Supplementary Material

A Rational Analysis on Key Parameters Ruling Zerovalent Iron-Based Treatment Trains: Towards the Separation of Reductive from Oxidative Phases

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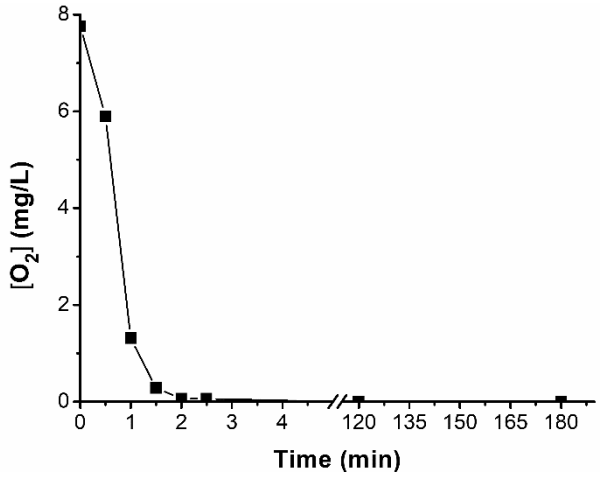

Figure S1. Dissolved oxygen concentration during PNBA 6 μM reduction in NW with 1.4 g/L of mZVI at initial pH 3.0.

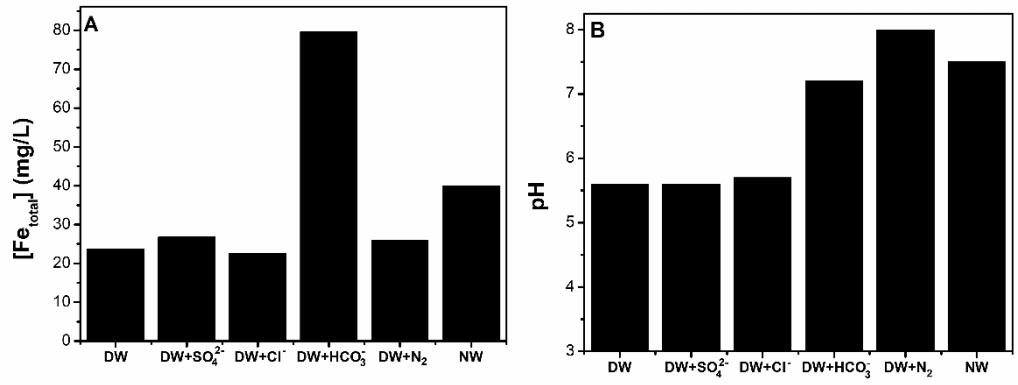

Figure S2. PNBA 6 μM reduction at initial pH 3.0 with 1.4 g/L mZVI in different water matrices at 180 min: A) released Fe (measured as total and filtered) B) pH.

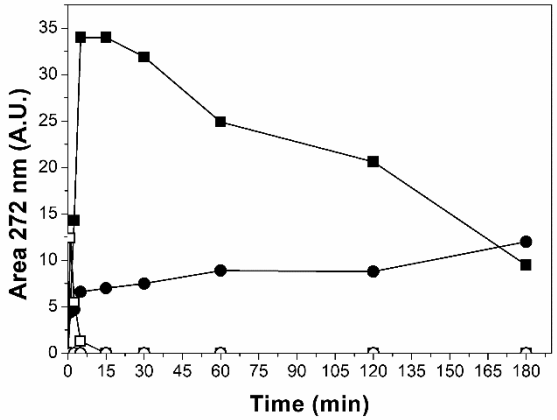

Figure S3. Kinetic formation of two unknown compounds, called X1 and X2, observed in the chromatograms during PNBA 6 μM reduction with 1.4 g/L mZVI at initial pH 3.0 in DW under aerobic (■ and ● for X1 and X2, respectively) and anaerobic (□ and ○ for X1 and X2, respectively) conditions.

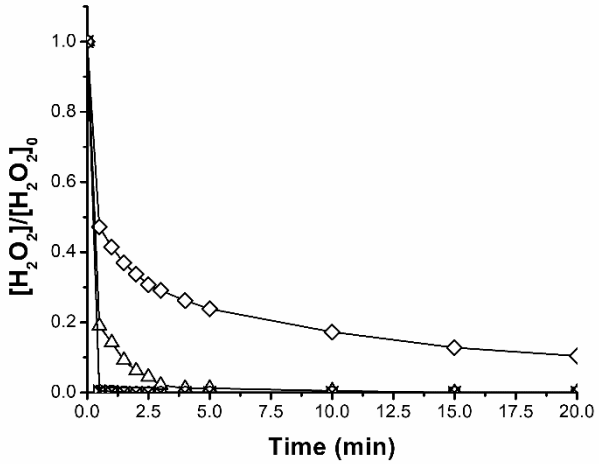

Figure S4. H_2O_2 consumption during Fenton oxidation experiments, separating the mZVI previous different H_2O_2 concentrations, 10 mg/L (○), 25 mg/L (△) and 50 mg/L (◇), as well as the one containing the mZVI 1.4 g/L with H_2O_2 50 mg/L (⊕).

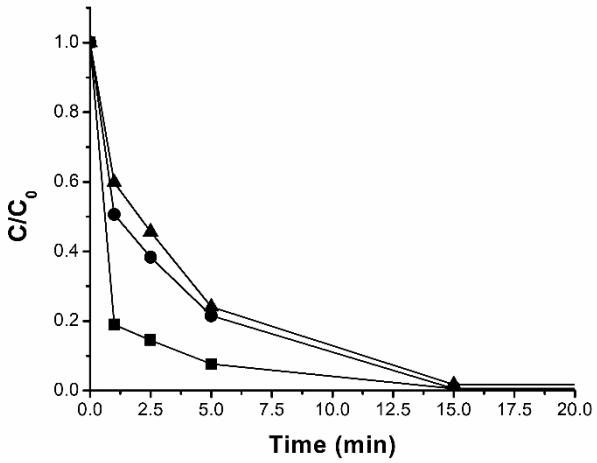

Figure S5. Fenton oxidation of the supernatant ([PABA] = 50 μM, [Fe_{total}] = 55 mg/L, pH = 7.3) with 50 mg/L of H_2O_2, and 50 μM of PNBA (added). Theorical PNBA degradation rate[1] has been also inserted in the graph. Symbol representation has been given by: ■ (PABA), ● (PNBA) and ▲ (theorical PNBA degradation rate).

References

1. Buxton, G.V.; Greenstock, C.L.; Helman, W.P.; Ross, A.B. Critical Review of rate constants for reactions of hydrated electrons, hydrogen atoms and hydroxyl radicals (·OH/·O−) in Aqueous Solution. *J. Phys. Chem. Ref. Data* **1988**, *17*, 513–886, doi:10.1063/1.555805.