



## **LEAD MANAGEMENT PROGRAM**

Pursuant to:

29 CFR [§ 1910.1025](#) – Standards for General Industry

29 CFR [§ 1910.134](#) – Respiratory Protection

29 CFR [§ 1926.62](#) – Standards for Construction Industry

40 CFR [§ 261.3](#) – Definition of Hazardous Waste

40 CFR [§ 261.24](#) – Toxicity Characteristic

40 CFR [§ 745 Subpart L](#) – Lead Based Paint Activities  
(Target Housing)

**Arizona State University**

**Asbestos/Lead Management Group**

**2014**

**TABLE OF CONTENTS**

1.0 Introduction ..... 3

2.0 Purpose ..... 3

3.0 Definitions ..... 3

4.0 Duties and Responsibilities ..... 4

5.0 Lead Identification ..... 5

6.0 Lead Exposure ..... 6

7.0 Work Categories ..... 6

8.0 Project Notification ..... 7

9.0 Notification to Building Occupants ..... 7

10.0 Training ..... 7

11.0 Performance Criteria for Contractors ..... 7

12.0 Contractors Lead Compliance Plan ..... 9

13.0 Signage ..... 9

14.0 Recommended Minimum Work Practice Controls ..... 9

15.0 Sampling ..... 11

    15.1 Bulk Sampling for Lead Identification ..... 12

    15.2 Area Air Sampling ..... 12

    15.3 Final Clearance Sampling ..... 13

16.0 Lead Waste ..... 15

**APPENDICES**

- Appendix 1 – Initial Lead Project Notification
- Appendix 2 – On-campus lead Work Sign
- Appendix 3 – Approved Sampling Consultants

## 1.0 INTRODUCTION

This document is the official Arizona State University (ASU) position on procedures and operations involving the disturbance of lead-containing materials at ASU by employees or outside contractors.

This document was developed to ensure University compliance with Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA) and the office of Housing and Urban Development (HUD) Standards.

## 2.0 PURPOSE

The purpose of the Lead Management Program is to prevent lead exposure of all workers, regardless of job title and to help prevent the potential for building contamination from lead during demolition, maintenance, and renovation activities in ASU owned structures. The requirements in this Program set standards for work that disturbs lead-containing materials. Contractors engaged in such projects are expected to possess the managerial expertise, experience and to employ workers with skill, training, and experience so that the work is carried out in compliance with these requirements.

## 3.0 DEFINITIONS

**Action Level (AL)** – Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30ug/m<sup>3</sup>) calculated as an 8-hour time weighted average.

**Child Occupied Facility** – a building or portion of a building constructed before 1978 that is visited regularly by a child who is 6 years of age or less, on at least 2 different days within a given week, if each day's visit is at least 3 hours and the combined weekly visit is at least 6 hours in length, and the combined annual visits are at least 60 hours in length. Child occupied facility includes but is not limited to a day-care center, a preschool, and a kindergarten classroom.

**Contractor Employer Program** – In accordance with the Hazard Communications Standard, each outside contractor working on an ASU owned property (on-site) is responsible for developing, implementing, and informing other on-site employers of all hazard communication related information. Under the Program, each outside employer must provide ASU, and other employer(s) working on-site, with unrestricted, on-site access to safety data sheets (SDSs) for all hazardous materials used, handled or stored on-site to which an employee may potentially be exposed to during their normal course of work. Additionally, each vendor performing work on ASU's campuses must sign the Service Providers Acknowledgement Agreement with Environmental Health and Safety (EH&S).

**Hazardous Waste** – Generation and disposal of hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA). If a waste exhibits toxicity, corrosivity, ignitability, or reactivity characteristics it is considered hazardous.

**High Efficiency Particulate Air (HEPA)** – A HEPA filter is one that is capable of filtering 99.97% of all airborne particles at 0.3 micrometers (µm) in diameter.

**HEPA Vacuum Cleaner** – An electrical device that cleans surfaces by suction and discharges transport air through a HEPA filter.

**Lead Containing Materials (LCM)** – Any material that has been confirmed, through laboratory analysis to contain any detectable quantity of lead.

**Permissible Exposure Limit (PEL)** – No employee shall be exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 µg/m<sup>3</sup>) averaged over an 8-hour period or for a total of 400 µg/m<sup>3</sup> in any work day.

**Presumed Lead Containing Material (PLCM)** – Any material that is presumed to contain any quantity of lead.

**Representative Sample** – Sample that accurately captures a particular material or area based on the typical characteristics of that material or area.

**Substrate** – The underlying material a building component is made from, over which is often applied a surface finish such as paint. Common substrates include, plaster, concrete, wood, metal and gypsum.

**Target Housing** – Any housing constructed before 1978, except any of the following:

- (a) Housing for the elderly or persons with disabilities, unless any 1 or more children age 6 years or less resides or is expected to reside in that housing.
- (b) A 0-bedroom dwelling.
- (c) An unoccupied dwelling unit pending demolition provided the dwelling unit remains unoccupied until demolition.

**Toxicity Characteristic Leachate Procedure (TCLP)** – Test conducted to determine if a substance is a hazardous waste. The hazardous waste limit for lead is 5 parts per million (ppm). This limit applies only to waste determination.

#### **4.0 DUTIES AND RESPONSIBILITIES**

The Asbestos/Lead Management Group (ALMG) shall:

1. Provide technical guidance to University personnel concerning lead hazard evaluation and control.
2. Review results of area air monitoring and clearance dust wipe sampling and provide interpretation for departments managing work.
3. Direct the University Departments conducting the work to modify or stop lead related work practices if employees, students, or the public are being exposed to lead hazards.
4. Maintain records of all sampling data submitted to or collected by the ALMG.
5. Communicate requirements of Lead Management Program.
6. Periodically review the Lead Management Program and revise as necessary.
7. Review for approval Statement of Qualifications for outside Lead Abatement contractors or consultants.
8. Assist ASU's EH&S's department to develop training in accordance with 29 CFR 1926.62 (L)(2) for University Employees anticipated to have occupational lead exposure.
9. Develop and maintain a database of known lead containing materials in campus buildings, based on information provided by consultants and ASU lead sampling collected.
10. Evaluate and approve acceptable lead management plan variance requests.

The ASU Representatives Managing Lead Work shall:

1. Disclose known information regarding the presence of lead in building and construction materials to any contractor retained to conduct demolition or renovation work at ASU.
2. Contact the ALMG a minimum of 15 working days in advance of upcoming projects that may impact coated surfaces that may contain lead.
3. Ensure that the contractor has read, understands, and will abide by the minimum performance standards required in this Program for controlling lead hazards.
4. Report any problems associated with implementation of the Lead Management Program to EH&S.
5. Provide the ALMG with a Statement of Qualifications of the Contractor scheduled to conduct the area air sampling, 15 working days prior to the intended start date, for review and approval.
6. Stop or modify lead related work practices if employees, students, or the public are being exposed to lead hazards.
7. Conduct area air monitoring and clearance sampling by approved consultant as required by this program and provide the ALMG with all sample results.
8. Ensure all lead related work-sites and all areas that have been contaminated resulting from the work conducted are properly cleaned and meet the clearance criteria required by this Program.
9. Ensure all hazardous waste is properly identified, labeled, segregated and stored at the job-site until removed by EH&S or approved contractor.
10. Provide specific contractor language regarding projects that may contain lead to outside contractors bidding on projects.
11. Submit a variance request to the ALMG in writing for work practices, notification times, or other deviations from the Lead Management Plan. Variances are at the discretion of the ALMG.

## 5.0 LEAD IDENTIFICATION

Because of its physical properties, lead has been widely used as an additive to many building materials. Although lead has been banned from the use on potable water supplies and residential paint, it may still be present in older buildings and in commercial paints at 0.06% until 2009 which changed to 0.009%. Some lead containing building materials continue to be used to this day. The following materials should be presumed to contain lead unless manufacturer information, SDS, or testing proves otherwise.

### **Presumed Lead Containing Materials (PLCM):**

- Interior and exterior paint
- Steel and iron primer
- Industrial paint
- Industrial electrical jacketing
- Roof flashing
- Tank linings
- Soft solder
- Glazed Ceramics
- Sheeting, blocks, and bricks in floors and walls for x-ray penetration protection.

The OSHA Lead Standard applies to any detectable concentration of lead in a material. ***The presence of any lead in a material triggers the worker protection and work practice requirements of this program.***

Lead identification sampling shall be conducted to determine if a presumed lead containing material contains lead and requires lead management. The only methods recognized are bulk sampling for laboratory analysis and X-ray Fluorescence (XRF). Sampling may only be conducted by a qualified ASU employee or an approved consulting firm. See Appendix 3 for a list of approved consulting firms that may be used by the ALMG **Only**.

## **6.0 LEAD EXPOSURE**

According to the Occupational Safety and Health Association (OSHA), any lead containing material has the potential to create an airborne exposure to lead. Contractors that disturb lead-containing material or presumed lead containing material must protect their employees from airborne lead exposure in compliance with the OSHA Lead Standard 29 CFR 1926.62. In accordance with OSHA, Contractors must protect their own employees with personal protective equipment, training, and medical surveillance. Contractors conducting lead work on multi-contractor sites must also inform all site workers of potential exposure to lead.

ASU employees must also be protected, regardless of job title, from lead exposures according to the OSHA General Industry Standard 29 CFR 1910.1025. Protecting these individuals from lead exposure will be accomplished by making sure the Contractor contains all airborne lead to the work site by using appropriate work practice controls and meeting the minimum performance criteria listed below.

## **7.0 WORK CATEGORIES**

Projects involving lead can be categorizing according to the tasks performed. In order to ensure the appropriate measure will be taken to protect all individuals at ASU, all projects must be categorized by the ALMG prior to initiation. The use of the following tasks described below will be implemented to categorize the work being conducted.

Recommended minimum work practice controls can be found in section 14.

### **Level 0**

- Tasks conducted with lead containing material that are not anticipated to create dust or debris and are not listed as Level 1, 2 or 3 Tasks
- Manual demolition of lead containing materials or coatings below 0.06% lead by weight.

### **Level 1**

Example tasks may include, but are not limited to:

- Spray painting with lead-based paint
- Manual demolition of lead containing materials or coating greater than 0.06% lead by weight.
- Manual scraping or sanding of lead containing materials or coatings
- Use of a heat gun under 1100 degrees on lead containing materials or coatings
- Power tool disturbance of lead containing materials or coatings with a dust collection system

### **Level 2**

Example tasks may include, but are not limited to:

- Using lead-containing mortar
- Lead burning
- Rivet busting on lead containing materials or coatings
- Power tool disturbance of lead containing materials or coatings without a dust collection system
- Clean-up of dry expendable abrasives used to remove a lead containing coating

### **Level 3**

Example tasks may include, but are not limited to:

- Abrasive blasting on lead containing materials or coatings
- Welding on lead containing materials or coatings
- Cutting on lead containing materials or coatings
- Torch burning on lead containing materials or coatings
- Large Scale Demolition of lead containing materials or coatings

## **8.0 PROJECT NOTIFICATION**

Prior to the initiation of any interior or exterior work involving lead containing or presumed lead containing materials by an outside contractor, the department managing the work must provide the ALMG with an Initial Lead Project Notification using the ASU Capital Programs Management (CPMG) Request for Asbestos Services form. The initial notification must contain the general scope of work to be done, dates for the start and proposed completion of the work, and the precautions which will be employed to protect building occupants. The ALMG must receive the notification form, 15 days prior to the start of the project. The CPMG Request for Asbestos Services form is in Appendix 1 and available at <https://fdm-apps.asu.edu/CPMG/AsbestosServices/>.

## **9.0 NOTIFICATION TO BUILDING OCCUPANTS**

Prior to the initiation of any interior or exterior work involving lead containing or presumed lead containing material, the building manager will forward an informational memo to all appropriate persons on the building contact directory list located in the building that lead work is conducted. This memo will contain the general scope of work to be done, dates for the start and proposed completion of the work, and the precautions which will be employed to protect building occupants. A bright pink flyer, (identical in color to the asbestos notifications), will be posted on the main entries to the building or work-site.

## **10.0 TRAINING**

All ASU employees that are anticipated to enter a lead work-site may result in an occupational lead exposure must receive a Lead Training in accordance with 29 CFR 1926.62 (L)(2). Lead training shall be conducted annually by EH&S and will consist of the following:

- The specific nature of the operations which could result in exposure to lead above the action level
- The purpose, proper selection, fitting, use and limitations of respirators
- The purpose and description of the medical surveillance and medical removal programs, including health effects of lead exposure and potential reproductive consequences.
- The contents of this compliance plan
- Instruction that chelating agents should not be used unless under the direction of a licensed physician
- Explanation of engineering controls and work practices for lead-related work
- The employee's right of access to records

## **11.0 PERFORMANCE CRITERIA FOR CONTRACTORS**

Minimum Performance Criteria have been established for outside contractors conducting lead related work to ensure that no University employee is exposed above the OSHA Action Level of 30µg/m<sup>3</sup> of

airborne lead or has the potential to come into contact with lead dust as a result of contractor's activities. At a minimum, Contractor disturbing lead related materials must meet the following requirements.

- Possess, at a minimum, 2 years of experience with lead related work.
- Limit access to worksites in which Level 1, 2 and 3 tasks are taking place to trained and authorized personnel only.
- Adequately limit all migration of lead containing dust and debris to any areas outside the worksite.
- Ensure that ASU employees not associated with the worksite are not exposed to lead levels above the OSHA Action Level.
- Prevent the contamination of ASU property (i.e., computers, chairs, desks, carpet, floors, wall, etc.) from lead dust and debris.
- Collect and manage hazardous wastes produced in accordance with hazardous waste requirements.
- Ensure that workers contaminated with lead containing dust and debris do not transfer that material outside the worksite.

The ALMG will ensure airborne lead and dust is contained to the worksite by contracting approved third party Area Air Monitoring and Clearance Dust Wipe Sampling (information on Area Air Monitoring and Clearance Dust Wipe Sampling can be found in Sections 15 and 16).

**Note:** ASU employees designated to conduct lead related work will be protected in accordance with the OSHA Lead in Construction Standards 29 CFR 1926.62.

## **12.0 CONTRACTORS LEAD COMPLIANCE PLAN**

OSHA requires contractors that employ workers occupationally exposed to lead establish and implement a Lead Compliance Plan. The Lead Compliance Plan shall be prepared by the Contractor, as required by the OSHA Standard (29 CFR 1926.62) and submitted to the ALMG at ASU. The document must include the following:

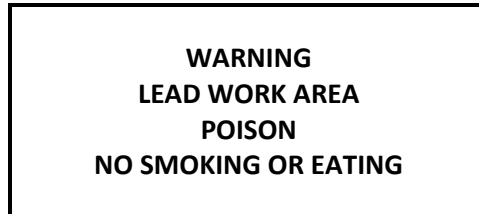
- Description of each activity in which lead containing, or presumed lead containing material is disturbed (i.e., equipment used, material involved and % Pb, controls in place, operating procedures, crew size and corresponding employee job responsibilities). If chemical removal is performed the SDS's of products will need to be reviewed by the ALMG prior to any work being performed.
- Work Practice Controls to be used to prevent lead contamination from occurring outside the work-site.
- Regular inspections of the work-site and equipment by a competent person named by the ALMG at ASU.
- A description of arrangements made among Contractors on multi-contractor site to inform workers of potential exposure to lead and their responsibility to comply with the OSHA Lead in Construction Standard 29 CFR 1926.62.
- Proof of appropriate Lead Training for each employee on-site.
- Proof of appropriate written respirator program and compliance under 29 CFR 1910.134.
- Certification that the Contractor has read, understands and will abide by the minimum performance standards required in this Program for controlling lead hazards.



### 13.0 SIGNAGE

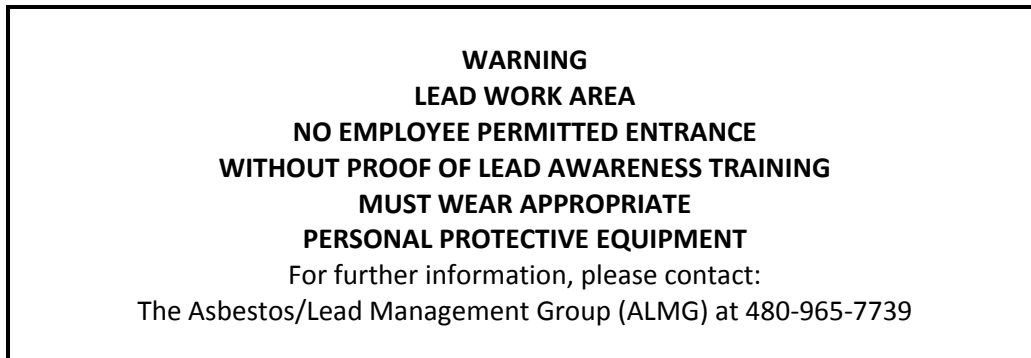
The Contractor conducting lead work shall post warning signs outside any entrance to the worksite in accordance with the OSHA standard below.

1926.62 (m)(2)(ii) The employer shall post the following warning signs in each work area where an employees exposure to lead is above the PEL.



1926.62(m)(2)(ii)The employer shall assure that signs required by this paragraph are illuminated and cleaned as necessary so that the legend is readily visible.

Additionally, all lead work areas, regardless of airborne lead concentrations, shall post the following information on a sign. An example of this sign can be found in [Appendix 2](#).



The ALMG shall ensure that signs are posted and maintained appropriately by the approved Contractor.

### 14.0 RECOMMENDED MINIMUM WORK PRACTICE CONTROLS

Recommended work practices have been developed for lead related work conducted at ASU. Work involving lead-containing material must be well planned out to avoid worker and occupant exposure. The following work practices are recommended for meeting the performance criteria listed in the Requirements of Contractors Section in this Program.

#### Level 0 Tasks

Recommended work practices for Level 0 Tasks performed on confirmed lead containing material or presumed lead containing material include:

- Use care to minimize the production of dust and debris
- Visually inspect area for any debris/dust resulting from work conducted. Remove any debris/dust from area using a HEPA filtered vacuum. All vacuums used in a lead worksite must have a minimum filter efficiency of 99.97% (HEPA).

- The contents of the HEPA vacuum shall be tested to determine if the material is a “hazardous waste”. All contents of the HEPA vacuum shall be adequately labeled and stored in a secondary container provided by ASU EH&S in accordance with all State and Federal rules, and ASU Procedures.

### **Level 1 Tasks**

Recommended work practices for Level 1 Tasks include:

- For work occurring in occupied areas (i.e., office, cafeteria, gym, dormitory, apartments, study room, labs) the work area should be enclosed with, minimally, 6 mil fire rated plastic in a manner that prevents transfer of dust outside the work area. Remove all movable objects (desk, chairs, and book) within the enclosed work area. Non-movable objects should be securely covered with 6-mil fire rated plastic sheeting, as to prevent lead dust contamination. ASU employee entry to the work area will be limited to those individuals with documented Lead Awareness Training.
- For work occurring in unoccupied area (i.e., hallways, stairwell, foyers, mechanical spaces) prepare work area by placing 6-mil fire rated plastic sheeting a minimum of six (6) feet horizontally out in all directions from the work area. Adequately secure plastic to ensure all debris and dust is collected on plastic.
- Cover all air vents with in the work area.
- Use care to minimize the production of dust form scraping or sanding. Use either wet sanding/scraping or HEPA filtration fitted equipment.
- After disturbance work is completed a HEPA vacuum should be used to remove any small debris and visible dust from interior/exterior surfaces and plastic sheeting.
- Visually inspect area for any debris resulting from work conducted. Remove any debris from area.

### **Level 2 and 3 Tasks**

Recommended interior work practice controls for Level 2 and 3 Tasks include:

- Lead dust/debris shall be contained to the work area by sealing all doors, windows, and air vents with 6-mil fire rated plastic sheeting. This may require turning off localized HVAC systems, which requires a five (5) working day, request through ASU.
- The entrance to the work area should be equipped with an adequate air lock constructed of 6-mil fire rated plastic sheeting at a minimum. The air lock must control any dust migration or transfer out of the controlled work area.
- An enclosed clean change area must be provided prior to the entrance of the work area. The area must provide a place to remove and dispose of disposable coveralls, and provide for clean storage of new disposable coveralls.
- Disposable coveralls must be donned prior to entering the work-site and contaminated coveralls must be doffed prior to exiting the work-site.
- Entry to the work area will be limited to workers with documented Lead Awareness Training.
- All furniture that cannot be removed from the work area should be covered in 6-mil fire rated plastic sheeting in a manner which provides protection from lead dust contamination.
- Place a minimum of 6-mil fire rated plastic sheeting on all finished floors in the work area, and tape all seams as necessary. The contractor must notify the Asbestos/Lead Department if the

plastic sheeting is not appropriate for floor application and provide an alternate floor protection control method.

- Mechanical ventilation may not be used, unless resulting exhaust outside the work area is equipped with HEPA filtration and the termination of the exhaust is monitored in accordance with Section 15 of the Program.
- Barrier tape will be used to isolate the work area in such a way that staff, students, and the public cannot get within 10 ft of the work area.
- A warning sign should be posted outside any unsecured entry to the work site. Refer to the Signage Section of this Program (Section 13).
- Daily clean-up of the worksite will include removal of debris (with the exception of contaminated plastic sheeting) and disposal of protective clothing.
- After lead project work is completed, a HEPA vacuum should be used to remove any small debris and visible dust from all surfaces. After visible debris is removed from the plastic sheeting, it should be rolled inward and placed in a “hazardous” waste container, along with all disposable clothing. All “hazardous” waste shall be adequately labeled and stored in accordance with all Local, State, and Federal rules and in accordance with University Procedures.
- In situations where work is complete, but plastic sheeting was not used on the floor, a HEPA vacuum should be used to remove any small debris and visible dust, followed by a wet mopping with lead specific detergent and HEPA vacuumed a second time of the entire floor. (HEPA sandwich) All liquid waste and mop heads must be treated as “hazardous” until otherwise determined by analysis and characterization.
- The work area may not be released for general use or occupancy until clearance wipe samples are collected and results reviewed and approved by the Asbestos/Lead Department. Information on Clearance Criteria and associated sampling can be found in Section 15(C) of this Program.

Recommended exterior work practices for Level 2 and 3 Tasks include:

- Building occupants shall be notified to close windows and doors within 20 feet of work area until work is complete.
- Controls shall be in place to eliminate contaminating HVAC systems and air intakes that have the potential to draw in air from the work-site. Control methods must be submitted to the Asbestos/Lead Department for review and approval.
- Capture all lead containing material and presumed lead containing material to prevent contamination of the surrounding environment (i.e. secure one layer of 6-mil fire rated plastic on the ground extending 10 feet beyond the perimeter of the work-site).
- Erect temporary fencing or barrier tape at a 20 foot perimeter around work-site.
- Daily clean-up of the worksite will include removal of all debris, plastic sheeting, and disposal of coveralls. All “hazardous” waste shall be adequately labeled and stored in accordance with all Local, State and Federal rules and in accordance with University Procedures.
- Keep all hazardous waste in a secure indoor area on ASU property until disposal

## **15.0 SAMPLING**

ASU requires all lead sampling to be conducted by qualified trained individuals, consultants, and labs. Additionally, all laboratory analysis of bulk, air, and wipe samples must be conducted by an AIHA approved lead laboratory.

The Asbestos/Lead Department has reviewed the following company Statement of Qualifications and has determined their laboratory accreditation meets the minimum qualifications. These labs provide an

analysis service for a fee and all associated costs will be the responsibility of the department requesting the work. The ALMG approved labs are as follows:

Wipe/Soil Sampling – Air Sampling	TCLP
<b>Fiberquant Analytical Services</b> 5025 S. 33 <sup>rd</sup> Street Phoenix, Arizona 85040 602-276-6139	<b>Test America</b> 4625 East Cotton Center Boulevard #189 Phoenix, Arizona 85040 602-437-3340

### 15.1 BULK SAMPLING FOR LEAD IDENTIFICATION

ASU’s ALMG may decide to conduct lead identification sampling to determine if a presumed lead containing material contains lead and requires lead management. The methods recognized by ASU will be bulk sampling for laboratory analysis and X-ray fluorescence (XRF). This sampling may only be conducted by a qualified ASU employee or an approved consulting firm.

At a minimum, a qualified person conducting lead identification sampling will:

- Have previous bulk sampling for lab analysis experience.
- Have a working understanding of the National Institutes for Occupational Safety and Health (NIOSH) sampling methodologies.
- Capable of determining appropriate sampling methodologies documenting and submitting a “representative” sampling plan.

At a minimum, Lead Identification Sampling must provide the following:

- Sampling must be representative of the material selected. One sample is needed for each homogenous (same color and substrate) component and each individual component must be sampled separately. For example, if a door is painted 2 different colors, a sample is needed for each color, or if a wall is half plaster and half drywall, a sample is needed for each substrate.
- A collection of all paint layers from the substrate, and minimize the collection of actual substrate.
- A record of the component, substrate, color and location for each sample taken.
- Sampling results must be provided to the ALMG.

### 15.2 AIR SAMPLING

The department managing the work must provide air sampling for all tasks involving lead containing materials or presumed lead containing materials, in which abrasive blasting is conducted, large scale demolition takes place, or HEPA equipped ventilation is exhausted outside the work-site. Sampling may only be conducted by a qualified individual(s). For a list of ASU approved sampling consultants, see Appendix 3.

At a minimum, a qualified person conducting air sampling will:

- Have previous air sampling experience and work under the supervision of an Industrial Hygiene Professional.
- Possess the ability to calibrate and maintain all air sampling equipment.
- Have an understanding of the National Institutes for Occupational Safety and Health (NIOSH) sampling methodologies.

- Have the ability to answer questions on sampling procedures, laboratory results, and or, instrument readings.

At a minimum, Air Sampling must provide the following:

- A personal breathing zone sample of a worker performing the lead removal operations.
- One air sample which represents an area outside the worksite, no more than 3 feet from the entrance.
- One air sample at the termination of any mechanical ventilation device used in the work-site which is exhausted outside of the worksite.
- One sample that represents the closest occupied area, or adjacent public space.
- Area air sampling must be conducted for every shift HEPA equipped ventilation is used or abrasive blasting is conducted.
- Analytical results of air samples must be provided by an American Industrial Hygiene Association accredited lab within 24 hours of sample collection.
- Air sample results must be provided to the ALMG daily. The ALMG will review all air sample results and contact the department managing the work the next business day if results are at or above 30  $\mu\text{g}/\text{m}^3$ . The results must contain the date, time, duration, associated room number, and a floor plan drawing that identifies sample location.

An area air sample result at, or above 30  $\mu\text{g}/\text{m}^3$ , for any shift, will be considered a breach in dust containment. All surfaces represented in the area sample are considered to be contaminated with lead dust and represent an exposure potential for future or existing building occupants. Work must be stopped immediately and the following must occur:

- The affected area must be HEPA vacuumed, removing all visible dust from all affected surfaces.
- Clearance Dust Sampling must be conducted to ensure lead dust was removed. A re-clean of the area will be required until the University Clearance Criteria is met at the expense of the Contractor. Information on Clearance Dust Sampling is provided in Section 15.0 (C).

### **15.3 CLEARANCE DUST WIPE SAMPLING**

Clearance Dust Wipe Sampling is required at the completion of the Level 2 and 3 tasks in which more than 2 square feet of a lead containing material is impacted. Results of the sampling will determine if the worksite is free of lead dust contamination and if the worksite can be opened for unrestricted access. Sampling will also provide confirmation that an area that was accidentally contaminated was sufficiently cleaned. Sampling may only be conducted by a qualified individual(s). For ASU's approved Sampling Consultant used by the ALMG see Appendix 3.

At a minimum, a qualified person conducting clearance sampling will:

- Have previous sampling experience and work under the supervision of an Industrial Hygiene Professional.
- Have the ability to answer questions on sampling procedures and laboratory results.
- Be completely independent of the contractor conducting the lead work.

In target housing (University Housing that meets criteria and Daycare facilities owned by the University), the person conducting clearance sampling must possess EPA Lead Inspector or EPA Risk Assessor certification.

At a minimum, Clearance Dust Wipe Sampling must provide the following:

- One representative floor dust wipe sample per room, or per every 1000 square foot of floor space for rooms over 1000 square foot in size. Sample locations will represent the areas that have the highest potential for contamination with in the work-site, or areas that have been identified as contaminated.
- One dust wipe sample for every hand contact surface located in the work site, or hand contact surfaces that have been identified as contaminated.
- Clearance dust wipe sampled shall be collected no sooner than one hour from the completion of work. Samples collected within an hour of the completion of work will not be considered accurate representations of actual conditions in the work area.
- Clearance dust wipe sampling shall be conducted after the worksite is HEPA vacuumed by the Contractor and all visible dust is removed and prior to use or occupancy.
- Analytical results of dust wipe samples must be provided by an American Industrial Hygiene Association accredited lab.
- Clearance dust wipe sample results must be provided to the Asbestos/Lead Department for review. The Asbestos/Lead Department will notify the University department the work is conducted in the next business day if area testing results meets the Clearance Criteria, and or, the space can be released for unrestricted access. ASU's Clearance Criteria is listed below.

**Dust Wipe and Soil Sampling Clearance Criteria – 40 CFR 745.227 (e)(8)(viii) – Dust Wipe, 40 CFR 745.227 (h)(4)(i)&(ii) - Soils**

Surface	Clearance Criteria
All interior surfaces (e.g., floors, stair treads)	40 µg/ft <sup>2</sup>
Window Sills	250 µg/ft <sup>2</sup>
All exterior horizontal surfaces extending 20-feet from work-site up to a height of 6-feet (e.g., stairs, pavement, concrete, window sills)	400 µg/ft <sup>2</sup>
Soil Sampling	Drip line or Other Yard Area (Residential) 1200 ppm
Soil Sampling	Play Area 400 ppm

The Contractor conducting lead work on campus shall be responsible for returning the work area to below the appropriate clearance levels. In settings where baseline samples show existing lead concentrations above the clearance level, the contractor must clean the work area to the baseline level or below. If baseline data is used as clearance criteria, the contractor must contact the ALMG **BEFORE** work is conducted to request baseline wipe or soil sampling. Failure to inform the ALMG before work is started will require the use of the listed clearance limits.

Clearance dust wipe/soil sample results above the Clearance Criteria represent surface lead contamination. Any areas that contain surface contamination must remain a restricted lead worksite, until a re-clean is completed and clearance dust wipes/soil are collected by a third-party Sampling Technician and results reviewed for approval by the ALMG.

When submitting results to the ALMG please attach all results to a completed Sample Result Notification Form located in Attachment C.

**NOTE:** Clearance Criteria for lead contamination in “Target Housing” or Child-Occupied Facilities must meet requirements listed in the US Department of Housing and Urban Development (HUD), “Guidelines for the Control of Lead-Based Paint Hazards in Housing.”

## **16.0 LEAD WASTE**

There are comprehensive Federal, State and Local regulations for the management of hazardous waste. These rules apply to all University personnel; from those who initially generate the hazardous waste to those who arrange for waste disposal. The University is regulated as a hazardous waste generator. Strict regulatory requirements apply to labeling, handling, storing and disposing of hazardous wastes. Contact EH&S for this disposal assistance and the policy and protocol at [ehs@asu.edu](mailto:ehs@asu.edu) **NOTE:** Reminder all waste will need to be properly containerized, labeled and remain on ASU property until determination is made through TCLP analysis.

In order to remain compliant with the Resource Conservation and Recovery Act (RCRA) solid waste must be reviewed to determine if it is a regulated waste. In the case of construction debris, there is a potential for lead contamination from lead based paint. Any waste which leaches lead at a rate 5 parts per million or greater is considered to be a hazardous waste.

ASU has determined that there are four types of lead contaminated waste which may be created as a result of maintenance and construction operations. These four types are:

1. Dust – Any material with a surface area of less than 2 square inches, to include but not limited to, paint scrapings, small bits of construction debris, and dust from drilling, sanding, cutting, and the like.
2. Debris – Any material with a surface greater than or equal to 2 square inches in size, to include, but not limited to, Personal Protective Equipment (PPE), rags, wood, construction debris, paper, plastic, scrap metal which is not sent for recycling.
3. Water – Waste water from processes involving the removal of lead based paint or lead contaminated debris, to include, but not limited to, mop water, rinse water.
4. Scrap metal – Any painted metal which is being discarded as a waste, and can be sent to a metal recycling facility, to include, but not limited to, railings, stairs, shutters, doors, etc.

### **Waste Sampling**

Many wastes which are or have the potential to be contaminated with lead must be sampled by an approved Third Party Sampling Technician or by a qualified University employee and be submitted for testing to an EPA accredited lab for Toxicity Characteristic Leaching Procedure (TCLP) analysis. For the purposes of this program, ASU will require testing and analytical for all Water and Debris, and for large volumes of Dust\* on a case by case basis.

ASU’s ALMG requires that the work being performed use an approved laboratory for analysis of the waste material. For sampling, the approved sampling consultants that will be coordinated by the ALMG are located in Appendix 3.

ASU EH&S recommends a representative waste sample be taken and results submitted to the ALMG and EH&S prior to waste generation. By making a waste determination before work starts, the Contractor can make appropriate arrangements for storage and disposal of the waste in advance.

## **Waste Determination**

Once the analytical results are received, a hazardous waste determination must be made by the contractor. A copy of sample results will need to be submitted to the ALMG and EH&S for review. Waste may only be removed from the worksite after EH&S has made a waste determination, based on the analytical results.

Once materials are deemed to be a hazardous waste they must be managed through ASU EH&S at [ehs@asu.edu](mailto:ehs@asu.edu).

If the material is determined by EH&S to be non-hazardous it may be treated as a Municipal Solid Waste, Construction Debris, or Scrap Metal and can be managed and removed by the Contractor. The material cannot be determined to be non-hazardous until ASU's EH&S receives and reviews a copy of the analytical for review and notification of determination is given to the Waste Coordinator (see description below). Only then can the material sampled be treated as non-hazardous.



**APPENDIX 1**

**Initial Lead Project Notification**

ASU Building \_\_\_\_\_ /# \_\_\_\_\_ Floor \_\_\_\_\_ Room \_\_\_\_\_  
Building Contact \_\_\_\_\_ Phone \_\_\_\_\_  
Project \_\_\_\_\_ Phone \_\_\_\_\_  
Representative \_\_\_\_\_  
General Contractor \_\_\_\_\_ Phone \_\_\_\_\_

Scope of Work (including engineering controls):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Start Date \_\_\_\_\_ End Date \_\_\_\_\_ Hours \_\_\_\_\_ am/pm to \_\_\_\_\_ am/pm

Baseline Wipe/Soil Samples Requested: Yes \_\_\_\_\_ No \_\_\_\_\_

Presumed Lead Containing Material Tested? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, who tested the material and what were the results?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Email Completed Form to The Asbestos/Lead Management Group at least 15 days before start – [AsbestosServices@mainex1.asu.edu](mailto:AsbestosServices@mainex1.asu.edu)

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**ASU-EHS USE ONLY**

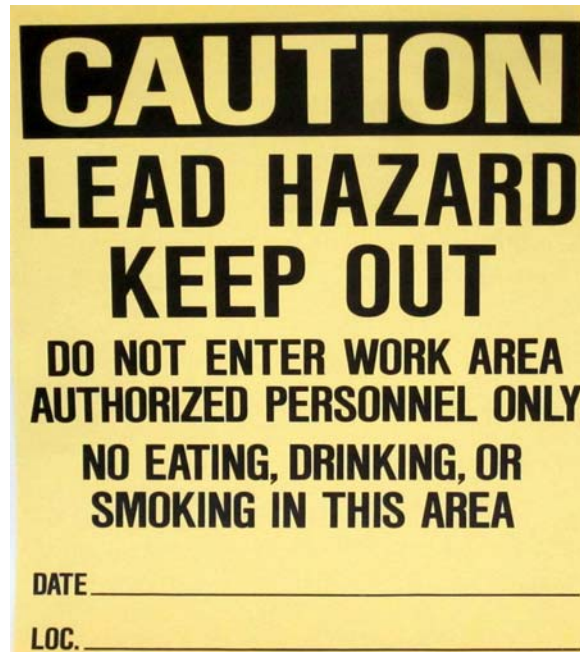
<b>Date Rcd:</b> _____	<b>Lead #:</b> _____
<b>Comments:</b> _____ _____ _____	

**APPENDIX 2**

**ON CAMPUS LEAD WORK SIGN**

Please contact the ALMG at 480-965-7739 for approval. These signs must be used on all lead projects on campus.

The following sign must appear at the worksite any time lead work is conducted.



When conducting an initial exposure assessment or work is above the PEL, the following sign must be displayed:



**APPENDIX 3**

**APPROVED SAMPLING CONSULTANTS**

| ASU's ALMG uses the following Consultants for Lead Sampling:

<b>Contract / Blanket s#</b>	<b>Description</b>	<b>Vendor Name</b>	<b>Type Code</b>	<b>Begin Date</b>	<b>End Date</b>
<u>ADOT13-032629</u>	Environmental Laboratory Services	<b>FIBERQUANT INC</b>	N/A	Open	Open
151301-EC 01	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Adams and Wendt</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
151301-EC 02	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Allen Environmental Services</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
151301-EC 03	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>AMEC Environmental Services</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
151301-EC 04	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Arizona Environmental Specialist</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 05</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Cardno ATC</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 06</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Continental Envirotech</b>	EC		
<b>151301-EC 07</b>	ASU Environmental <b>Consulting</b>	<b>Dominion Environmental</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year

	Services for Asbestos and Lead				extensions
<b>15301-EC 08</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Dunn Environmental</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 09</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>FM Group</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 10</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Four Corners Environmental</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 11</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Hutzel and Associates</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 12</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>JRM Environmental</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 13</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and Lead	<b>Terracon Consultants</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 14</b>	ASU Environmental <b>Consulting</b> Services for Asbestos ( <b>no Lead</b> )	<b>The Greenway Environmental Group</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-EC 15</b>	ASU Environmental <b>Consulting</b> Services for Asbestos and	<b>TRC Environmental Group</b>	EC	3-5-14	3-5-16 w/ possible two (2) one year extensions

	Lead				
<b>151301-AC 01</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>American Abatement</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 02</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>American Technologies Inc</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC-03</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Argus Contracting</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 04</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Arizona Environmental Group</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 05</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Comprehensive Risk Services</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 06</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>D and K Enterprises LLC</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 07</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>East Valley Disaster Services</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 08</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and	<b>ERE dba Response Team 1</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions

	Lead				
<b>151301-AC 09</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Hartford Enterprises</b>	AC		
<b>151301-AC 10</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Interstate Construction Services LLC</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 11</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Kary Environmental Services</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 12</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Native Environmental Services Inc</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 13</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Southwest Hazard Control</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 14</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Spray Systems Environmental</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions
<b>151301-AC 15</b>	ASU Environmental <b>Abatement</b> Services for Asbestos and Lead	<b>Viking Specialty Contracting</b>	AC	3-5-14	3-5-16 w/ possible two (2) one year extensions