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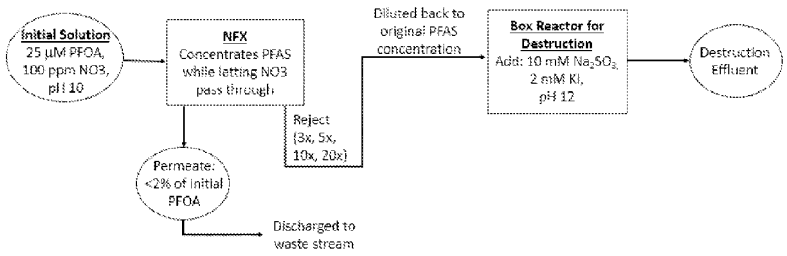


Figure 52

(57) Abstract: Methods and systems of PFAS destruction in water containing nitrate. The methods and systems include filtering water containing PFAS and nitrate through a membrane selective for PFAS to obtain a membrane reject containing PFAS and nitrate and a filtrate containing nitrate, forming a treatment solution using the membrane reject including diluting the membrane reject and combining the membrane reject with a photosensitizer, a sulfite salt, and a sufficient amount of base such that the treatment solution has a pH of about 10 or more, and irradiating the treatment solution with UV light in a photoreactor to destroy a portion of the PFAS. Before dilution, a concentration of PFAS in the membrane reject may be between about 3 times and about 20 times greater than before the filtering step. Dilution of the membrane reject may include between about a 3 and about a 20 times dilution.

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