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Canadian Water Network
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Process Emissions Webinar Series

Webinar 4: Opportunities for Process Emissions Reduction

December 12, 2024

Speakers: Jose Porro (Cobalt Water Global), **Jens Munk Poulsen** (NIRAS), **Nerea Uri Carreño** (N118 Consulting) and moderated by **Jessica Akande** (Canadian Water Network) and **Harry Zhang** (Water Research Foundation).

Key takeaways:

- **The first critical step in addressing fugitive emissions is planning,** which helps prioritize where to take measurements of fugitive emissions within the wastewater treatment plant and identifies the most efficient points for mitigation. Mitigating fugitive emissions is an iterative and cyclical process that starts with planning and progresses to measuring, mitigating and monitoring to inform further planning.
- We have reached the point where best practices and tools, such as machine learning and knowledge-based artificial intelligence, are available to start mitigating fugitive emissions. These tools provide the knowledge needed to prioritize where to begin measuring and mitigating, allowing us **to take action and implement mitigation measures now.**
- To reduce the time needed to begin taking mitigation actions, the recommendation is to **baseline and reduce GHG emissions simultaneously.**
- The mitigation hierarchy for methane and nitrous oxide emissions is to **avoid, reduce, remove and sometimes offset greenhouse gas emissions.** However, nitrous oxide is still a voluntary market where water utilities can work to reduce nitrous oxide emissions, which have the most significant impact on greenhouse gases.
- Case studies included Watercare, the largest utility in New Zealand, putting a list of **mitigation strategies** together before monitoring nitrous oxide emissions, VCS **reducing aeration control** to reduce nitrous oxide and provide the co-benefit of better reactor performance, exhaust gas treatments, **advanced controls**, replacing membrane aerated biofilm reactor (MABR) and other instances of win-win situations in mitigating nitrous oxide.
- The speakers explained why mitigating fugitive emissions must be done now. Nerea Uri Carreño stated, **"Good N2O practices come with good performance in wastewater treatment plants."** Jose Porro concluded, **"Every ton of CO_2e counts."**

The webinar highlighted the importance of **networking and connecting with other water utilities** (internationally and within Canada) to share examples of successful fugitive emissions reductions, which may not be available in peer-reviewed literature or publicly available documents. Good information on process emissions reductions can also be obtained from commercial companies and organizations helping to implement net-zero actions in the water sector. Canadian Water Network's Net Zero Water project will develop a **network of networks to strengthen relationships** that can support peer learning and knowledge sharing between Canadian water utilities, other sectors and international organizations.

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.

To register to watch this webinar, please visit The Water Research Foundation.