

CHAPTER 13

Cleanup Documentation

Upon confirmation that initial yard sampling indicates that a given residential property does not exceed the lead cleanup level for the site, or upon the completion of the cleanup of a residential property, a letter (“clean” letter) should be sent to the property owner documenting that EPA considers the lead level in the yard to be below the level of human health concern. Prior to issuing a “clean” letter, a property closeout form should be signed by the property owner documenting that the owner is satisfied with the remediation of the property. Examples of property closeout forms are in Appendix M. Any areas that are not cleaned up per the owner’s request, such as gardens, should be noted in the “clean” letter. If contamination is not cleaned up to depth, this fact, along with protections (*i.e.*, barriers/markers) that are put in place, should be stated in the “clean” letter. The “clean” letter provides official documentation to the property owner for use in future property sales or transactions. Sample “clean” letters are provided in Appendix N.

13.1 Backfill and Waste Soil Sampling

Backfill soil used as part of the response action to fill in excavated areas should be consistent with the respective state’s technical requirements for site remediation, and should be sampled to ensure that material being placed on the site does not pose an unacceptable human exposure to lead or any other potential contaminant(s). The list of analytes and the frequency of sampling backfill soil should be based on site-specific factors, including the location of the source of the backfill material relative to potential sources of contamination and the geochemistry of the borrow areas and the heterogeneity of the material, and any ARARs, such as state sampling or residential use criteria. Site-specific cleanup levels and regionally applicable background concentrations should be considered in defining acceptable levels of lead and any other potential contaminant(s) in the backfill source. The sampling program, chemical analyses, and statistical analysis program for establishing the acceptability of candidate fill sources should be consistent with the program described in Section 6.2.1 and should consider the heterogeneity of the material and the geology of the borrow area. In some urban areas, fill may be blended from multiple borrow areas and could change during the course of cleanup. Additionally, these operations generally do not have much space and/or have such high demand that a pile of backfill sampled one week could be gone by the time analytical results are received and therefore not truly be representative of what will be shipped. In short, there are many factors that need to be considered for backfill in many suburban and urban areas.

For early cleanups (removals or early action remedial actions), when site-specific characterization information may be incomplete, 50 ppm lead in backfill serves as a preliminary recommendation to reduce the risk from lead exposure. This reduces the risk of using backfill above the potential final cleanup level, which could result in the need to re-remediate backfill soils that are above final cleanup levels. Acceptable backfill concentrations can be reevaluated once the RSL and characterization are completed and there is confidence in what the final cleanup concentrations will be.

For final remedial actions, Regions can elect to use this recommendation (50 ppm lead in backfill) or develop their own backfill numbers using site-specific information. If the evaluation of available backfill material within a reasonable distance from the site is found to contain lead and/or other contaminants at levels above site-specific cleanup levels, then an evaluation of possible alternative fill materials, alternative mitigation actions, and/or interim or permanent ICs is recommended. Where backfill material contains lead >50 ppm, an evaluation should also be conducted to contribute to the efficient performance of any anticipated long-term remedial action to the extent practicable.

For example, at the Bunker Hill Superfund site, four-point composite samples were collected for every 200 cubic yards of backfill soil (TerraGraphics 1997a). Please note that for this site, due to site specific circumstances, it was determined that four-point composite samples were sufficient to control heterogeneity. The number of composite samples to collect to determine the concentration of lead in fill material should be determined on a site-specific basis to ensure that the results are definitive (*i.e.*, sufficiently low to be considered clean fill).

Gravel used for driveway backfill at the Bunker Hill Superfund Site was also sampled every 200 cubic yards (TerraGraphics 1997b). Some states have requirements for backfill sample collection and analyses, and should be consulted when performing this type of sampling.

Samples of excavated soil for disposal should be analyzed for the analytical parameters that are required under the disposal facilities permit to determine if the soil contains a RCRA hazardous waste and requires management as a hazardous waste. The analysis typically includes the full TCLP and analyzes for contaminants such as:

- RCRA toxicity characteristic metals plus copper, manganese, vanadium, and zinc;
- Target Compound List (TCL) semi-volatile organic compounds (SVOCs);
- Low-level polycyclic aromatic hydrocarbons (PAHs);

- TCL chlorinated pesticides;
- Polychlorinated biphenyls (PCBs);
- Chlorinated herbicides;
- Cyanides; and
- Other chemicals that may be specific to the waste, such as TCL volatile organic compounds (VOCs).

In addition, backfill soil samples and duplicates, as needed, may be tested for agronomy parameters such as:

- Soil classification;
- pH;
- Electroconductivity;
- Organic matter: loss on ignition;
- Nutrients such as nitrogen, phosphorus, and potassium;
- Carbon-Nitrogen Ratio: calculated from Total Kjeldahl Nitrogen (TKN) and via combustion byproducts;
- Sodium Absorption Ratio (SAR); and
- Cation Exchange Capacity (CEC).

These are valuable to ensure that the soils being used will support restoration and proper compaction, and where needed, provide proper growth medium. There may be different analyses recommended for topsoil versus common fill.

This information is to be documented in the remedial action report, the removal action report for completed soil cleanups, and/or the pollution report (POLREP).