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Online monitoring of bromate in treated wastewater:

Implications for potable water reuse

Supplementary Information

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Parameters	Conditions
Column temperature	40°C
Injection volume	10 µL
Gradient conditions	B: 5% (0 min) \rightarrow 5% (0.5 min) \rightarrow 60% (5 min) \rightarrow 60% (8 min) \rightarrow 5% (9 min)
Capillary voltage	0.5 kV
Cone voltage	20 V
Collision energy	17 V for <i>m/z</i> 126.8>110.9 and 20 V for <i>m/z</i> 126.8>94.9
Source temperature	120°C
Desolvation temperature	400°C
Desolvation gas flow	600 L/h
Cone gas flow	50 L/h
Multiple ion monitoring	<i>m/z</i> 126.8>110.9 (quantification) <i>m/z</i> 126.8>94.9 (confirmation)

 Table S1. LC-MS/MS conditions for bromate analysis.



Fig. S1. Nanofiltration (NF) pre-treatment system diagram with a spiral-wound NF270 membrane element. An NF membrane element housed in a membrane housing was called as a membrane module. The NF pre-treatment system comprised of a membrane module, a diaphragm pump (DCP 8800, Aquatec International, Inc., CA, USA), flow indicators, a pressure gauge, a 22.5 L feed tank, a 300 mL permeate collection tank equipped with an over-flow pipe, and a coil pipe connected to a temperature-controlled water bath (Thermax Water Bath, TM-1A, AS-ONE, Osaka, Japan)



Fig. S2. Excitation and emission spectra of membrane bioreactor effluent: (a) before and (b) after NF pre-treatment. The data was attained during NF pre-treatment at a feed temperature of 35 °C and a permeate flux of 1 L/m²h.



Fig. S3. The relationship between bromate ion permeation and EX300/EM400 permeation. The standard permeate flux and feed temperature were 1 L/m²h and 35 °C, respectively. Bromate ion concentrations in the MBR-treated effluent were adjusted at 12 μ g/L, and analyzed using LC-MS/MS.



Fig. S4. Excitation and emission spectra of primary wastewater effluent: (a) before and (b) after NF pre-treatment. The data was attained during NF pre-treatment at a feed temperature of 35 $^{\circ}$ C and a permeate flux of 1 L/m²h.



Fig. S5. Bromate concentrations before and after the NF pre-treatment system over a course of three days.



Fig. S6. Permeation of interfering substances represented by fluorescence intensity (EX300/EM400) over a course of three days.