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## Determination of VOSCs in sewer headspace air using TD-GC-SCD

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### Abstract

The management of odorous emissions from sewer networks has become an important issue for sewer operators resulting in the need to better understand the composition of volatile organic sulfur compounds (VOSCs). In order to characterise the composition of such malodorous emissions, a method based on thermal desorption (TD) and gas chromatography coupled to sulfur chemiluminescence detector (GC-SCD) has been developed to determine a broader range of VOSCs, hydrogen sulfide (H<sub>2</sub>S), methanethiol (MeSH), ethanethiol (EtSH), dimethyl sulfide (DMS), carbon disulfide (CS<sub>2</sub>), ethylmethyl sulfide (EMS), 1-butanethiol (1-BuSH), dimethyl disulfide (DMDS), diethyl disulfide (DEDS), and dimethyl trisulfide (DMTS). Parameters affecting the chromatographic behaviour of the target compounds were studied (e.g. temperature program, carrier gas velocity) as well as the experimental conditions affecting the adsorption/desorption process (temperature, flow and time). Optimised extraction of VOSCs samples was achieved under adsorption temperatures of less than -20°C,

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