Plastic is an essential component of modern life and is utilized in various aspects of our daily routine, including packaging, household items, and clothing.In the present review article, we aim to address a research gap by discussing the impact of interactions between MPs and other contaminants in various sludge treatment processes.Primary MPs, such as microbeads from cosmetics and personal care products, and secondary MPs from laundry and industrial sources are also significant contributors of hazardous heavy metals and organic contaminants (Bretas Alvim et al., 2020; Li et al., 2018).Approximately 50%–80% of heavy metals (i.e., Cu, Zn, Pb, Cr, Ni, Cd, Hg, and Mn) in sewage enter SS via physicochemical and biological interactions (Yang et al., 2020).Wagstaff et al. (2022) confirmed the capacity of MPs to adsorb pharmaceuticals, with greater affinity observed for more hydrophobic compounds (log DOW >= 1.65) that were found to adsorb to polyamide (nylon) MPs in wastewater at pH 7.6.The accumulation of MPs can also impact aquatic organisms, resulting in reduced feeding activity, oxidative stress, genotoxicity, growth retardation, and mortality (Carlos et al., 2018; Hernandez-Arenas et al., 2021; Shiu et al., 2020b).These small plastic particles have infiltrated aquatic, terrestrial, and atmospheric environments, posing a significant threat to both wildlife and humans (Li et al., 2020; Ni'am et al., 2022; Shiu et al., 2021).Although WWTPs are not specifically designed to treat MP pollutants in wastewater, previous studies indicate that there is a reduction in the concentration of MPs between the influent and effluent wastewater streams.MPs can also originate from the degradation of plastic products due to mechanical, photo-oxidative, and other effects, resulting in the release of fragments and dust particles; these are known as secondary MPs (Murphy et al., 2016; Shiu et al., 2022).WWTP sludge as a fertilizer in agriculture has gained popularity due to its high amount organic and nutrient contents (Wagstaff et al., 2022).

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