

**Ventura County
Environmental Health Division**

**GUIDANCE DOCUMENT FOR THE ASSESSMENT
AND REMEDIATION OF PROPERTIES
CONTAMINATED BY METHAMPHETAMINE
LABORATORY ACTIVITIES**



Environmental Health Division
800 South Victoria Avenue
Ventura, California 93009-1730

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**COUNTY OF VENTURA
ENVIRONMENTAL HEALTH DIVISION**

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1.0 INTRODUCTION

1.1 Clandestine laboratories (Clan Labs) which illegally manufacture methamphetamine are periodically discovered in Ventura County and subsequently seized by law enforcement personnel. While officials arrange for the removal of chemicals and process equipment for evidence and/or proper disposal, portions or the entire property may be contaminated with both precursor chemicals and the final drug products.

1.2 As required by Section 25400.35 of Chapter 6.9.1 of the California Health and Safety Code (H&SC), this Guidance Document has been developed to establish procedures for the assessment and remediation of clandestine methamphetamine manufacturing sites within Ventura County. These procedures are to be followed by property owners and authorized contractors to develop and implement an appropriate remediation strategy that can be accepted by the County and the State, and by County authorities to evaluate workplans and assessments in a manner consistent with best available practices.

1.3 This Guidance has been peer-reviewed by other County health and environmental agencies within the State of California, as well as technical experts in the Clan Lab remediation industry and is consistent with Chapter 6.9.1, Article 6 of the California H&SC.

2.0 AUTHORITY

Pursuant to Chapter 6.9.1, Section 25400.17(b) of the California H&SC, the Ventura County Health Officer has delegated authority for the regulatory oversight of these contaminated properties to the Ventura County Environmental Health Division (EHD).

3.0 DETERMINATION OF CONTAMINATION AND NOTIFICATION PROCEDURES

3.1 Upon notification from law enforcement or other sources that a Clan Lab has been discovered, seized, and secured, EHD will perform the following tasks.

3.1.1 Respond and post the property in a conspicuous location within 48 hours after notification. Depending upon the apparent extent of contamination, EHD may post adjacent units of apartments, hotels, and other proximal building units. If the Clan Lab activity has been limited to outbuildings such as sheds and garages, these may be posted without impacting the residence. Anyone disturbing or

destroying the posted notice is subject to a civil penalty in an amount of up to five thousand dollars (\$5,000).

3.1.2 Obtain and review a copy of the Law Enforcement report for pertinent information. Report should be maintained in EHD file records as well.

3.1.3 Perform an inspection of the property and surrounding area within five (5) days after notification. The inspection will include, but not be limited to, obtaining evidence of hazardous chemical use or storage, and documentation of evidence of any chemical stains, manufacturing activity, and release or spillage of hazardous chemicals used in the production of methamphetamine.

3.2 If EHD determines that the property is not contaminated, EHD will complete the following actions.

3.2.1 Within three (3) working days of making the determination, remove all notices posted to the property and prepare written documentation that includes findings and conclusions.

3.2.2 Within ten (10) working days after preparing written documentation that the property is not contaminated, send a copy of this document to the property owner and to the local code enforcement agency that has jurisdiction.

3.3 If EHD determines that the property is contaminated, EHD will complete the following actions within ten (10) working days after making the determination.

3.3.1 If the property is real property, record a lien on the property with the Ventura County Recorder's office.

3.3.2 Issue an Order to all known occupants of the property and to all persons who have a recorded right, title, estate, lien, or interest in the property prohibiting use or occupancy of the property.

3.3.2(a). Provide a copy of the Order to local code enforcement with jurisdiction.

3.3.2(b). Within one working day of the issuance of the Order, post a copy in a conspicuous place on the property.

4.0 PROPERTY RESTRICTIONS

4.1 Properties used as Clan Labs may or may not be found in a lab-like setting, but typically include containers of chemicals and manufacturing equipment. While these items and materials will be removed by a law enforcement sponsored contractor, contamination from the drug manufacturing process is likely to remain. Typical areas of contamination include sinks, toilets, bathtubs, floor, walls, ceilings, carpets, drapes, furniture, and ventilation (heating and air conditioning) systems.

4.2 Entry into the posted area(s) of the property is prohibited unless specifically approved in writing by EHD.

4.3 No personal belongings, furniture, or other items may be removed from the tagged property until released by EHD. Such release is not likely to occur until a Preliminary Site Assessment (PSA) has been reviewed and approved by EHD.

4.4 Anyone conducting an unauthorized entry or removal is subject to a civil penalty in an amount of up to five thousand dollars (\$5,000) (H&SC Section 25400.45(b)).

5.0 PROPERTY OWNER RESPONSIBILITIES

5.1 A property owner and any person(s) occupying the property that is the subject of an Order issued per Section 3.3.2, shall immediately vacate the affected unit described in the Order (H&SC Section 25400.25(a)).

5.2 The property owner shall utilize the services of an authorized Contractor (H&SC Section 25400.26(a)) to remediate the contamination and shall, within 30 days after receipt of an Order, demonstrate to EHD that such an authorized contractor has been retained for this work. An authorized Contractor means a person who has been trained or received other qualifications pursuant to Section 25400.40 of the H&SC.

5.3 The property owner or the property owner's authorized Contractor shall submit a preliminary site assessment (PSA) Workplan to EHD for review. The PSA Workplan shall be submitted no later than 30 days after demonstrating to EHD that an authorized Contractor has been retained by the property owner.

5.4 The property owner shall complete remediation of all applicable portions of the contaminated property in accordance with H&SC Chapter 6.9.1 no later than 90 days after the date that the PSA Workplan has been approved by EHD.

5.5 Until the property owner receives a determination from EHD that no further action is required to remediate the affected units or site, the following must be conducted.

5.5.1 All prospective buyers of the property shall be provided with a copy of the Order and must indicate receipt in writing.

5.5.2 All prospective tenants who have completed an application to rent an affected unit or other property described on the Order shall be provided with a copy of the Order and must indicate receipt in writing.

6.0 REMEDIATION PROCESS – PRELIMINARY SITE ASSESSMENT

6.1 PRELIMINARY SITE ASSESSMENT (PSA) WORKPLAN. A written PSA Workplan shall be developed and submitted to EHD within 30 days after demonstrating

to EHD that an authorized Contractor has been retained by the property owner. The PSA Workplan shall include, but not be limited to, the following.

- 6.1.1** A description of the physical location of the property.
- 6.1.2** A summary of the information obtained from law enforcement, EHD, and any other involved agency. The summary shall include a discussion of the information's relevance to the contamination, including areas suspected of being contaminated, and may include all of the following.
 - 6.1.2(a)** Duration of lab operation and number of batches cooked and processed.
 - 6.1.2(b)** Hazardous chemicals known to have been manufactured or present at the site.
 - 6.1.2(c)** Recipes and methods used for methamphetamine production. (Information regarding process-specific chemicals is provided in Attachment II.)
 - 6.1.2(d)** Chemicals and equipment and their location(s).
 - 6.1.2(e)** Location of contaminated manufacturing and storage areas.
 - 6.1.2(f)** Visual assessment of the severity of contamination inside and outside of the structure where the Clan Lab was discovered.
 - 6.1.2(g)** Assessment of contamination in adjacent rooms, units, apartments or structures.
 - 6.1.2(h)** Disposal methods observed at or near the property (e.g. dumping, burning, burial, venting, and/or drain disposal).
 - 6.1.2(i)** A comparison of the chemicals on the manifest with known methods of manufacture in order to identify other potential contaminants.
 - 6.1.2(j)** A determination as to whether the manufacturing method included the use of chemicals containing mercury or lead (e.g., lead acetate, mercuric chloride, mercuric nitrate).
- 6.1.3** A description of the areas to be sampled and the basis for the selection of the areas. This element of the workplan must also document the decision process used in determining not to sample particular areas. When identifying potential sample areas, consideration must be given to:
 - 6.1.3(a)** Obviously stained areas.
 - 6.1.3(b)** Areas in the immediate vicinity of the manufacturing location.
 - 6.1.3(c)** Areas where chemicals were found.
 - 6.1.3(d)** Adjacent rooms.
 - 6.1.3(e)** Locations typically accessible for contact by occupants, particularly children.
 - 6.1.3(f)** High traffic areas outside of the manufacturing area.
 - 6.1.3(g)** Ventilation systems.
 - 6.1.3(h)** Hard and soft surfaces, walls, floors, ceilings, and appliances.
 - 6.1.3(i)** Areas of potential waste disposal such as sinks, floor drains, bathtubs, showers, and toilets.
 - 6.1.3(j)** Septic systems (Section 17.0).

6.1.4 Primary areas of potential contamination.

6.1.4(a) Manufacturing areas. Contamination in these areas can be caused by spills, boil-over, explosions, or by chemical fumes and gases created during manufacturing. Affected areas can include: floors, walls, ceilings, glassware, containers, working surfaces, furniture, carpeting, draperies and other textile products, plumbing fixtures and drains, and heating and air conditioning vents.

6.1.4(b) Disposal areas. Indoor areas include sinks, toilets, bathtubs, plumbing traps and floor drains, vents and vent fans, and chimney flues. Outdoor contamination may be caused by dumping or burning on or near soil, surface water, groundwater, sewer or storm systems, septic systems, and cesspools.

6.1.5 Secondary areas of potential contamination.

6.1.5(a) Locations where contamination may have migrated, such as hallways or high-traffic areas.

6.1.5(b) Common areas in multiple dwellings, and adjacent apartments or rooms, including floors, walls, ceilings, furniture, carpeting, light fixtures, blinds, draperies and other textile products.

6.1.5(c) Common ventilation and plumbing systems in hotels and multiple dwellings.

6.1.6 Sampling protocols and analytical methods (Sections 7.0 and 8.0, and Attachment II), and laboratories to be used and their relevant certifications/accreditations. During each phase of sample collection, identical methods must be used to provide a common basis for comparing results.

6.1.7 A description of areas and items that will be remediated in lieu of sampling, if any. In the case of surfaces that are obviously or highly suspected to be contaminated, EHD will waive sampling requirements for those items or materials that will be removed and properly disposed. For example, if manufacturing was conducted in a kitchen and staining is evident, the property owner may decide that it is more cost-effective to remove and dispose of sheet rock, cabinets, appliances, and linoleum rather than to spend money on sampling only to confirm that the materials are, in fact, contaminated. It may also be decided to surface wash (Section 10.4) and encapsulate (Section 10.5) all surfaces in a room that appear to have been impacted; assessment sampling would not be required for these surfaces, but post-remediation sampling would be. The disposal facility/landfill will likely require sampling of these items or materials.

6.1.8 The PSA workplan shall be signed by the contractor responsible for the completion of the PSA (generally a licensed Professional Engineer (PE) or Professional Geologist (PG)) and by a Certified Industrial Hygienist (CIH).

6.2 PSA REPORT. After the PSA is completed according to the approved Workplan, a PSA Report shall be prepared and submitted to EHD.

6.2.1 The PSA Report must be thorough and specific in reporting findings and recommendations. If areas or items are contaminated, the report must clearly specify all required remediation actions. Therefore, a recommendation such as “The stove and all adjacent impacted areas must be cleaned” is insufficient, because it does not specify what constitutes an “adjacent impacted area.” The PSA sampling program must be designed to provide sufficient data to make specific recommendations.

6.2.2 Components of the PSA Report shall include the following.

6.2.2(a) Location, which should include street address, mailing address, and unit or room number of the contaminated property. Also include the legal description and clear directions for locating the property.

6.2.2(b) Owner of record and contact information, including mailing address.

6.2.2(c) Location map of the contaminated property, showing property boundaries, streets, adjacent properties, all water wells (including domestic, municipal, and agricultural) within ½ mile of the property, and nearby surface waters.

6.2.2(d) Site maps of the contaminated property, including floor plans of affected buildings drawn to an appropriate scale. These diagrams shall show the location of damage and contamination and the location of sampling points used in the PSA. The sampling point locations shall be keyed to the sampling results and remediation recommendations.

6.2.2(e) A description of the sampling methods and analytical protocols used in the assessment.

6.2.2(f) A tabulated summary of the sampling results. If providing a narrative, results must be grouped by location rather than by analyte. Information regarding the background samples and results obtained must also be included.

6.2.2(g) Specific recommendations, including methods, for remedial actions required to meet State Reoccupancy Criteria (Section 14.0).

6.2.2(h) A plan for the Post Remediation Site Assessment, including specific sampling requirements and methodologies, and locations at which samples are to be obtained.

6.2.3 The PSA Report shall be signed and notarized by the authorized contractor responsible for the remediation work and by a Certified Industrial Hygienist (CIH).

6.2.4 If, upon review of the PSA Report, EHD determines that there is no level of contamination at the site that requires remediation, then EHD shall take action as specified in Section 13.0 of this Plan.

6.2.5 The PSA report shall be signed by the contractor responsible for the completion of the PSA (generally a California-licensed PE or PG) and by a CIH. If any interpretations of soil or groundwater parameters are included, the report must be signed by a PE or PG.

7.0 SAMPLING METHODS

Sampling methods may include wipe, bulk, and composite samples. EHD has determined that a standard method based on the “Proposed Surrogate Method” devised by Bruce Lazarus, CIH, is required for evaluating sampling protocols. Lazarus’ paper describing this method was published in the Journal of Clandestine Laboratory

Investigating Chemists, Volume 10, Number 2. The “Surrogate Method” sampling protocol required by EHD is in Attachment II.

7.1 WIPE SAMPLES AND RESULT REPORTING

7.1.1 Contractors are required to follow the sample collection methodology described in Attachment II. The contractor shall use a consistent wipe sample technique throughout the project, and describe the specific wipe sample process in the reports.

7.1.2 Contractors are required to use appropriate personal protective equipment when using methanol. As described in II, all wipe samples shall use methanol as the wetting/collecting solvent.

7.1.3 Sample results for which the area of the sample is not recorded will not be accepted. All methamphetamine wipe sample results shall be reported as weight/surface area, in mass/100cm² (mass/ft² for lead). Composite wipe samples using the same filter paper will not be accepted (Section 7.3).

7.1.4 EHD requires a surface sample area of 100 cm² for general wipe samples.

7.1.5 Sample containers shall be jars, as described in Attachment II. The use of plastic bags is not acceptable.

7.2 BULK SAMPLES AND RESULT REPORTING

7.2.1 Contractors are required to follow the sample collection methodology described in Attachment II. The contractor shall use a consistent bulk sampling technique throughout the project, and describe the specific sampling process in the report.

7.2.2 Sample results for which the location and medium of the sample is not recorded will not be accepted.

7.2.3 Sample containers shall be jars, as described in Attachment II. The use of plastic bags is not acceptable.

7.3 COMPOSITE SAMPLES

7.3.1 Composite samples must be reserved for those areas that, in the authorized contractor’s judgment, are anticipated to be uncontaminated.

7.3.2 Each sample area to be composited must be 100 cm². For example, four 100 cm² wipes must be used to collect wipe samples of four discrete wall areas in a kitchen. Each wipe sample must be collected with a #40 Whatman Filter Paper or equivalent (see Note to Attachment II), with compositing accomplished by the lab in the extraction process. Up to four wipe samples may be composited.

7.3.3 Composite sampling may not be used in an area or on an item that is likely to be contaminated (e.g., obvious staining) with areas unlikely to show

contamination (e.g., remote from known manufacturing areas). Composite sampling must be limited to similar surfaces (i.e. walls with walls, etc.).

7.3.4 Multiple-appliance compositing will not be accepted (e.g., stove AND refrigerator AND microwave). The Contractor may composite samples for a particular appliance (e.g., the burners, oven, handles, knobs, surface, of a stove), but defining 100 cm² sample areas may be difficult.

8.0 ANALYTICAL METHODS

8.1 Analytical methods are driven by the analyte, and sampling methods are frequently driven by the analytical method. Analytical methods for wipe and bulk samples are expected to be from US EPA SW-846, OSHA Sampling and Analytical Methods, NIOSH Analytical Methods, and, in the case of lead, HUD guidelines.

8.2 Methamphetamine samples shall be analyzed by modified Method 8270. According to Washington Department of Ecology-accredited labs, modified Method 8015 is prone to false positives. Wipe samples must be obtained with 11 cm #40 Whatman Filter Paper (p/n 1440-110) or equivalent wetted with methanol, and stored and shipped in appropriate sampling jars.

8.3 EHD will not accept field analyses for clearance samples. This includes the use of colorimetric detector tubes, real-time direct reading instruments such as flame ionization and photo ionization detectors, any type of Hazardous Category evaluation, and Marquis/Methamphetamine reagents, pH paper, or similar.

9.0 GROSS REMEDIATION

Materials associated with the operating Clan Lab, such as containers of chemicals and lab equipment, should have been removed by the law enforcement sponsored contractor at the time the Clan Lab was seized and secured. If the authorized contractor finds any such materials during the site assessment process, the material must be left in place and EHD must be notified immediately.

10.0 RESIDUAL REMEDIATION

A number of processes can be used to remediate the Clan Lab property. All material disposal associated with the site remediation process must be in accordance with Section 16.0 "Waste Disposal."

10.1 “AIRING-OUT”/VENTING. EHD does not accept venting as a substitute for removing and disposing those items such as porous furnishings and wallboard that have been contaminated by Clan Lab chemicals.

10.2 AIR MONITORING. Except for mercury contamination, EHD does not accept the use of air monitoring for either evaluation or for final clearance/verification sampling. If mercury contamination was present, see Section 14.2.2.

10.3 REMOVAL

10.3.1 Visibly contaminated (etched or stained) sinks, bathtubs, toilets, and similar fixtures must be removed and properly disposed.

10.3.2 Porous materials (e.g., carpeting, suspended ceiling panels, wallpaper) that can absorb dust, powder, aerosols, and vapors from the manufacturing process shall be removed and properly disposed. In most cases, the cost of analytical testing, cleaning, and post-testing exceeds the cost of replacement of these articles.

10.3.3 Acoustic spray-on ceiling coatings (“popcorn” ceilings) may contain asbestos and should not be disturbed unless there is gross staining. Any removal work must be conducted under permit by the appropriate agency (i.e., Ventura County Air Pollution Control District and/or SCAQMD), and must be directed by a Cal/OSHA Certified Asbestos Consultant. A sealant of the type typically used for asbestos-containing spray-on finishes may be applied to the ceiling if low concentrations of contaminants are detected.

10.3.4 Some nonporous and semi-porous surfaces (e.g., floors, countertops, tiles, walls, and ceilings) can hold contamination from the manufacturing process, particularly in those areas where manufacturing and preparation was performed and chemicals were stored. If a surface has visible contamination or staining, complete removal and replacement of that surface is required. This could include removal and replacement of wallboard, floor coverings, concrete slabs, and countertops. If this is not possible, intensive cleaning (Sections 10.4 and 10.5) could be attempted. Circumstances that prohibit removal and replacement must be described in the Remediation Workplan.

10.3.5 Appliances that were in the room in which manufacturing was conducted must be destroyed and properly disposed as there are too many surfaces to clean adequately for future food preparation or storage. All other appliances associated with food preparation or storage located outside the manufacturing area must be sampled for analytical testing.

10.4 SURFACE WASHING. Surface washing takes many forms, including pressure washing, detergent-washer washing, solvent (alcohol) washing, steam cleaning, and others. The objective is to remove contaminants to below criteria specified in Section 25400.16 of the H&SC by an efficient method that generates a minimal waste stream.

Note that all wash solutions and rinseate must be effectively collected for proper disposal (Section 16.0).

10.5 ENCAPSULATION. In cases where porous or semi-porous surfaces (e.g., walls, wood flooring, panels, ceiling, concrete) have had levels of contamination that permitted in-situ cleaning instead of removal and replacement, such surfaces shall be encapsulated with an oil-based paint, varnish, or similar sealant. Water-based latex paints are not acceptable as they have a greater tendency to permit “bleed-through” than oil-based coatings. The sealant must be applied after surface washing has been completed. After the sealant has cured in accordance with the manufacturer’s instruction, sampling and analysis must be conducted to assure that any remaining contamination is below criteria specified in Section 25400.16 of the H&SC.

10.6 VENTILATION SYSTEM

10.6.1 Ventilation systems tend to collect fumes, vapors, and dust, and redistribute them throughout a structure. The vents, stove hoods, ductwork, filters, and walls and ceilings near the ventilation ducts can become contaminated. All air filters in the system shall be replaced, ventilation registers removed and cleaned, and surfaces near inlets and outlets cleaned. Cleaning or replacement of system ductwork may be required.

10.6.2 In motels, apartments, row-houses, or other multiple-family dwellings, a ventilation system may serve more than one unit or structure. These connections must be considered when evaluating remediation and testing procedures. One strategy is to take samples from adjacent or connected areas/rooms/units, working outward from the lab site until samples show results below criteria specified in Section 25400.16 of the H&SC.

10.6.3 Rooms adjacent to the manufacturing area may be impacted by active or passive ventilation (distributing fumes and vapors) or by poor chemical handling and hygiene practices. EHD requires evaluation and possible decontamination of areas adjacent to the manufacturing area. Such areas may include hallways and other high traffic areas, as well as adjacent rooms. The Contractor shall consider this in the PSA Report.

10.7 IMPACTED SOIL AND GROUNDWATER

10.7.1 Impacted soil or groundwater will be investigated and remediated under regulatory criteria for hazardous waste sites. Oversight for hazardous waste site remediation may be conducted by the California Department of Toxic Substances Control; if groundwater may be impacted, oversight may be shared with the Regional Water Quality Control Board. These agencies may, under certain circumstances, transfer oversight responsibility to Ventura County Certified Unified Program Agency (CUPA) or EHD. Responsible parties may have the option of requesting the Voluntary Cleanup Program to provide oversight of the voluntary

remediation of the hazardous waste site component of the property; such oversight would be provided on a fee-for-service basis.

10.7.2 The variables associated with hazardous waste site remediation are numerous, and will not be discussed in this document. In the event that the PSA Report identifies potential impacts to soil and/or groundwater, EHD will work with the Property Owner and contractor to determine the appropriate path for further assessment and mitigation activities and associated regulatory oversight.

11.0 POST REMEDIATION ASSESSMENT

The purpose of the post remediation assessment is to establish that the property has been cleaned up to a level below criteria specified in Section 25400.16 of the H&SC. This assessment must be conducted by the authorized contractor after remediation has been completed and/or the encapsulant has cured. Sampling protocols for the post-remediation assessment will have been defined in the approved PSA Workplan.

In general, those areas of the property for which the PSA sampling indicate levels above criteria specified in Section 25400.16 of the H&SC and were not removed and replaced (i.e. were cleaned, or cleaned and encapsulated) are sampled in the same manner as that used for the PSA. If the sampling results fall below criteria specified in Section 25400.16 of the H&SC and are accepted by EHD, then the remediation work is completed and the contractor can prepare the Final Report. Any areas that fail the post-remediation sampling must be removed or further remediated and then re-sampled.

12.0 FINAL REPORT

12.1 REMEDIATION BY REMOVAL ONLY. If the remedial action consisted solely of removal of contaminated surfaces or other materials, and post-remediation sampling and assessment is not required by EHD, then the contractor must provide to EHD a Final Report following procedures in Section 12.3 certifying that the removal activities have been completed in accordance with the PSA Report. This documentation shall include proof of proper disposal of contaminated items and building materials that were removed from the property as part of the remediation process. Any remediation activity other than the complete removal of contaminated surfaces requires post-remediation sampling and assessment.

12.2 REMEDIATION BY REMOVAL AND CLEANING. If the remedial action included any methods other than removal of contaminated surfaces (e.g., removal of some surfaces, cleaning of others), the authorized Contractor must provide a Final Report establishing in detail that the remediation work has been completed in accordance with the approved PSA Report. This documentation shall include a narrative description of the remedial actions, tabulated analytical results of the verification samples, and sample

location maps, as well as proof of proper disposal of contaminated items and building materials that were removed from the property in accordance with Section 12.1.

12.3 REPORT COMPONENTS. The Final Report is a technical document, summarizing the work performed as outlined in the approved PSA Workplan and PSA Report, and data collected during the Post Remediation Assessment. Components of the Final Report shall include:

- 12.3.1** Case Narrative.
- 12.3.2** Site Description
- 12.3.3** Summary of PSA findings and recommendations
- 12.3.4** Summary and documentation of remedial actions
- 12.3.5** Post-remediation assessment with detailed description and documentation, including lab reports and scaled site map keyed to sample locations
- 12.3.6** Post-remediation assessment results, with Consultant's analysis and recommendation.
- 12.3.7** Signature page, containing original signatures and wet-stamps of the appropriately-licensed contractor and a CIH, as well as a PG or PE, if required.

13.0 NO FURTHER ACTION (NFA) DETERMINATION

If EHD determines that the property that has been the subject of a PSA Report does not require remediation or has been remediated in accordance with this Plan and Chapter 6.9.1 of the H&SC, EHD shall issue an NFA determination and complete all required actions in accordance with Section 25400.27 of the H&SC.

14.0 REOCCUPANCY CRITERIA

14.1 METHAMPHETAMINE. Until October 2009, pursuant to Section 25400.16 of the H&SC, property contaminated by Clan Lab activity was considered safe for human occupancy only if the methamphetamine level was less than, or equal to, 0.1 microgram per 100 square centimeters (0.1 $\mu\text{g}/100\text{cm}^2$).

In February 2009, using the methamphetamine reference dose and a multi-media exposure model with children as the sensitive receptor, California EPA's Office of Environmental Health Hazard Assessment (OEHHA) determined that the risk (health) - based cleanup standard for methamphetamine surface contamination is **1.5 microgram per 100 square centimeters (1.5 $\mu\text{g}/100 \text{ sq. cm}$)**. Assembly Bill (AB) 1489 passed in October 2009, amending the health-based cleanup standard to 1.5 $\mu\text{g}/100 \text{ sq. cm}$.

14.2 LEAD AND MERCURY. If the Clan Lab activity included the use of lead or mercury, a property will be considered safe for human occupancy when the following standards are met.

14.2.1 The total level of lead is less than, or equal to, 20 micrograms per square foot (20 $\mu\text{g}/\text{ft}^2$).

14.2.2 The level of mercury is less than, or equal to, 50 nanograms per cubic meter of air (50 ng/m^3).

15.0 LABORATORY REQUIREMENTS

All analyses must be conducted by analytical laboratories which are accredited (Fields of Testing E114-E117) by the California Dept. of Health Service Environmental Laboratory Accreditation Program.

16.0 WASTE DISPOSAL

16.1 All materials removed from a Clan Lab property as a result of having been impacted/contaminated by Clan Lab activities (including, but not limited to operation, storage, spills, and disposal) must receive special handling at the disposal or recycling facility. Examples of such materials are kitchen appliances, drapes, carpets, and building materials. Items such as appliances and furniture must be rendered unusable (dismantled or broken down) prior to disposal.

16.2 For any disposed items, EHD will require an inventory, as well as a waste disposal receipt, to be submitted with the Final Report. For items that are required to be disposed as hazardous waste, a copy of the Uniform Hazardous Waste Manifest is required.

16.3 EHD regulates the types of wastes accepted by the Ventura County disposal facilities/landfills. Each facility has permit requirements to meet, and will likely review Clan Lab debris on a case by case basis. The Contractor must contact the facility/landfill to determine whether a specific material removed from a Clan Lab property will be accepted, and the conditions under which it will be accepted.

17.0 SEPTIC SYSTEMS

If chemical or other waste materials are suspected to have been dumped down a drain, the Contractor will need to work through a process to determine whether a septic system was impacted. All plumbing fixtures, including tubs, sinks, and toilets must be evaluated for evidence of waste disposal. If there is evidence of disposal, determine whether the property is on septic or sewer system. Local agencies, such as Ventura

County Public Works, can assist in this determination. Contact numbers, current as of February 2006, include the following.

Ventura County Public Works (805) 584-4844
Ventura Regional Sanitation District (805) 658-4600
Ventura County Environmental Health Division (805) 654-2813

If the property is on a sewer system, the Contractor must notify the local sanitary district. If the property is on a septic system, a representative sample of the material in the septic tank must be obtained and analyzed for hazardous waste characteristics using an appropriate analytical laboratory. If analysis indicates that the sample is hazardous, determine which hazardous waste facility will accept the mixed septic/hazardous waste. Use an appropriately-permitted hazardous waste transporter to pump the tank and transport the contents to the accepting hazardous waste facility.

Information regarding the positive analysis for hazardous waste characteristics shall be provided to EHD, which will evaluate whether remedial action will be required for the leachfield.

All required permits from the regulatory agencies must be obtained prior to initiation of any work.

Certified documentation of all offsite disposal must be submitted to EHD in the Final Report.

ATTACHMENT I – CHEMICALS OF CONCERN

The following is a list of common methods of methamphetamine production and some of the chemicals typically used for each method (CSTI Clandestine Drug Laboratory Chemical Identification Training Manual).

Red Phosphorus / Hydriodic Acid / Ephedrine Method

- Ephedrine
- Hydriodic Acid
- Red Phosphorous
- Sodium Hydroxide
- Hydrochloric Acid
- Freon

Phenyl-2-Propanone (P2P) / Mercuric Chloride Method

- Phenyl-2-Propanone
- Methylamine
- Methyl Alcohol
- Mercuric Chloride
- Aluminum
- Ether
- Sodium Hydroxide

Sodium Metal / Ammonia / Nazi or Birch Method

- Ephedrine
- Pseudoephedrine
- Anhydrous Ammonia
- Sodium (metal)
- Lithium (metal)
- Hydrochloric Acid

ATTACHMENT II – THE SURROGATE METHOD

A standard method based on the “Proposed Surrogate Method” devised by Bruce Lazarus, CIH, will be the benchmark for evaluating sampling protocols. Lazarus’ paper describing this method was published in the Journal of Clandestine Laboratory Investigating Chemists, Volume 10, Number 2. Most of the material in this Attachment is taken from this article.

In the Surrogate Method, a limited number of laboratory samples are collected from selected locations throughout the clandestine laboratory (Clan Lab) site and analyzed for the target analytes. This design method attempts to balance the necessary cost burden of assessment activities against the public health need to ensure that no significant residual contamination is allowed to continue uncorrected. The surrogate approach is based on the following concepts:

- A. Specific test methods and reference standards for many of the substances and organic drug compounds associated with Clan Lab activities do not have specific test methods. Testing for all hazardous materials associated with the manufacturing process is not feasible and, even if test methods were available, would be prohibitively expensive.
- B. Some target chemicals are more persistent in the environment, both in porous media and on non-porous surfaces, allowing for latent detection.
- C. The presence and concentration variability of target chemicals assessed at Clan Lab sites is assumed to be representative of similar conditions for the remaining Clan Lab chemicals not specially analyzed for owing to the reasons outlined above. If the target analytes are detected in significant concentration, then other Clan Lab chemicals are likely present in concentrations of public health interest. Conversely, if the target analytes are not detected or detected in very low concentrations, chemicals not analyzed for are inferred to be unlikely to be present, or present in concentrations low enough not to be of public health concern.

It is understood that these assumptions define a data gap suitable for future study. However, absent an alternative method that concurrently minimizes the cost of investigation while providing adequate information to indicate potential public health risk, the Surrogate Method is the minimum level of site investigation acceptable to EHD.

EHD Criteria under the Surrogate Method follow.

- A. **Sample Types.** A combination of wipe and bulk samples must be collected utilizing this protocol. Wipe samples must be taken of non-porous surfaces, whereas bulk samples must be taken of porous materials.

1. Wipe samples should be taken of sealed concrete (garage floors), vinyl flooring, sealed wood surfaces, tile, Formica, bathroom fixtures, appliance surfaces, painted surface of good condition, etc.
2. Bulk samples should be taken of unsealed or poor condition concrete and wood surfaces, dry wall, painted surfaces of poor condition, carpeting, carpet padding, upholstery, septic waste, and soils.

NOTE: In some cases, particularly with painted surfaces, a decision must be made if a wipe sample or bulk sample would be more appropriate to recover and identify potential contamination. To address errors associated with mass loading of bulk samples, particularly from painted surfaces and drywall, it may be appropriate to obtain bulk samples using a surface scraping technique.

B. Sample Locations and Quantities

Take one bulk or wipe sample from the following as associated with each major area of the location suspected by history and/or visual observations as being potentially affected by contamination:

1. Each major floor surface.
2. Each major wall surface.
3. Each major ceiling surface.
4. Each major home appliance (e.g., refrigerator, oven, microwave, dishwasher, washing machine, dryer, etc.).
5. Each major cabinet, counter, and/or built-in feature (e.g., kitchen cabinets, counters, vanities, etc.).
6. Each bathroom and/or kitchen fixture or grouping of fixtures.
7. Each major furniture grouping.

NOTE: In establishing the number and location of samples at individual property sites, sampling of some locations or items may not be necessary if the need for remediation is apparent by observation or agreement of parties. Examples include fire-damaged surfaces, apparent direct chemical staining or damage, and/or obvious physical damage of an item or feature necessitating removal.

C. Collection Procedures

1. **Wipe Samples.** Wipe samples must be obtained using the following protocol unless otherwise instructed by the analytical laboratory. Note that these instructions differ from Lazarus' paper, as lab requirements have been refined.
 - a. Use eight-ounce, wide mouth, borosilicate glass jars having phenolic screw top lids with Teflon liners.
 - b. Prepare each sample by placing an 11 cm #40 Whatman Filter Paper (p/n 1440-110) or equivalent into each sample jar. (In some cases, specific to the surface being sampled, the use of sterile gauze pads

- may be preferable.) Add 5 ml of methanol to each pad and close the jar. Use appropriate personal protective equipment when using methanol.
- c. Select the surface location to be sampled.
 - d. Squeeze excess methanol from the pad (back into the open jar) before wiping the sample area.
 - e. Wipe a one hundred square centimeter (100 cm²) surface area, using a consistent wipe or blot pattern technique (i.e., concentric circle pattern starting in the upper left corner and ending in the center of the area). Use a 10-by-10 cm square template (usually made of Teflon or other material that will not contaminate the sample and is resistant to the solvent).
 - f. Without allowing the filter to contact any other surfaces, fold the filter with the exposed side in, then fold it again. Return the filter to the glass jar and replace the lid.
 - g. Wear disposable Nitrile or PVC gloves for each sample collected. Change gloves between samples.
 - h. Obtain separate wipe samples (separate jar and pads) for each individual analyte, including pH, to be analyzed by the laboratory unless the laboratory explicitly states that multiple analytes can be tested from one pad. Otherwise, if multiple analytes are to be tested, then all wipe samples from a selected location should be of adjacent, contiguous surfaces. Do not re-wipe the same surface.
 - i. Preservation of the samples for inorganic analysis is not required unless otherwise specified by the analytical laboratory.
 - j. When appropriate, submit a trip blank consisting of a prepared sample jar taken to the field and returned to the laboratory for analysis.
 - k. Label the jar, attach custody seal, and prepare sample for transport to the laboratory.
 - l. See Section 7.3 for information on compositing samples.
2. **Bulk Samples.** Bulk samples must be obtained using the following protocol unless otherwise instructed by the analytical laboratory.
- a. Use four- or eight-ounce, wide mouth, borosilicate glass jars having phenolic screw top lids with Teflon liners.
 - b. Select the media to be bulk sampled.
 - c. Using an appropriate sampling tool/device, obtain a minimum of 30 grams for each bulk sample unless the analytical laboratory specifies a different quantity of sample.
 - d. Wear disposable Nitrile or PVC gloves for each sample taken. Change gloves between samples.
 - e. Unless otherwise specified by the analytical laboratory, multiple analytes, including pH, may be analyzed from a single bulk sample representing each medium to be evaluated.

- f. Sampling tools/devices must be cleaned and triple-rinsed with deionized water between each bulk sample, or otherwise cleaned following a laboratory-recommended protocol between samples.
- g. For scrape samples of paint, etc., a polyethylene tray (or similar capture device) may be taped to the wall surface below the surface area to be scraped. Collect the sample in the tray and then transfer it to the sample container.
- h. Preservation of the samples for inorganic analysis is not required unless otherwise specified by the analytical laboratory.
- i. Bulk samples for organic analysis should be preserved at 4°C (usually applies to septic waste and subsurface soil samples recovered for volatile and semi-volatile hydrocarbon analysis).

D. Target Analytes

Analytes specified for analysis should be selected based on individual association with specific Clan Lab manufacturing processes, expected persistence in the environment, usefulness of data interpretation, application of available testing methods, laboratory capabilities, and cost of analysis. The table below provides selected target analytes and test methods appropriate for the most common methamphetamine synthesis routes typically encountered in the United States. This table should be used as a guide only, as it may not be necessary or appropriate to sample and analyze for every analyte listed.

**Target Analytes for Common
Methamphetamine Manufacturing Methods**

Manufacturing Method	Methamphetamine ¹	Precursor	Hydrochloric Acid (Chloride)	Essential Chemicals (or by-products) ²
Red Phosphorous/ Hydriodic Acid / Ephedrine	Modified EPA Method 8270	Ephedrine by Modified EPA Method 8270	EPA Method 300	Total Phosphorous by EPA Method 6010 ³ Iodide by EPA Method 300
Sodium Metal / Ammonia / Nazi or Birch	Modified EPA Method 8270	Ephedrine by Modified EPA Method 8270	EPA Method 300	Total Lithium or Total Sodium by EPA Method 6010 ³ Total Ammonia by EPA Method 350
Phenyl-2- Propanone (P2P) / Mercuric Chloride	Modified EPA Method 8270	Phenyl-2- Propanone by Modified EPA Method 8270	EPA Method 300	Mercury by EPA Method 7471A Total Lead by EPA Method 6010

NOTE: Approved labs (e.g., ELAP labs) may select methods other than those listed in this table.

¹ Results for Modified EPA Method 8270 may be semi-quantitative depending on analytical laboratory capabilities.

² Select one or more analytes for sampling and analysis, based on property data and assessment needs.

³ Metals analysis may also be performed by EPA Method 6020.