



Classifying Wastes as Hazardous or Non-Hazardous by Toxicity

Determining the toxicity of waste is one of four means waste generators, transporters and disposal sites use to classify the material as either **Hazardous** or **Non-Hazardous**. Often, receiving facilities require a "total analysis" of the waste to identify the total concentration of the required target analytes. However, the total analysis does not always identify the amount of each analyte that can potentially leach from the waste to become an environmental contaminant. To evaluate this leaching potential, the EPA developed Method 1311, Toxicity Characteristic Leaching Procedure (TCLP).

The TCLP is designed to determine the mobility of contaminants by measuring the amount of the individual analytes that leach from the sample into an aqueous fluid after an 18-hour period of continual mixing. The ratio between the mass of the sample and volume of extraction fluid is specified in the method and is equal to 20 parts fluid to 1 part sample. Regulatory limits identify the maximum permissible concentrations limits of analytes in the fluid after the 18-hour rotary agitation period.

Within the Scope and Application Section 1.2 of the TCLP method; "If the total analysis of the sample confirms that the analytes are not present or at such low concentrations that the appropriate regulatory levels could not possibly be exceeded, the TCLP need not be run."

The decision to perform "total analysis", the TCLP determination or both is at the discretion of the project manager. However, to maintain the quality of data while minimizing costs, EAI offers the following suggestions;

1. If contamination is not expected, perform total analysis initially and base decisions whether or not to perform TCLP after total analysis results are available. In our experience, the total analysis generally confirms that analytes are not present or present at such small concentrations that TCLP limits are not exceeded (based on the 20 times rule).
2. If one or more analytes are present at sufficiently high concentrations based on the "totals" analysis (and exceed the 20 times rule), the TCLP determination is performed on the sample, but only for those analytes in exceedance of the 20 times rule. Please make a note on the chain-of-custody (COC) if you would like EAI to automatically proceed with the TCLP determination based on the 20 times rule.

For waste generators and transporters, oftentimes, the TCLP determination is required and should be performed. If your project provides flexibility to run "totals" first, a note may be written on the COC indicating you would like to "run TCLP if exceedance of the 20x rule" and the lab will proceed accordingly. If total analyses and TCLP determination are performed, reports clearly distinguish between the two.

If you have questions regarding TCLP determination and/or EAI's laboratory services, please call us at 800.287.0525 or email customerservice@easternanalytical.com.