual relevant to clan lab remediation include:

- Nuisance
- Investigation
- Enforcement Mechanisms and Procedures

Introduction

Clandestine drug laboratories (clan labs) are used to illegally manufacture drugs such as methamphetamines and have been found in rural, regional and metropolitan locations.

Environmental contamination is expected to be present in clan labs due to non-ideal manufacturing conditions such as:

- under/over heating
- ingredient mishandling
- spillages
- waste disposal practices.

These conditions can result in chemical residues being deposited on surfaces during the drug manufacturing (cooking) process. Contamination must be professionally assessed and remediated to ensure that a site does not remain a public health and safety risk.

Property owners are responsible for the remediation of a clan lab site and any associated costs including recovery of those costs from a tenant where applicable.

Authorised Officers under the *Public Health & Wellbeing Act 2008* (PHWA), are neither expected nor recommended to personally assess, test or remediate a clan lab site. These tasks should be carried out by professionals experienced in this field.

Clan lab hazards

In many cases, materials used during the manufacture of illicit drugs may cause residual contamination of the soil, water and air close to a clan lab site, due to improper storage, use and disposal of chemicals and wastes. Residual contamination may be present even if there is no evidence of odour or visible staining.

A range of chemicals can be found in clan lab operations, depending on the type of drug(s) produced. These include reagents, precursors to final products used in synthesis and/or by-product(s) of reactions. Chemical hazards should therefore be assessed on a case-by-case basis.

An Investigation Level (IL) is the concentration of a contaminant above which further appropriate investigation and evaluation is required. It is the basis of a risk-based analysis to determine the need for further assessment

or development of an appropriate remediation plan. ILs have been developed for indoor air and surfaces and outdoor soil. The National Guidelines provide the ILs for a number of key chemicals.

For example, the common clan lab drug, **methamphetamine** is odourless, but can be an aerosol hazard until residues are cleaned from surfaces. The IL for methamphetamine on an indoor surface is 0.5 [tg/100 cm² (Environmental Risk Sciences 2009).

The chemical toxicity of residue found at a clan lab will depend on the:

- manufacturing process
- starting materials/chemicals used
- amount of residue.

The **amount of residue** found at a clan lab depends on:

- the size of the lab
- how long the lab has been operating
- how chemicals have been stored and disposed
- spillages that have occurred.

Corrosive chemicals often found in clan labs include:

- hydrochloric acid
- sodium hydroxide
- ammonia.

Solvents often found in clan labs include:

- ethyl ether
- benzene
- toluene
- denatured alcohol.

Note: solvents are potentially explosive; some clan labs are discovered after an explosion.

Other chemicals and/or drug materials found in clan labs include:

- methamphetamine
- ephedrine
- pseudoephedrine
- hazardous metals such as mercury and lead.

Other hazards include:

- pressurised gas cylinders
- faulty electrical wiring.

EHO Safety: EHOs responding to a nuisance complaint about a clan lab should not enter the premises if there is a health and safety risk. Victoria Police, Metropolitan Fire Brigade (MFB), Country Fire Authority (CFA), and/or the Environment Protection Authority Victoria (EPA) should be contacted for assistance.

Police investigation

When investigating a clan lab, the Victoria Police Clandestine Drug Laboratory Squad and Forensic Services (the police) collect samples of evidentiary value for prosecution purposes. The following items are identified, processed and packaged for transport and disposal by a chemical transport contractor:

- chemicals
- glassware
- equipment (e.g. heaters, scales)
- containers
- drug products.

Victoria Police is not responsible for the assessment and remediation of a site following the completion of an investigation.

When the police are close to finishing an investigation, they will contact the EHO at the responsible council to notify them of the discovery of a clan lab site and its potential hazards and risks. They will then send a confirmation letter to the EHO and include contact details of the police investigator. The EHO may wish to discuss details of potential contamination with the investigator to help facilitate safe access to the site and an appropriate remediation strategy.

Responsibility for managing the site, including remediation, returns to the property owner once the police have completed their investigation and removed material of evidentiary value from the property. Council can utilise their relevant powers under the PHWA to ensure that a clan lab site is remediated and can also prohibit unauthorized access.

Health risks

The National Guidelines acknowledge that residual contamination created by a clan lab operation presents 'a serious risk of harm to human and environmental health'. Potential health effects will vary depending on:

- the chemicals a person is exposed to
- the quantity of each chemical a person is exposed to
- the duration of a person's exposure
- the health status of person exposed.

Manufacturing residues, by-products and finished products may remain on the premises after the police have completed their investigation. These substances may have also been discharged into the environment (for example, into the air, septic tanks and soil) during the manufacturing process. They pose a potential risk to human health, with children the most vulnerable. Some residues can remain on surfaces for long periods of time (Environmental Risk Sciences 2009).

- There is no accepted science/health-based safe level of exposure to residual contamination due to the manufacture of illicit drugs.
- Contaminated material should be removed and affected surfaces properly cleaned to prevent ongoing exposure to residents.
- Acute exposure to the typical clan lab drug **methamphetamine** can cause irritation to eyes, breathing difficulties, dizziness and headache (Environmental Risk Sciences 2009).

Public Health & Wellbeing Act 2008

Nuisance

Part 6, Division 1 of the PHWA applies to nuisances which are, or liable to be, “dangerous to health” or “offensive”. Section 58(4) of the PHWA defines offensive to mean “noxious” or “injurious to personal comfort”.

As residual contamination arising out of clan labs is acknowledged to be a serious health risk, this contamination is a nuisance for the purposes of the PHWA.

It is an offence under the PHWA to **cause** a nuisance or to **knowingly allow** a nuisance to exist on, or emanate from, land. Land owners must abate this nuisance, or they will be liable to face criminal prosecution.

Under the PHWA, Councils **must** investigate any notification of nuisance [Section 62(2)] and have a **duty to remedy**, as far as reasonably possible, all nuisances in their municipal district (Section 60).

Upon notification of a clan lab, councils should advise the owner to have the land assessed and remediated if necessary.

In a situation where the land owner does not take steps to remediate the nuisance, council may issue the landowner with an improvement notice to abate the nuisance.

In cases where the land owner is unknown or cannot be located, the PHWA provides that councils may take action to abate the nuisance [Section 66].

Part 9 of the PHWA sets out the powers of Authorised Officers to enter premises to investigate nuisances and eliminate or reduce risks to public health. These powers include a power to “seal” premises in Section 175(1)(e). The property should be sealed until it is assessed as safe for its intended use.

Further information on the legal powers of councils and their officers to deal with Nuisance can be found in the MAV manual including an Improvement Notice template.

Remediation

Before starting

The EHO, and/or land owner should:

- liaise with the police investigator for details of potential contamination at the site
- be aware of hazards and risks, especially personal safety, prior to entering the premises and take into account relevant information provided by the police investigator
- prevent unauthorised access to the premises
- notify neighbours if adjacent properties are affected or are at risk.

The premises should be ventilated for at least 48 hours prior to beginning the remediation. This will allow volatile solvents and gases that have been absorbed into porous surfaces to evaporate. The premises should also be closed off from public access until remediation is complete and the site is safe to re-enter.

Engaging an assessor

The property should be investigated by an assessor¹ to determine what remediation is necessary. The assessor should confirm their findings in writing.

Factors an assessor should consider may include:

- information provided by the police investigator, which usually includes where cooking was carried out, whether the clan lab was active or inactive² and the location(s) of hot spots
- the extent of residue and staining on walls, ceilings and other surfaces

¹ An expert experienced in this field, for example, an occupational hygienist.

² Active= category A; (operational; glassware and chemicals present). Inactive= category B; (not in use)

- evidence of confined 'cooking' activities, (e.g. only in the shed or laundry but not the rest of the site). In such cases, the shed may need to be demolished and removed. Assessment may still be required post-demolition to determine soil and/or off-site contamination. Other areas of the site may also have been used and therefore should also be assessed.

Remediation plan

Where an assessor reports that ILs have not been exceeded and therefore remediation is not required, it is recommended that properties are generally cleaned.

A remediation plan should be prepared by a professional cleaning contractor. The plan should be based on the findings of the initial police investigation and the assessor's report and agreed by the relevant stakeholders (property owner, EHO and assessor/cleaning contractor). The plan should include:

- items to be disposed of due to damage or contamination
- items to be removed from the site for cleaning
- procedures for cleaning.

Items suspected to have been used in the manufacturing process and/or show evidence of acid etching, chemical staining or other visible contamination including sinks, bathtubs and toilets should be either cleaned according to the assessor's advice, or discarded. Items should also be discarded if they emit a chemical odour.

Engaging cleaning contractors

- Professional cleaning contractors familiar with remediation requirements of clan labs should be used.
- A class 'A' removalist is required if a premises is to be demolished (e.g. as per asbestos removalists) with any contaminated materials appropriately disposed of.
- WorkSafe Victoria can advise contractors of appropriate Personal Protective Equipment (PPE), however as a minimum, PPE should include:
 - disposable chemically impervious overalls, gloves and footwear
 - P1 or P2 filter masks
 - Respirators, especially where strong odours are present.

Local councils can assist site owners with contact details of suitably qualified assessors and cleaning contractors.

The Environment Protection Authority Victoria (EPA Victoria) can advise on transport and disposal of contaminated items and locations of landfills that accept contaminated waste and/or soil.

Post remediation assessment

Following remediation, the assessor should provide written verification that residual contamination is below the relevant Investigation Levels and that the site is fit for its intended purpose. If the remediation is deemed inadequate, further remediation activities will be required before the assessor can deem the site fit.

A copy of the assessor's report should be provided to Council. This report can be used as evidence of compliance with a Council improvement notice that may have been served on the owner.

Roles and Responsibilities

Individuals and Groups of Individuals	Responsibilities
Victoria Police	<ul style="list-style-type: none"> Initial investigation of clan lab and relevant prosecution activities. Notify Council EHO, by phone, of the presence of a clan lab, transferring powers to them for further action. Provide a follow-up letter of a clan lab investigation to the EHO and contact details of the police investigator. Process and organise packaging, transport and disposal of equipment and chemicals found in a clan lab that are relevant to the police investigation. Provide relevant details of contamination at a site to the EHO upon request.
Local Government - Environmental Health Section Authorised Officers	<ul style="list-style-type: none"> Respond to potential residual contamination at a clan lab site after notification has been received from Victoria Police or complainant of such a nuisance. Liaise with police investigator to clarify potential contamination at the site. Issue improvement and/or prohibition notice to property owner of a clan lab site. Facilitate prohibition of unauthorised access to a clan lab site. Notify potentially affected parties of risks and hazards of a clan lab, e.g. neighbours. Engage and liaise with assessment/cleaning/demolition contractors as required. Oversee the remediation of residual contamination at a clan lab site.
Property Owner(s)	<ul style="list-style-type: none"> Appoint an assessor to assess contamination at a clan lab site. Manage the remediation of the site. Submit the assessor's report to Council confirming that contamination levels are within acceptable levels.
Assessors (suitably qualified professional)	<ul style="list-style-type: none"> Assess potential contamination, hazards and risks at a clan lab site. Confirm in writing, to the property owner and/or Council that a property previously used as a clan lab: <ul style="list-style-type: none"> -does not require remediation OR -has been remediated to a satisfactory level and is fit for its intended use.
Chemical disposal/transport contractor	<ul style="list-style-type: none"> Transport and dispose of equipment and chemicals found at a clan lab site.
Cleaning contractor/ remediation professional	<ul style="list-style-type: none"> Write a remediation plan before commencing. Remove contamination and hazards from a clan lab property. Remediate the site so that it is fit for its intended use.

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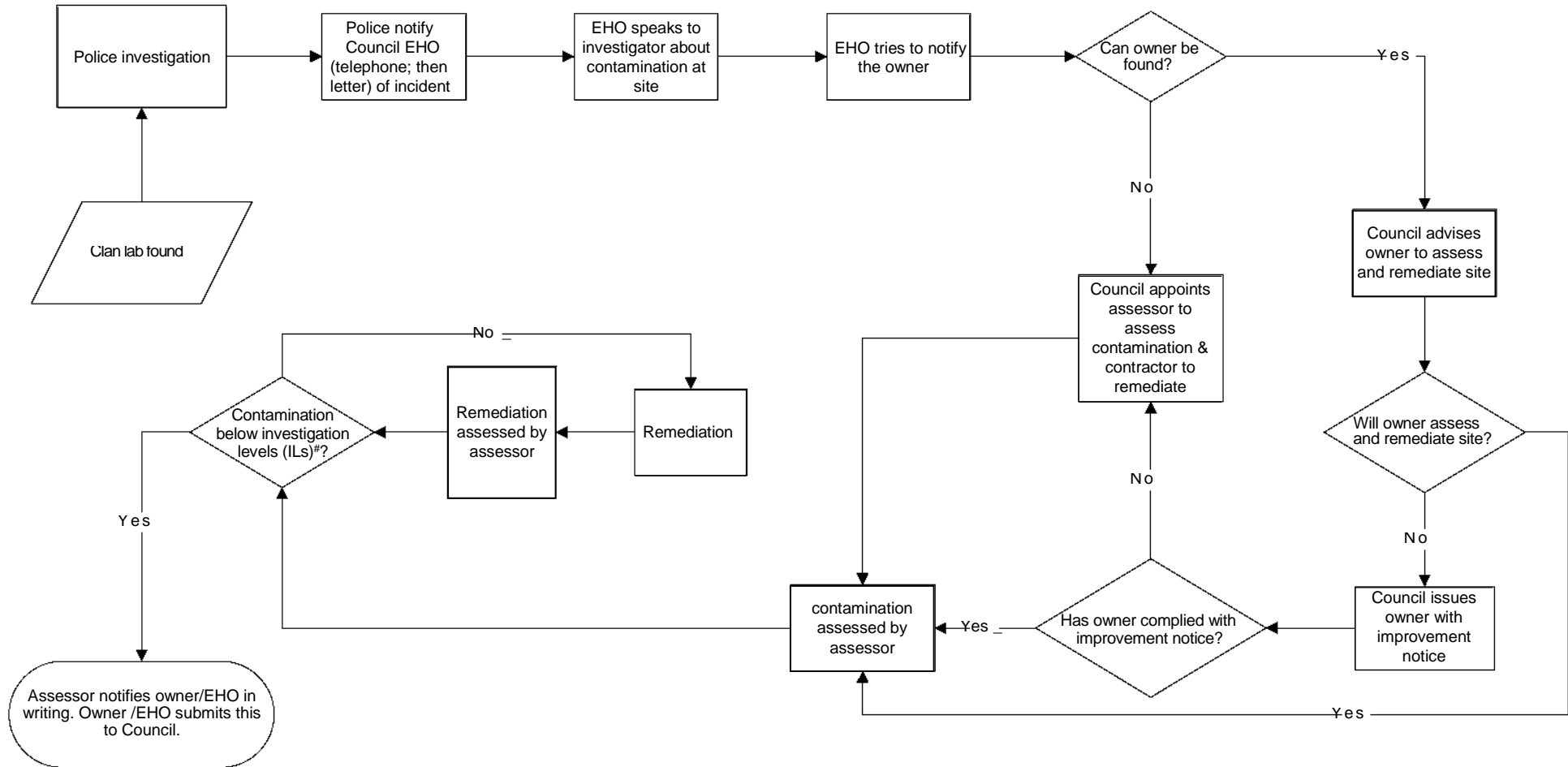
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Flow Chart: Remediation of a Clandestine Drug Laboratory Site



*ILs (investigation levels) are derived from Appendix 1 of the *Clandestine Drug Laboratory Remediation Guidelines* (Newell et al 2011)