



BS 10176:2020 – Soil Sampling for the Determination of Volatile Organic Compounds (VOCs)

BS 10176:2020 sets the standard for soil sampling techniques that minimize the loss of volatile organic compounds (VOCs) during and after collection. ALS Hawarden has developed advanced, field-tested solutions to meet these requirements, providing clients with proven methods for accurate and dependable data.



Why VOC Preservation Matters

Volatile organic compounds are prone to volatilization and biodegradation, leading to potential loss and inaccurate results. The shift towards field-based preservation techniques (rather than relying solely on laboratory procedures) is transforming the landscape of VOC testing. BS10176:2020 is pivotal in this shift, ensuring your soil samples are more representative and your findings remain true to field conditions.

As early as the 1990s, research was published suggesting the practice of soil collection in bulk containers for VOCs provides significantly biased low results. It is well recognised and now widely accepted that this method often results in 90% to 99% loss of VOCs prior to laboratory analysis. Several factors influence VOC loss during the sampling process:

- Vapour pressure: The higher the vapour pressure of a VOC, the more likely it is to evaporate, especially under warmer conditions.
- Matrix type: Materials like sandy soils, being more porous, tend to lose VOCs more easily compared to denser materials like clay.
- Exposure time and environmental factors: Temperature, humidity, microbial activity, and the duration of exposure to the atmosphere can all increase VOC loss.

By following BS 10176:2020, VOC losses can be minimized, leading to results that accurately reflect the conditions at the sampling site.

ALS Preservative VOC Offerings

ALS has developed a multi-solution approach to VOC testing to help our clients align with BS 10176:2020 standards:

1. Intact Core Sampling: A small, intact core is collected, sealed, and transported to the laboratory for VOC analysis. This method ensures minimal VOC loss during transport and storage. ALS can provide an En-Core sampling mechanism to assist with this approach.

2. Methanol Preservation: The soil sample is immediately preserved using a methanol solution (1:1 ratio), provided by the laboratory. ALS provide a VOC corer to extrude the sample. The laboratory will prepare a methanol preserved volatile vial, which is pre-weighed and labelled.

Each option is designed to reduce VOC loss and deliver reliable results across various environmental conditions. All samples must be chilled at the sample location and stored and transported upright.

Why Chose ALS?

ALS understands the complexity and difficulty of site and ground investigation work, and we remain focused on delivering practical solutions for our clients based on the latest UK and international guidance and field-tested data.

- *Global Reach:* ALS's 20+ years of global experience in VOC sampling and analysis has helped us gain unparalleled experience working with clients to develop pragmatic solutions for accurate and reliable VOC data collection.
- *Proven Methods:* We've carried out extensive trials to determine the limits of detection for VOCs using methanol preservation. This experience enables us to provide reliable and reproducible results across various environmental conditions.
- *Expert Guidance:* Working closely with ALS means access to expert support, the latest equipment, and the highest standards in VOC sampling and preservation. Our experienced Technical and Client Services teams remain on-hand to discuss your sample requirements and the options available for VOC sampling and testing.

Get In Touch

It's important to note that BS 10176 is a sampling standard, not an analytical standard. Successful VOC testing depends heavily on close coordination between laboratory staff and field teams to preserve sample quality throughout the process.

To learn more about how ALS can help you achieve accurate, reliable VOC sampling in line with BS 10176:2020, contact us today. We are here to assist you every step of the way.

You can also access our recorded webinar for more in-depth insights on BS 10176 and VOC sample collection: [Watch the webinar](#)

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