

# UC DRAFT

## LEAD COMPLIANCE PLAN

### 1.0 PURPOSE

The purpose of this program is to establish specific plan to minimize occupational exposure to lead and management of construction activities involving lead. Proper lead management will safeguard the health and safety of workers and building occupants, minimize the impact to the environment, and ensure adherence to the various regulatory issues concerning lead in the work environment.

### 2.0 SCOPE

This program applies to all occupational exposures to inorganic lead for affected UC employees and contractors during construction work activities in which lead-containing materials are present in the work environment. Construction related activities where a worker may encounter and or/work with lead include: a) new construction; b) demolition or salvage of structures; c) removal or encapsulation of lead containing materials; d) alteration, repairs, and/or renovation of structures; e) installation of products containing lead; f) emergency clean-up; g) storage of lead containing materials at the work site; and h) maintenance operations.

### 3.0 DEFINITIONS

- 3.1 **Action Level (AL)** - Employee exposure to airborne lead at an 8-hour time-weighted average concentration of 30 micrograms of lead per cubic meter ( $\mu\text{g}/\text{m}^3$ ) of air or 0.030 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) of air, without regard to the use of respirators.
- 3.2 **Permissible Exposure Level (PEL)** - The allowable 8-hour time weighted average concentration of airborne lead the employee may be exposed to without regard to the use of respirators. This value is  $50 \mu\text{g}/\text{m}^3$  of lead in air or  $0.050 \text{mg}/\text{m}^3$  of lead in air.
- 3.3 **Objective Data** - Information from manufacturers or laboratory data that demonstrates that the use of a material in a specific operation or activity will not result in exposure to lead at the AL.
- 3.4 **Regulated Area** - Work areas where airborne exposure to lead is at or above the PEL or performing tasks listed under Appendix B.

### 4.0 RESPONSIBILITIES

- 4.1 **Industrial Hygienist** - Responsibilities include, but are not limited to, overseeing project-specific lead management programs; inspections of work activities involving potential lead exposure; lead identification/assessment techniques; and monitor airborne lead exposures. In addition, the Industrial Hygienist shall:

## UC DRAFT

- 4.1.1 Provide exposure assessment for work involving lead containing materials.
  - 4.1.2 Assist supervisors in identifying lead containing materials.
  - 4.1.3 Assist supervisors in identifying employees requiring health and safety training in compliance with Title8, Section 1532.1.
  - 4.1.4 Identify employees requiring medical surveillance.
  - 4.1.5 Assist in the design of engineering and work practice controls.
  - 4.1.6 Approve the type of respirator and use of personal protective equipment.
  - 4.1.7 Review contractor's lead work compliance plans.
  - 4.1.8 Perform surface swipe testing, as needed.
- 4.2 Lead Employee/Worker** - Each employee must have basic knowledge of the hazards associated with lead. Each employee is responsible for wearing assigned personal protective equipment; following good personal hygiene practices; and adhering to all work practices established for each specific job. Any employee who is pregnant or actively trying to conceive should notify Occupational Health.
- 4.3 Project Site Supervision / Facilities Management Supervisor** - Each supervisor will be responsible for contacting the Industrial Hygienist to evaluate the presence of lead-containing materials. In addition, they shall:
- 4.3.1 Request that the Industrial Hygienist evaluates the workplaces of all employees who may be exposed to lead;
  - 4.3.2 Ensure that all available and specified engineering, administrative controls, and personal protective equipment are used appropriately;
  - 4.3.3 Identify and ensure that all individuals who may be potentially exposed to lead receive appropriate training;
  - 4.3.4 Schedule employees identified by Environmental Health and Safety as requiring medical surveillance for medical exams;
  - 4.3.5 Ensure that all employees follow all health and safety requirements listed within the Compliance Plan;
  - 4.3.6 Conduct frequent inspection of the job site to ensure compliance with all health and safety requirements.

## UC DRAFT

- 4.3.7 Notify the Industrial Hygienist at least 48 hours prior to any lead related work.
- 4.3.8 Where multiple contractors may be present at the job site, the Supervisor shall ensure that the contractors have been informed, in writing, of potential exposure to lead and of regulated areas.

### **4.4 Occupational Health Services** - The Occupational Health Services shall:

- 4.4.1 Perform required medical surveillance and biological monitoring;
- 4.4.2 Notify employees of medical findings in writing, as required;
- 4.4.3 Determine when employees will be removed from exposure due to elevated blood lead levels or when a medical condition is detected which places the employees' health at risk;
- 4.4.4 Determine when employees may return to work after a medical removal;
- 4.4.5 Request the assistance of the Industrial Hygienist to perform a worksite evaluation for any employee found to have possible health effects due to lead exposure.

### **4.5 Contractor** - Each contractor dealing with lead-containing materials is required to follow guidelines established by the UC Environmental Health and Safety Department and submit their company's Lead Compliance to the Industrial Hygienist for approval.

## **5.0 TRAINING**

### **5.1 EMPLOYEE GENERAL AWARENESS**

For each employee in a work environment where lead-containing materials are present, training will be conducted initially upon job assignment. Training will consist of, as a minimum, an overview of the hazards of lead; warning signs/labels; relevant information from an MSDS; and employee information and training.

### **5.2 LEAD WORKER TRAINING**

- 5.2.1 In addition to general awareness training, each worker exposed to an airborne concentration of lead at or above the action level of  $30 \mu\text{g}/\text{m}^3$  (micrograms per cubic meter) shall receive, at least annually, information concerning:
  - (a) Content of Cal/OSHA's Lead in Construction Standard, Title 8 Section 1532.1.
  - (b) Specific jobs that could result in an exposure above the action level
  - (c) General respirator and use of personal protective equipment

## **UC DRAFT**

- (d) Proper use of engineering controls and work practice controls as listed under Appendix B of the standard
- (e) Medical surveillance/removal program
- (f) Use of chelating agents
- (g) The contents of the Compliance Plan and the location of regulated areas
- (h) Access to medical/exposure records/training materials under Cal/OSHA Section 3204

5.2.2 Employees who have been shown to be exposed at the PEL must meet the above training requirements and are trained by an accredited training provider and are certified by the California Department of Health Services.

### **5.3 RESPIRATORY PROTECTION TRAINING**

All UC employees required to use a respirator must participate in the UC Respiratory Protection Program.

## **6.0 EXPOSURE ASSESSMENT**

### **6.1 LEAD IDENTIFICATION BULK SAMPLES**

- 6.1.1 Suspect lead-containing materials are evaluated properly prior to the start of work.. Lead analysis must be performed for each unique surface to be disturbed.
- 6.1.2 For non-residential buildings, a representative number of painted surface bulk samples should be collected. Two samples should be collected from each homogeneous surface from each type of paint/color. One sample may be collected from each type of door or window frame.
- 6.1.3 All samples shall be submitted to AIHA and ELLAP accredited lead laboratories for analysis.
- 6.1.4 At UC, the locations listed in Appendix A have been found to contain lead.

### **6.2 EXPOSURE MONITORING**

- 6.2.1 Air monitoring is conducted under the direction of the industrial hygienist.
- 6.2.2 Air samples shall be collected in the breathing zone of employees where there is potential exposure to lead. Sampling shall be conducted annually in accordance with NIOSH Method No. 7082.
- 6.2.3 Where a determination has been made that lead containing surfaces or materials may be present at the work site, air monitoring shall be conducted during construction

## **UC DRAFT**

activities which is representative of the exposure for each job classification at the work site to represent the initial exposure assessment.

### **6.3 DETERMINATION OF SURFACE CONTAMINATION LEVELS**

To minimize the risk of contamination in eating areas and the workplace in general, housekeeping measures (HEPA vacuums, wet mopping, and as listed under Section VII, B), should be implemented to contain lead dust during any activity involving the disturbance of lead containing materials. To verify the effectiveness of housekeeping efforts, the presence of lead contamination on surfaces shall be conducted using NIOSH 9100 methods. Acceptable levels of contamination should not exceed \_\_\_\_\_.

## **7.0 CONTROL MEASURES**

### **7.1 PERSONAL PROTECTIVE EQUIPMENT**

- 7.1.1 Personal Protective Equipment must be worn at all times where there may be potential exposure to lead containing materials including the initial exposure assessment phase. The minimum level of personal protective equipment shall be specified by the industrial hygienist.
- 7.1.2 The appropriate respiratory protection must be worn in accordance with Appendix B.
- 7.1.3 Respirators must be worn:
  - a. As an interim protection for tasks until exposure assessments can be completed, refer to Appendix B and C to determine the appropriate level of respiratory protection.
  - b. When an employee's exposure exceeds the Permissible Exposure Limit (PEL).
  - c. Whenever an employee requests for a respirator.
  - d. In work situations where engineering and work practice controls are not sufficient to reduce employee exposures below the PEL.
- 7.1.4 Coveralls contaminated with lead must not be worn outside of the regulated area.
- 7.1.5 Gloves should be worn if they do not interfere with the work being performed.
- 7.1.6 Eye protection meeting the ANSI Z87.1 standard must be worn during construction activities.

### **7.2 ENGINEERING AND WORK PRACTICE CONTROLS**

## UC DRAFT

- 7.2.1. Provide HEPA filtered local exhaust ventilation for devices or abrasive power tools, needle guns sanders, grinders, and other equipment that will be used to disturb lead containing surfaces.
- 7.2.2 Use HEPA vacuums for clean-up. Do not dry sweep or use compressed air.
- 7.2.3 Use wet methods to reduce airborne dust generation, e.g., a water sprayer to hold down settled leaded dust on the plastic sheeting covering the floor.
- 7.2.4 Wet surfaces with water prior to scraping, sweeping, or sawing.
- 7.2.5 Daily clean-up of work area and equipment to prevent leaded dust accumulations.
- 7.2.6 No eating, drinking, smoking, or applying cosmetics where lead containing surfaces are being disturbed.
- 7.2.7 Shoveling, wet sweeping, brushing may only be used for clean-up to pick-up large debris. The debris should be misted with water prior to clean-up to minimize leaded dust generation.
- 7.2.8 All surfaces must be kept as free as practicable from lead accumulations.
- 7.2.9 Possession or storage or consumption of foods, beverages, chewing gum, tobacco products, and cosmetic products is prohibited in the work area.
- 7.2.10 A Regulated Area shall be established around the work location. In the absence of project-specific exposure data, the Regulated Area shall be configured to include all areas within a 25-foot radius of these activities performed on structures with lead-containing coatings. The Regulated Areas shall be identified with warning signs posted at all approaches to the area such that personnel may read the signs and take necessary protective steps before entering the area marked by the signs. The signs shall read as follows:

WARNING  
LEAD WORK AREA  
POISON  
NO SMOKING OR EATING

- 7.2.11 A change area shall be established at the boundary of the Regulated Area for the purpose of entry and exit from the Regulated Area for any purpose except emergencies.

## **UC DRAFT**

- 7.2.12 Employees entering the Regulated Area will be provided respiratory protection in accordance with Appendix B.
- 7.2.13 Employees entering the Regulated Area will be provided with protective work clothing that prevents contamination of the employee's garments. This protective clothing shall be provided in a clean and dry condition at least weekly. Protective clothing shall include, as a minimum:
- coveralls or similar full-body work clothing
  - gloves
  - eye protection
- 7.2.14 Employees exiting the Regulated Area for any purpose shall decontaminate their protective clothing by the following methods:
- removal of outer protective clothing
  - use of a HEPA-filtered vacuum
- 7.2.15 Provisions shall be made in the change area for the collection of contaminated items such as work clothing, respirator cartridges, and equipment.
- 7.2.16 Provisions will be made for employees to wash their hands and face at the completion of the activity and/or before departing from work at the end of the shift. Also, provisions will be made to allow employees to wash their hands and face prior to eating, drinking, smoking, or applying cosmetics.
- 7.2.17 Shower facilities should be provided when deemed appropriate by the Industrial Hygienist. This decision shall be made upon consideration of project duration and location, climate, and availability of acceptable water supply.

## **8.0 MEDICAL SURVEILLANCE**

### **8.1 INITIAL MEDICAL SURVEILLANCE**

- 8.1.1 Employees exposed on any day to airborne lead concentrations at or above  $30 \mu\text{g}/\text{m}^3$  will have the opportunity to receive a baseline blood lead level (BLL) examination. This examination shall include the BLL and the zinc protoporphyrin level. Medical examinations and information provided to examining and consulting physicians shall be in accordance with Cal/OSHA Standard Section 1532.1 and under the direction of an Occupational Physician designated by UC EH&S. The following information shall be provided to the consulting physicians:

## UC DRAFT

- (a) Copy of Cal/OSHA's Lead in Construction Standard, Title 8 Section 1532.1, including all Appendices;
- (b) Description of the affected employee's duties as they relate to the employee's exposure;
- (c) Employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable);
- (d) Description of any personal protective equipment used or to be used;
- (e) Prior blood lead determinations;
- (f) All prior written medical opinions concerning the employee in the employer's possession or control.

8.1.2 Medical testing for employees' blood lead level (BLL) and Zinc Protoporphyrin (ZPP) must be performed by a laboratory that is Federal OSHA approved.

8.1.3 Results of blood lead levels and zinc protoporphyrin tests must be communicated to employees within 5 days of receipt of the results. The protocol for interpreting results is presented in Table \_\_\_\_.

### 8.2 MEDICAL CONSULTATION

Medical consultation will be made available at least annually to any employee under the following situations:

- 8.2.1 The employee has a confirmed BLL of 40 µg/dL or higher within the preceding 12 months.
- 8.2.2 The employee exhibits signs or symptoms commonly associated with lead intoxication.
- 8.2.3 The employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child.

### 8.3 MEDICAL OPINION

Medical Services will provide EH&S and every employee undergoing a medical evaluation with a brief written medical report containing the physician's opinion as to whether the employee is at an increased risk from lead exposure, any recommended limits to be placed on his/her lead exposure or use of respirators, and the results of blood lead and ZPP testing. Medical Services will reveal to employee, but not to EH&S, findings unrelated to the employee's occupational exposure.

### 8.4 MULTIPLE PHYSICIAN REVIEW

UC will select the physician to conduct the initial medical examination, as listed under Title 8, Section 1532.1. The employee has the right to designate a second physician to review initial

## **UC DRAFT**

examination results after notification to the UC Worker's Compensation Office, and have a second examination conducted only after the initial medical examination has been completed. In the event the two physicians differ in their findings, a third party physician will be agreed on by the two physicians to resolve prior disagreements.

### **8.5 MEDICAL REMOVAL PROTECTION**

8.5.1 Medical removal protection (MRP) involves the temporary removal of an employee from a worksite, due to elevated blood lead levels, to a place of significantly lower exposure without loss of earnings or seniority or other employment rights or benefits.

8.5.2 An employee is included in the MRP when:

- (a) Worker's periodic and follow-up BLL are equal to 50 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ). The employee can return to the worksite when two consecutive BLL are less than 40 ( $\mu\text{g}/\text{dL}$ ).
- (b) A final medical determination indicates a medical condition that places the employee at "increased risk of material impairment to health" due to lead exposure.
- (c) An employee removed as a result of the physician's recommendation may be returned to former job status when the physician indicates it is safe to do so.

## **9.0 RECORD KEEPING**

Accurate records will be established and maintained for the following subjects. The record retention period will be in accordance with UC record retention guidelines. Affected employees, former employees, and their designated representatives can obtain access to the records mentioned above by providing a written request to the Occupational Health Nurse in the Environmental Health and Safety Office.

### **9.1 EXPOSURE ASSESSMENT**

9.1.1 All employee monitoring data will be retained for the period of employment plus 30 years.

9.1.2 Exposure monitoring records shall include:

- (a) Date(s), number, duration, location and results of each of the samples taken if any, including a description of the sampling procedure used to determine representative employee exposure where applicable
- (b) Description of the sampling and analytical methods used and evidence of their accuracy

## **UC DRAFT**

- (c) Type of respiratory protective devices worn, if any
- (d) Name, social security number, and job classification of employee monitored and all other employees whose exposure the measurement is intended to represent
- (e) Environmental variables that could affect the measurement of employee exposure

### **9.2 MEDICAL SURVEILLANCE**

9.2.1 Records will be maintained for employees subject to medical surveillance. Records will include at a minimum:

- (a) employee name
- (b) social security number
- (c) job description/duties
- (c) air monitoring data pertinent to the employee
- (d) any employee medical complaints
- (e) medical examination results including medical/work history
- (f) biological monitoring
- (g) any information or guidelines used to interpret laboratory tests

9.2.2 Medical records appropriate to this section will be retained for a period of employment plus 30 years.

### **9.3 MEDICAL REMOVAL**

Records will be maintained for employees removed from current job status due to elevated BLLs. Records will include at a minimum: employee name; social security number; date of removal and return to job status; explanation of how the removal was accomplished; and reason for removal. Records will be retained for a least the duration of the employee's employment.

### **9.4 TRAINING**

EH&S Office will maintain training records on each employee trained under this Lead Compliance Program. Records will include: date of training; employee name; and a description or outline of training content.

## **10.0 ENVIRONMENTAL MANAGEMENT**

Environmental management (i.e., waste characterization, waste disposal) will be conducted under the direction of the Hazardous Waste Section of Environmental Health and Safety.

**UC DRAFT**

**APPENDIX A**

**LOCATIONS OF LEAD CONTAINING MATERIALS**

The following areas have been determined as using lead:

# UC DRAFT

## APPENDIX B

### ASSUMED EXPOSURES FOR CONSTRUCTION TASKS\*

50 $\mu\text{g}/\text{m}^3$ to 500 $\mu\text{g}/\text{m}^3$	500 $\mu\text{g}/\text{m}^3$ to 2500 $\mu\text{g}/\text{m}^3$	Greater than 2500 $\mu\text{g}/\text{m}^3$
<ul style="list-style-type: none"><li>•Manual demolition</li><li>•Manual scraping</li><li>•Manual sanding</li><li>•Heat gun use</li><li>•Power tool paint removal in the HEPA vacuum-assist dust collection system</li></ul>	<ul style="list-style-type: none"><li>•Cleanup on dry, abrasive blasting jobs</li><li>•Abrasive blasting enclosure movement/removal</li></ul>	<ul style="list-style-type: none"><li>•Abrasive blasting</li></ul>

\*Title 8 CCR, Section 1532.1

APPENDIX C

RESPIRATORY PROTECTION FOR LEAD AEROSOLS

Airborne Concentration of Lead or Condition of Use	Required Respirator
Not in excess of 500 µg/m <sup>3</sup>	<ul style="list-style-type: none"> <li>•½mask air purifying respirator with high efficiency filters</li> <li>•½mask supplied air respirator operated in demand (negative pressure) mode</li> </ul>
Not in excess of 1250 µg/m <sup>3</sup>	<ul style="list-style-type: none"> <li>•Loose fitting hood or helmet powered air purifying respirator with high efficiency filters</li> <li>•Hood or helmet supplied air respirator operated in a continuous-flow mode, e.g., type CE abrasive blasting respirator operated in a continuous-flow mode</li> </ul>
Not in excess of 2500 µg/m <sup>3</sup>	<ul style="list-style-type: none"> <li>•Full facepiece air purifying respirator with high efficiency filters</li> <li>•Tight fitting powered air purifying respirator with high efficiency filters</li> <li>•Full facepiece supplied air respirator operated in a continuous-flow mode</li> <li>•½mask of full facepiece supplied air respirator operated in demand mode</li> <li>•Full facepiece self-contained breathing apparatus (SCBA) operated in demand mode</li> </ul>
Not in excess of 50,000 µg/m <sup>3</sup>	<ul style="list-style-type: none"> <li>•½mask supplied air respirator operated in pressure demand or other positive-pressure mode</li> </ul>
Not in excess of 100,000 µg/m <sup>3</sup>	<ul style="list-style-type: none"> <li>•Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode, e.g., type CE abrasive blasting respirators operated in a positive-pressure mode</li> </ul>
Greater than 100,000 µg/m <sup>3</sup> unknown concentration, or fire fighting	<ul style="list-style-type: none"> <li>•Full facepiece SCBA operated in pressure demand or other positive-pressure mode</li> </ul>

# UC DRAFT

## APPENDIX D

### EXPOSURE CONTROL STRATEGY DURING RENOVATION/PAINTING/SANDING OPERATIONS OF SURFACES CONTAINING 600 PPM LEAD OR GREATER IN HOUSING AREAS

#### 1.0 REQUIREMENTS

- 1.1 The building shall remain unoccupied during renovation activities. The area shall be secured with barrier tapes to prevent unauthorized personnel from entering the work areas.
- 1.2 All HVAC systems must be turned off prior to commencement of sanding activities. Cover the air vents with plastic after turning off the system.
- 1.3 Carpets and all furniture should be removed prior to sanding activities.
- 1.4 Only vacuum cleaners equipped with HEPA filters should be used to clean-up interior dusts.
- 1.5 A layer of 6-mil polyethylene sheeting shall be laid over the entire floor.
- 1.6 All windows should be kept closed to prevent dust and chips from leaving the area.
- 1.7 Dry sanding is not allowed.

#### 2.0 **Wet Scraping**

- 2.1 A scraper attached to a HEPA vacuum is recommended for the scraping process.
- 2.2 Wet scraping can also be done by misting the surface with water to minimize dust generation. A scraper can be used to remove loose chips of paint.
- 2.3 Use a damp rag to collect large chips that fall on to the 6-mil plastic floor containment.
- 2.4 HEPA vacuum paint dusts on the plastic sheeting.

#### 3.0 **Wet Sanding**

- 3.1 Traditional orbiting sanding devices may be used only in conjunction with a HEPA vacuum filter attachment.

## **UC DRAFT**

- 3.2 Wood, metal, and painted surfaces that require a fine cosmetic finish may be sanded using wet/dry sand paper and water or an oil paint solvent.
- 3.3 Relatively rough surfaces may be finished using wet foam sanding blocks created by dipping a sponge in an aluminum oxide grit. These sponge sanders are ideally suited for wet sanding and can be easily cleaned by immersing in a bucket of 5 -6% trisodium phosphate (TSP).

### **4.0 Surface Cleaning**

- 4.1 HEPA vacuum all surfaces (sanded walls, windows, and floors); follow by surface wipe cleaning with a 5-6% TSP solution and rinse with water. A two-bucket system should be used: one for the cleaning solution and the other for rinsing using a new sponge. Change the wash water at least once in each room.
- 4.2 Begin at the top of each room and work down.
- 4.3 When vacuuming, use a crevice and brush tool where appropriate.
- 4.4 HEPA vacuum the polyethylene sheeting prior to removal.
- 4.5 Remove and dispose of HEPA vacuum cleaner bags outside of the building.
- 4.6 Repaint surfaces with paint free of lead, mercury, and other heavy metals.
- 4.7 Contact EH&S for final clearance. Surface wipe samples of floors and windows will be collected to ensure surfaces do not have excessive lead residues. Clearance levels set by EPA/Housing and Urban Development Guidelines will be followed. Personal and area monitoring will be conducted by EH&S.

### **5.0 Waste Disposal**

- 5.1 All HEPA filters must be disposed of as required by UC \_EH&S Hazardous Waste Department.
- 5.2 Contact EH&S Hazardous Waste Department for final disposition of waste.

# UC DRAFT

## APPENDIX E

### EXPOSURE CONTROL STRATEGY DURING MINOR DEMOLITION/SANDING/PAINTING OF SURFACES CONTAINING LESS THAN 600 PPM LEAD

#### 1.0 GENERAL

Minor demolition work applies to work less than 100 square feet. Consult with EH&S for demolition of areas greater than 100 square feet.

#### 2.0 REQUIREMENTS

- 2.1 At a minimum, the area under renovation shall remain unoccupied during renovation activities. The area shall be secured with barrier tapes to prevent unauthorized personnel from entering the work areas.
- 2.2 All HVAC systems must be turned off prior to commencement of sanding activities or demolition activities. Install critical barriers by covering the air vents and door openings with plastic after turning off the HVAC system.
- 2.3 EH&S must be contacted for personnel and perimeter air monitoring.
- 2.4 Carpets and all furniture should be covered with 4-mil poly prior to sanding activities.
- 2.5 A layer of 6-mil polyethylene sheeting shall be laid over the entire floor.
- 2.6 Only vacuum cleaners equipped with HEPA filters should be used to clean-up interior dusts.
- 2.7 Contact EH&S for final clearance for re-occupancy.

APPENDIX F

**GUIDANCE ON WASTE MANAGEMENT FOR LEAD ABATEMENT ACTIVITIES**

Wastes generated from lead abatement, or any of the activities listed above, may be regulated by the Department of Toxic Substances Control (Department) because they contain lead, a toxic substance. Wastes from the use of chemical paint strippers may also be corrosive. A corrosive waste has a pH  $\leq 2.0$  or  $\geq 12.5$ , or it corrodes steel at a rate greater than 6.35 mm per year.<sup>1</sup>

In California, there are two regulatory levels for wastes contaminated with lead, the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC). The regulatory limits for lead are 1000 mg/kg and 5.0 mg/L, respectively.<sup>2</sup> In addition, federal law (Resource Conservation and Recovery Act or RCRA) regulates lead by establishing a maximum concentration of 5 mg/L. Although this level is the same as California's STLC, federal law specifies a different testing procedure.<sup>3</sup>

Some wastes that may be generated by lead removal and clean-up activities include paint chips, dust, chemical stripper sludge, waste water, rags, sponges, filters, and large debris such as doors, casements, jams, and moldings. EH&S recommends that lead paint wastes be segregated into the following categories to aid in classifying the wastes as hazardous or nonhazardous. Depending on the quantities of wastes generated, it may be economical to dispose of all wastes in category A as hazardous without testing. According to U.S. EPA tests,<sup>4</sup> wastes in category B are less likely to be hazardous wastes, and thus they should be tested for proper classification. Solid components coated with intact, unpeeling paint may test as hazardous if the paint has a high lead content; plastic sheeting may test as hazardous if a heat gun was used to remove paint.<sup>5</sup> Segregating Category A wastes from Category B wastes may result in a reduction in the volume of hazardous waste generated.

**Table 1**

CATEGORY A: WASTE USUALLY FOUND TO BE HAZARDOUS

- Paint chips and dust from vacuum debris and dust
- Waste wash water
- Sludge from chemical stripping
- Rags, sponges, mops, HEPA filters, scrapers, and other materials used for testing, abatement and clean-up

**Table 2**

CATEGORY B: WASTES THAT MAY BE HAZARDOUS

- Disposable work clothing
- Respirator filters
- Polyethylene (plastic) sheeting
- Solid components coated with intact, unpeeling paint, such as doors, casements, molding, and jams

<sup>1</sup>Title 22, California Code of Regulations (22 CCR), § 66261.22.

<sup>2</sup> 22 CCR, § 66261.24 (a)(2) and Table II.

<sup>3</sup> see 22 CCR §66261.24 (a)(1) and Table I.

<sup>4</sup> U.S. EPA. 1993. Applicability of RCRA disposal requirements to lead-based paint abatement wastes. Final Report. Technical Programs Branch, Office of Pollution Prevention and Toxics. March 1993

<sup>5</sup> Ibid

\*Excerpt from *California Environmental Protection Agency, Department of Toxic Substances Control*

## UC DRAFT

### RCRA Wastes

Lead wastes are RCRA wastes if, when tested by the Toxicity Characteristic Leaching Procedure (TCLP), the lead content equals or exceeds 5.0 mg/L.<sup>6</sup> While this is the same regulatory level as California's STLC, the TCLP test extracts less lead from a sample than does California's test. The EPA hazardous waste number for lead is D008. D008 wastes are subject to Land Disposal Restrictions (LDR), and must meet the treatment standard of 5.0 mg/L or less extractable lead before disposal.<sup>7</sup>

### California-only hazardous wastes

If the lead content of a sample of waste is less than 5.0 mg/L using the TCLP, but is greater than or equals the TTLC or STLC (applying the Waste Extraction Test, or WET), then the waste is a California-only hazardous waste, also known as a non-RCRA waste. The compliance date for these metal-containing solid wastes to be treated to the standards has been extended to January 1, 1996.<sup>8</sup>

### Debris

Hazardous debris is defined as<sup>9</sup>:

- Solid discarded material exceeding a 60 mm (2.5 in) particle size intended for disposal;
- a manufactured object; or plant or animal matter; or natural geologic material. Debris does not include those materials for which there is a specific treatment standard (e.g., lead-acid batteries).

Hazardous debris, such as doors and moldings, is subject to LDR and must be treated prior to land disposal using extraction, destruction, or immobilization technologies, which are defined in Table 1 of 22 CCR § 66268.45. Hazardous debris that is treated using one of the specified extraction or destruction technologies of Table 1 and that no longer exhibits a characteristic of hazardous wastes after treatment is not a hazardous waste and need not be managed in a permitted hazardous waste landfill. Residuals from the treatment (e.g., lead paint) must be separated from the treated debris and managed as hazardous waste.<sup>10</sup>

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<sup>6</sup>See 22 CCR § 66261.24 (a)(1).

<sup>7</sup>See 22 CCR § 66268.40 Treatment Standards for Hazardous Waste.

<sup>8</sup>Senate Bill 1574, amendments HSC § 25719.7

<sup>9</sup>22 CCR § 66261.10. Definitions.

<sup>10</sup>22 CCR § 66268.7(d) and 66268.45.

## CHARACTERIZATION OF LEAD WASTE

Will you be generating hazardous waste?

