



**STATE OF CONNECTICUT  
DEPARTMENT OF  
ENVIRONMENTAL PROTECTION**

79 Elm Street  
Hartford CT 06106-5127

[www.ct.gov/dep](http://www.ct.gov/dep)

Gina McCarthy, Commissioner

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Bureau of Materials Management & Compliance Assurance

**Guidance for the Management and Disposal  
of Lead-Contaminated Materials  
Generated in the Lead Abatement,  
Renovation, and Demolition Industries**

November 4, 1994

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## PREFACE

DEP has based this guidance on data which is currently available regarding wastes which contain lead-based paint. However, it is possible that as this guidance is implemented and more and more sampling of lead-based paint wastes is performed, additional and more significant data trends may emerge which may justify significant changes in this policy. In particular, large-scale sampling of whole-building demolition debris\* may reveal that this particular material is non-hazardous an overwhelming percent of the time, thus justifying an across-the-board "knowledge of process" exemption by DEP.

Toward this end, DEP is requesting any and all sampling results on demolition debris in Connecticut. To be useful to us, however, these sampling results should be accompanied by the following information:

1. the town and street address of the building demolished.
2. the type of building (i.e., its use and materials of construction).
3. the age of the structure.
4. were any portions of the debris recycled or reused in any way?
5. was lead screening performed prior to sampling, or was lead known to be present for some other reason?
6. a description of how the samples were taken.

All such data should be sent to DEP at the following address:

Lead Data Coordinator  
Waste Management Bureau  
Waste Engineering & Enforcement Division  
Department of Environmental Protection  
79 Elm Street  
Hartford CT 06106-5127

Also, in a related matter, the United States Environmental Protection Agency (EPA) is considering deferring the regulation of architectural debris containing lead-based paint to the Toxic Substances Control Act ("TOSCA"). Appropriate management standards for such materials are being researched by EPA, and, if incorporated by DEP, could result in reduced regulation of these materials.

DUE TO THE ABOVE, THIS GUIDANCE DOCUMENT IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE.

Interested persons should monitor DEP and EPA publications for further developments in these and other areas related to the management and disposal of lead-based paint debris.

\* NOTE: the term "whole-building demolition debris" as used here refers to debris from the removal of entire structures, after appropriate recycling/source reduction has been conducted. See Section VI.D. below for more information regarding recycling options and requirements.

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Figure 1: A Flow Chart Illustrating a Suggested Sampling Regime Which Could be Used for Most Lead Removal Projects.

#### APPENDICES

- Appendix 1: Contacts to Call for Further Information.
- Appendix 2: List of Treatment, Storage and Disposal Facilities (TSDFs)
- Appendix 3: EPA Memorandum, "Lead-Based Paint Residues and Lead Contaminated Residential Soils in Private/Public Housing Units," dated November 20, 1987.
- Appendix 4: List of Transporters Permitted in Connecticut.
- Appendix 5: Connecticut-Regulated Waste.
- Appendix 6: List of Lead Recycling Facilities.
- Appendix 7: Useful References.

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## I. PURPOSE.

This document is intended to assist lead abatement contractors, renovation contractors, demolition contractors, homeowners, and other interested parties in complying with DEP's waste management regulations as they apply to the characterization, handling, storage, transportation, and off-site disposal of lead-contaminated building materials, and certain other related wastes. While this document was prepared primarily to address materials contaminated with lead-based paint (LBP), these guidelines may also have some applicability to other types of lead contamination.

## II. SCOPE.

The types of activities which could be impacted by this guidance include:

- \* Removal of the Lead Contamination from the Surface of a Material (i.e. by chipping, sanding, scraping, chemical treatment, etc.);
- \* Lead Abatements of housing units, including those being conducted voluntarily as well as those being conducted in response to a directive by a State or local health official.
- \* Renovation Activities (i.e., the removal and replacement of selected building components such as windows, doors, trim, baseboard, wallboard, siding, etc.);
- \* Whole-Building Demolition (i.e., the wrecking and removal of all or a large portion of a structure which contains lead-contaminated materials); and,
- \* Disposal of Contaminated Soil (created, for example, as a result of the normal weathering of a lead-contaminated surface, or by an improperly-conducted lead abatement).

This guidance document is primarily intended to provide assistance in the waste management aspects of these types of projects (i.e., characterization, handling, storage, transportation, and off-site disposal). As a result, this document does not provide in-depth guidance for numerous other possible concerns which may exist. For example, this guidance does not address worker protection requirements. It does not describe the proper procedures for conducting household lead abatements. It does not provide guidance on soil or groundwater cleanup standards. It does not comprehensively address the on-site disposal of wastewaters or other contaminated materials. It does not comprehensively address the requirements which must be met if there are air releases from a work site. It does not describe in great detail the requirements of the State Fire Marshal's Office for demolition contractors. And, it is not a comprehensive guide to the many local requirements which may apply. Persons engaging in lead removal activities should take great care to ensure compliance with the requirements of any other applicable local, State or Federal regulatory programs. For additional, limited information on some of these topics, the reader should refer to Section V.A. below.

### III. APPLICABILITY.

This guidance would apply to anyone generating lead contaminated materials in the State of Connecticut, including:

- \* Individual homeowners ("do-it-yourselfers"),
- \* Contractors employed by individual homeowners, landlords, or commercial or industrial clients to perform lead removal at residential sites, and
- \* Contractors and commercial or industrial property owners generating lead-contaminated debris as a result of routine maintenance or one-time cleanups at non-residential sites.

The specific requirements that would apply to each of the different types of generators above vary significantly. See the following sections for complete details. In particular, since they are the least regulated of the above-listed categories, individual homeowners doing the removal work themselves should skip directly to Section V.I. below for information relating specifically to them. Those from either of the other two categories listed above should continue reading for instructions on the proper management of their waste materials.

### IV. CHARACTERIZATION.

The first and most important step in any lead removal project is to assess the site for the presence of hazardous waste constituents and to characterize the materials that will be removed in order to determine proper disposal.

This section has been confined primarily to the characterization of lead-contaminated building debris, since their characterization presents the greatest challenge. Although other materials may be generated at a lead removal work site (such as decontamination residues, dust sweepings, personal protective gear, contaminated soil, etc), their characterization is not as difficult, and may be done in accordance with standard characterization methods developed for industrial wastes and contaminated soils. See Section VI.C., "Disposal," for information concerning some of the non-debris wastes which can be generated.

#### A. Important Note.

It is crucial that all generators of building debris use best efforts to obtain the information and conduct the analyses described in this section. Failure to do so may result in that waste being improperly disposed, which would be a serious violation of State and federal law (see also Section VI.A. below regarding the importance of ensuring proper disposal).

#### B. Assessment for Hazardous Constituents Other than Lead.

In order to properly characterize the building materials being removed, it is necessary to first determine whether or not hazardous constituents other than lead are present at the site. This is especially important for

industrial or commercial sites which may have used hazardous chemicals for manufacturing, wastewater treatment, maintenance, or other purposes. Pesticides, asbestos or polychlorinated biphenyls (PCBs) may also be present at some sites, complicating characterization issues. Another possible concern is chromium contamination, which could be present if lead chromate (red) primer was used at a site. This primer was most commonly used on steel and other corrodible metals.

Sources of information which can be used in assessing a site for non-lead-based contamination include:

1. A physical/visual site inspection.
2. Process, purchasing, and inventory records.
3. Material Safety Data Sheets (MSDSs).
4. Past and present owners, supervisors, and employees.
5. Town land records regarding past ownership and usage.
6. Files maintained by DEP's Waste and Water Management Bureaus.
7. Analytical data (obtained either with field monitoring equipment, or through samples taken to a laboratory for analysis).

If a review of such information indicates that contaminants other than lead may be present at the site, then any materials removed will have to be assessed for the presence of these additional contaminants, as well as lead, in order to determine their proper disposal. Since this is not likely to happen in the majority of lead abatement, renovation or demolition projects, and since it would be difficult to describe here all the different ways that such a situation could be handled, we will forego any further discussion of it here in this guidance. Instead, DEP recommends that anyone in this situation who has uncertainties about how to proceed should contact the Waste Engineering and Enforcement Division for assistance (see Appendix 1 for a listing of DEP contacts).

### C. Characterization of Lead Contamination.

If an assessment conducted in accordance with the previous section indicates that contaminants other than lead are not present at the site, then the remaining characterization work can focus solely on lead. The remainder of Section IV describes procedures for characterizing building debris with respect to lead content.

#### 1. The Required Analytical Test -- the TCLP.

Lead-containing debris not contaminated with other hazardous wastes is either classified as hazardous waste or solid waste, depending on its lead content. The required analytical test to determine which of these classifications is appropriate for a given quantity of

lead-containing debris is the Toxicity Characteristic Leaching Procedure, or "TCLP" (Regulations of Connecticut State Agencies Section 22a-449(c)-101(a)(1), incorporating 40 CFR 261.24). The TCLP test subjects a 100-gram sample of a waste material to simulated landfill leaching conditions, and assesses the ability of the sample to leach out lead in this environment. The debris is classified as hazardous waste if the TCLP sample result is greater than or equal to 5.0 milligrams per liter (mg/l) of lead. The debris is classified as solid waste if the TCLP sample result is less than 5.0 mg/l. See Section VI. below for definitions of solid and hazardous waste, and for a description of the disposal requirements for each of these materials.

There are many laboratories in Connecticut which can analyze samples for TCLP. DEP has a listing of these laboratories, copies of which are available free of charge. See Appendix 1 for a list of DEP telephone numbers to call to obtain a copy of the list. Also, laboratories may be found in the Yellow Pages under "Environmental and Ecological Services" and "Laboratories - Analytical."

While the TCLP is the prescribed analytical test to determine if debris is hazardous or not, other techniques can be used to supplement or, in one case, in lieu of TCLP sampling. These include:

- a. the use of laboratory methods other than the TCLP as screening tools. Possible methods include x-ray fluorescence (XRF), atomic absorption (AA), and inductively coupled plasma atomic emission spectrometry (ICP-AES).
- b. the use of portable x-ray fluorescence (XRF) instruments to identify lead-contaminated surfaces in the field. Most portable XRF units display a numerical value, expressed in milligrams per square centimeter ( $\text{mg}/\text{cm}^2$ ), which indicates the amount of lead present in the material being screened. It should be noted that different XRF units vary in the depth to which they detect lead. As a result, for porous materials (which may have absorbed lead beyond the immediate surface), and for assessing lead-based paint (where there may be multiple layers of paint), deep-sensing XRF should be used to be sure of detecting all the lead that might be present in the debris.
- c. the use of chemical spot testers, most of which utilize some type of colorimetric technique to indicate the presence of lead contamination. Although these testers are inexpensive and easy to use, they do not quantify the amount of lead present, and may react to metals other than lead, thus producing "false positives." In addition, they only provide information about the outermost surface of the material being tested (not the underlying layers), and may be ineffective for darkly colored surfaces. Also, the Department of Public Health and Addiction Services' Lead Poisoning Prevention Regulations do not allow the use of these testers in state-ordered lead abatements. As a

result of these problems, use of these spot testers is generally not recommended. However, there may be some usefulness with these spot testers for preliminary waste-screening purposes, prior to portable XRF or laboratory analyses.

- d. the hazardous waste regulations specifically allow the use of "knowledge of process" in lieu of analytical sampling in order to characterize a waste (Regulations of Connecticut State Agencies Section 22a-449(c)-102(a)(1), incorporating 40 CFR 262.11(c)(2)). "Knowledge of process" is usually applied in industrial situations where the chemical constituents of a waste stream can be calculated using information known about the feedstocks and processes which generate the waste. However, this alternative may be utilized in any situation in which specific and reliable information is known about a waste stream which justifies foregoing TCLP analysis. As a result, this approach could have some limited applicability in the characterization of building debris. For example, if a wooden floor was being removed from a lead-acid battery manufacturing plant, and data were available on the concentrations of lead in the battery electrolyte, it might be possible to show through a simple calculation that the sections of the floor which had been saturated by spilled electrolyte would have retained enough lead to be hazardous waste (thereby avoiding the need to take a TCLP sample).

A similar approach might also be taken in a different case to demonstrate that a certain debris was non-hazardous without taking a TCLP sample. However, greater care must be exercised when using knowledge of process to demonstrate that something is non-hazardous, since any errors or oversights could result in that material being disposed of improperly (see Section IV.A., "Important Note," above). An outline of one method which could be used to conduct such a determination is presented in Section IV.C.2.e.

It should be noted that only method d. above can actually be used in lieu of TCLP sampling. Methods a. through c. can be used to provide direction as to where TCLP samples should be taken, or to reduce the number of samples that must be taken at a given site, but they cannot be used to totally replace TCLP sampling.

## 2. Strategies for Sampling and Characterization.

There are a number of possible strategies which may be employed to assess lead-contaminated debris while minimizing analytical and eventual disposal costs. However, DEP believes that, to be truly valid and adequate, any such strategy must have the following features: 1.) the use of laboratory and QA/QC procedures which are in accordance with EPA guidance SW-846 (Test Methods for Evaluating Solid Waste - Physical and Chemical Methods), or which are generally accepted good practice; 2.) the application of a logical and

documented sampling regime which will ensure that the samples taken are truly "representative" of the waste being disposed of, and 3.) the use of field screening only as appropriate to provide direction in characterization efforts and to minimize the number of TCLP samples which must ultimately be taken to properly characterize the waste.

While it would be impractical here to enumerate every such strategy which would meet the above requirements, there are nevertheless several strategies which stand out in particular, as a result of their effectiveness, their convenience, or their ease of use. These strategies are listed in subparagraphs a. through f. below. Which of these strategies would prove best in a given situation will depend on available technical resources, time and financial constraints, the relative size of the removal project, and the general nature of the project. The costs for each strategy can also vary significantly from one project to the next. Persons conducting these kinds of projects are advised to compare costs and carefully consider which method would be best for their particular situation. Or, if another method not listed here seems more appropriate, persons may submit alternative sampling proposals for review and approval by DEP. Such requests should be mailed to: The Waste Engineering & Enforcement Division, Waste Management Bureau, Department of Environmental Protection, 79 Elm Street, Hartford CT, 06106-5127.

It should be reiterated that these strategies are primarily intended for building debris rather than decontamination residues, dust sweepings, personal protective gear, contaminated soil, or other non-debris wastes. The sampling of these non-debris materials can typically be conducted in accordance with the traditional methods used for industrial wastes and contaminated soils, and do not present the same difficulties as sampling whole or partial structures, which may be heterogenous in nature and physically difficult to sample. See Section VI.C. below for more information regarding non-debris wastes which may be generated.

- a. Screen, Sample, and Segregate. The most straight-forward strategy is to screen the building components to be removed using a field method such as portable XRF. For those components which field screening indicates are lead-contaminated, representative samples would be taken and sent for TCLP analysis. Those materials which fail the TCLP test (i.e. have lead concentrations over 5.0 mg/l) would be segregated for removal as hazardous waste. The remainder of the materials to be removed would be removed as solid waste.

There is one aspect to this strategy which merits some forethought and caution: deciding how to collect truly representative samples can present a significant practical and technical challenge. The most conservative approach would be to sample every individual component. Although this might be acceptable in some projects, in others it could result in excessive and unnecessary sampling. An alternative would be to

sample each similarly-contaminated surface, such as each room or each type of component (baseboard, trim, siding, etc.). This alternative would be especially useful and more appropriate in large projects with many similar components (such as a large apartment building or a housing complex).

Whatever methodology is used, care should be taken to ensure that the sample taken has a degree of surface contamination which is truly representative of the portion of the debris which it is taken to represent. For linear components (i.e., trim, baseboard, windowsills, etc.), the sample should consist of a full cross-sectional piece of the component. For non-linear components (such as windows), the sample should contain proportionally the same amounts of materials as the whole component (i.e., for a window, the proportional amounts of glass, wood, metal, paint, and glazing compound as are in the whole window).

- b. Screen and Segregate. This is a variation on the above method which offers cost savings on TCLP testing, but may increase the amount of material which will have to be disposed of as hazardous waste, thereby possibly increasing disposal costs. This strategy entails using field screening to identify lead-contaminated components. All such components would then be removed and segregated for disposal as hazardous waste, without any additional sampling or analysis. The remainder of the debris which was determined through field screening not to contain lead would be disposed of as solid waste.

DEP recognizes that this method appears to bypass the regulatory-required TCLP analysis. However, since the lead-containing materials will be disposed of as hazardous waste, DEP feels that this method is adequately protective of the environment, and, since it may result in significant cost savings in some abatement projects, that this approach is justified. DEP also feels that the current literature on lead concentrations in debris indicates that a large portion of selected lead-contaminated components fail the TCLP (see Section IV.C.4., "General Trends," below), and that this approach may often turn out to be nearly the same in result as the previous, more sampling-intensive strategy.

- c. Composite-Sample and Demolish. This method utilizes composite samples to assess the lead content of the entire quantity of debris to be removed. First, the different building components to be removed (e.g. foundation, structural, siding, roofing, drywall, trim, windows, doors, insulation) are identified. Then, aliquots or "sub-samples" are collected of each of these components using a power drill, or by removing portions of each building component. These aliquots must be carefully selected to ensure that the resulting composite sample will be truly representative of all of the material being removed. The

aliquots are then mixed together in proportion to their percent by weight in the total quantity of debris being removed. The resulting weight of this composite sample is not important, except that it must equal or exceed the 100-gram minimum sample weight specified for the TCLP test. The composite sample is then sent for TCLP analysis. This composite sample, if taken and mixed properly, should be representative of the whole structure.

The number of composite samples collected should be no fewer than one per structure, or one per 2500 square feet of floor space, whichever results in the greater number of composite samples. If the composite(s) all come back with lead concentrations below 5.0 mg/l, then the debris may be disposed of as solid waste. If any samples come back which are not below 5.0 mg/l of lead, then either:

- 1.) the portion of the structure represented by that sample must be disposed of as hazardous waste, or
- 2.) that portion of the structure must be reassessed by some other method, such as identifying the lead-containing components and removing them for disposal as hazardous waste.

Because of the undesirability of dealing with these two possibilities, this method is best used in situations where it is strongly expected that the entire quantity of debris, taken as a whole, will not fail the TCLP. Use of this method in marginal cases is not recommended, since it is likely to increase sampling and analysis costs without ultimately reducing disposal costs.

The above description constitutes only a brief outline of this method. For further details on this characterization method, consult documents number 4 and 8 listed in the list of useful references in Appendix 7.

- d. Remove, Cut, and Sample. This method was developed by the Denver Housing Authority for use in lead abatement projects in residential structures. The method involves several steps. First, like items (i.e., trim, baseboard, siding, windows, doors, etc.) are removed from the structure and placed together. Next, the volume or weight of each group of like items is determined, and recorded. Then the items are cut into 33-inch lengths using a circular saw, table saw, or bandsaw. During this process, the saw cuttings from each group of like items are carefully collected, containerized, labelled, and set aside for later compositing. After sawing, the like items are placed in 55-gallon drums or similar DOT-approved containers. Care is taken to ensure that only like items are placed in the same containers.

When all the items have been cut to size, a composite sample is made up, in a similar manner as in the previous method. That is, the saw cuttings obtained from cutting each group of like items are combined in proportion to their percent by volume or weight of the total amount of material being removed. In making this composite, amounts of each group of saw cuttings are selected so as to make up exactly a 100-gram composite sample (this is to allow the possibility for further analysis of the individual samples if needed later--see option 2.) below). The composite sample is then sent for TCLP analysis. If the result is under 5.0 mg/l of lead, then the entire quantity of material may be disposed of as non-hazardous solid waste. However, if the TCLP result is greater than or equal to 5.0 mg/l, then either:

- 1.) the entire quantity of material must be disposed of as hazardous waste, or
- 2.) the individual samples retained for each group of like items may be individually TCLP-sampled to determine if any of them may fall below the 5.0 mg/l limit. Any materials which this additional TCLP sampling indicates are below 5.0 mg/l may be disposed of as non-hazardous solid waste, thereby reducing the amount of hazardous waste which must be disposed of.

Several important issues should be mentioned regarding this method. Firstly, although not required by this method, field screening may be used before removal in order to limit the procedure only to those materials which are lead-contaminated. This use of field screening would likely reduce the amount of work required to obtain the samples, but may ultimately increase the likelihood of producing a composite which fails TCLP testing. Secondly, because of the labor-intensive way which the removed materials must be handled, this method lends itself best to household lead abatements and other projects which involve the removal of a fairly small number of selected building components. It should also be noted that the sawing of lead-painted building components presents a significant lead dust hazard and must be conducted in a manner which will not result in soil contamination, or exposure to workers or residents.

- e. Screen and Calculate Lead Concentration. This is a "knowledge of process" technique which uses known data to calculate the concentration of lead in the entire quantity of debris to be removed. This method is primarily intended for use in situations where the source of the lead contamination is lead-based paint (LBP), although it could conceivably be used in characterizing other lead-contaminated materials in which the lead is confined mostly to a consistent and distinct outer layer. The method involves the following steps:

- 1.) use a field screening technique to determine those components which have LBP on them.
- 2.) record the dimensions of the LBP-coated surfaces and calculate the total painted surface area (in cm<sup>2</sup>) on the components to be removed.
- 3.) collect samples of the paint on the surface of the components to be removed, and submit them to a laboratory to determine the average weight percent of lead in the LBP, the average paint thickness (in cm), and the average paint density (in mg/cm<sup>3</sup>).
- 4.) estimate the mass (in kg) of the components to be removed. Traditional engineering and/or demolition industry methods may be used in determining this estimate.
- 5.) determine the mass-concentration of lead in the debris as follows:

$$\left( \begin{array}{l} \text{Volume of LBP} \\ \text{in cm}^3 \end{array} \right) = \left( \begin{array}{l} \text{Painted Surface} \\ \text{Area in cm}^2 \end{array} \right) \times \left( \begin{array}{l} \text{Average Paint} \\ \text{Thickness in cm} \end{array} \right)$$

$$\left( \begin{array}{l} \text{Mass of LBP} \\ \text{in mg} \end{array} \right) = \left( \begin{array}{l} \text{Average Paint} \\ \text{Density in mg/cm}^3 \end{array} \right) \times \left( \begin{array}{l} \text{Volume of LBP} \\ \text{in cm}^3 \end{array} \right)$$

$$\left( \begin{array}{l} \text{Mass of Lead} \\ \text{in LBP in mg} \end{array} \right) = \left( \begin{array}{l} \text{Average Wt. \%} \\ \text{Lead in LBP} \end{array} \right) \times \left( \begin{array}{l} \text{Mass of LBP} \\ \text{in mg} \end{array} \right)$$

$$\left( \begin{array}{l} \text{Mass Conc. of Lead} \\ \text{in Structure in mg/kg} \end{array} \right) = \frac{\text{Mass of Lead in LBP in mg}}{\text{Estimated Mass of Structure in kg}}$$

- 6.) Hazardous/non-hazardous determination:

Is this Mass Concentration < 100 mg/kg?

If Yes: The debris may be disposed of as solid waste.

If No: The entire structure must either be re-evaluated using one of the methods a. through d. or f. in this section, or it must be disposed of in its entirety as a hazardous waste.

The 100 mg/kg value used in the Yes/No test above represents the lowest possible mass analysis concentration which could leach out greater than 5.0 mg/l in a TCLP test. This is due

to the 20:1 dilution ratio of the TCLP test protocol, and also assumes that 100% of the lead in the LBP sample will leach out. Although in reality a given LBP sample will rarely leach out 100% of the lead it contains, this assumption is the only one that can be safely made in lieu of actual TCLP results; in addition, the worst-case assumption adds a "safety factor" to compensate for possible errors in the LBP data or the estimated mass of the structure being removed.

If the average lead content, average paint thickness, or average paint density numbers for a given project vary widely from one part of the structure to another, it may be appropriate to conduct separate "mass of LBP" or "mass of lead in LBP" calculations for each portion of the structure with similar values. The individual results for the different portions of the structure could then be summed before dividing by the mass of the entire structure. This would be appropriate, for example, in a case where the interior of a given structure was painted with only two, thin coats of low-lead LBP, but the exterior had been painted with five, thick coats of high-lead LBP. As a simpler alternative, the highest numbers found in each category could be used for the entire structure; if the calculation passes the 100 mg/kg test even with the highest values, there is no need to go through the additional effort to weight the different portions of the structure in this manner, since the result can only be lower.

- 7.) There is a short-cut variation of the above method which may be useful as a quick screening tool, to direct TCLP-sampling efforts, or to confirm non-hazardous characterization of materials with low levels of lead contamination. This short-cut variation uses numerous field XRF values and the painted surface area directly to calculate the "mass of lead in LBP" value, as follows:

$$\left( \begin{array}{l} \text{Mass of Lead} \\ \text{in LBP in mg} \end{array} \right) = \left( \begin{array}{l} \text{Average Field XRF} \\ \text{value in mg/cm}^2 \end{array} \right) \times \left( \begin{array}{l} \text{Painted Surface} \\ \text{Area in cm}^2 \end{array} \right)$$

The calculation then proceeds from this point as outlined in subsection 5.) above. This variation on the method bypasses the need to take physical samples of the paint for laboratory analysis and provides a rapid means for determining if a structure is likely to fail TCLP or not. The previous paragraph regarding structures with widely differing lead contents also applies to this method. Therefore, if XRF readings vary significantly from one part of the structure to another, then the mass of lead in each should be calculated separately and then summed before

dividing by the mass of the structure. Or, in the alternative, the highest readings can be used for the whole structure, and compared to the 100 mg/kg standard in the "worst case" approach discussed above.

NOTE: Since both the main method and the short-cut variation described above involve an assumption that 100% of the lead is leachable, they tend to be very conservative. As a result, these methods are generally only useful in situations where the material being disposed of has low levels of lead contamination. In particular, the short-cut approach in subparagraph 7.) above will generally only produce a non-hazardous result if average XRF values are fairly low (i.e., lower than 10 mg/cm<sup>2</sup> or so). Sites with moderate to near-hazardous levels of lead are likely to fail by this method and require some kind of TCLP sampling in order to obtain a definitive characterization of the material.

- f. Demolish and Test. This method entails simply demolishing the structures to be removed, and obtaining representative samples of the debris to be sent for TCLP analysis. At least one sample should be obtained per container (e.g. roll-off) of debris generated. Each such sample should consist of several randomly-selected aliquots, so as to ensure that the sample is truly representative of the entire quantity of debris in the container. Any containers for which TCLP lead concentrations equal or exceed 5.0 mg/l must be disposed of as hazardous waste. Those containers with TCLP lead concentrations below 5.0 mg/l would be classified as solid waste.

Although this method can be successfully used to characterize lead-containing debris, DEP strongly recommends using one of the other methods which involve characterizing the waste before removal, for the following reasons:

- 1.) high risk (lead-containing) components, which could cause the entire quantity of debris to be hazardous, cannot be easily identified, sampled or segregated after being removed and containerized. As a result, there is the risk of greatly increased disposal cost brought about by this inadvertent and, for all practical purposes, irreversible mixing of the hazardous and non-hazardous portions of the debris.
- 2.) due to the physical nature of the debris (i.e., often tough, fibrous, and heterogeneous in nature), it is difficult to obtain truly representative samples of building components after they have been removed and containerized. This problem, in turn, increases the likelihood of both false positives (i.e. characterizing material as hazardous when it in fact is not) and false negatives (characterizing a material as non-hazardous when it is actually hazardous).

- 3.) once the debris is removed, it becomes a waste, and as a result, must be managed in accordance with DEP's waste management regulations (see Section V. below for the exact requirements that would apply); storing the materials on-site in this state pending laboratory analysis and/or finalization of off-site disposal arrangements makes compliance with the waste management regulations more difficult and time-consuming, and increases the likelihood that a violation will occur. This approach also creates time delays while samples await TCLP-testing.

#### D. Use of Combined Sampling Strategies.

Each of the strategies in the previous section can be used separately in characterizing a given quantity of waste. But in many cases, these strategies can be combined to develop a broader sampling regime which may be more efficient or more effective than any single sampling strategy in characterizing lead-contaminated debris.

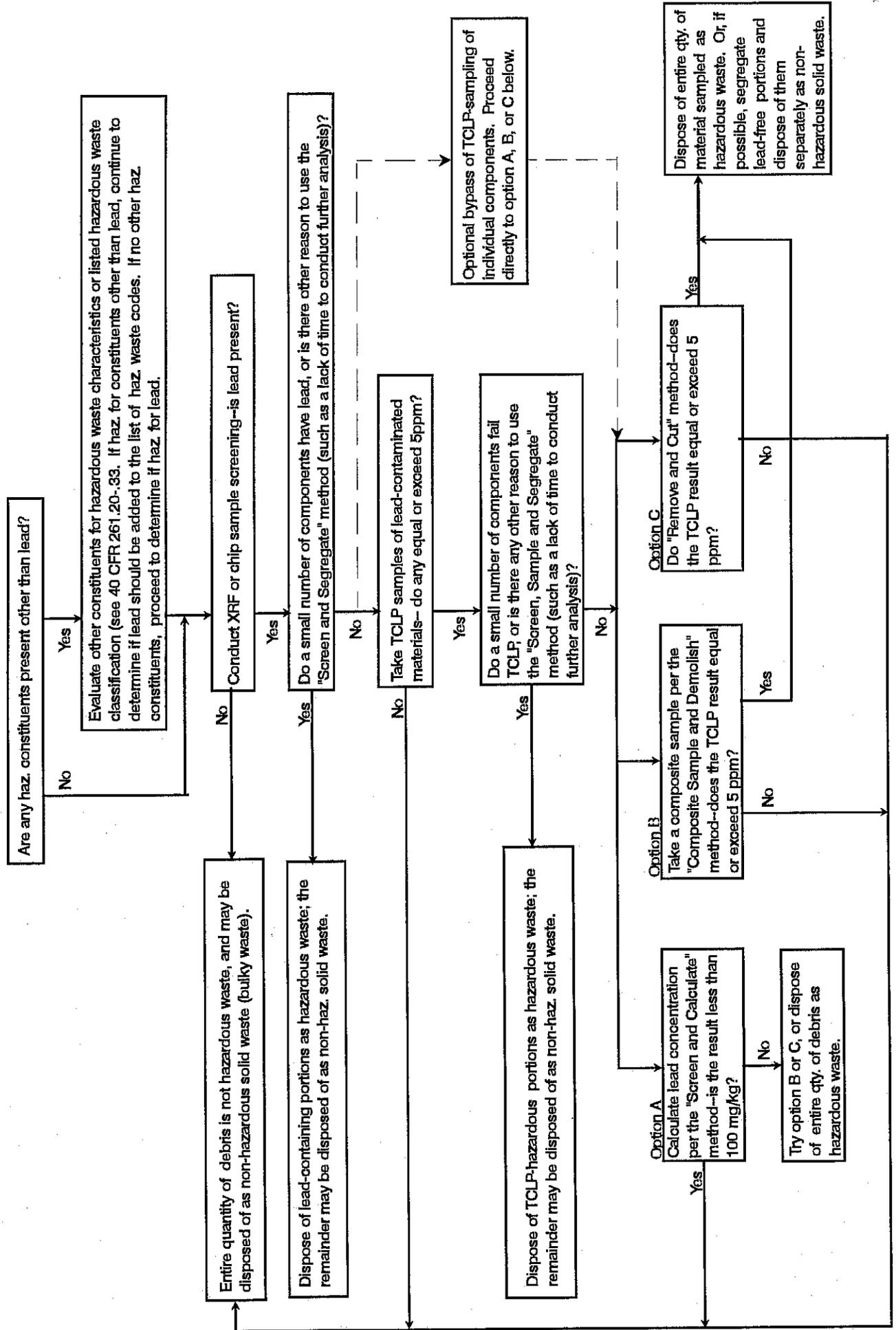
Figure 1 provides such a sampling regime in a convenient, flow-chart form, and is sufficiently broad in scope as to be useful in a wide variety of projects involving disposal of lead-contaminated debris.

This flow chart is organized as follows:

1. The flow chart begins with an assessment as to whether any constituents other than lead are present (as described in Section IV.B. above), and then proceeds directly to lead screening. If lead screening should reveal the presence of lead, the flow chart then asks whether consideration should be given to the "Screen and Segregate" method (i.e. Section IV.C.2.b. above). This would be particularly appealing in cases where lead contamination is limited to a small number of building components (which can be easily and economically disposed of as hazardous waste), or in projects where time constraints do not permit additional analysis.
2. The flow chart then prescribes TCLP sampling of the individual components which screening indicates are lead-contaminated. If all such TCLP samples test below 5.0 ppm lead, the entire quantity of debris may be disposed of as non-hazardous solid waste. If any components fail TCLP, the flow chart offers the option of pursuing the "Screen, Sample and Segregate" method (i.e., Section IV.C.2.a. above). As above, this would be particularly appealing in cases where the number of components failing TCLP was small, or where time constraints limit the ability to conduct additional analyses.

NOTE: as an alternative to taking TCLP samples of individual components, the flow chart allows the user to proceed directly to Options A through C (see item 3. below). This bypass of TCLP sampling is denoted with a broken line to indicate its optional nature. The

**Figure 1.**  
**A Flow Chart Illustrating a Suggested Sampling Regime**  
**Which Could Be Used for Most Lead Removal Projects**



user may wish to select this bypass in cases where it is highly suspected that a large number of components will fail TCLP, or when the user feels confident that one of the methods in Options A through C will result in a characterization that is acceptable from a disposal cost standpoint.

3. The last part of the flow chart requires the user to select one of three options (i.e., Option A, B, or C) to determine if the debris is hazardous or non-hazardous. These options correspond, respectively, to the "Screen and Calculate," "Composite Sample and Demolish," and "Remove and Cut" methods described in Sections IV.C.2.c., d., and e. above. The user is advised to consider these three options carefully before selecting which one to use. Each of these options have certain advantages and disadvantages which will affect their desirability in a given lead removal project. In particular, depending on how the debris is handled and stored, Option C will limit possibilities for segregation after cutting and removal. Also, Option A allows the user to use Options B or C as a back up method if this method yields a "hazardous" versus a "non-hazardous" result. This is an important provision since Option A involves very conservative assumptions which may yield a "hazardous" result for a material which is actually non-hazardous.

This sampling regime is not the only one which could be used. The reader may wish to develop a different flow chart which is better suited to his or her individual needs. However, any such regime should use approved analytical methods, such as those in Section IV.C. above, should be logically and technically sound, and should never produce a "non-hazardous" result for a material which is actually hazardous waste.

#### E. Recordkeeping.

An important part of the characterization process is recordkeeping. The property owner or contractor with the responsibility for disposing of the waste should carefully document any and all characterization activities, and should retain these records for at least three years after completion of the project. By retaining these records, the generator of the waste will have documentation of the characterization of the waste if inspected by DEP and will also be prepared in the event that problems arise at the ultimate disposal facility. Additional recordkeeping requirements may apply in certain cases. See Section V., "Handling Requirements," for additional information.

#### F. General Trends.

Despite the wide variety of lead-contaminated materials which can be generated during lead removal, renovation, or demolition projects, a few general trends emerge:

1. Highly concentrated wastes, such as pure LBP chips, lead paint stripping wastes, HEPA vacuum filters, etc., almost always fail the TCLP for lead.

2. Moderately-contaminated materials, in particular individually selected components such as trim, baseboard, and siding, are fairly evenly split regarding TCLP results. A review of data by DEP shows that anywhere from 50-90 percent of selected components fail the TCLP for lead. This means that anywhere from 10-50 percent do not fail the TCLP.
3. Low-contamination materials, such as whole-building demolition debris, usually do not fail the TCLP for lead. However, there is the possibility that in some cases even these materials may fail the TCLP, requiring disposal as hazardous waste. In one theoretical scenario considered by DEP, a light, steel-framed warehouse with no internals and no slab, painted inside and out with several coats of LBP, could easily fail the TCLP, taken as a whole. Although this is clearly a worst case scenario, the example nevertheless indicates that such an outcome is indeed possible. As a result, even these materials must be properly characterized to prevent improper disposal. See Section IV.A., "Important Note" above, regarding the importance of proper characterization. See also the Preface of this document regarding DEP's request for sampling results of whole-building demolition debris.

## V. HANDLING REQUIREMENTS.

This Section discusses the requirements associated with the removal, handling, and on-site processing and storage of lead-contaminated debris. Section V.A. provides an overview of the non-waste-management requirements which may apply to such projects. The remainder of this Section is devoted solely to the waste management-related issues involved, and in particular, those requirements related to the handling of any hazardous wastes which may be generated. Although there are a number of non-hazardous wastes which may also be generated during such projects, the handling requirements associated with such materials are for the most part limited to ensuring proper disposal, and such requirements are discussed in detail in Section VI. below.

### A. An Overview of Handling Requirements Other Than for Waste Disposal.

As indicated in Section II above, this guidance was intended primarily to address the waste management issues associated with lead-contaminated debris. However, the handling of these materials can also be regulated by a number of regulatory programs other than DEP's Waste Management Bureau. Although it is not practical here to provide comprehensive information regarding each of these programs, the following paragraphs serve as an effective outline of the requirements involved, so that the reader may be aware of which ones may apply to a particular project, and to assist the reader in obtaining additional information.

In addition to DEP's Waste Management Bureau, projects generating lead debris could be regulated by the following regulatory agencies or programs:

1. DEP's Water Management Bureau, if wastewaters are generated or disposed of on-site. Lead removal projects may be regulated under the Water Management Bureau's water discharge permitting program, if they involve discharge of wastewaters to the ground, on-site septic systems, storm drains, or sewage systems. In particular, activities such as power-washing, rinsing of "Peel-Away" or other chemical paint stripping agents, and personnel and equipment decontamination can all generate contaminated wastewaters that would require a permit if discharged on-site. Depending on the nature of the on-site activity and the associated wastewater discharge, the required permit may be in the form of: 1.) an individual permit with site-specific effluent limitations, conditions, or other specified constraints; or 2.) a general permit (a greatly streamlined type of permit issued to a broad class of permittees who meet certain qualifying criteria and who follow certain procedures for registration and operation specified in the general permit).

For sites which may have brief, one-time wastewater discharges, the Water Management Bureau also has the authority to issue "Temporary Authorizations" for discharge. Such authorizations are issued for a period of 30 days, and may be extended for an additional 30 days. Such authorizations may only be issued once per year for a given site.

In addition to the above permitting and authorization authorities, the Water Management Bureau has also established Best Management Practices ("BMPs") for certain activities, in order to prevent pollution of ground and surface waters. These BMPs detail department policy for certain activities, including some which may not require a discharge permit. Current BMPs which may be of interest to persons conducting lead removal projects include one entitled "General Best Management Practices" and another entitled "Furniture Strippers." Both are contained in a convenient booklet entitled Best Management Practices for the Protection of Ground Water. This document is available for \$5.00 (plus tax and shipping) from DEP's Maps and Publications Sales Office. See Appendix 1 for the telephone number to call to order this document. The Water Management Bureau is also in the process of developing new BMPs, some of which may apply to certain lead removal activities. Persons involved in such work are advised to stay abreast of any new BMPs issued by the Water Management Bureau.

Appendix 1 also lists the telephone number of the Water Bureau's permitting program. Staff are available at this number to provide further information regarding water discharge permitting requirements and BMPs.

2. DEP's Air Management Bureau, if on-site activities result in a release of particulate matter, including lead, or any other

regulated pollutants to the air. More Specifically, Air Management Bureau regulations apply to following kinds of "sources:"

- a. Stationary Sources, which are equipment, or sources, that are not designed or constructed to move from one location to another for normal operation; and
- b. Mobile Sources, which are equipment, or sources, that are designed or constructed to move from one location to another for normal operation. Examples of mobile sources are demolition debris crushers, shredders, and processers, sand blasters, power washers, and mobile soil treatment units.

Such sources are required to apply for a permit prior to operation if potential emissions of particulate matter, or any other regulated pollutant, calculated at the maximum rated capacity of the equipment (assuming operation 24 hours/day, 365 days/year), is greater than or equal to five tons/year, or if the equipment's maximum rated capacity is greater than or equal to 2,000 pounds/hour or 16,000 pounds/day (see RCSA Section 22a-174-3(a)).

Sources which are required to obtain a permit must also demonstrate compliance with emission limitations for specific hazardous air pollutants, such as lead (see RCSA Section 22a-174-29).

Regardless of whether or not a permit is required, all sources must comply with fugitive dust and visible emissions restrictions (see RCSA 22a-174-18(a), (b), and (e)). In particular, demolition and sand blasting are both specifically regulated in RCSA Section 22a-174-18(b). In addition, compliance must be demonstrated for any hazardous air pollutants listed on Table 1 of RCSA Section 22a-174-29, if emitted.

Air Management Bureau permitting staff are available to answer questions regarding air permits and regulations. See Appendix 1 for the telephone number for this program. Callers may request that specific sections of the air regulations be sent to them, or if an entire set of the air regulations is desired, they may be purchased from the Air Management Bureau at a cost of \$50.

3. OSHA (The Federal Occupational Safety and Health Administration), if the work is covered by OSHA's General Industry or Construction Lead Standards (i.e. 29 CFR 1910.1025 and 1926.62). See Appendix 1 for the telephone number for the Hartford regional office of OSHA. OSHA Industrial Hygienists are available at this number to provide technical assistance in complying with OSHA rules.
4. Connecticut's Department of Public Health and Addiction Services (DPHAS), if the work is being done pursuant to that Department's

Lead Poisoning Prevention and Control Regulations. See Appendix 1 for the telephone number for DPHAS's lead program. Staff at this number can provide technical assistance in complying with these lead regulations, including approved methods for conducting State-ordered residential lead abatements, and can also provide general advice on locating qualified lead inspectors and safe methods for removing lead paint at non-State-ordered lead removal projects.

This Department also manages a licensing and certification program for lead consultants, lead abatement workers and supervisors, lead abatement contractors, and lead consultant contractors. Persons interested in obtaining more information on this program should call the number listed in Appendix 1.

5. The Requirements of the State Fire Marshal's Office, Division of Fire, Emergency and Building Services, if the project involves demolition of a structure. In particular, contractors who engage in demolition work are required to have a current Demolition Contractor's Certificate of Registration from this office. This office also has certain rules and regulations which must be followed for demolition (i.e., RCSA Sections 29-401-1 through -5, and Connecticut General Statutes Section 29-401 through -415, commonly referred to as the "State Demolition Code"). See Appendix 1 for the telephone number for the State Fire Marshal's Office demolition unit. Staff at this number are available to answer questions regarding contractor registration and procedures for demolition.
6. Certain local requirements, depending on local town or city ordinances. Chief among these is the requirement to obtain a demolition permit from the local building inspector before demolishing a structure. Local health departments also have authority over lead abatement projects (including the ability to issue an order to abate a lead-contaminated residence). Persons engaging in projects involving lead-contaminated building components should be sure to check with local authorities for any additional requirements which may apply. Telephone numbers may be found in the "blue pages" section of the local telephone book.

#### B. Determining Hazardous Waste Generator Status.

The exact hazardous waste management rules which would apply at any given site will depend on the site's so-called "generator status," which is in turn determined by the amount of hazardous waste which is generated during the lead removal project. The amount of hazardous waste to be generated should be determined as far as possible in advance of removal, and should be conducted in accordance with Section IV. above.

Hazardous waste generator status is determined by comparing the amount of hazardous waste generated to the criteria listed in the table below. However, residential sites where the homeowner is doing the removal work

(i.e., no contractor is involved) are exempt from such classification. See Section V.I. below for more information regarding residential sites and the so-called "household hazardous waste" exemption.

<u>STATUS</u>	<u>CRITERIA</u>
Non-handler	No hazardous waste generated at all.
Conditionally Exempt Small Quantity Generator (referred to as a "CESQG")	Generates less than 100 kg/month of hazardous waste; accumulates no greater than 1000 kg of hazardous waste on-site at any one time.
Small Quantity Generator (referred to as an "SQG")	Generates between 100 and 1000 kg/month of hazardous waste; accumulates no greater than 1000 kg of hazardous waste on-site at any one time; stores waste for no greater than 180 days.
Large Quantity Generator (referred to as an "LQG")	Generates greater than 1000 kg/month of hazardous waste <u>or</u> accumulates more than 1000 kg on-site at any one time; stores waste for no greater than 90 days.
Treatment, Storage and Disposal Facility (referred to as a "TSDF")	Treats or disposes of hazardous waste on-site, receives hazardous waste from off-site, or stores hazardous waste in excess of the limits listed above for SQGs or LQGs.

By way of clarification, it should be noted that the use of the phrase "on-site" above refers to a work site which is a single, contiguous property. As a result, contractors who may have multiple work sites need not add the generation rates of the multiple work sites together. Rather, each work site should be classified separately in this determination. It should also be noted that a lead removal site's generator status could be affected by hazardous waste generating activities other than the lead removal project. For example, if it is determined that the amount of hazardous lead-containing debris to be removed from a certain site would fall within SQG quantities, small amounts of other hazardous wastes generated at the facility (say, from on-site manufacturing operations), could elevate the actual status to LQG. As a result, other waste management activities should be taken into account as part of selecting the proper generator status for any given lead-removal project site.

Two important additional notes:

1. A generator need only comply with the rules relating specifically to storage if the waste is actually stored on the site pending removal. If the waste is sent for off-site disposal as it is generated (i.e. on the same day which it is removed from the structure or demolished), then it shall not be considered to have been "in storage," removing the need to comply with these requirements. Any requirements not relating to storage (i.e.,

regarding the proper disposal of the material, response to spills, recordkeeping and manifesting of the waste, etc.), must still be complied with, however.

2. Since the handling requirements which will apply at a given generator site depend on the generation rates, the need for adequate characterization of the waste materials prior to generation cannot be stressed enough. Without good characterization data, it can be very difficult to estimate the amount of hazardous waste generated, putting the generator at risk of failing to comply with the correct set of requirements. In cases where generation amounts cannot be estimated in advance, it is recommended that the generator assume the highest likely generation rate to be sure of complying with the rules.

C. Requirements for Non-Handlers.

Non-handlers are not regulated by hazardous waste rules since they do not generate any hazardous waste. The only waste management regulations which generators in this category need to follow would be for characterization (see Section IV. above), and for disposal of any non-hazardous waste generated at the site (see Section VI. below).

D. Requirements for Conditionally Exempt Small Quantity Generators (CESQGs).

CESQGs must comply with the requirements outlined in Section 22a-449(c)-101(b) of the Regulations of Connecticut State Agencies (RCSA"). These regulations require compliance with the federal hazardous waste regulations for CESQGs (i.e. 40 CFR 261.5), and in addition impose a number of additional requirements. Briefly summarized, the CESQG rules require the following:

1. the proper characterization of all solid wastes generated, in order to determine if they are hazardous or not (see Section IV. above).
2. the retention of any records, analyses, or other determinations made in accordance with the above requirement for at least three years from the date of off-site shipment.
3. that all hazardous wastes generated be sent off-site to permitted hazardous waste treatment, storage or disposal facilities or "TSDFs" (see Section VI. below for more information regarding proper disposal of hazardous waste).
4. the use of transporters permitted by DEP for any shipments of hazardous waste sent off-site in accordance with the above requirement (see Section V.H. below for more information about hazardous waste transportation; also, see Appendix 4 for a list of permitted transporters).

It should also be noted that although the use of a hazardous waste manifest is not required by the CESQG rules, many transporters or TSDFs may require it as a general rule for all their customers, regardless of generator status. Some CESQGs may also wish to use manifests voluntarily in order to have documentation of proper disposal.

E. Requirements for Small Quantity Generators (SQGs).

SQGs must comply with the requirements of RCRA Sections 22a-449(c)-102(a) and (c). SQGs must also comply with the federal rules for SQGs (i.e. 40 CFR 262.34(d) through (f)). A brief summary of the SQG requirements follows.

1. SQGs must comply with requirements 1. through 4. in Section D. above.
2. Unless the project site already has an EPA ID number, a temporary number must be obtained. Hazardous waste manifests must be used for all off-site shipments of hazardous waste, and must bear this ID number. See Appendix 1 for information on obtaining EPA ID numbers.
3. SQGs must comply with certain requirements for any hazardous wastes which are stored on-site in containers (i.e., drums, roll-offs, etc.). These include keeping the containers in good condition, keeping the containers closed while in storage, maintaining adequate aisle space between containers, and properly labelling and dating the containers. The containers used must also be those which are approved by the U.S. Department of Transportation (DOT) for over-the-road transport. In addition, any containers of hazardous waste which contain free liquids must also be stored on an impermeable surface and provided with secondary containment to contain any releases. Containers used to store ignitable solvents prior to off-site shipment must be stored no less than 50 feet from the site's property line, and must be managed so as to prevent a fire or explosion.
4. SQGs are required to develop a written inspection schedule, to inspect any containers of hazardous waste at least weekly, and to record the results of these inspections in an inspection log.
5. SQGs must designate an emergency coordinator who will be responsible for coordinating emergency response measures in the event of a fire or other emergency which could involve or affect any hazardous waste stored at the site. This emergency coordinator is responsible for taking certain required response and reporting actions required by the SQG rules (see 40 CFR 262.34(d)(5)(iv)).
6. Basic emergency information must be listed in writing, and posted next to the on-site telephone (if there is one). This information must include the name and telephone number of the emergency coordinator, the location of any on-site emergency equipment, and the telephone number of the local fire department.

7. SQGs must notify local fire departments or police regarding the location, nature, and duration of the lead-removal project, and regarding the type and quantity of hazardous waste which may be stored at the site (see 40 CFR 262.34(d)(4) and 40 CFR 265.37).
8. SQGs must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities during normal facility operations and emergencies.
9. SQGs may not store hazardous waste on-site for greater than 180 days without a TSDF permit (see Section G. below). The only exception to this is if the waste must be transported 200 miles or more for disposal, in which case it may be stored on-site for up to 270 days.
10. Before leaving a site for the last time, an SQG must remove any remaining hazardous waste and must decontaminate any equipment, storage areas, structures, soil, etc., contaminated as a result of the removal or storage of the hazardous waste generated at the site.

This list was not meant to be all-inclusive. Only the rules most likely to apply to lead-removal projects were listed (for example, there are also rules for hazardous waste tanks operated by SQGs, but discussion of these rules was left out since tanks are not likely to be used at lead-removal sites). Other requirements could apply in certain situations. A very helpful guidance document has been prepared by DEP which outlines the SQG rules in much greater detail than is practical here. The document is entitled Small Quantity Generator Guidance, and is dated March 1, 1993. Requests for copies of this document may be submitted by telephone, by fax, or in writing (see Appendix 1 for a list of DEP contacts).

Contractors doing lead removal work at numerous similar sites may find that developing formats for the inspection and emergency response documents required by the SQG rules may make compliance with the rules at each of their sites much easier. For example, it would be a simple matter to develop a universal inspection schedule and log which would only require the filling in of several blanks in order to be ready for use at a new site. Contractors could also create formats for emergency coordinator designation, for the list of emergency information to be posted next to the on-site telephone, and for notification of local emergency response authorities. Contractors may also find it more efficient to consolidate training requirements for their employees, by conducting broad-spectrum training on a one-time basis rather than fully retraining them at each new site; however, care must still be taken to familiarize employees with any particular hazards which might be unique to each individual site.

#### F. Requirements for Large Quantity Generators (LQGs).

LQGs are subject to the requirements of RCRA Section 22a-449(c)-102(a) and (b). LQGs must also comply with the federal requirements for LQGs (i.e. 40 CFR 262.34(a) through (c)). A summary of the LQG requirements follows.

1. LQGs must comply with requirements 1., 2., 3., 4., and 7. in Section E. above.
2. LQGs must designate an emergency coordinator who will be responsible for coordinating emergency response measures in the event of a fire or other emergency which could involve or affect any hazardous waste stored at the site. This emergency coordinator is also responsible for taking certain required response and reporting actions required by the rules (see 40 CFR 265.51 and .56).
3. LQGs must develop a written contingency plan for the site, which describe actions personnel will take in response to fires or other emergencies which may result in a release of hazardous waste constituents. The plan must meet certain content requirements and copies of the plan must be submitted to certain local emergency response officials (see 40 CFR 265.52 and .53).
4. LQGs must notify local fire departments or police regarding the location, nature, and duration of the lead-removal project, and regarding the type and quantity of hazardous waste which may be stored at the site (see 40 CFR 262.34(a)(4) and 40 CFR 265.37)).
5. LQGs must train their employees in hazardous waste management. They must maintain certain documentation regarding their training program, including the names, job titles, and job descriptions of the employees involved with hazardous waste management, a written description of the training that is given, and records documenting that employees have been trained. Annual updates of training ("i.e. refresher training") must also be given.
6. LQGs may not store hazardous waste on-site for greater than 90 days without a TSDF permit (see Section G. below).
7. Before leaving a site for the last time, an LQG must remove any remaining hazardous waste and must decontaminate any equipment, storage areas, structures, soil, etc., contaminated as a result of the removal or storage of the hazardous waste generated at the site.

This list was not meant to be all-inclusive. Only the LQG rules most likely to apply to lead-removal projects were listed (for example, there are also rules for hazardous waste tanks operated by LQGs, but discussion of these rules was left out since tanks are not likely to be used at lead-removal sites). Other requirements could apply in certain situations. LQGs should familiarize themselves with the regulations referenced above and take measures to comply with any additional rules that might apply to their sites. Any LQG who has a question or is uncertain about how to interpret a certain rule with respect to their particular site should contact DEP (see list of contacts in Appendix 1).

Contractors having to comply with LQG requirements at several different work sites may find it more efficient to consolidate and standardize compliance efforts. See the last paragraph in Section E. above regarding

the use of formats, consolidating training, etc., for suggestions on this subject.

G. Requirements for Treatment, Storage and Disposal Facilities (TSDFs).

TSDFs are those facilities which engage in a variety of carefully-defined activities above and beyond the mere on-site storage of hazardous waste prior to off-site shipment for treatment or disposal. Such activities include:

1. the storage of SQG quantities of hazardous waste for greater than 180 days or LQG quantities of waste for greater than 90 days.
2. receipt of hazardous waste from off-site.
3. treatment of hazardous waste. Treatment is defined as "any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less-hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume."
4. disposal of hazardous waste to land or water.

TSDFs are the most highly regulated types of hazardous waste facilities. TSDFs cannot operate unless they have either a final RCRA Part B permit, or "interim status." Interim status was granted only to facilities that were already in operation before the effective date of the hazardous waste regulations and expires upon issuance of a final permit. The TSDF permitting process is extremely complex and time-consuming and is generally not a practical option for the majority of lead removal sites. As a result, it is strongly recommended that facilities conducting lead removal projects operate within one of the generator classifications described in Sections D. through F. above, and not consider engaging in TSDF activities.

As indicated above, treatment activities can generally not be conducted at a lead removal site without a TSDF permit. However, certain kinds of treatment activities are exempt from permitting requirements and could be conducted on-site, under certain circumstances. Specifically, certain recycling activities are exempt from TSDF permitting requirements, and may have some applicability to lead removal operations. See Section VI.D. below for further information on this alternative to off-site disposal.

H. Requirements for Hazardous Waste Transporters.

Hazardous waste transporters in Connecticut must have a permit pursuant to RCSA Section 22a-449(c)-11. Transporters of hazardous waste must also comply with the requirements of RCSA Section 22a-449(c)-103 and 40 CFR 263. As a result, hazardous building debris would have to be transported in accordance with these requirements.

However, there is an exemption in the regulations which allows generators to haul their own waste without a transporter's permit, provided that:

1. DOT hazardous material transportation regulations (49 CFR 172 and 173) are complied with,
2. the non-permit-related requirements of RCRA Section 22a-449(c)-103, and 40 CFR 263 are complied with, and
3. the amount transported does not exceed 1000 kg (approx. 2200 lb.) per month.

As a result, contractors generating less than this quantity of hazardous debris could transport the material to a permitted facility themselves, as long as the indicated requirements are complied with. It should be noted that the 1000 kg/month number listed above refers to each individual work site a contractor may be working at, not the sum of all the contractor's work sites. Hence, a contractor may haul hazardous waste from numerous work sites without a transporter's permit, as long as each one does not exceed the 1000 kg/month limit. Permitted transporters would have to be used for any work sites which exceed this limit.

In addition to the above requirements for hazardous waste, transporters of certain non-hazardous "Connecticut-regulated" wastes must also have a transporter's permit, in accordance with Connecticut General Statutes Section 22a-454. However, this requirement only applies to contractors who are commercially hauling Connecticut-regulated waste (i.e., hauling it for others for a fee). Those transporters who haul waste they have generated themselves are not required to have this permit. In addition, transporters hauling Connecticut-regulated waste with the waste code CR05 (waste chemical solids) are also not required to have this permit. See Section VI.B.2 below for more information on Connecticut-regulated wastes.

A list of transporters permitted to transport hazardous and Connecticut-regulated waste in Connecticut is provided in Appendix 4.

I. Residential Sites and the "Household Hazardous Waste" Exemption.

1. Residential Lead Removal Work Done by "Do-It-Yourselfers."

The hazardous waste regulations have an exemption for so-called "household hazardous waste" (see 40 CFR 261.4.(b)(1)). Household hazardous waste is defined as hazardous waste derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

As a result of this exemption, homeowners conducting "do-it-yourself" lead removal operations are technically not required to dispose of hazardous debris or residues at permitted hazardous waste facilities. However, DEP recommends against homeowners placing these materials in

the trash, or in the public sewer; instead, DEP recommends that homeowners make arrangements to dispose of such materials at a local household hazardous waste collection day, if possible. Also, homeowners are warned not to dispose of such wastes on the ground, or into an on-site septic system, since such disposal is prohibited by law (e.g. by Section 22a-432 of the Connecticut General Statutes).

Homeowners should also be aware that conducting remodeling or renovation projects involving lead removal by themselves can put them at risk of inhaling/ingesting lead dust or contaminating their home environment with toxic levels of lead. As a result, homeowners should seriously consider having such work performed by a qualified contractor in accordance with the Connecticut Department of Public Health and Addiction Services' (DPHAS) Lead Poisoning Prevention and Control Regulations (RCSA Sections 19a-111-1 through 19a-111-11). Persons interested in learning more about these regulations may call the Lead Program at DPHAS at the number listed in Appendix 1.

Contractors involved in lead removal projects may have to be licensed with the Department of Consumer Protection if the work comes under the heading of "home improvement." Certain contractors may also have to be certified or licensed by the Lead Program at DPHAS. Homeowners should be cautious in selecting a contractor to be sure that they are qualified to do this kind of work, and that they have any relevant licenses. Homeowners should also obtain several estimates to be sure they are being quoted a reasonable price. The Lead Program staff at DPHAS can answer questions and otherwise provide assistance in this area. See Appendix 1 for the telephone number for this program.

It should also be noted that work done by homeowners which is beyond routine remodeling or renovation is not covered under this exemption. Projects which would not be considered to be "routine" include:

- a. whole-building demolition;
- b. partial-building demolition, major renovation projects, or other jobs generating in excess of ten cubic yards of waste (about the amount that would fill a large trash dumpster);

Hazardous wastes generated during such projects must be disposed of at permitted treatment, storage and disposal facilities in accordance with State and federal requirements. A list of such facilities is provided in Appendix 2. Since the testing and transportation of such materials often requires specialized knowledge and expertise, homeowners engaging in major projects such as these should seriously consider having the work performed by a qualified contractor experienced in the disposal of building debris.

## 2. Residential Lead Removal Work Done by Contractors.

The previous section describing the household hazardous waste exemption might at first seem to apply if a contractor performs the

work for a homeowner, since the waste is still coming from a "household." However, as indicated in a clarifying memorandum by EPA Headquarters on November 20, 1987, the household hazardous waste exemption does not apply when contractors are hired to perform the work (see copy of memo in Appendix 3). This is essentially because the contractor is a "co-generator" of the waste who is not subject to the exemption. As a result, a contractor performing lead removal work at a residential site must comply with the applicable hazardous waste requirements for any hazardous wastes which the contractor manages on the homeowner's behalf.

In some cases the homeowner may agree to assume responsibility for the hazardous waste generated. It is acceptable in such situations for the contractor to leave the waste with the homeowner; however, DEP recommends against such practices unless the following conditions are met:

- a. the homeowner agrees in writing to accept the material;
- b. the homeowner is informed of the amount and nature of the material being left behind; and
- c. the homeowner has provisions for legally and safely storing the waste, and a viable outlet for disposing of it in the near future (such as a local household hazardous waste collection day--for more information, see subparagraph 1. above regarding disposal of wastes by "do-it-yourselfers").

Under no circumstances may a contractor leave waste materials behind at a work site without the homeowners knowledge and informed consent.

## VI. DISPOSAL.

### A. Important Note.

It is crucial that all generators of building debris and associated wastes ensure that all of their wastes are properly disposed of. Any generator who fails to properly dispose of any waste, especially if that waste is hazardous, exposes him or herself to possible civil and/or criminal actions, including the possibility of fines or imprisonment. In addition, Section 22a-250a of the Connecticut General Statutes allows the State to seize any truck or other vehicle which has been used in the illegal disposal of hazardous or solid waste.

### B. The Three Basic Classifications of Waste Which Can Be Generated.

Many different kinds of waste materials may be generated during a lead removal project which require disposal. These waste materials may be divided into three basic categories with respect to their regulatory status. The three basic categories, and the requirements for their disposal, are:

1. Hazardous Waste.

As indicated in Section IV. above, lead-contaminated building debris can often fail the TCLP test and be characterized as hazardous waste. However, other hazardous wastes may be generated at a lead removal site aside from lead-contaminated building debris (see Section C. below for examples).

Regardless of their nature, all hazardous wastes generated during a lead removal project must be shipped off-site to a permitted hazardous waste treatment, storage or disposal facility (TSDF). Connecticut's hazardous waste regulations also require that hazardous wastes be shipped by permitted transporters (certain exceptions exist--see Section V.H. above). A list of TSDFs is provided in Appendix 2. Appendix 4 provides a listing of the transporters who are permitted to transport hazardous waste in Connecticut.

2. Connecticut-Regulated Waste.

There is a special category of wastes which are not classified as hazardous waste, but which may not be disposed of at solid waste facilities. These materials are referred to as Connecticut-regulated wastes. Connecticut-regulated wastes include but are not necessarily limited to:

- a. waste PCBs (waste code CR01),
- b. waste oil (waste code CR02),
- c. waste water-soluble oil (waste code CR03),
- d. waste chemical liquids (waste code CR04), and
- e. waste chemical solids (waste code CR05).

Building debris will generally not fall into any of these categories unless it has been mixed or contaminated with these substances (in fact, building debris will most often be either hazardous or solid waste depending on the lead content). However, many non-debris wastes which may be generated at a work site (such as decontamination residues, non-hazardous chemical paint-stripping wastes and other materials) may easily fall into one or more of these categories. See Appendix 5 for a detailed explanation of the five Connecticut-regulated waste categories.

If disposed of in-state, Connecticut-regulated wastes must be disposed of at a facility permitted to treat, store, or dispose of Connecticut-regulated waste. If sent out of state for disposal, the receiving state's rules (if any) will apply. Like hazardous waste, Connecticut-regulated wastes must also be transported by permitted transporters (certain exceptions exist--see Section V.H. above). See Appendix 4 for a listing of permitted transporters.

### 3. Non-Hazardous Solid Waste.

Non-hazardous solid wastes (often referred to merely as "solid wastes") include municipal solid waste (MSW), bulky waste, biomedical waste, and "special waste." Detailed definitions of each of these sub-categories may be found in Connecticut General Statutes Section 22a-207, and in RCSA Section 22a-209.

With the exception of certain "special wastes," non-hazardous solid wastes may be shipped to disposal facilities permitted by DEP to receive these materials. Non-hazardous building debris will most often be classified as a bulky waste. However, "clean" rock, brick, ceramics, concrete, or asphalt pavement may be separated and used as clean fill. To qualify as "clean" according to DEP's solid waste regulations, these materials must be "virtually inert and pose neither a pollution threat to ground or surface waters nor a fire hazard." In the case of concrete, it must also have no exposed reinforcing bar. Options for disposal of non-hazardous building debris include:

- a. bulky waste landfills,
- b. MSW landfills,
- c. Resource Recovery Facilities (trash incinerators), provided that the amount of the material being disposed of does not constitute a "significant quantity" as defined by CGS Section 22a-207(23) or the facility's operating permit.
- d. wood burning facilities (clean wood only),
- e. volume reduction facilities permitted to receive bulky waste,
- e. wood recycling facilities (clean wood only), and
- f. any of several out-of-state solid waste facilities.

Several important facts bear mentioning here. First, due to greatly increased operating standards, many of the MSW landfills operating in Connecticut have begun closing as of Fall, 1993. Most of the bulky waste landfills will continue to operate, however. Second, the disposal of wood debris at wood burners or wood recycling plants will be difficult if any of the debris is painted or otherwise contaminated. These facilities are limited to accepting clean wood only. It should also be noted that, although several proposals have been made, there are currently no wood burners operating in Connecticut. This may change in the future, however. The Solid Waste Section has prepared a list of active solid waste facilities (see Appendix 1 for a list of contacts).

As alluded to above, certain "special wastes" may not be disposed of at solid waste facilities without prior approval, or else require disposal at special facilities. Examples pertinent to the renovation and demolition industries include asbestos, and building debris contaminated with non-hazardous levels of chemicals. Those with special waste to dispose of should call DEP for assistance (see Appendix 1 for a list of contacts).

### C. Disposal of Non-Debris Wastes.

There are a variety of non-debris wastes which can be generated during lead removal projects. In general, these wastes do not pose the characterization problems that building debris does, and can usually be assessed in accordance with standard characterization methods developed for industrial wastes. Listed below are the most common non-debris waste streams, and some suggestions regarding their characterization and disposal:

#### 1. Contaminated Soil.

Although DEP's waste management regulations generally do not require removal of contaminated soil, a number of other regulatory programs may require soil removal in some cases (see Section V.A. above for examples). If one of these programs requires soil to be removed from the site--for example, to meet a cleanup standard, or as a part of a lead abatement project--it must be assessed for hazardous waste characteristics and managed accordingly. If there are no contaminants present other than lead, this would simply involve TCLP-testing the soil for lead and disposing of as hazardous waste or solid waste accordingly.

If contaminants other than lead are present, the soil should be analyzed for lead and for the other contaminants, and the results of these analyses compared to the hazardous waste criteria in 40 CFR 261.21 - 261.33 to determine if it qualifies as a hazardous waste. If the soil meets any of these criteria, it must be disposed of as a hazardous waste. If this determination indicates the soil is non-hazardous, then it must still be disposed of as a Connecticut-regulated waste, unless DEP grants a special waste authorization allowing the material to be disposed of at a solid waste facility. The telephone number to call for more information on special waste authorizations is listed in Appendix 1.

#### 2. Wastewaters.

Personnel and equipment decontamination, rinsing of "Peel-Away," hydro-blasting of painted surfaces to remove paint, and other operations can generate lead-contaminated wastewaters. In general, these wastewaters cannot be released to on-site sewer or septic systems without a wastewater discharge permit from DEP (see Section V.A.1.b. above). These materials can also not be disposed of in the trash, or on the ground. As a result, the only practical alternative

for these wastes in most cases is to containerize them and dispose of them as hazardous or Connecticut-regulated wastes depending on the lead concentration. Opportunities exist, however, for minimizing the quantities of these wastes generated by filtering and/or reusing them, if possible.

It should be noted that if the wastewaters contain chemicals other than lead, they may be rendered hazardous by the presence of these chemicals. If hazardous chemicals are used which wind up in the wastewaters (such as solvents, chemical cleaning agents, etc.), then they should be tested for these constituents in order to determine proper disposal.

### 3. Dry Decontamination Residues.

Materials such as dust, sweepings, HEPA filters, vacuum bags, etc. can often be generated during lead abatements. These materials can often be very high in lead concentration. As a result, they should be TCLP-tested and disposed of as solid or hazardous waste, accordingly.

As with wastewaters, these materials may have to be tested for additional constituents if contaminated with constituents other than lead.

### 4. Plastic Sheeting/Disposable Clothing/PPE.

Plastic sheeting used to seal-off work areas, disposable clothing (such as tyvek suits), personal protective equipment (PPE), and other similar wastes may also be generated during lead abatements. Some of these materials may be able to be decontaminated and reused (see subparagraph 2. above regarding proper disposal of decontamination rinsewaters). The remainder will have to be disposed. These materials are generally not as high in lead content as the materials in Section 3. above, but they can still fail the TCLP on occasion. As a result they should be TCLP-tested prior to disposal.

Contractors engaged in large projects or conducting lead abatements on a frequent basis may be able to detect trends in the TCLP results for these materials which may indicate that a "knowledge of process" pattern exists (see Section IV.C.1.d. regarding this rationale). That is, if a contractor operates in a similar manner from site to site, always collecting and segregating these wastes in the same way, and if he were to test wastes generated at several different sites and determine that these materials never fail TCLP, he might be justified in using this information to justify classifying them as non-hazardous, based on knowledge of process. Care should be taken to carefully document such activities, however, and the waste should be checked periodically (e.g. yearly) to confirm that the non-hazardous trend continues.

As an alternative to testing, contractors may, if they wish, simply assume the materials are hazardous and place these materials in the

containers of hazardous debris generated at the site. A similar approach may also be used for the more lead-contaminated materials described in Section 3. above.

5. Spent Solvents, "Peel-Away" and Other Chemical Wastes.

Some lead abatements may use methylene chloride or caustic-based paint strippers to remove LBP from painted surfaces. These materials will most often be hazardous waste. However, some paint strippers have been developed which are non-hazardous, and may be disposed of as Connecticut-regulated waste if TCLP lead concentrations are below 5.0 mg/l. Other chemicals used for decontamination, clean-up, maintenance of equipment, etc., could also be hazardous waste or Connecticut-regulated waste. Chemicals which must be disposed of as hazardous waste are listed in the federal hazardous waste regulations at 40 CFR 261.21 through 261.33. Connecticut-regulated wastes requirements are described in further detail in Appendix 5.

D. Recycling Options and Requirements.

Numerous recycling options exist which may be utilized to reduce the amount of waste which must be disposed of, and as a result, the ultimate disposal cost.

However, the obvious economic incentives associated with recycling are often not the only factor driving recycling efforts. There are certain liability concerns associated with the generation of waste, particularly the generation of hazardous waste. Several State and Federal waste management laws (such as the Federal hazardous waste regulations) mandate certain waste minimization efforts. In addition, Connecticut's Solid Waste Management Plan also has numerous provisions to establish and promote recycling in this State. In particular, the Plan encourages generators of building debris to develop and implement site-specific waste management plans prior to the commencement of work. These site-specific waste management plans identify salvageable material that can be reused or recycled, describe procedures for separation of these materials from other wastes, summarize strategies for the characterization and proper disposal of any hazardous components (such as lead based paint), and identify markets for recyclable materials and disposal options for non-recyclable wastes. The State's Solid Waste Management Plan also has provisions for State and local governments to require the development of site-specific waste management plans for projects which they are funding. In addition, the Plan promotes the development of additional facilities to process non-hazardous building debris for recycling. If you have questions about this Plan, or if you would like to obtain a copy, call the number listed for the Plan in Appendix 1.

Two major types of recycling of particular interest with respect to lead-contaminated building debris include: 1.) scrap metal recycling/architectural salvage, and 2.) recycling of building debris in order to recover lead values. Each are discussed in more detail below.

## 1. Scrap Metal Recycling and Architectural Salvage.

Buildings may contain significant amounts of ductwork, wiring, structural steel, plumbing, HVAC equipment and other items which may have value if removed and segregated for scrap metal recycling. Provided that they are legitimately recycled, such materials are exempt from regulation as hazardous waste.

Other components may have architectural or historic value and may be removed and reused. As with scrap metal, these materials are exempt from hazardous waste regulation, as long as they are legitimately reused. However, such "architectural salvage" components which are coated with lead-based paint should be chemically dipped or otherwise stripped before being reused (note--this may either be done at a furniture stripping establishment or in some other manner, but all wastes generated should be managed in accordance with hazardous and solid waste regulations).

## 2. Recycling of Building Debris for Lead Values.

In addition to scrap metal recycling and architectural salvage, the possibility exists for recycling lead-contaminated debris to recover lead values. Appendix 6 lists several facilities which can recycle various types of lead-contaminated materials. All of these facilities can accept lead-contaminated building debris, though most can only take it in certain forms. As a result, some degree of prior processing is often required in order to render the lead-bearing waste amenable to the recovery process. In the case of lead-contaminated building debris, this usually involves shredding or some other type of processing to reduce the material into a more concentrated form.

A typical recycling scenario might be as follows: hazardous or non-hazardous debris could be processed to remove the lead contamination, resulting in a concentrated lead-containing portion, and a low-lead (perhaps even "clean") portion. The concentrated lead portion would then be sent to a recycling facility for lead reclamation, and the treated debris recycled, reused, or disposed of. Shredding is slightly different since there is no separation--the waste is just reduced in volume and easier to store, transport, and handle at the recycling facility.

This processing of the building debris could occur either at the work site, or at an off-site location; however, different requirements apply depending on whether the building debris is hazardous or non-hazardous. Different requirements also apply depending on whether this processing is on- or off-site. A summary of these differing situations is provided below:

### a. On- and Off-Site Recycling of Non-Hazardous Building Debris.

Certain types of facilities which recycle or otherwise process non-hazardous building debris are required to have a permit from

the Waste Management Bureau's Solid Waste Program. In particular, facilities which meet the definition in Section 22a-207 of the Connecticut General Statutes of a "Transfer Station," and which store in excess of ten cubic yards must have such a permit. In addition, facilities meeting the definition of a "Recycling Facility" or a "Volume Reduction Plant," and which are capable of processing in excess of a ton per hour must have a permit. Other types may also require a permit, depending upon the exact nature of the operation. However, facilities which merely generate non-hazardous building debris for recycling or disposal at a permitted off-site facility are not required to have a permit. If you have questions about whether or not a permit would be required for a certain activity, you may call staff in the Solid Waste Program (see list of phone numbers in Appendix 1).

Regardless of whether or not a permit is required, the processing of non-hazardous building debris may cause air releases which may be regulated by the Air Management Bureau. See Section V.A. above regarding this and other requirements which may apply.

b. On-Site Recycling of Hazardous Building Debris.

Generators may recycle hazardous debris on-site, provided that it is conducted in accordance with the hazardous waste recycling regulations (i.e. RCRA Section 22a-449(c)-101(c) and 40 CFR 261.6). These regulations include the marking and labelling of recyclable hazardous wastes stored in tanks or containers pending recycling, and filing a DEP Recycling Registration. To obtain copies of the Registration form, call DEP at the recycling number listed in Appendix 1. Care must also be taken to ensure that these recycling activities do not create air emissions, cause soil, groundwater, or surface water contamination, or violate OSHA worker protection standards (see Section V.A. above for more on these requirements).

On-site recycling conducted by generators does not require a hazardous waste facility, or "TSDF" permit. However, if the generator happens to be a contractor hired by the property owner to do the work, the contractor would, in most cases, need to have a permit pursuant to Section 22a-454 of the Connecticut General Statutes (i.e., a so-called "454 permit"). Although these kinds of permits may be issued on a site-by-site basis, it would be more practical (due to the resource and time demands involved with the permitting process) for a contractor to obtain a single permit to be used at numerous project sites around the State. At the time this document is being written, the Waste Engineering and Enforcement Division of DEP is in the early stages of developing a greatly streamlined "general" permit which will encompass some of these recycling activities. In addition, DEP has the authority to issue "temporary authorizations" for one-time projects which are limited in duration. It is possible

that some recycling projects could be handled under such a temporary authorization. Those interested in the above permits and temporary authorizations should contact the Waste Engineering & Enforcement Division's permits group for the required forms and for further information (see Appendix 1 for a list of contacts).

There is one type of on-site recycling which may be particularly effective in certain kinds of projects which generate hazardous debris (e.g., large, multi-unit lead abatement projects). This type of recycling utilizes a "containment building" as described in 40 CFR 262.34(a)(1)(iv). Such a containment building could be a temporary, free-standing structure, or could utilize existing structures at the site, but must meet certain technical standards specified in 40 CFR 265.1100-1102. Briefly summarized, these technical standards include an impermeable floor, controls to prevent tracking of waste and waste residues out of the building, controls on doors, windows and other openings, and air emissions controls. Hazardous debris such as painted boards, bricks, etc., may be taken inside such a containment building and processed (such as by sandblasting, abrasive planing, shredding, etc.) to remove the lead. The "clean" debris can then be disposed of as bulky waste, provided it has been thoroughly cleaned and no longer fails TCLP for lead. The leaded portion can then be sent to a lead smelter for lead recycling (see Appendix 6 for a list of lead recyclers). Persons interested in this type of recycling may wish to consult the Federal Register dated August 18, 1992 (pages 37195-37281) for more information regarding technical standards for containment buildings, as well as the proper procedures for the disposal of the treated debris. Staff at DEP's Waste Engineering & Enforcement Division may also answer questions regarding these issues (see the list of DEP contacts provided in Appendix 1).

c. Off-site Recycling of Hazardous Building Debris.

Contractors may also recycle hazardous debris off-site, such as at a centralized treatment facility. As with most types of on-site recycling of hazardous debris, the recycling process itself would not require a hazardous waste TSDF permit, and could be conducted solely under a 454 permit. Unlike on-site recycling, however, the storage of hazardous debris prior to recycling would require a hazardous waste TSDF permit. Put another way, unless all hazardous debris is processed immediately upon receipt without being put into storage, an off-site recycling facility would have to have a hazardous waste TSDF permit in addition to a 454 permit. Contractors interested in off-site recycling should contact the Waste Engineering & Enforcement Division's permits group for further information regarding the required permits (see Appendix 1 for a list of contacts).

APPENDICES

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Appendix 1: Contacts to Call for Further Information.

Listed below are numerous useful numbers to call for additional information. All of the numbers are in Connecticut, and so are all within the (860) area code.

DEP Waste Management Bureau:

Permits for Hazardous and Connecticut-Regulated Waste Transporters and Treatment, Storage, and Disposal Facilities.....424-3372

Hazardous and Connecticut-Regulated Waste Recycling.....424-3372

To Obtain an EPA ID Number (available only on Mondays, Wednesdays, and Fridays between 9 a.m. and noon).....424-3372

Hazardous Waste Generator Requirements (i.e., Characterization, Storage, and Disposal).....424-3023

Special Waste Handling and Disposal/Special Waste Authorizations...424-3372

Solid Waste Recycling and Disposal--Permits and Regulations.....424-3366

Bulky Waste Recycling and The State Solid Waste Management Plan....424-3365

Handling and Disposal of PCBs.....424-3368

Petroleum Underground Storage Tanks.....424-3374

DEP Water Management Bureau:

Water Discharge Permits.....424-3018

Cleanup of Soil and Groundwater Contamination.....424-3705

DEP Air Management Bureau:

Engineering & Enforcement Division.....424-3028

DEP Maps and Publications Sales:.....424-3555

Connecticut Department of Public Health and Addiction Services (DPHAS):

Lead Poisoning Prevention Program.....509-7299

U.S. Occupational Safety and Health Administration (OSHA):

OSHA Lead Standards.....240-3152

The State Fire Marshal's Office:

Division of Fire, Emergency & Building Services.....685-8470

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Appendix 2: List of Permitted Treatment, Storage and Disposal Facilities  
(TSDFs)

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STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
79 Elm Street  
Hartford, CT 06106-5127  
(860) 424-3023  
<http://dep.state.ct.us>

Rev. January 18, 2007

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## LIST OF COMMERCIAL HAZARDOUS WASTE & CONNECTICUT REGULATED WASTE FACILITIES IN CONNECTICUT

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Prepared by the  
Waste Engineering and Enforcement Division

The appearance of a facility on this list does **not** constitute a recommendation or approval of the facility. The list may not be complete and is subject to change without notice.

The facilities listed in Section I manage both hazardous waste and Connecticut Regulated Waste. The facilities listed in Section II manage mainly non-hazardous Connecticut Regulated Waste. For a profile on each of these firms, you may wish to refer to the appendix in the report entitled "Connecticut Hazardous Waste Generation and Management: A Status Report", (prepared by the Connecticut Hazardous Waste Service). The facilities on the Connecticut Regulated Waste list handle certain Connecticut Regulated Wastes designated CR01 through CR05 as defined in Appendix 1.

You can contact the Waste Engineering and Enforcement Division of the Bureau of Materials Management and Compliance Assurance at DEP at (860) 424-3372 if you would like current permit status information on any of these facilities.

The Department of Environmental Protection is an equal opportunity/affirmative action employer, offering its services without regard to race, color, religion, national origin, age, sex, or disability. In conformance with the Americans with Disabilities Act, the DEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities needing auxiliary aids or services should call 860-424-3297 or TDD 424-3333.

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**SECTION I: HAZARDOUS WASTE & CONNECTICUT REGULATED WASTE FACILITIES**

<b>TSDF NAME</b>	<b>STREET ADDRESS</b>	<b>TOWN</b>	<b>PHONE NUMBER</b>	<b>EPA ID NO.</b>	<b>COMMENTS</b>
CLEAN HARBORS OF CT, INC.	761 MIDDLE ST.	BRISTOL	(860) 583-8917	CTD000604488	MAJOR TREATMENT ACTIVITIES
WASTE MANAGEMENT NEW ENGLAND ENVIRONMENTAL TRANSPORT, INC.	203 PICKERING ST.	PORTLAND	(860) 342-0667	CTD983896341	LEAD PAINT DEBRIS RECYCLING TRUCK TO TRUCK TRANSFER FACILITY
NORTHEAST LAMP RECYCLING	250 MAIN STREET	EAST WINDSOR	(860) 292-1992	CT5000001495	FLUORESCENT LAMP RECYCLING
UNITED OIL RECOVERY, INC.	136 GRACEY ST.	MERIDEN	(203) 238-6751	CTD021816889	FUEL & USED OIL RECYCLING
BRIDGEPORT UNITED RECYCLING	50 CROSS ST.	BRIDGEPORT	(203) 334-4812	CTD002563887	USED OIL RECYCLING

**SECTION II: CONNECTICUT REGULATED WASTE FACILITIES**

<b>22A-454 FACILITY NAME</b>	<b>STREET ADDRESS</b>	<b>TOWN</b>	<b>PHONE NUMBER</b>	<b>EPA ID NO.</b>	<b>COMMENTS</b>
COT-PURITECH, INC.	3713 PROGRESS ST. NE	CANTON, OHIO	(888) 478-6996	N/A	MOBILE USED OIL RECYCLING
PHOENIX SOILS, INC.	130 FREIGHT ST.	WATERBURY	(203) 759-0053	N/A	PETROLEUM CONTAMINATED SOILS
UNITED RETEK OF CONNECTICUT, LLC	P.O. BOX 1550	WATERBURY	(866)261-7778	N/A	MOBILE SOIL STABILIZATION UNIT

Appendix 3: EPA Memorandum, "Lead-Based Paint Residues and Lead Contaminated Residential Soils in Private/Public Housing Units," dated November 20, 1987.

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NOV 20 1987

MEMORANDUM

SUBJECT: Lead-Based Paint Residues and Lead Contaminated Residential Soils in Private/Public Housing Units

FROM: Jeffery Denit, Deputy Director */s/*  
Office of Solid Waste (WH-562)

TO: Walter Kovalick, Deputy Director  
Office of Emergency and Remedial Response (WH-548)

The following information is being provided in response to your draft memorandum requesting classification of lead-based paint residues.

BACKGROUND

As you are aware, the question of lead-based paint disposal has been of concern for a long time. As early as 1904, it was recognized that ingestion of paint and paint chips poses a serious health hazard to children. Many buildings, both individual residences and public housing units, especially those built before 1950, contain lead-based paints on interior and exterior walls, window sills, and other surfaces accessible to young children. In addition to paint, some plasters and putties have also been found to contain high levels of lead. Some older primers have been found to contain from 30,000 to 600,000 mg lead per kg of primer. Soils adjacent to residences also have been found to contain high levels of lead due to the leaching of the lead as a result of the weathering of the painted surface. For instance, in a study of lead contamination in Urbana, Illinois, lead was found in concentrations up to 12,000 ppm in soil. Many other cities throughout the United States have similar problems.

CONCURRENCES

SYMBOL							
SURNAME	<i>OSW</i>	<i>OSW</i>	<i>OSW</i>	<i>OSW</i>	<i>OSW</i>		
DATE	<i>Den</i>	<i>RHS</i>	<i>gawel</i>	<i>Lowme</i>	<i>STC</i>		
	<i>10/29</i>	<i>10/29</i>	<i>10/29</i>	<i>11/20/87</i>	<i>11/20/87</i>		

Numerous state and Federal agencies have been aware of and concerned about the problem for some time and are pursuing programs to identify lead poisoning and to remove lead-based paint from residences. The Lead-Based Paint Poisoning Prevention Act, as amended, provides the Department of Housing and Urban Development (HUD) with authority to eliminate the hazards of lead-based paint poisoning in HUD-financed and other public residential housing. Unfortunately, the program has been hindered by the lack of a determination of whether or not lead-based paint residues (paint chips, peelings, etc.) should be managed and disposed of as a hazardous waste.

### ISSUES

Currently, the question of whether or not lead paint wastes are hazardous is confused by Section 261.4 "Exclusions" of 40 CFR Part 261, Identification and Listing of Hazardous Waste. If these wastes are generated at a commercial facility and exceed the EP toxicity limit of 5 ppm for lead, then they will be hazardous wastes. However, when the paint residues are generated at private and public residential units, the question arises as to whether the household waste exclusion applies (See 40 CFR 261.4 (b)). This provision excludes household wastes from regulation as solid wastes, and therefore, as hazardous wastes. Household wastes are defined as "any material (including garbage) trash, and sanitary wastes (in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day recreation areas.)"

In the preamble to the Federal Register notice addressing hazardous waste identification and listing (Vol. 49, No. 220, November 13, 1984, page 44998), EPA states that "there is no basis for extending the household waste exclusion to waste such as debris produced during building construction, renovation, or demolition in houses or other residences, as EPA does not consider wastes from these sources to be similar to those generated by a consumer in a home in the course of daily living." Furthermore, in the preamble to the Final Hazardous Waste Rules, Federal Register, Vol. 45, No. 98, May 19, 1980, EPA noted that wastes generated by Federal agencies are not subject to the household exemption since they cannot qualify as households.

Paint wastes are exempted from regulation as a hazardous waste if they are generated at individual households by the houseowner doing his own removal. On the other hand, if the removal at an individual residence is done by a contractor, the residues are solid wastes and must be evaluated with respect to their hazardousness (EP Toxicity) and must be disposed of according to hazardous waste regulations if found to be hazardous.

In cases where paint residues are regulated under Subtitle C, then commercial contractors who are performing the renovation work and who generate less than 100 kg per month of paint residues (which we believe is likely), will be a conditionally exempt generator (Section 261.5) and their waste will not be subject to regulation under Sections 262 through 266 of RCRA. We believe that only large renovation projects will exceed the 100 kg per month limitations.

While paint residues may not be regulated as hazardous wastes, especially at private individual households or small housing units, information should be made available to homeowners warning them of the hazards associated with improper disposal of paint residues. Directions should be provided regarding the proper disposal of these wastes.

In the case of a larger commercial contractor whose activities result in the generation of more than 100 kg per month of waste, for instance, at a public housing renovation project, then the "hazardousness" of the waste must be determined. In the case of lead-paint wastes, the EP Leachate Test should be performed. If the leachate lead concentration exceeds 5 ppm, then the paint waste is a hazardous waste. If the residues are indeed hazardous, then the generator (removal contractor) must comply with all appropriate regulations, (e.g., Parts 262 Standards Applicable to Generators of Hazardous Wastes and Part 263 Standards Applicable to Transporters of Hazardous Waste), and must send the waste to a facility that is permitted or operating under RCRA interim status.

PROCESSES THAT MAY GENERATE HAZARDOUS WASTE

There are several methods available for removing lead-based paints; however, the conventional lead paint removal techniques currently available are not totally effective and may exacerbate the lead problem by dispersing lead-containing particles throughout the residence. Newer, more effective abatement methods which may be used for lead removal include:

- Peel Away - This consists of a caustic paste that is covered with a plastic film (calcium, magnesium, and sodium hydroxide). This paint removal system can be used on wood, metal, stone and brick, flat and irregular surfaces. It should be noted that in a demonstration project conducted in Baltimore, waste water from the peel away process was found to have a lead content greater than 66 ppm, which was well in excess of the EP toxicity limit of 5 ppm.
- Off-Site Dipping - Wood trim, woodwork, and doors are stripped of paint in enclosed chemical tanks containing methylene chloride. When used for this purpose, spent methylene chloride is a listed hazardous waste.
- High Efficiency Particle Accumulator (HEPA) Sander - This is a power disk sander that attaches to a HEPA vacuum to trap debris. It is used on flat surfaces only. This method would generate a dust which could, depending upon the lead content, fail the EP Toxicity Test.
- Replacement - Removal and replacement of wood trim and old windows with new materials. All of the painted wood products from the residence should be sampled and the EP performed on the wood samples.

In any of the above methods, if the extractable lead exceeds 5 ppm in the waste, then it is a hazardous waste. If the household waste exclusion does not apply then the wastes must be handled and disposed of in accordance with the requirements of 40 CFR Parts 262, 263, and 264, 265 and 270 as appropriate.

### CONTAMINATED SOILS

In addition to painted surfaces, the soils immediately adjacent to residences may have high concentrations of lead, due to the lead being leached from the exterior of the structure as the paint weathers and ages. For example, in a study of lead concentration in Urbana, Illinois, concentrations of the lead in the soil were found to range from 132 to 11,760 ppm adjacent to and 240 to 6,640 ppm away from the houses.

Whether or not "contaminated" soils are considered hazardous wastes depends upon whether or not they are 1) removed and transported off-site or left in place, and 2) exceed the lead toxicity limit of 5 ppm.

If the contaminated soil is removed for off-site disposal, it must be evaluated against the characteristics to determine whether or not the soils are hazardous. If the soils fail the existing EP toxicity characteristic, then they must be taken to a RCRA Subtitle C facility. In the case of CERCLA sites such soils must be taken to a RCRA facility which is in compliance with CERCLA requirements for off-site disposal. (See OSWER Directive number 9834.11 "Revised Procedures for Planning and Implementing off-site Response Actions; November 13, 1987.)

The requirements for on-site treatment of lead-contaminated residential soils, which may seldom be practical, differs for CERCLA and RCRA sites. For CERCLA sites, such on-site treatment can be performed without a permit being required. However, for on-site treatment at RCRA sites, a permit is required unless treatment is performed in tanks or containers in compliance with Section 262.34. It should be noted that any on-site treatment must consider the requirements of the individual states in question, which may be more stringent than Federal requirements.

In the case of soil left on site, the property owner will not normally be required to determine whether the soil is a hazardous waste. For soils that are left in place, EPA or the appropriate state agency should set clean-up levels that will ensure that the site will not pose a hazard when returned to normal residential use. I know that the CERCLA program often makes such determinations. For your information, described below is the procedure OSW plans to provide in the RCRA Clean Closure and RFI Guidance Manuals for determining when contaminated soils may safely be left in place and the site returned to residential use. We have had a number of discussions with your staff and we think that there is a general agreement on this approach.

There are two approaches which should be used in making a determination if further soil removal is required. The first is to look at health-based concentration limits in surface soils; the second is an acid precipitation leach test (method 1312 in SW-846).

The health-based limits should be used to determine how much contaminated soil will have to be removed. The RCRA Clean Closure and RFI guidance Manuals provide direction on the appropriate health-based levels to use. Excavation would terminate at the point where soil no longer exceeds the health-based concentration limits.

At that point, method 1312 should be run on soil samples to determine the threat, if any, that might be posed by remaining residual contaminants leaching into ground water. For testing for lead, a pH of 4.2 should be used. In the absence of better numbers, the 5 ppm threshold used for the EP should be the limit for method 1312 as well. Since method 1312 is new, no data on its use is available. Once such data are available, the ppm limit may be revised.

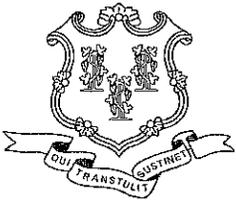
The removed soil should be tested against the EP after removal to see if it fails the 5 ppm limit. If so, it must be sent to a Subtitle C facility. If it does not fail, it can be sent to a Subtitle D facility.

If you have any questions pertaining to the above, please do not hesitate to contact Jerry Coalgate of my staff.

Attachment

Appendix 4: List of Transporters Permitted in Connecticut.

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STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



CONNECTICUT'S PERMITTED WASTE TRANSPORTERS LIST  
DESCRIPTIVE KEY

*Column Headings:*

*EPA ID NO.* = Permittee's U.S. EPA ID Number

*CT NO.* = HW - Permittee's Connecticut Hazardous Waste Transporter Number  
BMW - Permittee's Connecticut Biomedical Waste Transporter Number

*Transporter Name* = Permittee's name as written on permit

*Town* = Town the permittee is located in

*State* = State the permittee is located in

*Phone Number* = The phone number where the permittee can be contacted

*P E D* = Permit Expiration Date

*N* = Transporter is permitted to transport **CT Regulated Waste only**

*H* = Transporter is permitted to transport **hazardous waste only**

*SP* = Transporter is a Connecticut **Spill Clean-Up Contractor**

**NOTE:** Since all Connecticut waste transporter permits are vehicle and waste specific, you should verify that the vehicle(s) to be used and wastes to be transported are listed on the transporter's permit before using their services.

This list has been established for general reference only and should not be used as an ultimate verification source (i.e., You may want to request a current copy of the waste transporter's permit from the hauler you intend to use). Please be aware that this listing may change from day to day, however, due to resource constraints, this list is only periodically updated. In addition, this list should not be construed to be a recommendation from the Waste Management Bureau of any services provided.

Should you have any questions or comments, please feel free to contact Inga Rubecka at (860) 424-3566, of the Waste Engineering and Enforcement Division, Waste Management Bureau.

Rev: 1/4/05

# Transporter Public List

3/20/2007

Permit No.	EPA ID	Transporter Name	Site Street Address	Town	Phone No.	PEID	N	H	SP
<b>State: AL</b>									
1	CT-HW-678	ALD067138891	ROBBIE D. WOOD, INC.	1051 OLD WARRIOR RIVER ROAD	DOLomite	(205)744-8440	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	CT-HW-363	ALD095704011	SUTTLES TRUCK LEASING, INC.	2460 HIGHWAY 43 SOUTH	DEMOPOLIS	(334)289-0670	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>State: CT</b>									
1	CT-HW-692	CTR0000003921	ABSOLUTE TANK REMOVAL, L.L.C.	81 MUNSON STREET	MILFORD	(203)882-9391	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	CT-HW-798	CTR0000506162	ALPINE ENVIRONMENTALSERVICES LLC	425 SOUTH CHERRY STREET	WALLINGFORD	(203)269-9522	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	CT-HW-792	CTR0000505925	BRICO LLC	6C NORTHWOOD RD	BLOOMFIELD	(860)242-7068	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	CT-HW-770	CTR0000506519	CONNECTICUT OIL RECYCLING SERVICES LLC	27 MILL STREET	MIDDLETOWN	(860)347-7979	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	CT-HW-695	CTR0000004507	CONNECTICUT TANK REMOVAL INC.	118 BURR COURT	BRIDGEPORT	(203)384-6020	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	CT-HW-719	CTD983902370	D. W. TRANSPORT AND LEASING, INC.	33 PEQUOT ROAD	UNCASVILLE	(860)848-1692	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	CT-HW-614	CTR0000506428	EARTH TECHNOLOGY II, LLC	2199 STATE STREET	HAMDEN	(203)269-2202	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	CT-HW-703	CTR0000500819	EGC ENVIRONMENTAL SERVICES, INC.	8 RIDGE TOP LANE	NORTH BRANFORD	(203)483-6392	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	CT-HW-666	CTR0000003939	ENVIRONMENTAL MAINTENANCE SERVICES, INC.	10 GRAMMAR AVENUE	PROSPECT	(203)758-5550	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	CT-HW-218	CTD018811802	ENVIRONMENTAL SERVICES, INC.	90 BROOKFIELD STREET	SOUTH WINDSOR	(860)528-9500	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	CT-HW-495	CTD089620405	ENVIROSHIELD, INC.	250 MOFFITT STREET	STRATFORD	(203)380-5644	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	CT-HW-779	CTR0000505651	ENVIROTECH OF FAIRFIELD COUNTY INC	115 WOOSTER ST	BETHEL	(203)748-3111	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13	CT-HW-599	CTR0000501924	FEDERAL OIL SERVICE, INC.	58 GRANITE HILL ROAD	KILLINGWORTH	(860)663-5688	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14	CT-HW-786		FLEX SERVICES LLC	21 WEST DUDLEY TOWN ROAD	BLOOMFIELD	(860)242-2500	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15	CT-HW-783		HI STONE & SON INC	313 MAIN STREET NORTH	SOUTHBURY	(203)264-8656	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16	CT-HW-645	CTR0000077757	HEALTHCARE WASTE SOLUTIONS INC	117 MURPHY RD	HARTFORD	(718)842-9655	6/30/2009	<input type="checkbox"/>	<input type="checkbox"/>
17	CT-HW-684	CTR0000006049	HERBERT RECOVERY SYSTEMS, INC.	27 DAVENPORT STREET	STAMFORD	(203)938-7066	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18	CT-HW-690	CTR0000500389	KROPP ENVIRONMENTAL CONTRACTORS, INC.	32 EXETER ROAD	LEBANON	(860)642-9952	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
19	CT-HW-516	CTD983875493	MANSFIELD CONSTRUCTION, INC.	291 EAGLE STREET	BRIDGEPORT	(203)268-4876	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20	CT-HW-528	CTR0000005058	MCVAC ENVIRONMENTAL SERVICES INC.	481 GRAND AVENUE	NEW HAVEN	(203)498-1427	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
21	CT-HW-669	CT50000001495	NORTHEAST LAMP RECYCLING, INC.	250 MAIN STREET	EAST WINDSOR	(860)292-1992	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>
22	CT-HW-755		SHORELINE SANITATION INC.	HATCHETT HILL ROAD	OLD LYME	(860)434-0052	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>
23	CT-HW-776	N/A	SKIPS SEPTIK TANK SERVICE INC	27 MUDDY BROOK RD	ELLINGTON	(860)875-2332	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>

# Transporter Public List

3/20/2007

Permit No. EPA ID Transporter Name Site Street Address Town Phone No. PED N H SP

## State: CT

24	CT-HW-616	CTD983872698	STERICYCLE, INC.	80 INDUSTRIAL PARK ROAD	MIDDLETOWN	(860)632-0294	6/30/2010	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
25	CT-HW-751		SUBURBAN SANITATION SERVICE, INC.	18 COLONIAL ROAD	CANTON	(860)673-3078	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	CT-HW-691	CTR000004671	TECHNICAL ENVIRONMENTAL CONSTRUCTION, INC.	490 HUNTINGTON ROAD SUITE 103	STRATFORD	(203)378-1066	6/30/2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
27	CT-HW-718	CTR000506410	TRANSWASTE, INC.	3 BARKER DR	WALLINGFORD	(203)269-8300	6/30/2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
28	CT-HW-26	CTD016424210	TRI-S ENVIRONMENTAL SERVICES, INC.	25 PINNEY STREET	ELLINGTON	(860)875-2110	6/30/2006	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
29	CT-HW-794	CTR000505933	TRUE BLUE ENVIRONMENTAL SERVICES LLC	5 NORTHFIELD STREET	WALLINGFORD	(203)269-3355	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
30	CT-HW-527	CT000001966	TYREE ORGANIZATION, LTD.	125 COMMERCE DRIVE	BROOKFIELD	(631)249-3150	6/30/2010	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
31	CT-HW-231	CTD021816889	UNITED OIL RECOVERY, INC.	136 GRACEY AVENUE	MERIDEN	(203)238-6745	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
32	CT-HW-676	CTR000004903	VINCENT CAHILL AND SONS EXCAVATING, INC.	270 MAIN STREET	MIDDLEFIELD	(860)348-8851	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
33	CT-HW-560	CTD983896341	WASTE MANAGEMENT N.E.T., INC.	209 PICKERING STREET	PORTLAND	(860)342-5053	6/30/2010	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
34	CT-HW-787	CTR000503359	WE RECYCLE INC	500 SOUTH BROAD STREET	MERIDEN	(203)630-0344	6/30/2009	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## State: FL

1	CT-HW-762	FLR000057414	QUALITY CARRIERS, INC.	3802 CORPOREX PARK DRIVE	TAMPA	(800)282-2031	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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## State: IL

1	CT-HW-753	ILR000130062	HERITAGE-CRYSTAL CLEAN, LLC	2175 POINT BOULEVARD SUITE 375	ELGIN	(847)783-5932	6/30/2010	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	CT-HW-440	ILD981957236	SET ENVIRONMENTAL, INC.	450 SUMMAC ROAD	WHEELING	(847)537-9221	6/30/2010	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## State: IN

1	CT-HW-618	IND058484114	HERITAGE TRANSPORT, LLC	7901 WEST MORRIS STREET	INDIANAPOLIS	(317)381-6844	6/30/2010	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	CT-HW-757	IN0000640847	R. L. CARTER TRUCKING INC.	8451 SOUTH STATE RD 39	CLAYTON	(317)539-4364	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## State: MA

1	CT-HW-112	MAD039322250	CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.	42 LONGWATER DRIVE	NORWELL	(781)792-5000	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	CT-HW-33	NU0000027193	CLEAN VENTURE INC.	138 LELAND STREET	FRAMINGHAM	(508)872-5000	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	CT-HW-670	MAR000009654	CORPORATE ENVIRONMENTAL ADVISORS, INC.	127 HARTWELL STREET	WEST BOYLSTON	(508)835-8822	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	CT-HW-28	MAD082303777	CYN OIL CORPORATION	100 TOSCA DRIVE	STOUGHTON	(781)341-1777	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	CT-HW-30	MAD084814136	E Q NORTHEAST, INC.	185 INDUSTRIAL ROAD	WRENTHAM	(508)384-6151	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

# Transporter Public List

3/20/2007

Permit No.	EPA ID	Transporter Name	Site Street Address	Town	Phone No.	PED	N	H	SP
<b>State: MA</b>									
6	CT-HW-699	MAR000008375	ECOLOGY RECOVERY SYSTEMS, INC.	330 TACOMA STREET, SUITE 4	WORCESTER	(508)852-8451	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	CT-HW-529	MAD9880670004	ENPRO SERVICES, INC.	12 MULLIKEN WAY	NEWBURYPORT	(978)815-0296	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	CT-HW-744	MAC3000001617	ENVIRO-SAFE CORPORATION	14B JAN SEBASTIAN DRIVE	SANDWICH	(508)888-5478	6/30/2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	CT-HW-503	MAR0000504928	FLEET ENVIRONMENTAL SERVICES, LLC	75D YORK AVENUE	RANDOLPH	(781)815-1177	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	CT-HW-500	MAD08935353023	FRANK CORP. ENVIRONMENTAL SERVICES	615 TARKILN HILL ROAD	NEW BEDFORD	(508)995-9997	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	CT-HW-747	MAR0000503623	GLOBAL REMEDIATION SERVICES, INC.	1 WESTINGHOUSE PLAZA, SUITE 4001	BOSTON	(617)364-0012	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	CT-HW-806	MAC3000006038	GOULET TRUCKING	20 INDUSTRIAL DRIVE WEST	DEERFIELD	(413)665-1323	6/30/2011	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13	CT-HW-29	MA5000001867	MAXYMILLIAN TECHNOLOGIES, INC.	1801 EAST STREET	PITTSFIELD	(413)499-3050	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14	CT-HW-708	MAR0000011270	NATIONAL ENVIRONMENTAL SERVICES CO., INC.	590 SOUTH STREET	RAYNHAM	(508)880-2443	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15	CT-HW-624	MAD985307685	NATIONAL WASTE MANAGEMENT, INC.	362 PUTNAM HILL ROAD	SUTTON	(508)476-1900	6/30/2007	<input type="checkbox"/>	<input type="checkbox"/>
16	CT-HW-681	MAR0000504860	NEW ENGLAND DISPOSAL TECHNOLOGIES, INC.	ONE POLITO DRIVE	SHREWSBURY	(508)756-1339	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17	CT-HW-114	MAD985294693	OIL RECOVERY CORPORATION	138 PALMER AVENUE	WEST SPRINGFIELD	(413)737-2949	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18	CT-HW-748	MAR0000502138	TMC SERVICES, INC.	ONE WILLIAM WAY	BELLINGHAM	(508)966-3737	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	CT-HW-575	MAD985286988	TRIUMVIRATE ENVIRONMENTAL, INC.	61 INNER BELT ROAD	SOMERVILLE	(617)628-8098	6/30/2007	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	CT-HW-657	NYD0006801245	TYREE ORGANIZATION, LTD.	9 OTIS STREET	WESTBOROUGH	(631)249-3150	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>
21	CT-HW-521	MAD001764794	UNIVAR USA INC (WAS VOPAK USA INC. VAN WATERS & RO	COLONIAL ROAD	SALEM	(732)416-9830	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>State: ME</b>									
1	CT-HW-693	MER0000500595	AMERITECH ENVIRONMENTAL SERVICES, INC.	393 HAROLD L DOW HIGHWAY	ELIOT	(207)438-9149	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>State: MI</b>									
1	CT-HW-508	MID985568021	CHEMICAL ANALYTICS, INC.	29959 BEVERLY ROAD	ROMULUS	(734)326-9400	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>State: MO</b>									
1	CT-HW-476	MOD095038998	BED ROCK INC. DBA TRI-STATE MOTOR TRANSIT CO.	8141 EAST 7TH STREET	JOPLIN	(417)621-2828	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>State: NH</b>									
1	CT-HW-805	MAR0000510214	B & D ASSOCIATES INC	1045 RTE 114	GRANTHAM	(603)863-1974	6/30/2009	<input type="checkbox"/>	<input type="checkbox"/>

# Transporter Public List

3/20/2007

Permit No.	EPA ID	Transporter Name	Site Street Address	Town	Phone No.	PED	N	H	SP
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State: NH

2	CT-HW-734	NHDD018902874	TRANSFORMER SERVICE, INC.	74 REGIONAL DRIVE	CONCORD	(603)224-4006	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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State: NJ

1	CT-HW-658	NJD986588630	ALLSTATE O.R.C., INC.	473 HAMBURG TURNPIKE	WEST MILFORD	(973)696-3122	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	CT-HW-435	NJD003812047	ALLSTATE POWER VAC	928 EAST HAZELWOOD AVENUE	RAHWAY	(732)815-0220	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	CT-HW-430	NJD980772768	AUCHTER INDUSTRIAL VAC SERVICE, INC.	4801 SOUTH WOOD AVENUE	LINDEN	(908)925-1515	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	CT-HW-768	NJFR000032339	CARE ENVIRONMENTAL CORP.	10 ORBEN DRIVE	LANDING	(973)395-5100	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	CT-HW-672	NJFR000001180	CASTLTON ENVIRONMENTAL CONTRACTORS, LLC	377 ROUTE 17 SOUTH	HASBROUCK HEIGH	(201)727-9001	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	CT-HW-307	NJD054126164	FREEHOLD CARTAGE, INC.	825 HIGHWAY 33	FREEHOLD	(732)462-1001	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	CT-HW-797	NJFR000011528	H M H T T C RESPONSE INC	400 VALLEY ROAD SUITE 303	MOUNT ARLINGTON	(973)770-6900	6/20/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	CT-HW-752	NJFR000029967	J & D TRUCKING INC.	3526 NW BLVD	VINELAND	(856)691-5145	6/30/2010	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	CT-HW-477	NJD046555033	LACY'S EXPRESS INC.	26 EAST MILL STREET	PEDRICKTOWN	(856)299-2569	6/30/2007	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	CT-HW-795		LETICIA INC	640 IRVINGTON AVENUE	HILLSIDE	(908)355-4768	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	CT-HW-801	NJFR000023036	LIONETTI ASSOC DBA LORCO PETROLEUM SERVICES	450 S FRONT STREET	ELIZABETH	(908)820-8800	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	CT-HW-51	NJD002454544	MARISOL, INC.	125 FACTORY LANE	MIDDLESEX	(732)469-5100	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	CT-HW-613	NJD986607380	MAUMEE EXPRESS, INC.	27 SUTTON RD	LEBANON	(267)590-0043	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	CT-HW-768	MIK625426333	PARTS CLEANING TECHNOLOGIES LLC	835 INDUSTRIAL HIGHWAY UNIT 1	CINNAMINSON	(248)799-7700	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	CT-HW-107	NJD071629976	S - J TRANSPORTATION CO	1176 US ROUTE 40	WOODSTOWN	(856)769-2741	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	CT-HW-663	NJD080631369	VEOLIA ES TECHNICAL SOLUTIONS LLC	1 EDEN LANE	FLANDERS	(973)691-7321	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

State: NM

1	CT-HW-781	NMMD002208627	RINCHEM COMPANY INC	6133 EDITH BOULEVARD NE	ALBUQUERQUE	(505)345-3655	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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State: NY

1	CT-HW-501	NYD987023371	A B OIL SERVICE, LTD.	1599 OCEAN AVENUE	BOHEMIA	(631)567-6545	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	CT-HW-758	NYR0000076513	APPROVED STORAGE & WASTE HAULING, INC.	110 EDISON AVENUE	MT VERNON	(914)664-4791	6/30/2011	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	CT-HW-664	NY0000148163	ASBESTOS TRANSPORTATION COMPANY, INC. (A.T.C.)	#2 MORICHES MIDDLE ISLAND ROAD	SHIRLEY	(631)924-5050	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	CT-HW-283	NYR0000045724	BUFFALO FUEL CORP.	4870 PACKARD ROAD	NIAGARA FALLS	(716)278-2000	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Transporter Public List

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Permit No.	EPA ID	Transporter Name	Site Street Address	Town	Phone No.	PED	N	H	SP
5	CT-HW-163	NYD0082785429 CHEMICAL POLLUTION CONTROL, INC. OF NEW YORK	120 SOUTH 4TH STREET	BAY SHORE	(631)586-0333	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	CT-HW-785	NYD012928347 CONKLIN SERVICES & CONSTRUCTION INC	94 STEWART AVENUE	NEWBURGH	(845)561-1512	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	CT-HW-732	NYR000121335 ENVIROSTAR CORPORATION	50 FIELDS LANE	BREWSTER	(845)279-9555	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	CT-HW-454	NYD982792814 FRANKS VACUUM TRUCK SERVICE, INC.	4500 ROYAL AVENUE	NIAGARA FALLS	(716)284-2132	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	CT-HW-579	NYD010951986 FRED A. COOK, JR., INC.	3226 ALBANY POST ROAD	BUCHANAN	(914)739-3300	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	CT-HW-349	NYD980769947 HAZMAT ENVIRONMENTAL GROUP, INC.	60 COMMERCE DRIVE	BUFFALO	(716)827-7200	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	CT-HW-548	NYD981566565 J. B. WASTE OIL CO., INC.	18-18 41ST STREET	ASTORIA	(718)626-4161	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	CT-HW-570	NYD064743263 MILRO ASSOCIATES, INC.	41 HANSE AVENUE	FREEPORT	(516)379-1500	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	CT-HW-700	NYD986980753 OP-TECH ENVIRONMENTAL SERVICES, INC.	6392 DEERE ROAD	SYRACUSE	(315)463-1643	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	CT-HW-515	NYD986969947 PAGE E.T.C., INC.	2758 TROMBLEY ROAD	WEEDSPORT	(315)834-6681	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	CT-HW-634	NY0001031814 PRECISION INDUSTRIAL MAINTENANCE, INC.	1710 ERIE BOULEVARD	SCHENECTADY	(518)346-5800	6/30/2011	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	CT-HW-251	NYD046765574 PRICE TRUCKING CORP.	67 BEACON STREET	BUFFALO	(716)822-1414	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	CT-HW-673	NYR000038000 PRS 95 INC., d/b/a 95 INC., d/b/a PARTS SINKS	4 DITHOMAS COURT	COPIAGUE	(631)842-9595	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	CT-HW-171	NYD049178296 RADIAC RESEARCH CORP.	261 KENT AVENUE	BROOKLYN	(718)963-2233	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	CT-HW-778	NYD980757462 SHELDON OIL SERVICES INC	1005 ROUTE 9	CASTLETON	(518)766-2864	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	CT-HW-621	NYD986899912 TCI OF NY LLC	39 FALLS INDUSTRIAL PARK ROAD	HUDSON	(518)828-9997	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	CT-HW-754	NYR000080549 TERRACE TRANSPORTATION LLC	3249 RICHMOND TERRACE	STATEN ISLAND	(718)981-4600	6/30/2010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	CT-HW-733	NYR000054551 WASH PLUS INC., DBA AKBA WASTE OIL SERVICES	4 DITOMAS COURT	COPIAGUE	(516)747-0390	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	CT-HW-799	NYR000062166 WASTE RECYCLING SOLUTIONS INC	445 SILLS ROAD (COUNTY ROAD 101) S YAPHANK		(631)924-8111	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	CT-HW-159	NYD000708271 WEST CENTRAL ENVIRONMENTAL CORP.	250 WATERLIET SHAKER ROAD	WATERLIET	(518)272-6891	6/30/2011	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>State: OH</b>									
1	CT-HW-281	OHDD009865825 DART TRUCKING COMPANY, INC.	41738 ESTERLY DRIVE	COLUMBIANA	(800)541-8206	6/30/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	CT-HW-800	OHFR000107847 E T C LOGISTICS LLC	10092 REYNOLDS ROAD	PARKMAN	(440)548-5931	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	CT-HW-551	OHCO00000539 MIDWEST ENVIRONMENTAL TRANSPORT, INC.	10163 CINCINNATI-DAYTON ROAD	CINCINNATI	(513)772-1145	6/30/2007	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>State: OK</b>									
1	CT-HW-777	OKD987096328 JANUARY TRANSPORT INC	2701 S PROSPECT	OKLAHOMA CITY	(405)670-2030	6/30/2009	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Transporter Public List

3/20/2007

Permit No.	EPA ID	Transporter Name	Site Street Address	Town	Phone No.	PED	N	H	SP
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State: OK

2 CT-HW-625 OKD961588791 TRIAD TRANSPORT, INC. 1630 DIESEL AVENUE MCALESTER (918)426-4751 6/30/2008

State: PA

1 CT-HW-161 PADD14146179 ELDREDDGE, INC. 888 FERN HILL ROAD WEST CHESTER (610)436-4749 6/30/2009

2 CT-HW-580 PAD987271020 ELK TRANSPORTATION, INC. 1420 CLARION STREET READING (610)372-4760 6/30/2007

3 CT-HW-10 PAD010154045 ENVIRITE OF PENNSYLVANIA 730 VOGELSONG ROAD YORK (717)846-1900 6/30/2008

4 CT-HW-743 PAR000501577 ENVIRONMENTAL WASTE MINIMIZATION, INC. (EWM1) 14 BRICK KILN COURT NORTHAMPTON (484)275-6900 6/30/2009

5 CT-HW-411 PAD146714878 HORWITH TRUCKS, INC. 1449 NOR-BATH BOULEVARD NORTHAMPTON (610)261-2220 6/30/2011

6 CT-HW-780 PAD980537666 RECYCLE OIL CO 1600 S 25TH ST EASTON (610)250-8747 6/30/2007

7 CT-HW-431 PAD982661381 REPUBLIC ENVIRONMENTAL SYSTEMS (TG) INC. 21 CHURCH ROAD HATFIELD (215)997-2446 6/30/2007

8 CT-HW-277 PAD987358587 ST. JOSEPH MOTOR LINES ROUTE 879 CLEARFIELD (814)766-9732 6/30/2007

9 CT-HW-611 PAD987347515 U.S. BULK TRANSPORT, INC. 205 PENNBRIAR DRIVE ERIE (814)824-9949 6/30/2007

10 CT-HW-731 PAR000524041 US ENVIRONMENTAL, INC. 409 BOOT ROAD DOWNINGTOWN (610)518-5800 6/30/2010

11 CT-HW-446 PAD980707442 WEAVERTOWN TRANSPORT LEASING, INC. 3866 MILLERS RUN ROAD MCDONALD (724)746-4850 6/30/2010

State: RI

1 CT-HW-665 RID980906986 21ST CENTURY ENVIRONMENTAL MGMT. OF R.I. 275 ALLENS AVENUE PROVIDENCE (401)781-6340 6/30/2011

2 CT-HW-470 RID982194987 CYCLE SOLVE CORPORATION OF NEW ENGLAND, INC. 167 MILL STREET CRANSTON (401)781-0808 6/30/2008

3 CT-HW-391 RID982192627 LINCOLN ENVIRONMENTAL, INC. 333 WASHINGTON HIGHWAY SMITHFIELD (401)232-3353 6/30/2007

4 CT-HW-711 RIR000015115 QUINLAND COMPANIES INC THE 125 ERNEST STREET PROVIDENCE (401)461-5353 6/30/2010

5 CT-HW-257 RIR000500025 WESTERN OIL, INC. ONE DUCHESS WAY LINCOLN (401)727-8600 6/30/2007

State: TN

1 CT-HW-739 TNR000001388 NORTHSTAR ENVIRONMENTAL GROUP, INC. 417 N. BLYTHE STREET GALLATIN (615)451-4867 6/30/2007

State: VT

1 CT-HW-728 VTR000500090 ENVIRONMENTAL PRODUCTS & SERVICES OF VERMONT, INC. 2 FLYNN AVENUE BURLINGTON (802)862-1212 6/30/2007

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Appendix 5: Connecticut-Regulated Waste.

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## Non-RCRA Hazardous Waste (Connecticut Regulated Waste)

There are several types of industrial and non-industrial wastes that are considered to be non-RCRA\* hazardous waste. Non-RCRA hazardous waste should be tested for suspected RCRA hazardous constituents prior to treatment, storage or disposal. Testing is required by Title 40 Part 262.11 of the Code of Federal Regulations (CFR) and Sections 22a-449(c)-101 and 102 of the Regulations of Connecticut State Agencies (RCSA) and should be performed in accordance with the United States Environmental Protection Agency (EPA) methods approved by the Connecticut Department of Environmental Protection (DEP).

Non-RCRA hazardous waste must be managed properly and stored in an environmentally safe manner. Any mismanagement of non-RCRA hazardous waste may be a potential source of pollution and subject to enforcement action under Sections 22a-427 through 433 of the Connecticut General Statutes (CGS). In the event of a spill, DEP's Oil and Chemical Spills Response Division should be contacted at 860-424-3338. No liquids are allowed in landfills in Connecticut, therefore, liquid non-RCRA hazardous waste must be treated and disposed of by a permitted CGS Section 22a-454 Waste Facility or a publicly owned treatment works (POTW) facility permitted to accept such wastes. Pursuant to RCSA Section 22a-209-1, certain non-RCRA hazardous waste may be considered special waste and may be suitable for disposal at a solid waste land disposal facility or a resource recovery facility (RRF) that has been approved to accept such waste provided it complies with DEP's Special Waste Disposal Authorization approval requirements. The following are wastes which are typically neither characteristically nor listed RCRA Hazardous Waste as per 40 CFR 261, however a facility permit is required by CGS Section 22a-454 for a person *engaged in the business of* storing, treating, transferring, recycling, disposing or transporting\*\* such wastes. Refer to the following lists for a description of the types of waste and waste codes assigned to non-RCRA hazardous waste and suggested disposal methods for several types of common non-RCRA hazardous waste.

\* "RCRA" means Federal Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. Section 6901 et. seq.

\*\* Connecticut General Statutes do not require the transporter to be licensed to transport CR05 (Waste Chemical Solid) as defined on the following page.

## Non-RCRA Hazardous Waste (Connecticut Regulated Waste)

Waste Code	Waste Name	Description
CR01	Waste PCBs	Any waste material containing or contaminated by Polychlorinated Biphenyls (PCBs) in concentrations at or above 50 parts per million (ppm). These include, but are not limited to, PCB oils, items and equipment.
CR02	Waste Oil	Oil or petroleum that is no longer suitable for the services for which it was manufactured due to the presence of impurities or a loss of original properties, and <i>is not miscible</i> in water. These include, but are not limited to, used oil, crude oil, fuel oil, lubricating oil, kerosene, diesel fuel, motor oil, non-halogenated oil, and oils that are recovered from oil separators, oil spills or tank bottoms.
CR03	Waste Water Soluble Oil	Oil or petroleum that is no longer suitable for the services for which it was manufactured, due to the presence of impurities or a loss of original properties and <i>is miscible</i> in water. These include, but are not limited to, used oil and cutting oil emulsions.
CR04	Waste Chemical Liquids	Any wastes that are liquid, free flowing and/or contain free draining liquids <i>and</i> are toxic, hazardous to handle and/or may cause contamination of ground and/or surface water if improperly managed. These wastes may include, but are not limited to latex and solvent paint wastes, grinding wastes, waste sludges, antifreeze wastes and glycol solutions.
CR05**	Waste Chemical Solid	Any chemical solid or semi-solid from a commercial, industrial, agricultural or community activity. These wastes may include, but are not limited to, grinding dusts, tumbling sludges, scrap plastic and rubber flash, and other ground or chipped waste solid.

\*\* Connecticut General Statutes do not require the transporter to be licensed to transport CR05 (Waste Chemical Solid).

## Suggested Disposal Methods for Common Non-RCRA Hazardous Waste

Waste Name	Suggested Disposal Method
Waste Oil	Waste oil is a non-RCRA hazardous waste designated as CR02 or CR03 and must be collected and transported to a permitted CGS Section 22a-454 Waste Facility or POTW. Certain used oils may be burned on-site in a boiler, industrial furnace, or space heater in accordance with Connecticut's recycling regulations (RCSA Section 22a-241b). The DEP Bureau of Air Management must also be contacted at 860-424-4152 prior to any burning. RCRA hazardous used or waste oil is regulated according to RCSA Section 22a-449(c)-100 through 119 (Hazardous Waste Management Regulations).
Antifreeze	Antifreeze is a non-RCRA hazardous waste in most cases, but a RCRA hazardous waste determination should be made at least one time per year for verification purposes. It is designated as CR04 and must be collected and transported by a licensed hauler to a permitted CGS Section 22a-454 Waste Facility or POTW.
Solid Paint Wastes	Dried paint waste must be verified as non-RCRA hazardous through a waste determination. If determined to be non-RCRA hazardous, it is designated as CR05 and may be sent to an approved landfill or RRF with a Special Waste Disposal Authorization.
Grinding Dusts	Grinding dusts must be verified as non-RCRA hazardous through a waste determination. Non-RCRA hazardous dusts and residues are designated as CR05 and may be sent to an approved landfill or RRF with a Special Waste Disposal Authorization.
Spill Residues and Contaminated Soil	Certain non-RCRA hazardous spill residues and contaminated soil may be designated as CR05 and may be disposed of at an approved landfill or RRF with a Special Waste Disposal Authorization. The criteria for approval is subject to the volume of waste, the nature of contamination and the desired disposal facility. Each Special Waste Disposal Authorization is site specific. Contact the DEP Waste Engineering and Enforcement Division (WEED) at 860-424-3372 for information. A general description of contaminated soils suitability for land filling under a Special Waste Disposal Authorization is that it contains: 1) no listed or characteristically listed RCRA hazardous waste; 2) less than 50 ppm toxic organic compounds; and 3) less than 30 times the health based standards for inorganics as determined by the Toxicity Characteristic Leaching Procedure.

If there are any questions, please call WEED at 860-424-3372, or you may call the WEED Compliance Assistance Line at 888-424-4193.

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Appendix 6: List of Lead Recycling Facilities.

This list is intended to provide assistance to those attempting to find off-site recycling facilities for lead-contaminated wastes. This list does not necessarily include all of the facilities which may be able to accept these materials. This list also does not constitute an endorsement of any facility by DEP. Generators should take care in selecting any waste management company to be sure that the facility is in compliance with local requirements and can legally accept the particular waste generated.

<u>Facility Name</u>	<u>Facility Address</u>	<u>Contact Name &amp; Tel. Number</u>
The Doe Run Co.	Highway KK Boss, MO 65440	Louis J. Magdits (314)626-3476
	and	
	881 Main Street Herculaneum, MO 63048	Anthony Worchester (314)933-3107
Exide Corp.	P.O. Box 14205 Reading, PA 19612	Robert Jordan (800)346-3760
Master Metals, Inc.	2850 W. 3rd Street Cleveland, OH 44113	Jerry Moody (216)621-2361
Noranda Minerals	Brunswick Mining & Smelting Corp., Ltd. Belledune, New Brunswick Canada EOB 1G0	Phil Evans (506)522-2100
Nova Lead, Inc.	1200 Garnier Ville Ste.-Catherine Quebec, Canada JOL 1E0	Brian McIver (514)632-9910
Refined Metals Corp.	257 W. Mallory Memphis, TN 38109	Bill Freudiger (901)775-3770
	and	
	3700 Arlington Beech Grove, IN 46107	(317)787-6364
Revere Smelting & Refining	2 Ballard Road Middletown NY 10940	Jerry Llanaeza (914)692-4414
Schuykill Metals Corporation	Box 74040 Baton Rouge, LA 70874	Glen Krause or Glen Hasse (800)621-8236
	and	
	P.O. Box 156 Forest City, MO	Ken Fisher (816)446-3321

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#### Appendix 7: Useful References.

Listed below are several references which the reader may find helpful in the characterization, removal, handling, and disposal of lead-contaminated wastes.

1. Applicability of RCRA Disposal Requirements to Lead-Based Paint Abatement Wastes, Final Report, Technical Programs Branch, Chemical Management Division, Office of Pollution Prevention and Toxics, USEPA, 401 M Street S.W., Washington D.C. 20460, March, 1993. Can be obtained free of charge by calling the TOSCA hotline at (202)554-1404.
2. Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately-Owned Housing: Report to Congress, U.S. Dept. of Housing and Urban Development, Office of Policy Development and Research, January 1991, HUD Document Number HUD-PDR-1295.
3. Conditionally Exempt Small Quantity Generator Handbook--Guidance for Hazardous Waste Handlers, State of Connecticut Department of Environmental Protection, 79 Elm Street, Hartford CT 06106, January 1996.
4. Decontamination Techniques for Buildings, Structures, and Equipment, M.P. Esposito, J.L. McArdle, A.H. Crone, and J.S. Greber, Noyes Data Corporation, Park Ridge NJ, 1987.
5. Lead-Based Paint Contaminated Debris, Waste Characterization Study No. 37-26-JK44-92, U.S. Dept. of the Army, U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, Maryland 21010-5422, May, 1993.
6. Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, Office of Public Indian Housing, HUD, Washington D.C., September, 1990.
7. Lead Poisoning Prevention and Control Regulation, RCSA Sections 19a-111-1 through 19a-111-11, State of Connecticut Department of Public Health and Addiction Services, 150 Washington Street, Hartford CT 06106, September, 1992.
8. Lead Testing and Abatement Manual, Guidelines for the Abatement of Lead Hazards in Connecticut, State of Connecticut Department of Public Health and Addiction Services, Lead Poisoning Prevention Program, 150 Washington Street, Hartford CT 06106.
9. Management of Whole Structure Demolition Debris Containing Lead-Based Paint, U.S. Environmental Protection Agency, Office of Waste Programs Enforcement, Washington, D.C., 1993. Can be obtained by calling EPA Region I at (617) 573-9670.
10. Small Quantity Generator Guidance, State of Connecticut Department of Environmental Protection, 79 Elm Street, Hartford CT 06106, March 1, 1993 (Revised June 1, 1995).

Appendix 7: Useful References (continued)

11. State Lead Abatement Plan, State of Connecticut Department of Public Health and Addiction Services, Lead Poisoning Prevention Program, 150 Washington Street, Hartford CT 06106.
12. The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, Atlanta GA, July, 1988.