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Approaches for Quantifying the Attenuation of Wastewater-Derived Contaminants in the Aquatic Environment

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Abstract: The effluent from municipal wastewater treatment plants contains trace concentrations of a variety of organic compounds. To assess the removal of these compounds in full-scale treatment systems and effluent-receiving waters, approaches are needed for quantifying removal rates and mechanisms. For processes that result in near complete removal of wastewater-derived contaminants, it is reasonable to measure concentrations entering and leaving the treatment system. However, for those compounds that are not completely removed, alternative methods are needed. This paper describes several examples of approaches that combine laboratory and field studies to assess the attenuation of wastewater-derived contaminants.

Keywords: Chlorine · Estradiol · Nitrosodimethylamine (NDMA) · Pharmaceuticals · Sewage