

# Case History

## Reliable surveys even in harsh environments

Place: industrial plants and urban sites

Installation: 2022

Instrument: PhysisGC BTEX

Customer: pH Labs of TÜV SÜD Group



Aggiungi valore.  
Ispira fiducia.

## INTRODUCTION

In 2013, **pH Laboratory** became part of the **TÜV SÜD Group**, a world leader in laboratory testing, inspection and certification. Since then, customers have benefited from the expertise and international presence of the TÜV SÜD Group, whose logo guarantees the quality and safety of their products for more than 150 years. The pH Laboratory is able to offer complete support to its customers in the field of **Health and Safety of the workplace**, through a variety of dedicated services that are aimed primarily at the industry sector, but also at local governments or individuals who want to have clarity on the **air quality's state of the art**.

## REQUEST

As the demand for energy continues to grow and economies develop, the **treatment of fossil fuels** must be given due attention. Within **crude oil refining plants**, fugitive emissions from losses along the transport line, loading/unloading operations, refined product storage tanks, or dirty water treatment areas, contribute to the release into the atmosphere of more than 1 million tonnes of volatile organic compounds/dangerous air pollutants (VOC/HAP) per year.

The pH Laboratory wants to use, in the environmental monitoring and air quality field, reliable analytical instrumentation able to provide precise information on the type and concentration of specific pollutants. Within the framework of this project, there's a need to monitor **the evolution of emissions in the petrochemical field**, with particular attention to aromatic compounds such as **BTEX** (Benzene, Toluene, Ethylbenzene, Xylene) and related **olfactory harassment**.



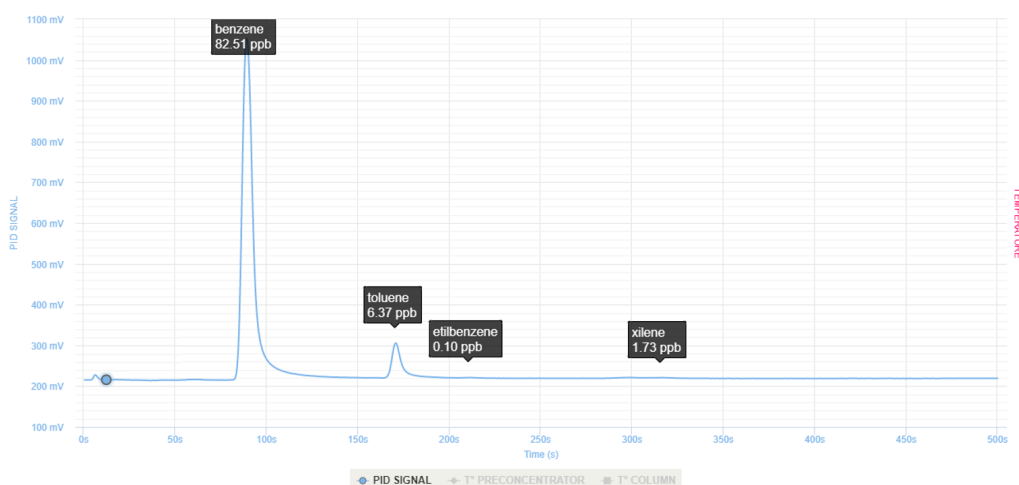
## SOLUTION

Pollution Analytical Equipment supplied a gas portable field chromatograph, **PyxisGC**, to conduct the monitoring campaign of BTEX. Thanks to the intrinsic capabilities of the chromatographic technique, the instrument can also be used to monitor different types of emissions and produce a **chromatographic fingerprint**, to connect olfactory harassment to a specific source or event. In this specific case, PyxisGC was installed in an area potentially subject to diffuse emissions near a petrochemical plant, continuously monitoring the presence of pollutants in ambient air. Thanks to this technology, it was possible to observe accurately the difference between a background chromatogram (with no pollutants) and a chromatogram following a pollutant event releasing benzene into ambient air. This allows to connect a specific event to a specific odoriferous harassment and allows to take a rapid action in the control and management of this event.



## CONCLUSION

In the management of a petrochemical plant, a central role must be reserved for the assessment of the connection between environmental pressures and health risks. Therefore, it's important to consider the qualitative state of the environment in all its aspects (air, water, noise pollution, production and use of chemicals). Use of the best analytical techniques available, or Best Available Techniques (BAT), represented here by gas chromatography, have allowed the creation of a **monitoring network** useful to identifying the BTEX emitted in the monitored petrochemical plant. The chromatogram recorded is also representative of that type of installation: this information was very important in order to uniquely attribute the origin of the pollutants detected around the industrial plant.



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