Supporting Information

Preventing the Colloidal Dispersion of Pb(IV) Corrosion Scales and Lead Release in Drinking Water Distribution Systems

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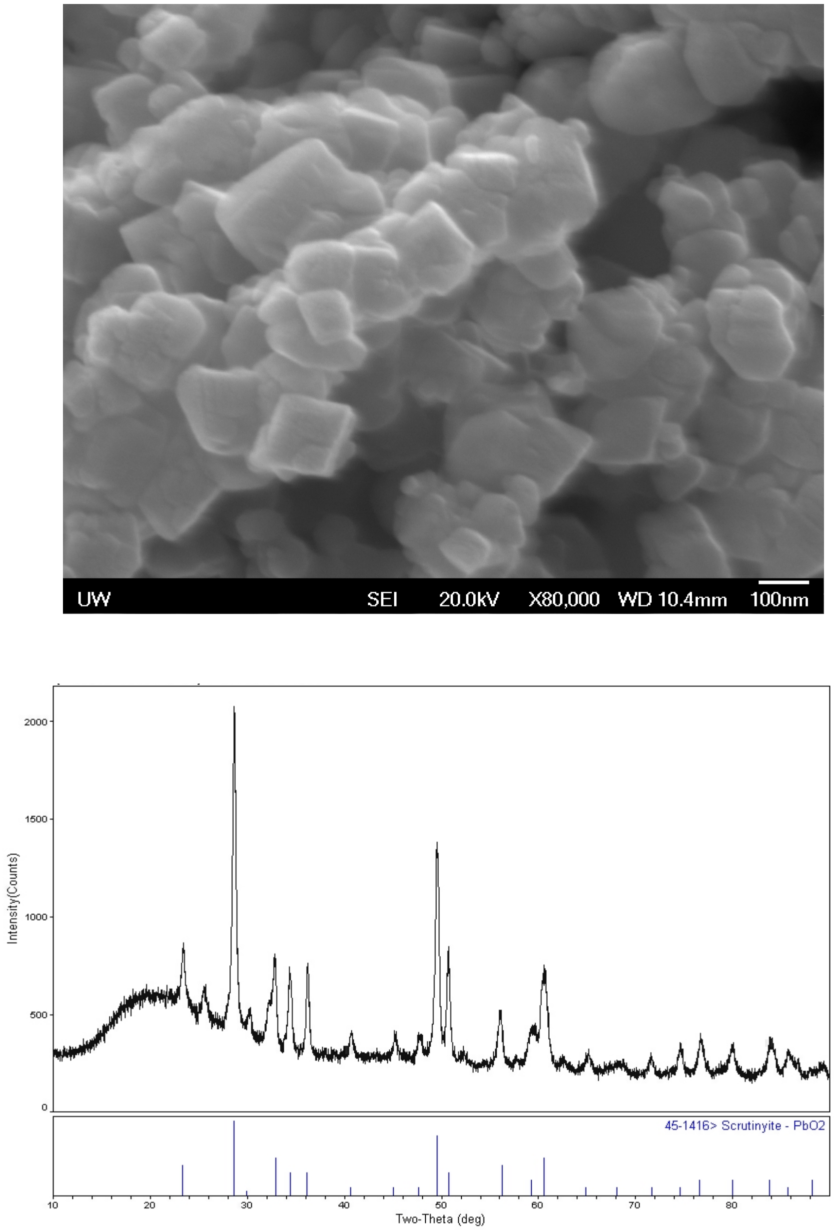

Figure S1 Morphology of synthesized scrutinyite α-PbO_2. (A) SEM images; (B) XRD patterns.

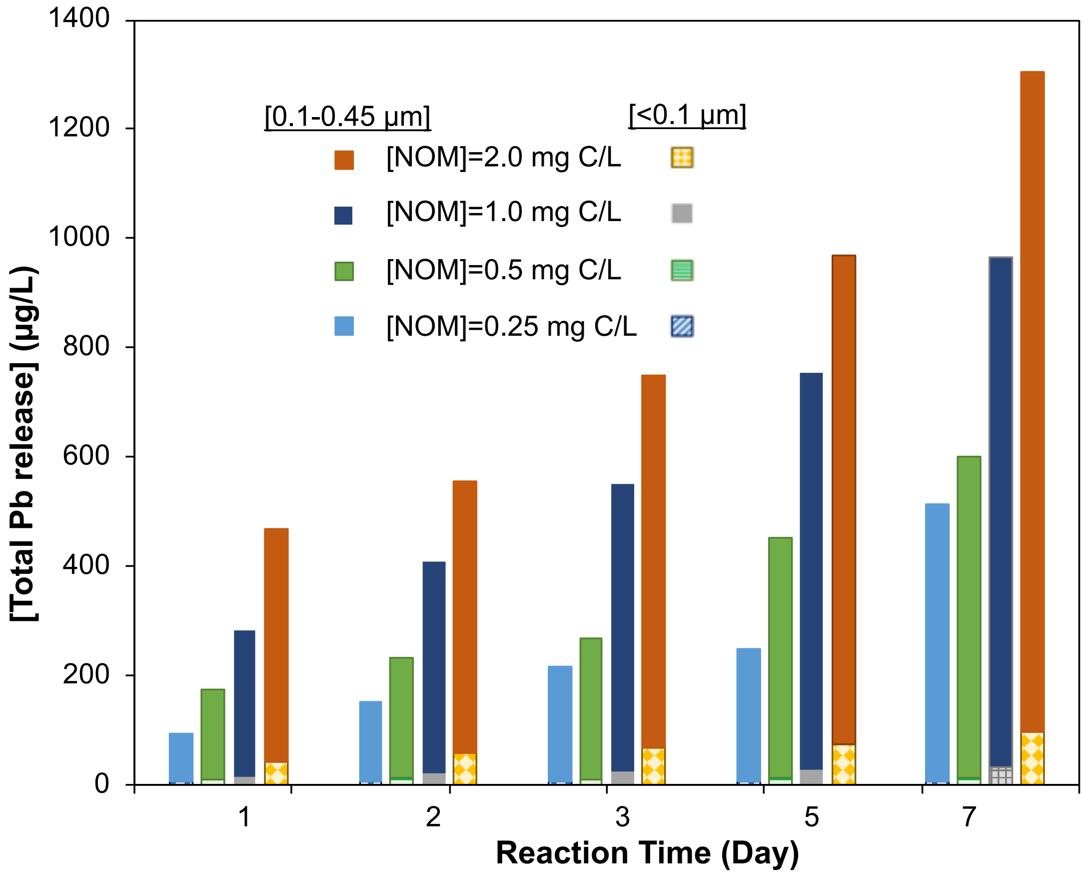

Figure S2 Size distribution of total lead release at different concentrations of natural organic matters. Initial $[PbO_2]$=50 mg/L, $TOTCO_3$=1 mM, $[Cl^-]$=1 mM, pH=7.5, ionic strength= 10 mM.

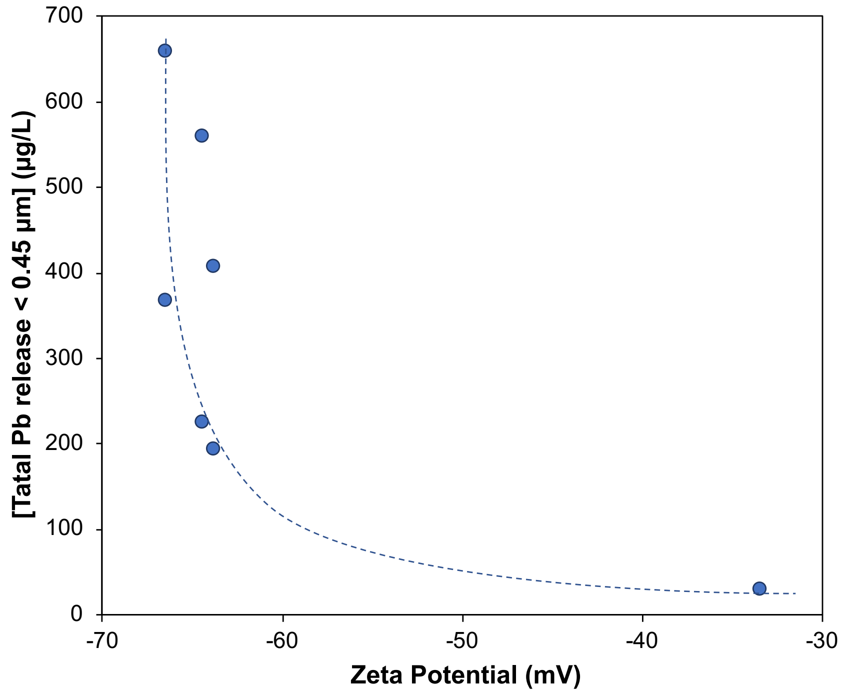

Figure S3 Correlation between zeta potential of PbO_2 particles and the total lead release after a reaction time of 5-7 days. [NOM]=0.5-5 mg/L, [chloramine]=1-2 mg/L, [PbO_2]=140 mg/L, $TOTCO_3$=1 mM, [Cl^-]=1 mM, pH=7.5, ionic strength=10 mM. The dash lines are trendlines connecting the data points.

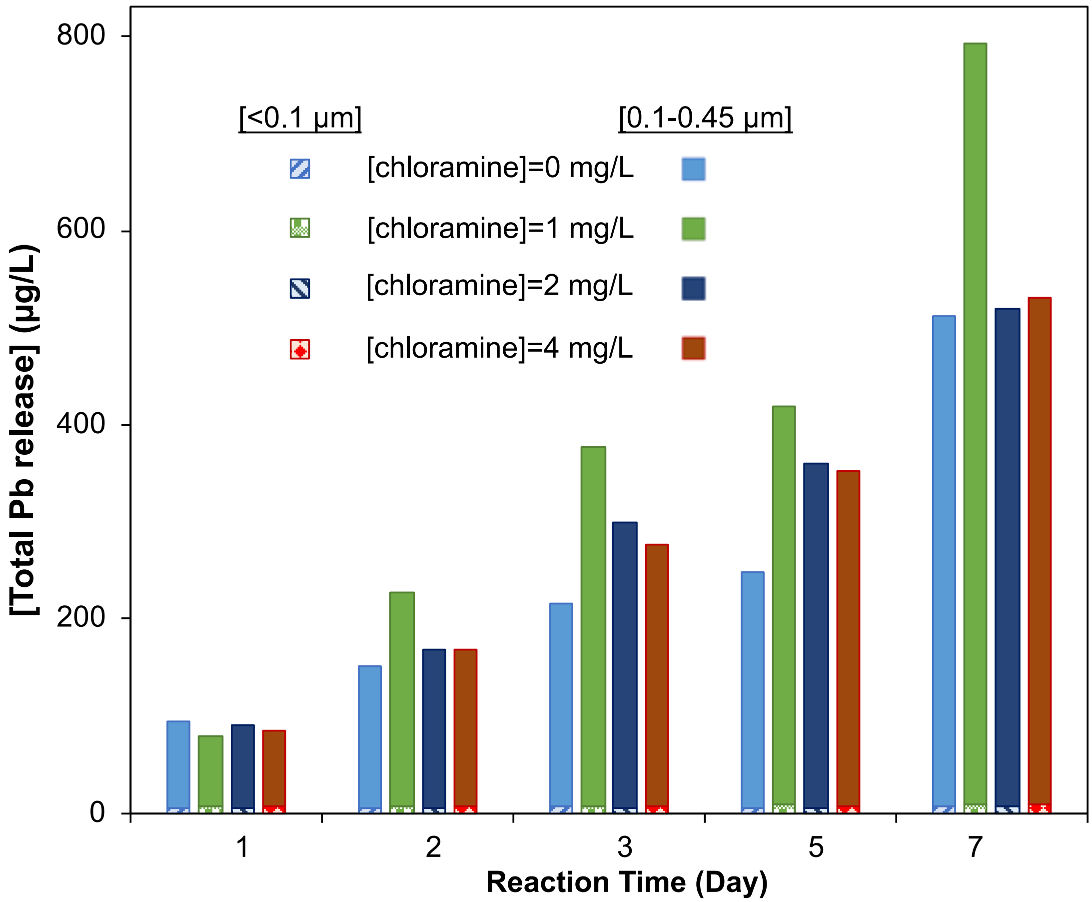

Figure S4 Size distribution of total lead release in the presence of both NOM and different concentrations of chloramine. $[PbO_2]$=50 mg/L, [NOM]=0.25 mg/L, $TOTCO_3$=1 mM, pH=7.5, ionic strength=10 mM. (A) Lead colloids <0.45 µm; (B) Lead colloids <0.1 µm.

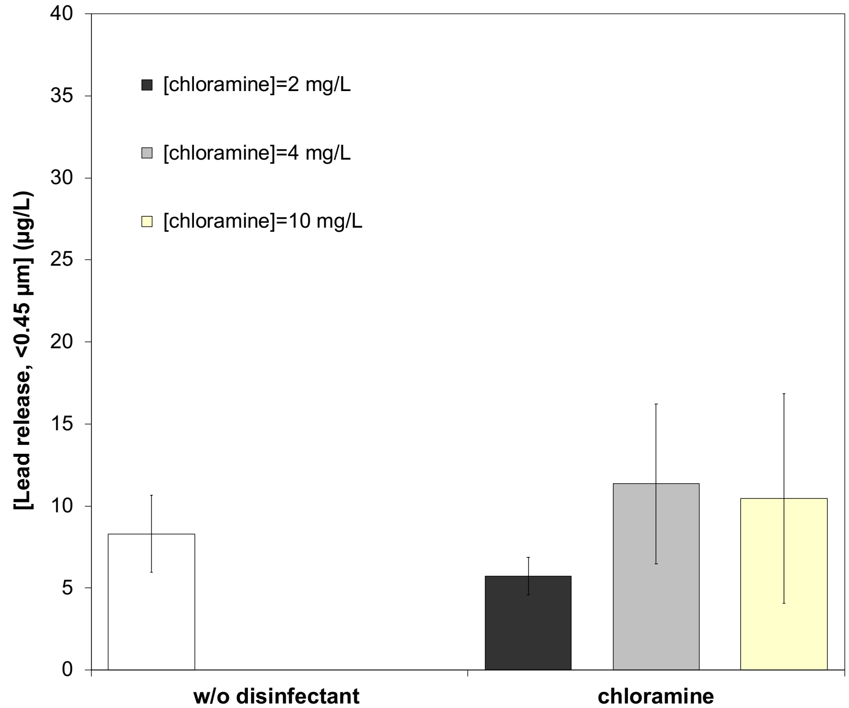

Figure S5 Comparison of lead release from hydroxypyromorphite $Pb_5(PO_4)_3OH$ in the presence of different concentrations of chloramine. $[Pb_5(PO_4)_3OH]$=0.5 g/L, pH=7.5, $[PO_4]$=1 mg/L, $TOTCO_3$=1 mM, ionic strength=10 mM.