Air Quality Monitoring Division

AGAT Laboratories

Passive Air Quality Monitoring Services

Passive Air Quality Samplers

Passive Air Quality Samplers (PAQS) provide a cost-effective method for collecting air quality data over a large geographic area. This system does not require power, data loggers or pumps, making it an excellent tool for sampling in any region, no matter how remote. AGAT Laboratories is accredited under ISO 17025 by the Standards Council of Canada (SCC) and our PAQS have been filed-validated to meet the requirements of regulatory monitoring programs.

The main advantage to this simple but effective sampling device is the ease in which they can be deployed and operated. The PAQS are housed within a protective rain shelter which can be mounted to a post, fence, or other stable structure in the area easily and quickly. The shelter hold the PAQS in a downward position and ensures there is no active movement of air through the sample.

How Does the Sampler Work?

PAQS operate on the principles of adsorption and permeation, physically binding to the specific compounds that are being targeted. Air pollutants that are being sampled will diffuse passively through a semi-permeable membrane and then collect on a filter that has been chemically treated to adsorb those targeted compounds.

After being exposed for a specific period of time, the sampler is analyzed in the laboratory to determine the amount of the targeted compound collected. A time-weighted average concentration is then calculated based on the duration of exposure, accounting for the effects of relative humidity, temperature and wind speed.

Capabilities

Sampling filter media is currently available for Sulphur Dioxide (SO_2), Hydrogen Sulphide (H_2S), Nitrogen Dioxide (NO_2), Ozone (O_3), Ammonia (NH_3), and Volatile Organic Compounds (VOC). The sampling system, which allows for up to four samplers, consists of a rain shelter, mounting hardware and a cavity up top for storing on-site blanks. One shelter can support duplicate sampling of two parameters.

The following table is an example of results that could be gained in a passive field study performed by AGAT Laboratories.

Applications

Passive Air Monitoring Samplers are routinely used to meet regulatory air monitoring requirements in Canada, to determine baseline readings prior to facility startup, or as a means to monitor a large geographic area where continuous air monitoring is cost-prohibitive.

Results can be utilized to establish long-term trending of pollutants of interest and can be operated independently from or as part of a larger air monitoring program which may also include continuous air monitoring.

Clean Air Laboratory

Once PAQS are removed from the field, they are analyzed in our Clean Air Laboratory to measure pollution concentrations collected for the duration of exposure.

Laboratory analysis for our passive air quality monitoring systems is performed in our state-of-the-art, positive pressure, Clean Air Laboratory. Ventilated air is first passed through a multi-stage HEPA filtration system which removes 99.99% of all particles in the air. After passing through the filtration system, the air is then directed through a chemical scrubber which removes any air contaminants such as Ozone, Hydrogen Sulphide, Sulphur Dioxide and others. Our air laboratories are designed to meet all US EPA and European Union standard requirements for temperature and humidity, which are precisely controlled through a computerized access panel.

This enables AGAT Laboratories to ensure that no contamination will come into contact with the passive monitors and that laboratory controls are of the highest quality possible.

For more information please contact info@agatlabs.com