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Comparison of Fence Line Monitoring by mobile monitoring vehicle and Chimney Measuring Devices in Large Industrial Complexes

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In the case of large industrial complexes, there are state management equipment to monitor pollutants emitted from chimneys, but there are undetected sources of pollution, such as leaks during processes, leaks from pipes, and leaks from unsealed warehouses, except for chimneys. In this study, mobile observation was conducted using SOF, Sky DOAS, in-situ MeDOAS, and MeFTIR equipment. The observation method used in this study is fence line monitoring, which surrounds a large factory area and observes both the upwind and downwind sides. method of observation. The observation site was conducted in July and August 2021 at the Yeosu Industrial Complex located in Yeosu, Jeollanam-do, South Korea, one of the three largest industrial complexes in South Korea. In order to find out whether and the extent of leakage, four areas where Telemonitoring System(TMS), a chimney measuring device managed by the Korea Environment Corporation, exist were designated as observation sites. The results observed for the same period of time were compared for SO_2 and NO_2, which are substances with overlapping measurement items of mobile monitoring vehicle(MMV) and TMS. Although a direct comparison was not possible because the MMV expresses the emission per hour and the TMS expresses the emission concentration, it was confirmed that leaks that were not captured by the TMS on a specific date appeared as a result of the MMV measurement. This study confirmed that even in industrial complexes where TMS is installed for management purposes, air pollution and economic losses due to leaks can be reduced if fan line monitoring is conducted to detect unexpected leaks.

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