Cleaning Up Former Drug Operations in our Residential Neighbourhoods

A community-led process for addressing contamination from former residential marihuana grow operations and drug labs

Fire Chief Len Garis and Dr. Joseph Clare

June 2013

UNIVERSITY OF THE FRASER VALLEY
SCHOOL OF CRIMINOLOGY & CRIMINAL JUSTICE

UNIVERSITY OF THE FRASER VALLEY
CENTRE FOR PUBLIC SAFETY & CRIMINAL JUSTICE RESEARCH

Executive Summary

1. Communities across British Columbia are conducting safety inspections of suspected marihuana grow operations and clandestine drug labs to address the health and safety hazards associated with these sites, including fire, unsafe structural alterations, illegal and unsafe wiring, mould and chemical spills. Marihuana grow operations are 24 times more likely to catch fire than a typical home. Medical marihuana grow operations are equally at risk from these hazards, due to a lack of oversight and disclosure of the sites to local authorities.

2. Remediation processes vary from city to city, and in general there is a lack of follow-through and documentation. Most city-led processes include a site visit by an inspection team, the serving of a notice (if warranted) prohibiting further occupation until the site is remediated, a deadline for remediating the property, and re-inspection by a certified professional before occupancy is permitted. No provincial standards exist for the remediation of residential drug operations for health and safety purposes, although there is a Ministry of Environment process for remediating environmental hazards, such as chemical spills.

3. Limitations of these processes include: difficulties by property owners in understanding the certification and insurance required for the remediation work, unclear roles and remediation processes, scopes of work that sometimes miss hidden problems, no obligation for the property owner to hire a professional to do the work, lack of project oversight by the professional who signs off on the work, and lack of documentation indicating the house was formerly used to produce drugs and the remediation work that was completed.

4. Unremediated drug operations affect not only future owners, but neighbours, visitors to the home (including emergency responders) and the community as a whole. Unsuspecting buyers may later be forced to pay thousands of dollars (estimated from $25,000 to $100,000) to address residual health and safety hazards in their home, and may be denied insurance coverage. Neighbours are at risk from fires, chemical spills and electrocution. Uremediated sites may be abandoned, property values in the neighbourhood may be affected, and the integrity of the community's housing stock may diminish.

5. An easily-understood, consistent and comprehensive approach is necessary to ensure former drug operations are fully remediated in all B.C. communities. The recommended process assigns clear roles and responsibilities: property owner – payment and hiring, environmental consultant –oversight and assessment, restoration contractor – site remediation, and the municipality – inspections and orders.

6. Having begun public inspection programs to address the hazards from drug operations, communities now have an obligation to create a comprehensive and documented remediation process to protect future homeowners and neighbourhoods.

The Purpose of this Research

The purpose of this research is to:

1. Inform communities of the ongoing dangers that may be associated with former residential drug operations – i.e. marihuana grow operations (MGO) and clandestine drug labs (CDL) for producing methamphetamines and other chemical drugs – that have not been properly remediated.

2. Provide communities with a recommended process to ensure the successful remediation of former residential drug operations.

Background

In the past decade, a number of British Columbia communities have taken steps to address the fire, safety and health hazards associated with MGOs and CDLs – particularly those that operate in residential properties.

City-led public safety inspections of suspected drug operations – identified through electricity consumption records, public tips and other means – have resulted in numerous sites being closed down and completing city remediation processes. These properties contain numerous and extensive health and safety hazards from the improper structural changes, chemical and pesticide use, waste disposal, plumbing and electrical work associated with drug production [1: pg 5-8].

Currently, there is no consistent or comprehensive process in B.C. for ensuring former residential MGOs and CDLs are successfully remediated. In part, this is due to a lack of provincial standards for inspection and remediation of former residential drug production sites for health and safety purposes (although a provincial remediation process does exist to address environmental contamination).

Cities tend to focus on functions they are responsible for – identification of sites, inspections, coordinating service disconnection or revoking site permits, issuing fees and enforcing cost-recovery provisions. Full responsibility for remediation is placed on the property owners (whose primary focus is not necessarily public safety), and the city's follow-through and documentation may be lacking. As a result, some sites that complete these remediation processes are not, in fact, fully remediated [3: pg 3].

Ultimately, subsequent owners and occupants of a former drug operation – as well as neighbouring homes and visitors to the property – may be subjected to health and safety risks without even being aware they exist. Further, they may be left with substantial remediation costs, which have been known to range from $25,000 to as high as $100,000 [1: pg 10].

Hazards

Many health, safety and environmental hazards are associated with residential drug operations.

Mould

Marihuana is cultivated indoors in a warm, moist environment. Environmental consulting and industrial hygiene professionals have noted improper ventilation at approximately 90% of growing sites, along with the growth of mould from the high levels of moisture. The health risk of the often-extensive mould at MGOs on

occupants has also been documented [1: pg 6]. Mould's ability to grow in hidden locations (e.g., inside walls), and its allergenic, pathogenic and toxigenic potential creates a significant health concern for future occupants. Microscopic mould particles can be absorbed into building materials and linger long after the primary source has been removed [2: pg 5].

Unsafe Structural Changes

Illegal and unsafe structural changes to the building are often made to accommodate indoor MGOs, affecting both the structural integrity and fire safety of the building. These include cutting into foundations and walls for ventilation and wiring purposes, and manipulating chimneys and roofs. [2: pg 5].

Electrical Tampering

Indoor MGOs bring a high risk of electrical hazards, such as fire and electrocution, because of the need for significant amounts of electricity to power the typically 1,000-watt grow bulbs. Illegal and unsafe electrical practices, including electrical bypasses and improper grounding, are commonly found in former MGOs. The problem is exacerbated by the presence of moisture and water in the MGO growing process. The risk of residential fires in MGOs is estimated at 24 times as great as that of a regular house [1: pg 7].

Chemicals

Chemicals such as fertilizers, herbicides and pesticides are frequently found at MGOs, often in high concentrations, with signs of spilling and on-site dumping. A study on the use of pesticides in MGOs found 15 different pesticides in 139 homes, some at unsafe levels [1: pg 6]. In CDLs, hydrochloric acid, iodine, benzone and a host of other chemicals are released during the production of methamphetamines.

Chemicals may be dumped down the drains or on the property, damaging the plumbing infrastructure and contaminating the ground water, city stormwater system and neighbouring properties [2: pg 5]. Fumes or airborne particles from pesticides and the chemicals used in CDLs may also affect the indoor air quality of the building for periods of time after production ends [5: pg 12; 8].

CO_2

CO_2 may be used at indoor MGOs to improve the rate of growth and tolerance for higher temperatures. Unsafe modifications are often made to the building to achieve higher CO_2 levels, including venting the home furnace exhaust into the growing room. Exposure to higher-than-normal levels of CO_2 can be dangerous [1: pg 6].

Medical Marihuana Sites

Through Health Canada's Medical Marihuana Access Regulations (MMAR), Canadians have been permitted to apply to grow marihuana legally within their homes. However, few medical MGOs comply with fire, building, plumbing, electrical codes and other regulations, due to a lack of oversight by Health Canada and the fact that locations of MMAR sites were not provided to local authorities. When local authorities do come across medical MGOs – often as a by-product of their public safety duties – they typically find them to contain the same safety and health risks as those outlined above for illegal MGOs.

While pending changes to the legislation monitoring medical marihuana (the *Marihuana for Medical Purposes Regulations*) will eliminate residential medical MGOs, there is no indication it will address the remediation of

these sites [2: pg 4]. This could have significant consequences for communities, given that thousands of former medical MGOs stand to be decommissioned in communities across British Columbia[1].

Current Remediation Processes

Communities that have implemented safety inspection programs for drug operations have also adopted bylaws that assign the cost for remediation to the property owner. However, remediation processes tend to vary from city to city, as no provincial standards exist in B.C. for the inspection and remediation of former MGOs and CDLs for health and safety purposes. These inconsistent processes and practices have led to mixed results, according to environmental consulting and industrial hygiene professionals [3: pg 3].

In most cases, the process includes:

- A site visit by an inspection team, per the local bylaw;
- If warranted, serving of a notice prohibiting further occupation until the site is remediated by the owner;
- A deadline for remediating the property; and
- Re-inspection by a certified professional before restoring services or the occupancy permit.

In some cases, documentation of the remediation work can only be accessed by city staff, so future owners may not be aware the property was once used to produce drugs [3: pg 10].

Limitations with Existing Processes

Potential issues with this approach are addressed in detail in the paper Improving the Remediation Process for Marihuana Grow Operations [3]. They are outlined below:

- Varying professional qualifications, requirements for maintaining qualifications, insurance standards and other issues make it difficult for laypeople to select a qualified remediation professional.
- The process and roles of environmental consultants and restoration companies are unclear.
- Remediation processes across different cities are being executed inconsistently and inefficiently, with no guarantee remediation work is completed correctly.
- The scope-of-work recommendations by environmental consultants often only address superficial issues and may miss hidden damage (e.g. mould within wall cavities).
- The quality of remediation work can vary because there is generally no obligation by the property owner to hire a certified restoration company. As a result, property owners may hire an unqualified tradesperson or do the work themselves.
- Although remediation is generally concluded with the authorization of a certified industrial hygienist or registered occupational hygienist, that individual rarely provided project oversight throughout the process. There are also concerns about a lack of independence between the environmental consultants who originally scope the damage, the cleaning companies that perform the remediation, and the hygienists who sign off on the process.
- Hygienists conduct their final site visit and inspection while the walls are still open for building/electrical inspection. This could result in the occupancy permit being issued while the house is not yet in a liveable state.

[1] Health Canada's Marihuana Medical Access Program Statistics webpage (http://www.hc-sc.gc.ca/dhp-mps/marihuana/stat/index-eng.php) listed 9,369 personal-use production licences and 2,232 designated-person production licences in B.C. as of December 2012.

- There is a lack of publicly-available documentation that the house was once used as a MGO or CDL and of the remediation work that was completed.

The issue of adequate remediation of former drug operations is not unique to B.C. The effectiveness of remediation practices were questioned in a 2009 study on former CDLs in Washington State that found unacceptable levels of methamphetamines persisted even through the site had been decontaminated by a State-certified contractor [7].

Environmental Contamination

The B.C. provincial Ministry of Environment (MOE) only becomes involved in cases of environmental contamination. The ministry will investigate a contaminated site if a spill occurs or when it receives a complaint of possible contamination. Contaminated land is remediated through this MOE-led process to the standard required for its intended land use.

Impact of Unremediated Drug Operations

The impact of unremediated drug operations extends not only to the future owners or tenants of the home, but to neighbours and others who may visit the property (including their guests, emergency responders and city employees), and to the community as a whole.

If a property is not fully remediated prior to sale, unsuspecting buyers may not discover the hidden health and safety hazards before they purchase the home. The owners may then face thousands of dollars in costs to make their home safe; environmental consultants and industrial hygiene professionals estimated that a new owner may pay $25,000 to $30,000 or more. Other research suggests the costs could be as high as $100,000 [1: pg 9]. Further, future owners who discover their home was used for drug production may be denied insurance coverage. Under B.C.'s Homeowner Protection Act, permitted exclusions from warranty coverage include any loss or damage from non-residential uses or from alterations not performed by a licensed residential builder [2: pg 6].

Neighbours to former MGOs and CDLs that have not been properly remediated continue to be at risk from the spills or dumps of toxic chemicals that leach onto their property, electrocution from improper grounding, and the spread of fire. The risks to visitors to the property are similar to those faced by the occupants due to unsafe wiring and construction practices and the presence of mould and chemical residue.

The larger community may also be affected. Former MGOs and CDLs may be abandoned if the cost to remediate them is too high. Municipalities with a large number of unremediated sites could see the value and integrity of their housing stock suffer, which affects all citizens and property owners.

Recommended Remediation Process, Roles and Responsibilities

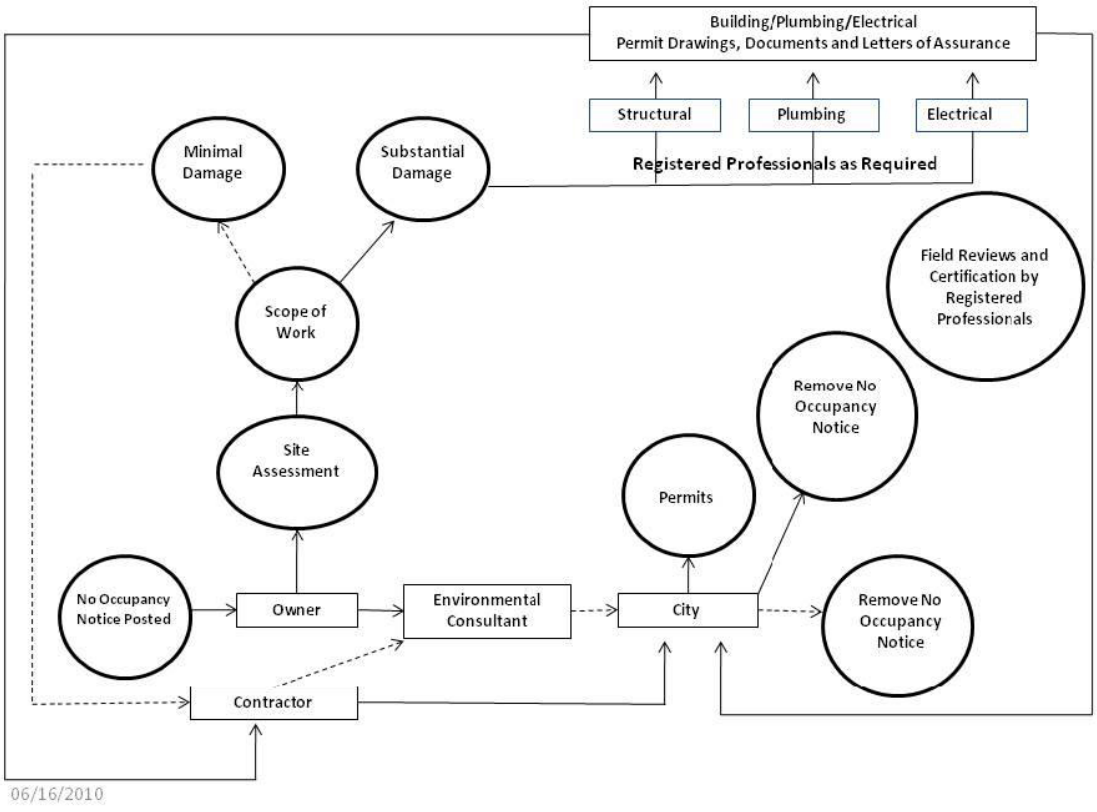
Under the *Community Charter* and the *Local Government Act*, municipalities may require homeowners to clean up a site and undertake remedial action to repair hazards and nuisances. In the absence of provincial standards for remediating homes used as drug operations, it is important that communities adopt an easily-understood, consistent and comprehensive process to ensure former MGOs and CDLs do not negatively affect the health and safety of future owners and neighbourhoods. Cities must also dedicate resources towards monitoring the remediation process to ensure compliance.

Process for Consideration

The following remediation process is outlined by Garis [3] based on industry research, best practices and consultation with professionals in environmental consulting and restoration.

1. A *Do Not Occupy* order is issued and posted on the building.
2. City provides property owner with information about remediation process.
3. Property owner hires environmental consultant and restoration contractor.
4. Environmental consultant investigates and assesses the site, prepares the scope of work for restoration contractor, coordinates hiring of registered professionals when required, and monitors remediation.
5. Restoration contractor obtains permits by submission of documents prepared by registered professionals as required, hires trades, ensures all work is completed and then signs off.
6. Environmental consultant signs off on the project and issues a Certificate for Entry.
7. Property owner completes finishing work.
8. City receives the final approvals from the environmental consultant of a successful final inspection and the City removes the *Do Not Occupy* order.
9. A record of the remediation is included in the building records.

A chart illustrating this process is below.



Recommended Roles and Responsibilities

Garis [3] also provided a detailed description of recommended roles and responsibilities of the various parties involved, outlined below:

PROPERTY OWNER – PAYMENT AND HIRING

- Pay full cost of remediation works, permits and fees.
- Hire an approved environmental consultant and restoration contractor to carry out the remediation process.
- Obtain a site profile from the Ministry of Environment to ensure environmental hazards have been ruled out.

ENVIRONMENTAL CONSULTANT – OVERSIGHT AND ASSESSMENT

- Must carry Certified Industrial Hygienist (CIH) or Registered Occupational Hygienist (ROH) certification (or equivalent) with adequate liability coverage, naming the municipality as the "named insured" on the policy.
- Assigns a project manager.
- Responsible for investigation, assessment, remediation and verification – including a minimum of three visits, preparation of scope of work, approval/hiring of any professional trades, monitoring of remediation works, and final verification and sign-off.

RESTORATION CONTRACTOR – SITE REMEDIATION

- Must specialize in environmental building remediation and carry adequate Environmental Pollution Liability insurance, and add the municipality as the "named insured" on the policy.
- Reports to the environmental consultant any additional damaged discovered during works.
- Conducts the remediation works per the environmental consultant's approval – including demolition and removing hazardous materials, removing contents for cleaning or disposal, completing repairs and cleaning of heating, ventilation, and air conditioning (HVAC) systems, repairing the building envelope and cleaning building surfaces.
- Responsible for hiring specialized contractors and assisting consultant in obtaining trades when required.
- Coordinates with the city for necessary permits.
- Signs off on all remediation works.

MUNICIPALITY: INSPECTIONS AND ORDERS

- Issues and posts a *Do Not Occupy* order after hazards are identified.
- Provides property owner with information package including: relevant bylaws, a detailed outline of the process and costs, what will happen if the site is not remediated, roles and responsibilities of all parties involved, a list of certified environmental contractors and restoration contractors in the area, and how to obtain a site profile from the Ministry of Environment.
- Issues permits to the restoration contractor to conduct remediation works.
- Processes documents submitted for permits, receives inspection reports and letters of assurance from registered professionals based on permits taken out by the contractor.
- Removes *Do Not Occupy* order upon receiving final approval from the environmental consultant.
- Adds any documentation associated with the remediation to the permanent building records.

Conclusion

Communities have an obligation to ensure that the process they begin with their public safety inspections is concluded in a way that does not negatively affect future property owners and other citizens. By introducing a thorough and well-documented remediation process, they will be taking the steps necessary to protect the health and safety of their citizens and the value and integrity of their housing stock.

References

[1] Darryl Plecas, Jordan Diplock, and Len Garis, *Revisiting the Issues Around Commercially Viable Indoor Marihuana Grow Operations in British Columbia*, July 2012, University of the Fraser Valley, School of Criminology.

[2] Len Garis and Joe Clare, *What the Marihuana for Medical Purposes Regulations Overlook – Disclosure and Remediation of Inappropriately Used Buildings*, July 2013, University of the Fraser Valley, School of Criminology.

[3] Len Garis, *Improving the Remediation Process for Marihuana Grow Operations: A Discussion Paper*, 2010, University of the Fraser Valley, School of Criminology.

[4] Jennifer Blair and Gordon Wedman, *Residual Pesticides in former Marijuana Grow-Operations*, 2009, Pacific Environmental Consulting.

[5] *The Impact of Illegal Drug Operations on Housing*, 2008, Fraser Valley Real Estate Board.

[6] Mike VanDyke, Nicola Erb, Shawn Arbuckle and John Martyny, *A 24-Hour Study to Investigate Persistent Chemical Exposures Associated with Clandestine Methamphetamine Laboratories*, February 2009, Journal of Occupational and Environmental Hygiene.

[7] Glen Patrick, William Daniell and Charles Treser, *Residual Methamphetamine in Decontaminated Clandestine Drug Laboratories*, March 2009, Journal of Occupational and Environmental Hygiene.

Author Biographical Information

Len Garis is the Fire Chief for the City of Surrey, B.C. and is an Adjunct Professor in the School of Criminology and Criminal Justice at the University of the Fraser Valley and a member of the Institute of Canadian Urban Research Studies, Simon Fraser University. Contact him at LWGaris@surrey.ca.

Dr Joseph Clare, strategic planning analyst for the Surrey Fire Service, is an Associate Professor in the Crime Research Centre, University of Western Australia, and a member of the Institute of Canadian Urban Research Studies, Simon Fraser University. Contact him at joe.clare@uwa.edu.au.