



Process Emissions Webinar Series

Webinar 2: Methane Emissions from Wastewater Treatment

September 19, 2024

Speakers: John Willis (Brown and Caldwell), Adrien Romero (Jacobs) and Trung Le (Brown and Caldwell), moderated by Jessica Akande (Canadian Water Network) and Jeff Moeller (The Water Research Foundation).

Key takeaways:

- Differences in methane emissions across different wastewater treatment plants can be traced to differences in where and when measurements are taken. A case study found that methane emissions from one lagoon were **10 to 12 times higher** than those from another lagoon with different sludge characteristics.
- **Many sources of methane emissions were identified**, such as sludge dewatering processes, headworks and biosolids storage. Other potential sources of methane include composting, biogas generation, sewer overflows and floating cover digesters (among many others). The tracer correlation method at the site level was the most accurate for intermittent measurements.
- Differences between **site and source-level** measurements, **continuous vs. intermittent** measurement methods, and **plant-wide vs. process units** were discussed, concluding that **multiple methods are required for individual source identification/quantification** and site-level quantification.
- A case study presented by Trung on a wastewater treatment plant in Columbus, Ohio, showed methane emissions from the thickening process, dewatering, digest appurtenances, liquid storage, biogas and tank cover with optical gas imaging. Both bottom-up and top-down measurements were used for source and leak detection. The case study confirmed that **floating covers are a huge source of methane emissions**. However, it is important to reconcile the different data sources for an accurate picture.

Overall, case studies presented in this webinar showed the **uncertainty in measuring and identifying methane emissions in wastewater treatment processes**. Many methods exist for measuring potential sources of methane, but with continuous measurement and monitoring, the gap between what we know and what we don't know will be reduced.

This series was organized by the U.S. Water Alliance and Canadian Water Network, hosted by The Water Research Foundation, and presented in collaboration with the Danish Water Technology Alliance, Water Environment Federation and International Water Association.

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