



Water Industry Operators Association of Australia

Submission of Abstract

Platform or Poster: Platform Paper

Title of Abstract: Working as One – Adaptive Management of Sydney Taste & Odour Event

Abstract (200 words):

In June 2024, approximately 100 customer complaints were received relating to unfavourable taste and odour in Sydney Water's Orchard Hills distribution network. High geosmin concentrations (>25 ng/L) were detected at customer taps. Sydney Water's water quality, operations, process optimisation, laboratory, and R&D teams collectively addressed the issue within 10 days.

The Orchard Hills Water Filtration Plant is a closed system where filter backwash wastewater is settled in three lagoons and supernatant is returned to the inlet. Extensive monitoring was undertaken for all sources and treated water to identify the root cause. The investigation revealed that geosmin concentration was <1 ng/L in the raw water but was elevated in Lagoon 1 and 2 (>200 ng/L) and Lagoon 3 (~30 ng/L). Lagoons 1 and 2 were immediately isolated and the supernatant flow from Lagoon 3 was restricted to prevent customer impact.

Ozonation and activated carbon absorption methods were trialled at bench-scale to treat elevated geosmin in supernatant. Up to 98% removal was achieved with ozone doses of 4 mg/L for the elevated concentration of geosmin >200 ng/L in the lagoons. Sydney Water's trailer-mounted ozone system was deployed for emergency treatment of supernatant. It successfully treated the elevated geosmin of the 10 ML of water from affected lagoons.

Name of Principal Author: Azhar Nomani, Tara Robinson,