Testing for Environmental Contaminants

When we look for chemical contaminants in our environment, we take samples of the water, soil, and air back to the lab and analyze them.

These environmental samples are complex mixtures of many different chemicals.

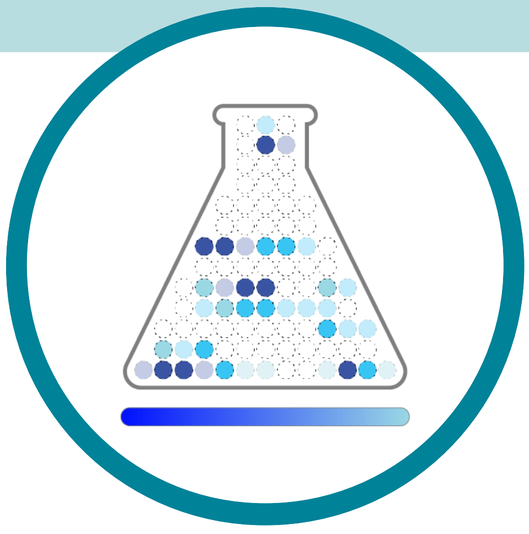
Imagine these colored dots represent all the different chemicals in our sample. It can be overwhelming trying to measure individual chemicals in such a complicated mixture.

Luckily, we have many different ways to analyze these samples.

Targeted Analysis

If we know which chemicals we are looking for, we use a targeted approach. This method gives us very detailed information about the chemicals we are interested in.

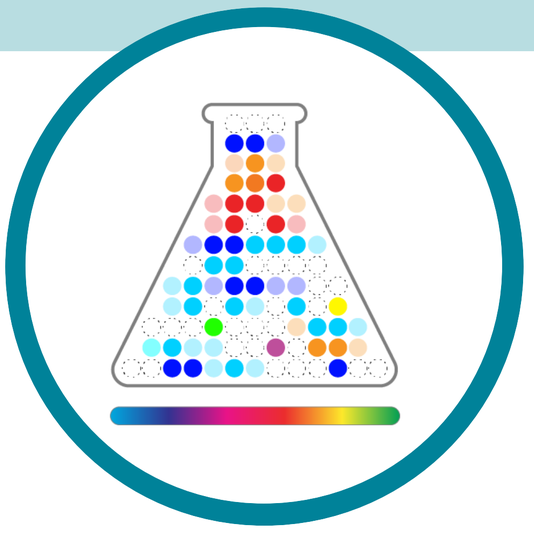
However, we can only see specifically what we are looking for. That means that other chemicals can be in the mixture, but we won't know about it.



Suspect Screening

When we have a general idea of what chemicals might be present in our sample, we do a suspect screening. Instead of testing for them individually, we explore a wider list of chemicals.

This option looks for more chemicals, but with less certainty, so we often narrow down the list by following up with targeted analysis.



Non-Targeted Analysis

Here, we are casting our widest net. We can look for hundreds of thousands of chemicals, but with less certainty.

This method is best when we want to look at the big picture to learn what might be in our sample. Then, we can hone our analysis by moving to suspect screening or targeted analysis.

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