

Determination of Volatile Organics in Air

When your project requires the determination of volatile organics in ambient air or landfill gas, a number of important sampling and analysis considerations must be determined. **Ambient air** monitoring programs that are interested in trace levels of target volatile compounds and



speciation of non-targets are best served by sampling into Summa or Silco canisters followed by analysis utilizing Gas Chromatography/Mass Spectrometry (GC/MS). Analysis using SCAN can yield lower detection limits on the order of 0.5 ppb. If levels required are less than this, York provides GC/MS/SIM (selected ion monitoring) to detect levels of target volatiles in the 10 to 100 ppt (parts per trillion) range. Of course, these levels are for ambient air matrix and for specific target compounds. York has provided thousands of GC/MS/SIM analyses of ambient air to these detection limits. York provides certified clean canisters for use in grab or integrated sampling applications. For integrated samples, sampling trees with critical orifices are utilized for up to 24 hour sampling periods.

These applications are typically applied to ambient monitoring in the environs of a remediation project, areas of nearby industrial activity or to characterize the volatile constituents of an odor in outside air or other ambient environments. Analysis is conducted utilizing the most recent sample cryogenic concentration techniques followed by secondary cryofocusing and separation and detection using high resolution capillary GC/MS systems to yield the most useful data. Analyses by EPA methods TO-14 and EPA TO-15 are available. Method TO-15 provides more reliable data and is applicable to a wider range of VOCs including polar (oxygenated) species.

Soil Gas or Landfill Gas

Other popular applications of canister techniques are determinations of soil gas constituents or landfill gas analysis. Grab sampling of gases from geoprobes is used to determine potential "hot spots" on a site, most often monitoring for petroleum-type hydrocarbons or typical chlorinated solvents. This application has also been applied to landfill gas studies for determination of dispersion of various volatiles around the environs of a landfill. York has also applied the use of tedlar bags in lieu of Canisters where raw landfill gas is the matrix. York also provide related permanent gas (methane, carbon dioxide, hydrogen, nitrogen, and oxygen and sulfur gas analysis.



Cryogenic Preconcentration-GCMS

Contact Rich August or Bob Bradley for more information