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Study Guide for the Lead Abatement Supervisor Certification Exam

California Department of Public Health,
Childhood Lead Poisoning Prevention Branch, Lead-Related Construction Unit

Introduction

The purpose of the certification examination is to determine if the Lead Abatement Supervisor candidates possess the necessary knowledge and abilities associated with performing the Supervisor job duties. This study guide has been developed to help you prepare for the Lead Abatement Supervisor certification examination.

To register for the Lead Abatement Supervisor certification examination, obtain a registration form from CPS HR by calling (916) 263-3624, option 5. CPS HR will provide information regarding examination administration schedules, locations, exam fees, and special accommodations.

You must take the Lead Abatement Supervisor certification examination prior to applying to the California Department of Public Health (CDPH) for certification, and you must also meet the CDPH requirements for training, education, and experience in order to become certified. You may take the exam as many times as you need to in order to pass. However, you must submit a completed re-examination form, and pay the re-examination fee to be rescheduled for a future examination. CDPH recommends that you take the Lead Abatement Supervisor course again if you fail the exam three or more times, but this is not a requirement.

Examination Content Overview

The Lead Abatement Supervisor certification examination contains 100 questions, all written in the multiple-choice format. Each question has four distinct alternatives from which to choose. None of the examination questions are intended to trick the candidates. Although some of the examination questions may seem to have multiple correct responses, candidates should choose the one response that is best from among the four alternatives. You will be allotted three hours in which to respond to all 100 examination questions.

The Lead Abatement Supervisor certification examination assesses candidate competencies in six content areas. The knowledge and abilities assessed by each of the six content areas, as well as the specific references for each of the knowledge and abilities, are described below. It is from these references that the Lead Abatement Supervisor certification examination questions will be based.

Regulatory Requirements

The 15 questions covering this content area require the candidate to demonstrate his/her knowledge of the applicable Federal and State regulatory requirements for lead testing and lead in construction activities. A successful candidate should possess the:

Knowledge of regulations governing the abatement of lead-contaminated dust and soil, and lead-based paint. *(HUD Guidelines: Chapter 11, 12, and 13; 17 CCR 36000 and 17 CCR 36100)*

Knowledge of how and when to construct and/or obtain a suitable and secure on-site hazardous waste storage area/facility including accumulation quantities and dates. *(HUD Guidelines: Chapters 8, 10, and 12; 22 CCR 66262.34 and 22 CCR 66262.35)*

Knowledge of how to safely dispose of water used at an abatement project. *(HUD Guidelines: Chapter 10)*

Knowledge of waste handling and characterization procedures and how to interpret the results. *(HUD Guidelines: Chapter 10; 22 CCR 66262 [Chapter 12, Article 1])*

Knowledge of requirements associated with the CDPH Abatement Notification (including documentation, posting, and filing requirements). *(17 CCR 36100)*

Knowledge of the Federal and Cal/OSHA Lead Written Compliance Program requirements. *(HUD Guidelines: Chapter 9; 8 CCR 1532.1)*

Knowledge of CDPH Work Practice Standards. *(17 CCR 36050 and 36100)*

Knowledge of CDPH Definitions, Roles of Certification Disciplines, and the requirements for certification. *(17 CCR 35001 – 35050, 17 CCR 36000, and 17 CCR 36100)*

Knowledge of Federal and Cal/OSHA Lead in Construction Exposure Assessment Requirements. *(8 CCR 1532.1; HUD Guidelines: Chapter 9 and Appendix*

13.4)

Knowledge of industry terms and definitions (e.g., abatement, interim controls, etc.). *(Cal/OSHA; HUD Guidelines: Chapters 11, 12, and Glossary)*

Knowledge of if, and when, local regulations prevail. *HUD Guidelines: Chapter 1)*

A. Health and Safety

The 20 questions covering this content area require the candidate to demonstrate his/her knowledge of the State and Federal regulations regarding worker health and safety practices. A successful candidate should possess the:

Knowledge of the pathways of lead exposure in children. *(HUD Guidelines: Chapter 1)*

Knowledge of the pathways of lead exposure in adults. *(HUD Guidelines: Chapter 9; 8 CCR 1532.1)*

Knowledge of the symptoms, diagnosis, social impacts, and medical treatment for lead poisoning in adults and children. *(HUD Guidelines: Chapter 9; 8 CCR 1532.1)*

Knowledge of the ventilation requirements when performing chemical removal. *(HUD Guidelines: Chapters 9 and 12)*

Knowledge of how and when to perform lockout/tagout of electrical and mechanical equipment to ensure deactivation of electrical and mechanical systems while work is being performed. *(8 CCR 1760 and 8 CCR 2320.4)*

Knowledge of ways in which workers inadvertently can transport "take home" lead away from the worksite. *(HUD Guidelines: Chapter 9; 8 CCR 1532.1)*

Knowledge of worksite hygiene requirements designed to minimize the amount of "take-home" lead. *(HUD Guidelines: Chapter 9; 8 CCR 1532.1)*

Knowledge of Hazardous Communications regulations. *(8 CCR 1509, 8 CCR 3203, and 8 CCR 5194)*

Knowledge of how to read and interpret Material Safety Data Sheets (MSDS). *(8 CCR 1509, 8 CCR 3203, and 8 CCR 5194)*

Knowledge of how to implement an employee Injury and Illness Prevention Program (IIPP). *(8 CCR 1509 and 8 CCR 3203)*

Knowledge of Cal/OSHA worksite safety requirements. *(HUD Guidelines: Chapter 8; Cal/OSHA Construction Safety Orders: Sections 1669 – 1675; 8 CCR 1532.1, 8 CCR 1644, and 8 CCR 3620 – 3627; 17 CCR)*

Knowledge of when and how to properly use personal protective equipment (such as gloves, respirators, and safety goggles). *(HUD Guidelines: Chapters 9, 12, and 14; 8 CCR 1532.1, 8 CCR 3203, and 8 CCR 5144)*

Knowledge of procedures used to safely lift and transport heavy objects. *(Cal/OSHA Construction Safety Orders: Section 1510)*

Knowledge of how to properly and safely use various industrial soaps and cleaning solvents. *(8 CCR 3203 and 8 CCR 5194)*

B. Sample Collection and Analysis

The 10 questions covering this content area require the candidate to demonstrate his/her knowledge of the appropriate methods of collecting samples and testing for the presence of lead. Candidates must also demonstrate the ability to calculate sampling rates and interpret sampling results. A successful candidate should possess the:

Knowledge of how and when to operate employee personal sampling pumps in accordance with Cal/OSHA regulations and NIOSH sampling and analysis methods. *(HUD Guidelines: Chapter 9 and Appendix 13.4; NIOSH 7082; 8 CCR 1532.1)*

Knowledge of the procedures for calibrating air sampling pumps using a rotometer. *(HUD Guidelines: Chapter 9 and Appendix 13.4)*

Skill to accurately calculate the flow rate for an air sample pump by using the average of the pre-sampling and post-sampling calibration flow checks. *(HUD Guidelines: Chapter 9 and Appendix 13.4)*

Knowledge of NIOSH requirements for minimum and maximum employee air monitoring sampling volumes. *(HUD Guidelines: Appendix 13.4)*

Knowledge of the various tests that laboratories use to detect the presence of lead in samples. *(HUD Guidelines: Appendices 13.1 - 13.4)*

Knowledge of the proper chain of custody protocols when sending samples out to be tested. *(HUD Guidelines: Chapter 5 sample forms)*

Ability to interpret air sampling results to determine the workers' time weighted average (TWA) exposure to airborne lead. *(HUD Guidelines: Chapter 9 and Appendix 13.4)*

Knowledge of when and how to review and interpret lead hazard evaluation results. *(HUD Guidelines: Chapters 3, 4, 5, 7, and Appendix 1; 17 CCR 35035 – 35037)*

Knowledge of when and how to collect pre-work background samples. *(HUD Guidelines: Chapters 11, 12 and 15)*

C. Abatement Options

The 30 questions covering this content area require the candidate to demonstrate his/her knowledge of various abatement methods and their limitations. A successful candidate should possess the:

Knowledge of the different types of enclosure systems, and when it is appropriate to use them. *(HUD Guidelines: Chapter 12)*

Knowledge of the different types of fastening materials (nails, screws, bolts, etc.) and seals (such as caulks) used to attach an enclosure, and when it is appropriate to use them. *(HUD Guidelines: Chapter 12)*

Knowledge of the different types of substances to chemically remove lead-based paint, their properties, and how and when they can be safely used. *(HUD Guidelines: Chapter 12)*

Knowledge of when and how to use a heat gun to remove lead-based paint. *(HUD Guidelines: Chapter 12)*

Knowledge of how and when to perform Substrate Compatibility Tests to ensure that the encapsulant material is compatible with the substrate and will adhere correctly. *(HUD Guidelines: Chapter 13)*

Knowledge of the different types of encapsulants and when it is appropriate to use them. *(HUD Guidelines: Chapter 13)*

Knowledge of how and when to wet sand and/or wet scrape materials to remove lead-based paint. *(HUD Guidelines: Chapters 4 and 11)*

Knowledge of when and how to apply different types of paint based on the substrate structural integrity and the paint's ability to adhere to the substrate. *(HUD Guidelines: Chapter 11)*

Knowledge of the different methods used to treat friction and impact surfaces, and when it is appropriate to apply them. *(HUD Guidelines: Chapter 11)*

Knowledge of when and how to plane down doors and window sashes using wood planes, files, and sandpaper. *(HUD Guidelines: Chapter 11)*

Knowledge of building component nomenclature. *(HUD Guidelines: Chapters 7, 11, 12, and Appendix 7.3)*

Knowledge of abatement methods prohibited by HUD and Federal, State, and local regulations. *(HUD Guidelines: Chapters 11 and 12)*

Knowledge of how and when to use HEPA vacuum-assisted power tools (including abrasive blasters, needle guns, sanders, and grinders). *(HUD Guidelines: Chapters 9 and 12)*

Knowledge of the methods, procedures, hazards, and limitations associated with abatement lasting less than 20 years (interim control) and those lasting at least 20 years (permanent abatement). *(HUD Guidelines: Chapters 6, 11, 12, 13, and 14)*

Knowledge of when and how to conduct soil abatement and interim controls. *(HUD Guidelines: Chapters 5, 11, and Appendix 13.3)*

D. Containment, Cleanup, and Clearance

The 10 questions covering this content area require the candidate to demonstrate his/her knowledge of the methods used to construct and disassemble various containment and barrier systems. A successful candidate should possess the:

Knowledge of how to properly construct and disassemble work area containments and various chambers (such as decontamination chamber, clean room, etc.). *(HUD Guidelines: Chapters 8 and 12)*

Knowledge of how and when to build a containment dam to restrict the flow of lead-contaminated water from the worksite. *(HUD Guidelines: Chapter 8 Worksite Preparation)*

Knowledge of how and when to install a negative pressure ventilation system to minimize the migration of lead-contaminated dust outside a containment area. *(HUD Guidelines: Chapters 8 and 12)*

Knowledge of how and when to erect site barriers to restrict occupants, neighbors, and any other unauthorized persons from entering the containment area and/or abatement site. *(HUD Guidelines: Chapter 8; 8 CCR 1532.1)*

Knowledge of approved cleaning patterns (such as ceiling to floor, back to front, etc.) and approved cleaning procedures (such as vacuum, wet wash, vacuum) for cleaning work areas including visual inspections and timing (e.g., one hour following abatement). *(HUD Guidelines: Chapter 14)*

Knowledge of when and how to prepare for a third party clearance inspection including the required standards and protocol. *(HUD Guidelines: Chapter 15)*

E. Administrative Duties

The 15 questions covering this content area require the candidate to demonstrate his/her knowledge and abilities associated with the administrative requirements for lead abatement projects. A successful candidate should possess the:

Knowledge of the Cal/OSHA requirements for employee medical and air monitoring testing results including employee notification, test frequency, and record retention. *(HUD Guidelines: Chapter 9; 8 CCR 1532.1)*

Knowledge of worker training and certification requirements including record keeping. *(8 CCR 1532.1)*

Knowledge of employee medical removal criteria and requirements. *(8 CCR 1532.1)*

Knowledge of the requirements for first aid and CPR. *(Cal/OSHA Construction Safety Orders: Sections 1510 and 1512)*

Knowledge of the Cal/OSHA requirements for respiratory fit testing including test frequency and record retention. *(8 CCR 5144)*

Knowledge of the communication requirements to occupants, tenants, owners, neighbors, etc. *(40 CFR 745; 8 CCR 1532.1; local regulations)*

Knowledge of how to develop the written Scope of Work, and of the items which must be included. *(HUD Guidelines: Appendix 7.3)*

Knowledge of the employee protections required when exposures exceed the Action Level. *(8 CCR 1532.1)*

Skill to develop a Written Compliance Plan where exposed to lead. *(8 CCR 1532.1)*

Knowledge of how to develop an Abatement Work Plan, and of the items which must be included. *(17 CCR 36100)*

Ability to determine the sequence and scheduling of work to develop project timelines. *(HUD Guidelines: Chapters 3, 8, 15, and Appendix 7.3)*

Passing Score Information

Your score on the Lead Abatement Supervisor certification examination will be based on the number of questions you answer correctly. Each test question is worth one point towards your overall score. You will receive an overall score and a separate score for each of the primary examination content areas. You will not be penalized for incorrect answers or guessing, so it is to your advantage to attempt to respond to all of the examination questions.

The passing score on the Lead Abatement Supervisor certification examination was established by using a criterion-referenced approach. This approach involves setting the passing score on the basis of minimum standards for competent practice (i.e., job requirements) rather than on relative candidate performance. A panel of Subject Matter Experts was used to determine the minimum standards (i.e., passing scores) for the Lead Abatement Supervisor certification examinations.

During the examination, if you feel a test question is inappropriate or problematic, you may document your concerns on the test comment form that will be provided to you at the test site. All candidate comment forms will be reviewed by subject matter experts and occupational testing specialists to determine if they have merit.

Examination Preparation Strategies

To study for the California Lead Abatement Supervisor Certification Exam, you should focus on learning the principles and practices of lead poisoning prevention, as well as gaining a broad understanding of the content areas listed in this study guide. The focus of your study should be on the knowledge and abilities needed to effectively perform the duties of a newly certified Lead Abatement Supervisor. Use the references listed

in this study guide to study for the exam. Make sure you fully understand the basic terms associated with each of the examination content areas. A glossary of some of the more common lead abatement terms is included below.

If you have further questions regarding your application for certification or the exam requirements, call the Lead-Related Construction Information Line at 1-800-597-LEAD (outside California 510-869-3953) or visit **www.cdph.ca.gov/programs/CLPPB** and click on "Lead Related Construction Program."

Glossary List for Lead Abatement Supervisor Certification Examination

Abatement: Any set of measures designed to reduce or eliminate lead hazards or lead-based paint from a building or structure.

Acidic: Describes a chemical compound with a pH of less than 7 that is capable of reacting with a base to form a salt. Has caustic properties. See Caustic.

Action Level (AL): The contaminant level at which medical surveillance and other measures are required by Cal/OSHA.

Air Quality Management District (AQMD): A regional agency with legislated authority to develop and enforce regulations for the control of air pollution in its jurisdiction.

Aliquot: A representative sub-sample of a field sample, or a laboratory sample.

Alkali: A compound that has the ability to neutralize an acid and form a salt. Also called a base.

Anemometer: An instrument that measures air speed.

Anodic Stripping Voltametry: An analytical method used to detect the presence of lead in various substances. It is typically used by mobile laboratories, and requires extensive sample preparation.

Apron: An interior window system component that is located below the lower window casing.

Atomic Absorption: The most common laboratory analysis method used to detect lead in samples.

Balusters: A thin, vertical stair system component that supports the railing.

Bubble Buret: A primary calibration standard for air sampling pumps. Also called a soap-bubble meter.

Calibration: Setting the flow rate of an air sampling pump by comparison with a secondary or primary reference standard.

Cal/OSHA: The California regulatory agency that enforces worker health and safety laws.

Carcinogen: A substance that causes cancer.

Caustic: A skin irritant capable of burning, corroding, or destroying living tissue.

Cellulose Ester: Material used in particulate air filters, which typically can trap particles larger than 0.3 microns.

Chain of Custody: A sample tracking form that is signed by the sample collector, the sample transporter, and the laboratory to ensure that the sample was not subject to tampering prior to analysis.

Chair Rail: An interior wall system component that separates the lower wall from the upper wall.

Chalking: A process by which the outer layers of lead-based paint turn into a powder from exposure to the weather.

Chelation: The use of drugs to remove lead from body tissues by binding the lead with other compounds that are excreted.

Containment: A system, process, or barrier used to contain lead hazards inside a work area.

Deciliter: A volume measurement equal to one tenth (1/10) of a liter.

Deionized Water: Water from which ions have been removed through an ion exchange process.

Decontamination: The process of removing lead dust and debris from workers, worker's clothing and shoes, personal protection equipment, and tools before leaving a containment area.

Department of Public Health (CDPH): The California State agency that accredits training providers and certifies lead-related construction personnel, and enforces the Title 17 lead-related construction regulations.

Department of Toxic Substances Control (DTSC): State of California body that regulates hazardous materials.

Elastomeric: A coating that has elastic, resilient properties.

Elevated Blood Level (EBL): Blood lead concentration measured at or above 20 µg/dL, or two measurements between 15 µg/dL and 20µg/dL taken at least 30 days apart.

Encapsulant: An elastomeric coating used to cover lead-based paint

Encapsulation: The process of applying encapsulants over lead-based paint.

Enclosure: Rigid construction materials mechanically fastened to the substrate of a wall to form a barrier from lead-based paint.

Engineering Controls: A procedure, process, or barrier used to reduce worker exposures to hazardous substances.

Environmental Protection Agency (EPA): The federal agency that regulates environmental contaminants.

Exterior Horizontal Window Surfaces (trough, well): The parts of the window sill that receive both the upper and lower window sashes when they are both lowered, and may also consist of the portion of the window sill that is accessible from the exterior when the window is closed.

Fascia: Usually decorative board between the top of a wall and the eves of a building.

Fahrenheit: A temperature scale in which water boils at 212 degrees above the zero point of the scale and water freezes at 32 degrees above the zero point of the scale.

Flame Atomic Absorption Sprectrophotometry (FAAS): A laboratory analytical method typically used to measure lead in paint samples. FAAS works by passing light from a heated element of the substance of interest through the sample, and measuring the amount of light absorbed.

Friction Surface: Components such as door jambs that are subject to deterioration by scraping and grinding against other components.

Fume: Small airborne particles that are formed when a hot metal vapor condenses.

Glacial Acetic Acid: An acid recommended in the HUD Guidelines to neutralize chemical stripping agents that are alkali or bases before applying new paint.

Graphite Furnace: A laboratory analytical method, more sensitive than FAA, typically used to measure lead in water samples.

HAZWOPER: Hazardous waste operations and emergency response training required by OSHA under 29 CFR 1910.10 and 8 CCR 5192. This training applies to workers at hazardous waste cleanup sites and TSDF's, and emergency responders. The regulation requires Health and Safety programs, site evaluation, exposure control, training, medical surveillance, air monitoring, decontamination procedures, and on-site and off-site emergency response plans.

High Efficiency Particulate Air (HEPA) Filter: A filter that is 99.97% efficient at capturing particles of 0.3 microns or greater.

HUD Guidelines: A publication by the Federal Office of Housing and Urban Development that describes how to control lead-based paint hazards in public housing.

HVAC: A building's heating, ventilation, and air conditioning system.

Hydroblasting: Use of high-pressure (typically >10,000 psi) water jets to remove paint.

Impact Surface: Any surface that is subject to repeated impacts or friction from other objects, resulting in the deterioration of the paint.

Inductively Coupled Plasma: A laboratory analytical method used to identify multiple types of metals in a sample.

Interim Controls: Procedures designed to control lead-based paint hazards that will last less than 20 years.

Isoamyl Acetate: A substance with a strong odor, often called "banana oil," used to accomplish qualitative fit tests on respirators.

Kilogram: Metric unit of weight, equal to 1000 grams or 2.2 pounds.

Lead Hazard Evaluation: An on-site investigation, for compensation, of lead-based paint or lead-based paint hazards such as a lead inspection, risk assessment, or clearance inspection.

Liability: Designated obligation according to law; legally responsible for actions or outcome.

Lockout/Tag-out: Part of the process by which electrical circuitry is de-energized or made inaccessible, locked out, and then labeled with a notification tag.

Manometer: A gauge used to measure the pressure within a containment compared to outside the containment.

Material Safety Data Sheet (MSDS): A description prepared by a product manufacturer that describes the composition and physical or chemical hazards associated with that product.

MCEF: Mixed cellulose ester filter used to collect air samples for laboratory analysis.

Medical Surveillance: A program required by 8 CCR 1532.1 that requires regular monitoring of blood lead levels and other medical information.

Methylene Chloride: A chemical compound found in some paint strippers that is not recommended for use by HUD because it is a cancer-producing agent.

Micrograms: A unit of measurement that is equal to one millionth (1/1,000,000) of a gram.

Milligram: Unit of measurement that is equal to one thousandth (1/1000) of a gram.

Mullion: A slender, vertical component that separates units of a window or door.

National Emissions Standards for Hazardous Air Pollutants (NESHAP): Developed in response to the clean air act (CAA) by the US EPA to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health.

Neoprene: A synthetic rubber material often used in protective gloves.

Newel Post: An interior vertical component at the base of a stairway.

NIOSH: The National Institute for Occupational Safety and Health, the federal agency that performs worker health and safety research and approves respirators.

Paint Stabilization: An interim control measure consisting of: (1) wet scraping loose, chipping paint; (2) priming; and (3) re-painting the surface with new paint.

Particulate (airborne): Bits of solid or liquid matter suspended in the air, in the micron size range. HEPA filters remove particles larger than 0.3 microns.

Parting Bead: Thin strip of wood or metal used to separate window sections.

Permissible Exposure Limit (PEL): The contaminant regulatory level that is enforced by Cal/OSHA.

Personal Protective Equipment (PPE): Worker clothing and equipment, such as gloves and respirators, designed to reduce worker exposure to hazardous substances.

Plinth Block: A decorative interior component located in the top corners of window or door casings.

Polychlorinated Biphenyls (PCBs): PCBs are a group of chemicals that were widely used in cooling oil in large electrical transformers. PCBs are carcinogens, cause reproductive abnormalities, systemic diseases, and developmental deficits.

Polypropylene: A type of plastic sheeting used for containment.

Polyvinyl Chloride (PVC): A rigid plastic material commonly used to make pipe.

Powered Air Purifying Respirator (PAPR): A respirator with mechanical or chemical filters and a pump to provide positive pressure.

Protection Factor (PF): The amount of protection a specific respirator will provide against a contaminant, calculated by taking the ratio of the contaminant level outside the respirator to the level inside the facepiece.

Quantitative Fit Test: A test of the protection factor of a respirator by measuring the concentration of a contaminant outside and inside of a mask.

Resource Conservation and Recovery Act of 1976 (RCRA): Amendment to the Solid Waste Disposal Act of 1965 that regulates the disposal of hazardous wastes.

Respirator: A facepiece or mask used to protect the worker from inhaling hazardous materials.

Rotometer: A secondary standard that is used to set air sampling pump flow rates.

Scope of Work: A description of the work and processes that will be performed as part of a contract.

Self Contained Breathing Apparatus (SCBA): A respirator that has its own supply of air in a tank carried by the wearer.

Soluble Threshold Limit Concentration (STLC): The concentration threshold for the soluble portion of a waste. Concentrations of a compound or element above the threshold make that waste hazardous. The contaminant concentrations are listed in 22 CCR 66261.24.

Stringer: A structural stair system component that is attached to the stair treads and risers.

Stringent: The strictness of a regulation or standard.

Substrate: Surface upon which paint or varnish is (or may be) applied.

Tagout: See Lockout/Tag-out.

Title X: The Residential Lead-Based Paint Hazard Reduction Act passed by Congress in 1992.

Title 17: The CDPH lead-related construction regulation.

Title 22: The California Department of Toxic Substances Control (DTSC) hazardous materials handling and disposal regulations.

Tort: A wrongful act other than a breach of contract which may result in damage claims or an injunction.

Total Threshold Limit Concentration (TTLC): The concentration threshold of a compound or element in a waste. Concentrations above the threshold make that waste hazardous. The contaminant concentrations are listed in 22 CCR 66261.24.

Toxicity Characteristic Leaching Procedure (TCLP): The TCLP is the federal waste extraction procedure used to determine if a waste is hazardous. It simulates conditions that cause waste to leach in landfills. The waste is considered hazardous if the extract or leachate contains a listed compound or element in a concentration that exceeds the maximum contaminant concentration.

Trigger Task: A task listed in the Cal/OSHA Construction Safety Orders for Lead for which airborne exposure is expected to exceed the PEL.

Tri-Sodium Phosphate (TSP): A high phosphate cleaning surfactant that is mixed with water and used to clean-up lead dust.

Uniform Hazardous Waste Manifest: The shipping document that is required by Cal/EPA and the federal EPA which identifies the quantity, composition, origin, and routing of hazardous waste as it is transported from the site at which the waste was generated to the disposal facility.

Ventilation: An engineering control that supplies non-contaminated air into a containment.

Vicarious Liability: An employer is legally responsible for the omissions or wrongful behavior of their employees.

Volatile: A substance that evaporates very quickly.

Waste Extraction Test (WET): The California waste extraction procedure used to determine if a waste is hazardous. This procedure simulates conditions that cause waste to leach in landfills. The waste is considered hazardous if the extract or leachate contains a listed compound or element in a concentration that exceeds the STLC.

X-Cut Test: A test to determine the effectiveness of the application of an encapsulant.

XRF: An X-ray Fluorescence instrument used for detecting lead-based paint.

Zinc Protoporphorin (ZPP): A chemical test that is performed at the same time as a blood lead level test. The level of ZPP present is an indicator of lead absorption over 3 to 4 months.