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Monitoring CO2 and H2S Emission in Live Austrian and UK Concrete Sewer Pipes

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Abstract : Corrosion of concrete sewer pipes induced by sulfuric acid is an acknowledged problem and a ticking time-bomb to sewer operators. Whilst the chemical reaction of the corrosion process is well-understood, the indirect roles of other parameters in the corrosion process which are found in sewer environment are not highly reflected on. This paper reports on a field studies undertaken in Austria and United Kingdom, where the parameters of temperature, pH, H2S and CO2 were monitored over a period of time. The study establishes that (i) effluent temperature and pH have similar daily pattern and peak times, When examined in minutes scale, (ii) H2S and CO2 have an identical hourly pattern, (iii) H2S instant or shifted relation to effluent temperature is governed by the root mean square value of CO2.

Keywords : concrete corrosion, carbon dioxide, hydrogen sulphide, sewer pipe, sulfuric acid
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