

## **Ambient Air Quality Analysis of Toxic Gases and Priority**

The EPA regional offices who continuously monitor ambient air quality have determined that combustion by-products and automobile exhaust make up the largest source of air pollution throughout the U.S., with more severe conditions existing overseas. Despite concerns about the conditions outdoors, air quality in the workplace and home environment receive even more attention. The EPA's list of priority pollutants has grown somewhat since the early 1970's, when implementation of the Clean Air Act went into full swing. However, the need to test for CO and CO<sub>2</sub> is in greater demand than ever.

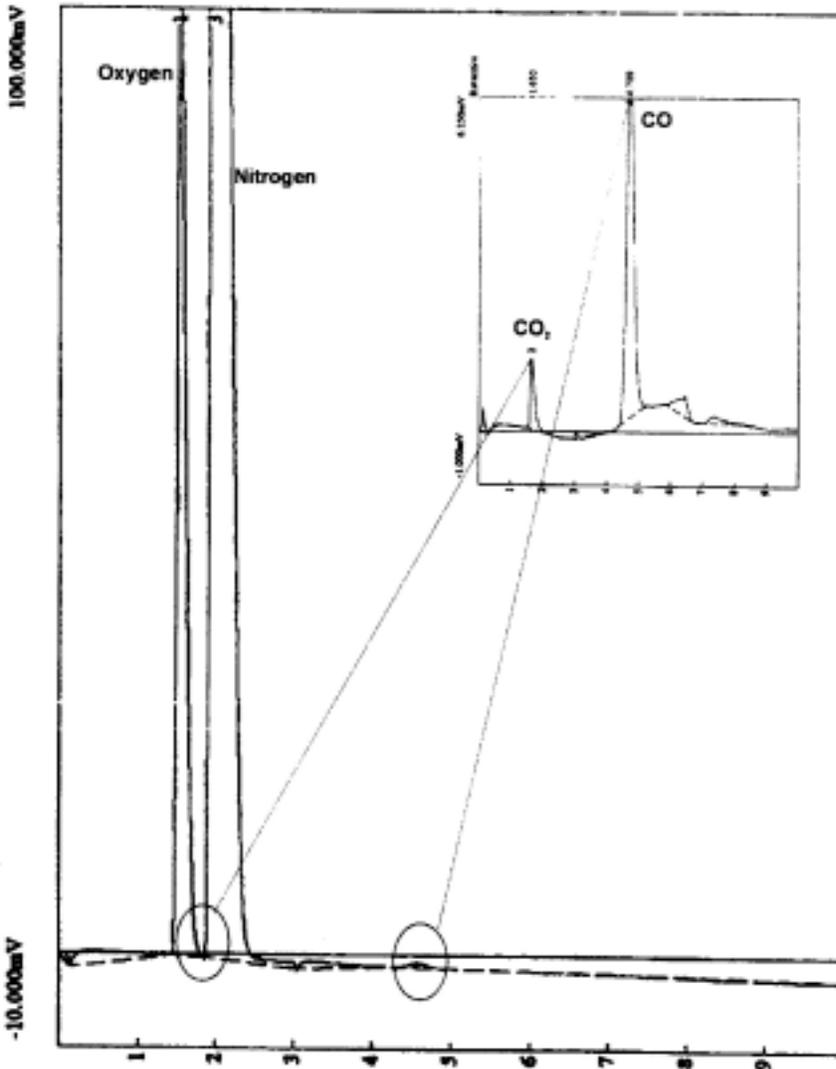
The Buck Scientific Series 910 Natural Gas Analyzer is designed to perform repeatable, high quality air tests of permanent gases and light hydrocarbons at ambient or controlled higher temperatures. Among the compounds detected are hydrogen, oxygen, nitrogen, carbon monoxide, carbon dioxide, hydrogen sulfide, sulfur dioxide, and nitrogen dioxide to levels as low as 0.1% (v/v).

The Natural Gas Analyzer is equipped with an automatic gas sampling valve for reproducible injections every time. In addition, the Flame Ionization Detector (FID) utilizes a nickel catalyst bed (methanizer) to convert oxides of carbon to methane for extremely low level detection, down to 1ppm carbon monoxide.

The TCD / FID combination make our instrument a powerful tool in the analysis of many compounds when used with alternative columns. Standard features such as temperature programming to 300°C, automatic restart features, internal and external calibration functions, and report generation through the PeakSimple II software (provided free of charge) make the Buck Natural Gas Analyzer a chromatographer's dream.

*Analyst: Kevin Attra*

# Ambient Air Quality Analysis of Toxic Gases and Priority Pollutants by GC/TCD/FID



Chromatogram of Cigarette Smoke in Ambient Air.  
Compare TCD response for carbon monoxide and carbon dioxide with FID/Methanizer.  
Note absence of coeluting oxygen peak on FID for carbon dioxide.

## Detector Specifications

**Thermal Conductivity:**

Sensitivity:  
1.15mV sec/mg Nitrogen

Detection Limit:  
4.05mg.m<sup>-3</sup> Nitrogen

Linear Range:  
10<sup>5</sup>

**Flame Ionization:**

Sensitivity:  
5.42mV sec/ng  
Hydrocarbon

Detection Limit:  
458mg L<sup>-1</sup> as Benzene

Linear Range:  
10<sup>7</sup>

**BUCK**  

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**Scientific**

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