

# EMISSIONS FROM BALED WASTE DURING SEASONAL AND TEMPORARILY STORAGE FOR ENERGY RECOVERY IN SWEDEN: CONCLUSION OF A FOUR YEAR STUDY

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## ABSTRACT

Baling of solid waste for the purpose of incineration has been shown to be a stable temporary method for the storage of waste. Pervious work has concentrated on the gaseous emission during storage in particularly CO<sub>2</sub>, and CH<sub>4</sub>. However, baling of waste has associated problems in the shape of odours and volatile organic compounds (VOC) emissions. This paper describes the experimental results which resulted from a large scale experiment of VOCs emissions from 24 bales which contained waste from the same source. The bales were grouped according to their shape as rectangular and cylindrical. Each group consisted of four multiples of variation, which included baled waste wrapped with six layers of Low density polyethylene (LDPE)-normal plastic cover- bales wrapped with twelve layers of LDPE, bales with no plastic cover and bales containing waste mixed with four litres of silage additive and wrapped with six layers. In total 24 boxes were built 12 boxes for rectangular bales and 12 for cylindrical bales. The boxes were made to be air tight, however 2 holes (4+/-0.5) cm in diameter were created to allow the pressure inside the box to stabilize. The emissions were sampled using Tenax<sup>®</sup> stainless steel tubes, as well as Carbosive glass absorption tubes. The tubes were analysed by Thermal desorption gas chromatography mass spectroscopy TD-GC-MS, along side liquid-injection-GC-MS. The emissions profiles were used to predict the "real-life" emissions from large waste bale storage using various dispersion models. The object is to analyse the VOC impact on the surrounding environment during the storage of baled waste. This paper will also include a conclusion from a 4 year study on the storage of waste using the baling technique.