Targeted Compound Monitoring, LLC Remote Monitoring Service for VOCs in Groundwater



www.tcmglobalinc.com



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TCM Development History

2014 (

Remote/Autonomous GC Invented Prototype Evaluation Project Funded by City of Dayton Wellfield Protection Fund

First Units Begin Field Testing

2015

2017

2015-16

Validation Testing Proves Accuracy/Stability, Weatherproofing, and Temperature Regulation

2018

2019

Began Work on BTEX Monitoring System (Benzene, Toluene, Ethylbenzene, Xylene(s))

First BTEX Units Begin Field Testing

2019

Double-Blind, 3rd Party Validation Study Shows TCM is More Accurate Than Most Laboratories

TCM Enters First Service Contract on 10 Chlorinated VOC Units for City of Dayton Department of Water

2019 TCM Begins Active Marketing

Remote, Autonomous Gas Chromatography

- Lab-equivalent data provided as a service
- Automated well sampling/analysis for VOCs
- Data is provided electronically in real time
- 24/7 Operation without routine on-site work
 - Solar powered with battery backup
 - Consumable-free GC
 - Wireless communication
 - Rugged/weatherproof
 - Geothermal heating/cooling















Double Blind MicroGC Validation Study

- 2 TCM DELCD MicroGCs vs. laboratory purge-and-trap GC-MS
- Random large volume groundwater samples spiked to known analyte level
 - 7 samples per day for 5 days
- Concentrations from 0 ppb to ~270 ppb
 - Analytes: t-1,2-DCE | c-1,2-DCE | TCE
- Randomized and double-blinded for a non-biased study
- Validated against laboratory purge-and-trap GC-MS
 - Average of 94% accuracy
 - Outperformed laboratory purge-and-trap GC-MS in accuracy and dynamic range





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Detector Configuration Options

Chlorinated VOC analysis

- Selective for chlorinated analytes
 - Perchlorethylene, trichloroethylene
 - Trihalomethanes
- 0.1 ppb to >500 ppb
- Ideal for early warning on edges of legacy TCE/PCE plumes
 - Can isolate decomposition isomers

General VOC analysis

- Detects most VOCs
 - Nearly all VOCs of regulatory concern
 - 1,4-dioxane
- 0.1 ppb to >300 ppb
- Ideal for BTEX monitoring
 - Pipeline leakage
 - Fuel contamination



The TCM Advantage Enables Proactive Source Water Protection

