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ATLANTIC DIVISION NAVFACENGCOSINST 10360.1A
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ATLANTIC DIVISION NAVFACENGCOS INSTRUCTION 10360.1A

From: Commander, Atlantic Division, Naval Facilities Engineering
Command

Subj: COMMAND LEAD POLICY

Encl: (1) THE COMMAND LEAD POLICY FOR DESIGN, CONSTRUCTION, RENOVATION,
REPAIR, AND MAINTENANCE OF FACILITIES

1. Purpose. To provide comprehensive policy on lead issues by focusing on three major concepts:

- a. Worker and occupant protection;
- b. Compliance; and
- c. Wastestream Characterization.

2. Cancellation. LANTNAVFACENGCOS Instruction 10360.1 of 17 MAY 1994.

3. Applicability. Compliance with and utilization of this instruction are mandatory for all projects involving the design, construction, renovation, repair, maintenance, and/or demolition of Navy and Marine Corps facilities. In those states and/or localities having residential or public/commercial building abatement regulations which are more stringent than the requirements set forth in this instruction, then limits established by the respective state and/or locality shall be applied. Therefore, it shall be the responsibility of each facility to determine the specific lead regulatory requirements and acceptable procedures currently required in the respective state and/or locality where the work will be performed. Overseas activities shall comply with Final Governing Standards (FGSS) as established for respective countries.

4. Scope. Enclosure (1) applies to all component activities of the Atlantic Division and is geared more for non-residential than residential projects (although residential work is addressed). Work in Navy family housing shall comply with all residential recommendations, policies, and legislation for lead-based paint as set forth by the Department of Housing & Urban Development (HUD) and local and state governments. All technical questions on how to proceed in Navy-owned or operated family housing should be directed to the Navy Family Housing LBP Hotline at (800) 645-4761.

5. Policy. The Command policy is to actively support and aggressively pursue all actions that will identify, evaluate, and control lead hazards during design, construction, renovation, repair, and maintenance of facilities.

6. Background. New regulations for the identification of residential lead-based paint hazards, licensing of individuals, work practices, and the management of wastes containing lead-based paint have been promulgated since the original instruction was drafted in May 1994. This revised instruction provides information and guidance on implementation of those new requirements.

M. H. CONAWAY
VICE COMMANDER

Subj: COMMAND LEAD-BASED PAINT POLICY

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THE COMMAND LEAD POLICY
FOR DESIGN, CONSTRUCTION, RENOVATION, REPAIR,
AND MAINTENANCE OF FACILITIES

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION,
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA

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1. References

A. 40 CFR Parts 260-261, Resource Conservation and Recovery Act (RCRA) Solid and Hazardous Waste Regulations, as amended

B. 40 CFR Part 745, Toxic Substances Control Act (TSCA) regulations for Lead

C. EPA Office of Solid Waste Memo "Regulatory Status of Waste Generated by Contractors and Residents from Lead-Based Paint Activities Conducted in Households" (31 Jul 00)

D. EPA Office of Pollution Prevention and Toxics Final Report on "Applicability of RCRA Disposal Requirements to Lead-Based Paint Abatement Wastes" (Mar 93)

2. Definitions

A. Abatement. Abatement is defined as any set of measures designed to permanently eliminate lead-based paint hazards in accordance with standards established by appropriate federal agencies. Abatement includes such items as: the removal of lead-based paint and lead-contaminated dust, the permanent containment or encapsulation of lead-based paint, the replacement of lead-based painted surfaces or fixtures, and the removal or covering of lead contaminated soil; and all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.

B. Accessible Surface. An accessible surface is defined as an interior or exterior surface painted with lead-based paint that is accessible for a young child to mouth or chew.

C. Certified Personnel. Certified personnel is defined as a contractor, inspector, or supervisor who has completed a training program accredited by the appropriate federal agency and has met any other requirements for certification or licensure established by such agency or who has been certified by any state through a program which has been found by such federal agency to be at least as rigorous as the federal certification program; and workers or designers who have fully met training requirements established by the appropriate federal or state agency.

D. Containment. Containment is defined as anything that stops lead-contaminated dust from spreading beyond the work area to non-work areas. There are many degrees of containment, ranging from simple plastic sheeting on the floor surrounding a small work area to a fully sealed dust room. Some types of containment are more effective than others. For example, a reusable drop cloth is not considered effective because it can trap and hold dust and paint chips, and can transport lead-contaminated dust from one job site to another.

E. Deteriorated Paint. Deteriorated paint is defined as any interior or exterior paint that is peeling, chipping, chalking, or cracking, or any paint located on an interior or exterior surface or fixture that is damaged or deteriorated.

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F. Friction Surface. A friction surface is defined as an interior or exterior surface that is subject to abrasion or friction, including certain window, floor, and stair surfaces.

G. Hazardous Waste. Hazardous waste is defined as solid waste which either exhibits the characteristics identified in 40 CFR 261 (Subpart C) and/or is identified as a "listed" hazard in 40 CFR 261 (Subpart D). Wastestreams leaching lead equal to or greater than 5 mg/L (milligrams per liter) or 5 ppm (parts per million) as measured by laboratory testing (i.e., EPA Method 1311 Toxicity Characteristic Leaching Procedure [TCLP]) constitute a hazardous waste. The management, transportation, and disposal of hazardous waste is regulated by the Environmental Protection Agency (EPA) under Subtitle C of the Resource Conservation and Recovery Act (RCRA) (Reference A) and as implemented by respective state and local authorities.

H. Heterogeneous Wastestream. A heterogeneous wastestream is defined as any total wastestream consisting of items, objects, components, materials, and/or areas which are dissimilar in composition, or which form a complex combination (e.g., an area designated as a total wastestream which contains window frames, doors, bricks, cinder blocks, cement, steel or wood structural members, fiberglass insulation, etc.).

I. Homogeneous Wastestream. A homogeneous wastestream is defined as any total wastestream consisting of items, objects, components, materials, and/or areas which are alike or similar in composition (e.g., a drum containing lead-based paint chips, paint sludge, and contaminated blasting grit), or which form a simple combination (e.g., windows and window frames or drywall and paint chips).

J. Impact Surface. An impact surface is defined as an interior or exterior surface that is subject to damage by repeated impacts, for example, certain parts of door frames.

K. Lead-Based Paint (LBP). Lead-based paint is defined as a paint or other surface coating that contains lead equal to or exceeding 1.0 milligram per square centimeter or 0.5 percent or 5,000 parts per million (ppm) by dry weight.

L. Lead-Based Paint Contaminated Wastestream. A lead-based paint contaminated wastestream is defined as a total wastestream which includes any item, object, or structure containing concentrations of lead in paint equal to or exceeding 1.0 milligram per square centimeter or 0.5 percent or 5,000 parts per million (ppm) by dry weight.

M. Lead-Based Paint Hazard. A lead-based paint hazard is defined as any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate federal agency.

N. Lead-Contaminated Dust. Lead-contaminated dust is defined as surface dust in residential structures that contain an area or mass concentration of lead in excess of levels determined by the appropriate federal agency to pose a threat of adverse health effects in pregnant women or young children.

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O. Lead-Contaminated Soil. Lead-contaminated soil is defined as bare soil on residential real property (i.e., real property on which there is situated one or more residential structures used or occupied, or intended to be used or occupied, in whole or in part, as the home or residence of one or more persons) that contains lead at or in excess of the levels determined to be hazardous to human health by the appropriate federal agency.

P. Nonhazardous Waste. A nonhazardous waste is defined as a solid waste which neither exhibits the characteristics of a hazardous waste identified in 40 CFR 261 (Subpart C), nor is it identified as a "listed" hazard in 40 CFR 261 (Subpart D). The management and disposal of nonhazardous waste is regulated by the Environmental Protection Agency (EPA) under Subtitle D of the Resource Conservation and Recovery Act (RCRA) (Reference A) and as implemented by respective state and local authorities. For purposes of this instruction, the terms solid waste and nonhazardous waste will be used interchangeably.

Q. Paint With Lead (PWL). Any paint that contains lead as determined by the testing laboratory using a valid test method. The requirements of this section do not apply if no detectable levels of lead are found using a quantitative method for analyzing paint using laboratory instruments with specified limits of detection (usually 0.01%). An X-Ray Fluorescence (XRF) instrument is not considered a valid test method.

R. Representative Sample. A representative sample shows the average value of the whole (i.e., total wastestream) that is being sampled. In practical terms, this can be achieved by obtaining a composite sample based on the proportional size/volume of each component that will make up the wastestream. Guidance on preparation of representative samples for homogeneous and heterogeneous wastestreams is provided in Appendix A and Appendix B, respectively.

S. Residence/Residential Structure. A residence or residential structure is defined as any single-family house, apartment building, public housing, or military barracks, or other structure serving as DoD family housing, including all child-care facilities.

T. Solid Debris. Solid debris is defined as any item such as old woodwork, plaster, windows, doors, and similar bulky components, or combination thereof.

U. Solid Waste. Although the regulatory definition of solid waste includes both hazardous and nonhazardous wastes, for purposes of this instruction, the terms solid waste and nonhazardous waste are used interchangeably to indicate a waste that is not hazardous.

V. Target Housing. Target housing is defined as any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child age 6 years or younger resides or is expected to reside in such housing for the elderly or persons with disabilities), or any 0-bedroom dwelling.

W. Total Wastestream. A total wastestream is defined as the entire object, series, or "universe" thereof slated for demolition and/or disposal (i.e., all of the solid waste plus all of the hazardous waste).

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3. Evaluation and Control

A. All projects involving paint with lead or lead-based paint shall be evaluated for compliance with all state and local requirements as appropriate. Factors determined to hinder such compliance shall be addressed and remedied as necessary to uphold current environmental standards.

B. All painted surfaces that will be impacted by the project shall be evaluated for lead. Examples of such areas include all painted structures and surfaces and coatings on steel structures and fuel lines. Any paint applied prior to 1980 shall be assumed to contain lead, unless or until screening by laboratory testing determines otherwise. An XRF analyzer can be used for a positive screen only (i.e., to confirm that lead-based paint is present). An XRF cannot be used to prove paint with lead is not present (negative screen). For purposes of construction projects, paint is identified as containing lead if any levels are present as determined by a valid detection limit (usually 0.01%). Negative or inconclusive XRF results require paint chip sampling and analysis. Soil and wipe samples shall be obtained as necessary to identify potential lead hazards as applicable to the project. All paint, soil, and wipe sampling criteria shall be in accordance with applicable current ASTM, EPA, and HUD guidelines. The extent to which lead actually exists as a factor in all facilities management projects involving construction, renovation, repair, maintenance, and/or demolition shall be determined by certified personnel (only required for projects involving housing at the time of this writing) in accordance with the following concerns and guidelines:

(1) Ensuring adequate protective measures and controls for worker and general population safety. Requirements for the implementation of such measures and controls shall be determined by sampling performed. Current OSHA requirements shall be recognized as the prevailing authority on issues related to the protection of workers and the general population.

(2) Minimizing and controlling the generation of potential hazardous wastes. Current requirements as set forth in References A and B shall be recognized as the prevailing authority on waste disposal issues. In addition, all commands and activities shall incorporate applicable state and local program requirements into project scopes and designs.

(3) Continuing to maintain existing facilities in operational conditions with limited maintenance condition and operation resources.

(4) Maintaining adequate controls for the protection of workers and the general population from the risks of lead exposure. For example, the use of dust control methods, negative air pressure, protective sheeting/shielding or other containment techniques, cleanup measures, etc. shall be employed and maintained as necessary in all projects involving lead including measures that will be taken during the work to protect the building occupants.

(5) The release of hazardous dust and debris to the environment must be controlled. Potential lead-based paint hazards may be reduced by minimizing or eliminating airborne particulates and by containing and collecting debris. Work controls may be necessary due to local regulations on fugitive dust and other emissions.

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C. Dust Standards.

(1) For sensitive work such as in family housing, child care facilities, kitchens, etc., surface wipe sample results collected inside and outside the work area should be less than 40 micrograms per square foot on floors, less than 250 micrograms per square foot on interior window sills, and less than 400 micrograms per square foot in window troughs.

(2) For work in administrative buildings or the conversion of industrial lead work areas (e.g., lead welding, firing ranges, etc.) into non-industrial work areas open for public access, surface wipe sample results collected inside and outside the work area should be less than 200 micrograms per square foot on floors or horizontal surfaces.

(3) Lead control areas in industrial facilities should be cleared of all visible dust and debris.

(4) For lead-based paint hazard abatement work, surface wipe and soil sampling shall be conducted and clearance determinations made according to the work practice standards presented in Reference B.

The dust lead level must be less than the applicable standard for the surface to pass clearance. Clearance standards are used to evaluate the effectiveness of cleaning following work that disturbed lead or a lead hazard abatement. If a property fails clearance, it must be recleaned until it passes, although it is not automatically necessary to reclean the entire property when clearance fails, such as when some of the visual and dust testing clearance results have indicated that portions of the property are already cleared.

D. Soil Standards.

(1) For exterior paint removal work, soil samples taken at the exterior of the work site should be used to determine if soil lead levels had increased at a statistically significant level from the soil lead levels prior to the work. If soil lead levels do show a statistically significant increase or is above any applicable federal or state standard for lead in soil, the soil should be remediated back to the pre-work level.

(2) For bare residential soil, a hazard standard of 400 parts per million (ppm) by weight in play areas based on the play area bare soil sample and an average of 1,200 ppm in bare soil in the remainder of the yard based on an average of all other samples collected.

4. Requirements for Design Specifications

A. Detailed Description. Design plans and specifications shall provide a detailed description of the following:

- (1) Approximate age of the building, item, or component, etc.;
- (2) Specific locations/areas designated for repair/renovation/demolition; and
- (3) Results of any previously sampled wastestreams associated with the project.

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B. Defining Element. Using the age of the building and/or date of all past renovations as the defining element for this policy, design plans and specifications for all buildings constructed prior to 1980 are required to include the following components:

(1) Bulk Sampling Results. In the initial phase of the design, bulk sampling and analysis of the painted surfaces associated with the work shall be performed. See Appendix C for a Scope of Work to accomplish this task. Final specifications shall include a copy of all analytical reports and the resulting determinations for appropriate levels/methods of technological controls to be exercised throughout the project.

(2) Environmental Testing Report. Design plans shall include an Environmental Testing Report providing the following information: precise location(s) and thorough descriptions of all surfaces where lead has been detected; sampling plans complete with drawings indicating all sample locations; summary table of all test results; name and certificate/license number of building inspectors; copy of current certificate/license; copy of testing laboratory accreditation; copy of all laboratory certificates of analysis; a copy of the Lead Project Designer's accreditation; and full identification of each wastestream anticipated to contain lead-based paint. Identification of wastestreams shall include the following elements:

(a) Description of all constituents (i.e., items, objects, materials, etc.) making up the wastestream;

(b) A ratio assigned to each separate constituent listed, indicating the proportional relationship between that constituent and the total wastestream;

(c) Numerical data specifying the full range (lowest measurement to highest measurement) of lead levels for each wastestream, as detected in the bulk sampling effort;

(d) Identification of each wastestream as either a homogeneous wastestream or a heterogeneous wastestream, in accordance with the definitions set forth in section 2 of this instruction;

(e) Identification of each wastestream as either hazardous waste or nonhazardous waste, in accordance with the standards set forth in section 2 of this instruction;

(f) Estimation of the total weight/volume of waste anticipated from each wastestream designated as hazardous waste; and

(g) All laboratory reports, statistical evaluations (if required), assumptions, and previous experience data.

(3) Waste Management Requirements. Design specifications shall:

(a) Require all hazardous wastes to be removed, replaced, handled, stored, transported, and disposed of in accordance with the status assigned therein (i.e., hazardous or nonhazardous) and the requirements set forth in Reference A and as implemented by all state and local regulations;

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(b) State that no additional testing of those wastestreams shall be required prior to disposal. However, in the event that circumstances arise to challenge the characterization of such wastes, then testing may be performed as necessary. Testing of discrete portions of the total wastestream (rather than representative samples) is not appropriate; and

(c) Require all hazardous waste manifests to be signed by Activity environmental office personnel.

(4) Work Plan Approval Process. Design specifications shall require a Work Plan approval process consisting of a written review of the work procedures for each of the following factors:

- (a) Worker protection practices;
- (b) Compliance review;
- (c) Occupant protection (if applicable); and
- (d) Waste management and disposal methods review.

(5) Personnel Certification. Specific federal, state, and local requirements and recommendations for training and certification shall be identified and incorporated into design specifications as applicable. Specific training and certification requirements (40 CFR 745 or authorized state program requirements) may not be necessary for all projects. However, local requirements may be substantially restrictive for lead-based paint or lead-based paint hazard abatement projects. Appendix D provides a matrix detailing requirements and recommended training based on Navy job/task. NOTE: Training requirements will be dynamic and federal training requirements for renovation and remodeling activities in target housing are anticipated in the future. To obtain information on current training requirements, contact the Naval Environmental Health Center, Industrial Hygiene Department, at phone (757) 953-0752.

(6) Occupant Notification. Projects in target housing involving improvement or maintenance (renovation or repair) disrupting more than 2 square feet of painted surface while being occupied require occupant notification prior to work. Occupant written acknowledgement of the delivery of lead hazard information pamphlet (EPA 747-K-99-001 "Protect Your Family From Lead in Your Home") prior to commencing the renovation work for each affected unit is required per Reference B.

(7) State Notification. In some states, notification of lead-based paint removal work by the contractor must be made prior to commencing work. For example, the Commonwealth of Virginia requires notification prior to abatement in housing and prior to soil abatement. It is anticipated that all authorized state programs will have similar (state-specific) requirements for notification prior to conducting lead-based paint activities.

5. Wastestream Characterization

A. The purpose of wastestream characterization is to determine whether a waste is hazardous or nonhazardous, which subsequently defines proper methods for handling, storage, transportation, and disposal of the wastestream. In determining whether a waste is hazardous or nonhazardous, in accordance with Reference A, RCRA allows generators of waste to rely on:

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results of prior testing; prior experience; knowledge of the waste; knowledge of the process generating the waste; analytical testing; or statistical evaluation of laboratory data. Therefore, the following assumptions may be made regarding the characterization of specific wastestreams, as applicable:

(1) Residential Projects. Per Reference C, wastes generated as a result of lead-based paint activities including abatement, renovation, and remodeling of residences are excluded from classification as RCRA hazardous waste, and may therefore be managed and disposed of as nonhazardous waste. This exclusion from RCRA Subtitle C management does not apply to wastes from government or institutional buildings unless they also meet the RCRA definition of a "residence," nor does it apply to demolition of residential units. When invoking this exclusion, EPA urges that best management practices be followed, such as: collect paint chips, dust, dirt, and rubble in plastic trash bags for disposal; store large lead-based paint building parts in containers until ready for disposal; and where possible, use covered mobile containers (roll-offs) to store lead-based paint debris until the work is completed. Also, bear in mind that (in the case of residues which have been removed by chemical means), any waste with free liquids is still prohibited from landfill disposal in most states and localities. Therefore, in order to take full advantage of this guidance, every effort should be made to employ paint removal methods other than by chemical means.

NOTE: Most states and localities have implemented (or are in the process of implementing) this policy. However, to ensure compliance, part of the design process shall include confirmation that this policy has indeed been implemented in the specific state or locality where the work will be conducted. Lead-based paint wastes generated by residential projects in states or localities that have not yet implemented this policy shall be managed in accordance with the same guidelines presented herein for non-residential projects.

(2) Non-Residential Projects.

(a) Disposable Work Clothes, Disposable Respirator Filters, and Rugs/Carpets. Per Reference D, these wastestreams are typically found to be nonhazardous and may be disposed of as such according to state and local solid waste regulations.

(b) Filtered Washwater. Filtered washwater is typically found to be nonhazardous. However, such wastes shall not be arbitrarily discharged to the sewer system, since this could violate existing wastewater permits, which are issued and regulated by individual municipalities. Discharge limits are based on the provisions specified within the individual permit for effluents as characterized therein, and may vary widely between individual municipalities; limits may also vary widely between individual permits held within the same municipality. Therefore, the proper disposal of filtered washwater shall be determined on a case basis, depending on the provisions existing for discharge in the respective wastewater permit. If limits as provided in the existing permit would be exceeded by such discharge, it is possible that the regulator may grant a temporary variance, thus enabling disposal via the sewer system. If such disposal is prohibited, the effluent may be disposed as a "special" waste in accordance with Reference A. Discharge of such effluent via run-off into surrounding areas is prohibited; appropriate controls shall be implemented as necessary to ensure proper management of effluents at all times.

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(c) Unfiltered Washwater, Paint Chips, Paint Dust, Wallpaper, HEPA Vacuum Debris, Air Filter Dust, (Stripping) Sludge, Rags, Sponges, Mops, HEPA Filters, Air Monitoring Cartridges, Scrapers, and Other Materials Used for Testing, Abatement, and Cleanup. Per Reference D, when generated as homogeneous wastestreams, these wastes are found to be hazardous in at least 50% of cases tested. Therefore, based on the results of prior testing, any such (homogeneous) lead-based paint contaminated wastestreams totaling <300 lbs. in volume shall be characterized as hazardous waste. Note: Reference D considers 300 lbs. to be the "break-even" volume for testing in this case. If the total volume of the respective wastestream is >300 lbs., the waste shall be sampled and analyzed for lead (via a TCLP test) to determine the appropriate disposal status (i.e., hazardous or nonhazardous).

(d) Plastic Sheeting and Tape. Reference D suggests that the method of paint removal used affects the disposal status of plastic sheeting and tape used to cover floors and other surfaces during abatement. Specifically, (when generated as a homogeneous wastestream), the waste tends to be hazardous when a heat gun is used for paint removal; however, the waste tends to be nonhazardous when chemical removal, abrasive removal or removal/replacement methods are used. When abatement methods such as encapsulation or enclosure are used, lead levels in the waste occasionally exceed the regulatory limit for disposal. Therefore, based on the results of prior testing, the plastic sheeting and tape shall be characterized for disposal as follows:

(i) In cases where a heat gun is used for paint removal, the associated plastic sheeting and tape shall be characterized as hazardous waste.

(ii) In cases where chemical removal, abrasive removal, and/or removal/replacement methods are used for paint removal, the associated plastic sheeting and tape shall be characterized as nonhazardous waste.

(iii) Encapsulation and enclosure are considered quite favorably as abatement methods, since both require only minimal disturbance of painted surfaces. Some of the actions inherent to accomplishing such work (e.g., pounding on studs, driving nails into painted surfaces, etc.) generate at least a small quantity of waste in the form of lead dust and occasional paint chips, but that quantity generated is minimal as compared to the volume generated by other methods of paint removal (e.g., chemical removal, abrasive removal, and/or removal/replacement). In keeping with this comparison, cleanup measures for areas where encapsulation and enclosure are performed are also minimal as compared to areas where other methods of paint removal have been used. For this reason, plastic sheeting and tape spread out in areas where encapsulation or enclosure is performed may contain more lead dust and paint chips than plastic sheeting and tape used during other paint removal methods. However, Reference D notes that the actual instance of such cases resulting in hazardous waste determinations is less than 25%. Based on analytical and statistical evaluations of the data collected, Reference D offers the following guidelines for disposal of plastic sheeting and tape when encapsulation and enclosure are the abatement methods used, suggesting that the "break-even" volume for laboratory testing of this wastestream is 300 lbs.:

(1) If the total volume of the plastic sheeting and tape is <300 lbs., it shall be characterized as hazardous waste.

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(2) If the total volume of the plastic sheeting and tape is >300 lbs., it shall be sampled and tested for lead (TCLP) to determine the appropriate disposal status (i.e., hazardous or nonhazardous).

(e) Solid Debris (Woodwork, Plaster, Windows, Doors, etc.). Reference D suggests a relationship between lead levels in the paint found in solid debris wastestreams (i.e., old woodwork, plaster, windows, doors, and similar bulky items) as measured in the laboratory by AAS, and whether such wastestreams will be within regulatory limits for disposal as a nonhazardous waste. Specifically, solid debris wastestreams have historically been characterized as hazardous for disposal only when levels in the paint are >4.0 mg/cm² as measured by AAS. Therefore, solid debris wastestreams with lead levels in the paint of <4.0 mg/cm² (as measured by AAS) shall be characterized as nonhazardous waste. Neither case shall require testing prior to disposal.

(f) All Other Wastestreams. All other wastestreams (homogeneous and heterogeneous) generated by work on non-residential structures for which there is information available (i.e., results of prior testing or experience, knowledge of the waste or process generating the waste, etc.) may be characterized on the basis of that information with no testing required. However, all other wastestreams for which there is no such information available shall be tested prior to disposal. To determine if a lead-based paint contaminated wastestream constitutes a hazardous waste, a representative sample of the entire wastestream is obtained and subjected to laboratory analysis via the Toxicity Characteristic Leaching Procedure (TCLP) for extraction of lead. If laboratory results reveal a (leachable) concentration of ≥5 mg/L (or ≥5 ppm) lead, the wastestream shall be designated as a hazardous waste. If laboratory results reveal a (leachable) concentration of <5 mg/L (or <5 ppm) lead, the wastestream shall be designated as a nonhazardous waste. The analysis of each wastestream shall result in a determination of whether it constitutes a hazardous waste or a nonhazardous waste; all such determinations shall be included in the design specifications. If circumstances arise to challenge the determination of such wastes, or if additional wastestreams not identified in the design specifications are generated, then testing shall be performed as needed to properly characterize the waste.

(i) Testing Homogeneous Wastestreams

- (1) A representative sample shall be obtained of the total wastestream;
- (2) Representative samples shall be subjected to TCLP analysis for lead;
- (3) Laboratory results shall determine the appropriate waste disposal status of the total wastestream (i.e., hazardous or nonhazardous).
- (4) See Appendix A for a Scope of Work to accomplish this task.

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(ii) Testing Heterogeneous Wastestreams

(1) A representative sample shall be developed from numerous sub-samples obtained from within the respective wastestream. This task proceeds as follows:

(a) Prepare detailed sampling plan to facilitate development of a representative sample;

(b) Obtain sub-samples in accordance with the requirements set forth in the detailed sampling plan. Prior to analysis, the laboratory shall mix/homogenizes the sub-samples thoroughly to develop the representative sample;

(c) Subject the representative sample to TCLP analysis for lead;

(d) Characterize the wastestream in accordance with the laboratory data obtained (i.e., hazardous or nonhazardous); and

(e) Prepare a sampling report summarizing the sampling plan and the analytical results obtained for lead concentration of the total wastestream. A copy of all analytical results shall be included as an attachment to the report.

(f) See Appendix B for a Scope of Work to accomplish this task.

(g) Wastestream Characterizations At-A-Glance For Lead-Based Paint Work on Non-Residential Structures. Table 1 presents a summary of the information on characterization of wastestreams. Note that Table 1 applies to work on non-residential projects only, since wastestreams generated by lead-based paint activities on residential projects are excluded from characterization as hazardous waste.

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TABLE 1
 WASTESTREAM CHARACTERIZATIONS AT-A-GLANCE
 FOR LEAD-BASED PAINT WORK ON NON-RESIDENTIAL STRUCTURES

WASTESTREAM	HAZARDOUS OR NONHAZARDOUS WASTE?
Disposable Work Clothes Disposable Respirator Filters Rugs/Carpets	Nonhazardous Waste
Filtered Wash Water (such as wash water from general cleanup, or from decontaminating surfaces after solvents have been used, or from exterior blasting)	Nonhazardous Waste, but DO NOT arbitrarily discharge effluent to the sewer system or discharge effluent via run-off into surrounding areas. Any discharge to the sewer system must be coordinated with appropriate facility personnel.
Unfiltered Wash Water Paint Chips Paint Dust Wallpaper HEPA Vacuum Debris HEPA Filters Sludge (from stripping) Rags Sponges Mops Paint Scrapers Other materials used for testing, abatement, and cleanup	<300 LBS in volume, characterize as hazardous waste. >300 LBS in volume, sample and analyze for lead (TCLP) to determine status.
Plastic Sheeting and Tape when a heat gun is used for paint removal	Hazardous Waste
Plastic Sheeting and Tape when chemical removal, abrasive removal, and/or removal/replacement methods are used for paint removal	Nonhazardous Waste
Plastic Sheeting and Tape when encapsulation and enclosure are the abatement methods used	<300 LBS in volume, characterize as hazardous waste. >300 LBS in volume, sample and analyze for lead (TCLP) to determine status.
Woodwork Plaster Windows Doors	If total lead analysis obtained by AAS measurements (for health & safety sampling) indicates lead is ≥ 4.0 mg/cm ² , characterize as hazardous waste. If total lead analysis obtained by AAS measurements (for health & safety sampling) indicates lead is < 4.0 mg/cm ² , characterize as nonhazardous waste.
All other homogeneous wastestreams known or suspected to contain LBP	If there is no information available (no results of prior testing, experience, etc.) sample and analyze using guidelines provided in Appendix A.
All other heterogeneous wastestreams known or suspected to contain LBP	If there is no information available (no results of prior testing, experience, etc.) sample and analyze using guidelines provided in Appendix B.

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APPENDIX A

GENERIC SCOPE OF WORK FOR TESTING A
HOMOGENEOUS LEAD-BASED PAINT CONTAMINATED WASTESTREAM

1. OBJECTIVE. To determine if the leachable lead concentration of the respective wastestream is within regulatory limits for disposal as set forth in 40 CFR 261.24. This shall be determined by obtaining a representative sample of the wastestream. The sample shall be subjected to a laboratory test for lead (i.e., EPA Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)), whereby the analyses obtained will determine subsequent disposition of the wastestream.

2. WORK PLAN. The Contractor shall submit a work plan that summarizes the following:

- a. What (item/material) the representative sample will consist of;
- b. The location where the representative sample will be taken from;
- c. The size requirement of the representative sample (amount of material to be collected);

Note: Prior to collecting any samples, the Contractor shall contact the analytical laboratory to determine sample size requirements for TCLP testing.

d. How the representative sample will be collected, packaged, labeled, preserved, transported, stored, and documented; and

e. The number of sampling blanks (field, trip, lab, equipment, and material blanks) that will be obtained.

3. SITE SAFETY PLAN. Normally, it will not be necessary to develop a new Site Health and Safety Plan for this sampling effort. Adequate health and safety measures can normally be ensured by using the same Site Health and Safety Plan previously developed for the bulk sampling effort (see Appendix C). Therefore, the Contractor shall evaluate the previous Site Health and Safety Plan to determine if adequate health and safety measures are provided therein for this new sampling effort. In cases where no modifications need to be made to the previously written plan, the Contractor shall apply that document (as is) to this work. In cases where modifications do need to be made to the previously written plan, the Contractor shall effect changes to that document as applicable on a case basis.

4. SAMPLING. The Contractor shall obtain a sample that is considered to be representative of the wastestream in accordance with the guidelines set forth in 40 CFR 260.10 and ATLANTIC DIVISION NAVFACENGCOMINST 10360.1A, "THE COMMAND LEAD-BASED PAINT POLICIES FOR DESIGN, CONSTRUCTION, RENOVATION, REPAIR, AND MAINTENANCE OF FACILITIES."

a. How to Collect the Sample. The Contractor shall collect the sample material onto a disposable container. From this collection container, the Contractor shall empty the sample material into a clean (new) plastic bag and labeled with the project/installation name and/or identification number, sample (item/area) number, sample date, and name of sampling personnel.

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b. Quality Assurance/Quality Control Measures. The Contractor shall obtain a field duplicate by simultaneously filling two sample containers during the sample process (i.e., the Contractor shall obtain adjacent samples and place them into separate containers). In addition to the field duplicate, the Contractor shall also obtain a rinseate sample and laboratory duplicate.

c. Packaging the Samples. The Contractor shall properly package all samples before transporting them to the certified analytical laboratory.

d. Transporting the Samples. The Contractor shall provide transportation of all samples to the analytical laboratory.

e. Chain-of-Custody Record. The Contractor shall provide a chain-of-custody record for sample handling and data recording.

f. Cleanup Required. If this work is being performed in a residential structure, the Contractor shall ensure that no visible trace of dust or debris is left from the taking of samples.

g. Example of Sampling to Determine Disposition of Waste. If a project involves a building renovation that necessitates surface preparation of windows or beams where lead-based paint must be removed (e.g., for corrosion control, etc.), then it is reasonable to assume the resulting wastestream will consist of some combination of lead-based paint chips, paint sludge, or sandblast grit contaminated with lead. A representative sample from such a homogeneous wastestream is usually readily obtained from the drum or bulk container holding the waste. Another such example would be a project that merely involves replacing the windows in a building, wherein an attempt shall be made to obtain a sample which proportionally represents the ratio of the lead-based paint on the window frames (painted surface area) to the (remaining) total area of the frames. In such cases, obtaining a core sample of the item being tested will be sufficient. Yet another example would be a project involving several items/materials slated for disposal, and visually evaluated to be alike or of similar vintage (e.g., paint color, apparent paint type, composition, and state of repair are basically the same). In such cases, refer to Table I to determine the number of items to be sampled.

TABLE I

QUANTITY OF TOTAL ITEMS/ MATERIALS MAKING UP THE UNIVERSE	QUANTITY OF SAMPLES TO OBTAIN
1 - 10	ALL
11 - 15	10
16 - 20	13
21 - 30	16
31 - 40	21
41 - 100	26
>100	32

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5. LABORATORY ANALYSIS. Since the respective wastestream is considered to be potentially hazardous for lead only, the Contractor shall subject samples to a TCLP test for lead analysis. Methods shall be in accordance with EPA SW-846. Samples shall be extracted using EPA Method 1311 (TCLP). If laboratory results reveal that the lead concentration of the representative sample exceeds regulatory limits for disposal, then the respective wastestream shall be considered a hazardous waste subject to all of the requirements set forth in 40 CFR 262 through 40 CFR 265.

Turnaround Time. The Contractor shall use a one-week turnaround time.

6. SAMPLING REPORT. The Contractor shall prepare a brief report summarizing the Sampling Plan and the analytical results obtained. The report shall also include a copy of all analytical results obtained.

7. DISTRIBUTION FOR SUBMITTALS. A Full Submittals Package (FSP) for this project shall include a copy of the Site Safety Plan, the Work Plan, all laboratory analyses received, and the Sampling Report. The Contractor shall provide (state how many) copies of the FSP. All copies of the FSP shall be sent under separate cover via express mail to the following addresses: (state full activity addresses, including names and code designations for all points of contact).

Note: Ensure all addresses are designated in terms of a street address to provide a suitable point for express delivery.

8. MILESTONES. (Work Days)

Note: The number of days indicated below will actually be contingent upon the number of items/materials requiring testing; therefore, the number of days shown herein is merely suggested guidelines.

Notice to Proceed	0 Days
FSP Due	30 Days

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APPENDIX B

GENERIC SCOPE OF WORK FOR TESTING A
HETEROGENEOUS LEAD-BASED PAINT CONTAMINATED WASTESTREAM

1. OBJECTIVE. To determine if the leachable lead concentration of the total wastestream is within regulatory limits for disposal as set forth in 40 CFR 261.24. This shall be determined by obtaining a representative sample of the total wastestream (in accordance with the guidelines set forth in 40 CFR 260.10 and ATLANTIC DIVISION NAVFACENGC MINST 10360.1A, "THE COMMAND LEAD-BASED PAINT POLICIES FOR DESIGN, CONSTRUCTION, RENOVATION, REPAIR, AND MAINTENANCE OF FACILITIES." The sample shall be subjected to a laboratory test for lead (i.e., EPA Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)), whereby the analysis obtained will determine subsequent disposition of the wastestream.
2. SITE SAFETY PLAN. Normally, it will not be necessary to develop a new Site Health and Safety Plan for this sampling effort. Adequate health and safety measures can normally be ensured by using the same Site Health and Safety Plan previously developed for the bulk sampling effort (see Appendix C). Therefore, the Contractor shall evaluate the previous Site Health and Safety Plan to determine if adequate health and safety measures are provided therein for this new sampling effort. In cases where no modifications need to be made to the previously written plan, the Contractor shall apply that document (as is) to this work. In cases where modifications do need to be made to the previously written plan, the Contractor shall effect changes to that document as applicable on a case basis.
3. SAMPLING PLAN. The Contractor shall prepare a detailed Sampling Plan that specifies how the sub-samples will be collected, packaged, labeled, preserved, transported, stored, and documented. The Contractor shall contact the analytical laboratory to determine size requirements for the samples, to ensure that enough sample material will be collected for adequate split laboratory analyses to be performed; therefore, the plan shall specify size requirements for both the (collective) representative sample and the individual sub-samples obtained. The plan shall specify the number of sampling blanks (field, trip, lab, equipment, and material blanks). The plan shall detail the system of ratios used to determine the number of sub-samples to be obtained from each individual material/component. The plan shall be written to meet the requirements of 40 CFR 260 through 262 (Appendix I), SW-846 Chapter 9, and this Instruction.
4. SAMPLING. Sub-samples shall be proportioned to components identified for disposal. Working from the detailed Sampling Plan, the Contractor shall obtain (core) sub-samples, using a 1-inch bit drill (or similar device). To the greatest extent (feasibly) possible, the Contractor shall drill through the entire substrate of each item/area being sampled. For components such as cinder blocks or cement, the Contractor shall use a hammer drill (or similar device). The Contractor shall record the number of drill holes obtained from each type of surface/area. The Contractor shall collect the sub-sample material into a disposable container (large sheets of paper, etc.) as the drilling is performed. From this collection container, the Contractor shall empty the materials into clean (new) plastic bags and labeled with the project/installation name and/or identification number, sample (item/area) number, sample date, and name of sampling personnel. Four ounces

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approximately 110 grams) of material is required for a composite of subsamples. Generally, the minimum size of each individual sample should be 3 inches X 6 inches to allow for proper compilation of the composite sample.

a. How Many Sub-Samples Shall Be Obtained. EPA Manual SW-846 (Volume II) requires that the number of samples and statistical parameters used to characterize a "universe" ensure an 80% confidence level in the resulting determination. The sample quantities in Table I are designed to meet or exceed these statistical requirements. The power and confidence intervals were set at or above 90% and 80% (respectively), and the precision was established as 20%. The coefficient of variance (CV) is assumed to be 35%.

TABLE I

QUANTITY OF TOTAL ITEMS/AREAS MAKING UP THE UNIVERSE	QUANTITY OF SAMPLES TO OBTAIN
1 - 10	ALL
11 - 15	10
16 - 20	13
21 - 30	16
31 - 40	21
41 - 100	26
>100	32

b. Quality Assurance/Quality Control Measures. The Contractor shall obtain field duplicates equaling 10% of the number of actual sub-samples (a minimum of at least one). These shall be obtained by simultaneously filling two sample containers during the sample process (i.e., for each sub-sample within a sample item/area, the Contractor shall obtain two adjacent samples and place them into separate containers). In addition to the field duplicate(s), quality assurance/quality control (QA/QC) measures for sampling efforts shall include a rinseate sample and laboratory duplicate.

c. Packaging Samples. The Contractor shall properly package all samples before transporting them to the certified analytical laboratory.

d. Preparation of Representative Sample. To ensure thorough mixing of the material such that a representative sample is obtained, the Contractor shall specifically request the analytical laboratory to thoroughly mix/homogenize the sample material before preparing it for analyses. This will minimize any settling effects that may occur during transportation. This procedure is particularly important when excess sample has been obtained, and the laboratory will only be using a portion of the overall sample.

e. Transportation of Samples. The Contractor shall provide transportation of all samples to the analytical laboratory.

f. Chain-of-Custody Record. The Contractor shall provide a chain-of-custody record for sample handling and data recording.

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g. Cleanup Required. If this work is being performed in a residential structure, the Contractor shall ensure that no visible trace of dust or debris is left from the taking of samples.

h. Example of Sampling to Determine Disposition of Waste. If a project involves repair, renovation, or demolition of an area consisting of bricks, cinder blocks, cement, a window, a door, steel or wood structural members, fiberglass insulation, and other items painted with lead-based paint. In such cases, a credible representative sample shall be developed by obtaining core samples of each material making up the wastestream in several locations (regardless of whether the material is painted or unpainted). All areas of the wastestream shall be proportionally represented in the sampling effort.

5. LABORATORY ANALYSIS. Since the respective wastestream is considered to be potentially hazardous for lead only, the Contractor shall subject samples to TCLP testing for lead analysis. Methods shall be in accordance with EPA SW-846. Samples shall be extracted using EPA Method 1311 (TCLP) for lead.

a. Turnaround Time. The Contractor shall use a one-week turnaround time.

b. Wastestream Analysis/Evaluation

(1) If the laboratory analysis reveals that lead concentrations for a particular wastestream are within the regulatory limits for disposal, then the wastestream shall be deemed nonhazardous.

(2) If the laboratory analysis reveals that lead concentrations for a particular wastestream exceed the regulatory limits for disposal, then the wastestream shall be deemed hazardous.

6. SAMPLING REPORT. The Contractor shall prepare a report summarizing the Sampling Plan and the analytical results obtained for lead concentration of the total wastestream. The report shall also include a copy of all analytical results.

7. DISTRIBUTION FOR SUBMITTALS. A Full Submittals Package (FSP) for this project shall include a copy of the Site Safety Plan, the Sampling Plan, all laboratory analyses received, and the Sampling Report. The Contractor shall provide (state how many) copies of the FSP. All copies of the FSP shall be sent under separate cover via express mail to the following addresses: (state full activity addresses, including names and code designations for all points of contact).

Note: Ensure all addresses are designated in terms of a street address to provide a suitable point for express delivery.

8. MILESTONES. (Work Days)

Note: The number of days indicated below is actually contingent upon the number of items/materials requiring testing; therefore, the number of days shown herein is merely suggested guidelines.

Notice to Proceed	0 Days
FSP Due	45 Days

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APPENDIX C
GENERIC SCOPE OF WORK FOR
BULK SAMPLING AND TESTING TO DETERMINE LEAD CONCENTRATIONS
IN SURFACE COATINGS SLATED FOR REMOVAL/DEMOLITION

1. OBJECTIVE. To perform bulk sampling of painted surfaces slated for repair/renovation/removal/demolition. Samples shall be submitted to laboratory testing to determine lead percentage by weight. The analyses obtained shall determine if lead-based paint will be an existing factor in the work required.

2. SITE SAFETY PLAN. In order to ensure that workers do not receive exposure beyond permissible exposure limits (PELs), the Contractor shall maintain the requirements set forth in 29 CFR 1926.62. The Contractor shall prepare a Site Safety Plan that includes, but is not limited to the following:

- a. Description of Contractor's in-house health monitoring plan;
- b. Description of Contractor personnel training in OSHA approved health and safety courses (29 CFR 1926.62);
- c. Map of general area showing work site, emergency transportation routes, and medical facilities;
- d. Sketch of work site;
- e. List of key Contractor and Government personnel with phone numbers;
- f. Description of potential hazards and proposed methods of protection/avoidance;
- g. Description of emergency medical care locations, directions, maps, and phone numbers;
- h. Phone numbers of local Police Department, Fire Department, Ambulance/Rescue Squad, Hospital, and Poison Control Center; and
- i. Description of Personnel Protective Equipment to be used.

3. WORK PLAN. The Contractor shall prepare a site work plan that provides specific detail on the following:

- a. What items/materials will be sampled (stating brief descriptions and locations of each);
- b. The number of samples that will be obtained from each item/material cited (including the number of sampling blanks [field, trip, lab, equipment, and material blanks]);
- c. The size requirement of samples (amount of material to be collected for each sample);

Note: Prior to collecting any samples, the Contractor shall contact the analytical laboratory to determine sample size requirements.

- d. How the samples will be collected, and what equipment will be used in that process;

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- e. What decontamination measures will be implemented;
- f. Name and location of the analytical laboratory to be used;
- g. The analytical test method and detection limit to be used;
- h. The turnaround time to be used; and
- i. The methods to be used for packaging, labeling, preserving, transporting, storing, and documenting the samples collected.

4. SAMPLING. The Contractor shall provide all equipment needed to obtain the samples. Sampling equipment shall consist of items such as paint scrapers, punches, sharp knives, etc.

a. How to Collect the Samples. The Contractor shall collect the sample material from each item/area onto a disposable container. From this collection container, the Contractor shall empty the materials into clean (new) plastic bags labeled with the project/installation name and/or identification number, sample (item/area) number, sample date, and name of sampling personnel. The Contractor shall ensure that the samples obtained meet the sample size requirements specified by the analytical laboratory being used.

b. Quality Assurance/Quality Control Measures. The Contractor shall obtain field duplicates equaling 10% of the number of actual samples (a minimum of at least one). These shall be obtained by simultaneously filling two sample containers during the sample process (i.e., the Contractor shall obtain adjacent samples and place them into separate containers).

c. Packaging Samples. The Contractor shall properly package all samples before transporting them to a certified analytical laboratory, and shall ensure that the laboratory is provided instructions on sampling protocols as specified.

d. Transportation of Samples. The Contractor shall provide transportation of all samples to the analytical laboratory.

e. Chain-of-Custody Record. The Contractor shall provide a chain-of-custody record for sample handling and data recording.

f. Cleanup Required. If this work is being performed in a residential structure, the Contractor shall ensure that no visible trace of dust or debris is left from the taking of samples.

5. LABORATORY ANALYSIS. The Contractor shall obtain laboratory analyses for all samples using EPA Method 6010A (Inductively Coupled Plasma (ICP)) Atomic Absorption Spectroscopy (AAS).

Turnaround Time. The Contractor shall use a one-week turnaround time to analyze the samples.

6. SAMPLING REPORT. The Contractor shall prepare a brief report summarizing the analytical results of the samples taken, and also indicate on Government-provided drawings and in text which surfaces or materials are determined to contain lead in the paint, specifying levels for each area sampled. The report shall include a copy of all laboratory certificates of analyses or test reports as appendices, including QA results.

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7. DISTRIBUTION FOR SUBMITTALS. A Full Submittals Package (FSP) for this project shall include the Site Safety Plan, the Work Plan, all laboratory analyses received, and the Sampling Report. The Contractor shall provide (state how many) copies of the FSP. All copies of the FSP shall be sent under separate cover via express mail to the following addresses: (state full activity addresses, including names and code designations for all points of contact).

Note: Ensure all addresses are designated in terms of a street address to provide a suitable point for express delivery.

8. MILESTONES. (Work Days)

Note: The number of days indicated below is actually contingent upon the number of items/materials requiring testing; therefore, the number of days shown herein are merely suggested guidelines.

Notice to Proceed	0 Days
FSP Due	45 Days

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APPENDIX D

NOTE: Training requirements are dynamic. Contact NEHC Industrial Hygiene Department at (757) 953-0752 to determine current requirements.

Lead and Lead-Based Paint Activities Training and Certification Requirements
and Recommended Training Based on Navy Job/Task
Disciplines

Job/Task	Inspector	Risk Assessor	Worker	Supervisor	Project Designer	Awareness
Target Housing Inspections	R					
Target Housing Risk Assessments*	R	R				
Housing Clearance Sampling	R	R				
Non-Housing Clearance	A (depends on State)	A (depends on State)				
Ongoing Monitoring	A	A				
Abatement Worker			R			
Supervision of Abatement Projects*			R	R		
Project Design including adopting or modifying guide specification changes					R	
Elevated Blood Lead Investigations	A (depends on State)	A (depends on State)				
Elevated Blood Lead Investigations - Conducting Environmental Sampling	R	R				
Regional or Installation Lead Program Manager		A				
EFD's - if modifying guide specifications		A		A	R	
COTR			A	A		
Competent Person				A		
Renovation and Remodeling work			A	A		
Conducting Interim Controls			A			R**

R - Training and certification is required based on state requirements (if an authorized state program) or the EPA (for non-authorized states).

A - Training not yet required by Federal regulations, but is considered necessary to conduct the process effectively, and is therefore, strongly advised.

* - Job task disciplines may require training or certification of more than one discipline.

** - Per HUD (24 CFR 35.1330), training must conform to the requirements of 29 CFR 1926.59 (Hazard Communication).