



New Testing Capability at Envirolab – LEAF Testing

Leaching Environment Assessment Framework (LEAF)

Recently, the Department of Environment Regulation (DER) in Western Australia released an Environmental Standard on leachate testing. The document provides a comprehensive approach to leachate testing in order to assess potentially harmful chemical constituents that may be leaching from solid waste derived materials. LEAF testing is therefore more ideal for this type of assessment because it provides a more rigorous and more relevant approach to the currently used TCLP/ASLP methodology.

LEAF is a collection of four leaching test methods developed to identify detailed characteristic leaching behaviours of various solid materials including soils, wastes and construction materials.

These tests, using USEPA methods SW846 1313, 1314, 1315 and 1316 are designed to provide aqueous extracts that represent the partitioning of compounds from solid to liquid under various mechanisms of interaction – i.e. actively, mechanical, passive, chemical or all of these.

A brief summary of the four laboratory methods is outlined below:

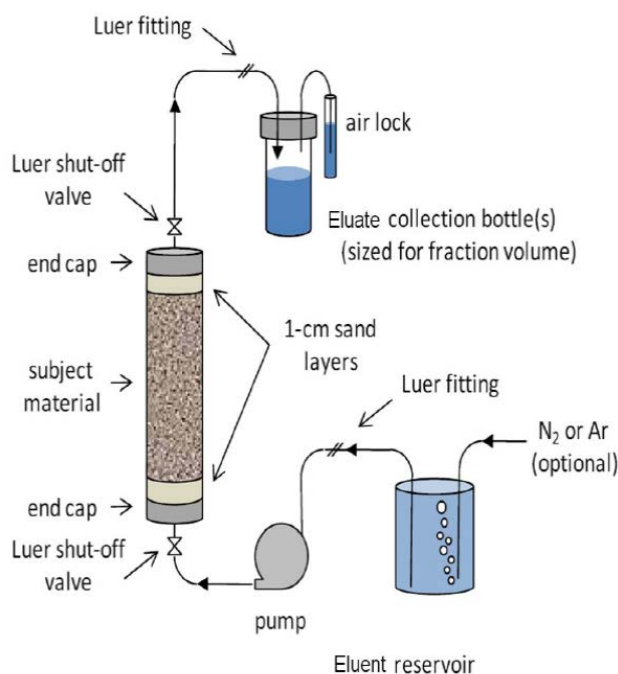
1. USEPA SW846 1313 – Parallel Leach

The solid is sized and then tumbled (for ≥ 24 hours) at various pH levels e.g. pH 2, 4, 5.5, 7, 8.0, 9.0, 10.5, 12 and 13.

2. USEPA SW846 1314 – Column Leach

The solid is sized and packed into a column.

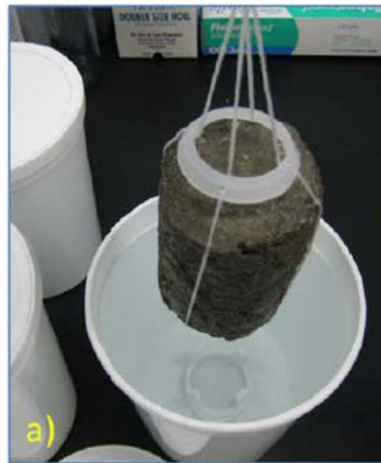
Eluent is very slowly percolated through the column and volumes of the resulting eluent are collected periodically and analysed for the target analytes.



3. USEPA 1315 – Monolith Leach

This method is aimed for monolithic or compacted granular material, typically cement based or stabilised materials.

The solid is emerged in eluate for various periods of time, and hence estimates of the diffusivity of target analytes from the monolith can be gained.



Start of Leaching Interval



Sample Centered in Eluant (top view)

4. USEPA 1316 – Parallel Leach

Solid is sized and tumbled end over end at varying liquid to solid (L/S) ratios.

The ratios can vary from 10:1 to 1:2 for liquid to solid respectively.

LEAF Testing At Envirolab

Envirolab is now NATA accredited for LEAF testing. However, as the procedures are relatively time consuming, a discussion with our laboratory team is required prior to sample submission. This will ensure the most appropriate method(s) and subsequent analysis of the resulting eluates.

For further information or if you require LEAF testing, call **1300 424 344** or **email:**

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