SUPPLEMENTAL INFORMATION

Treatability of Complex Effluents in High-Throughput and Bench Scale Microbial Electrolysis Cells

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Figure S1. (a) High-throughput mini with a 5 mL liquid volume and (b) cube MEC reactors with a 32 mL liquid volume, with parts and components labeled.
**Figure S2.** Initial COD concentration of samples as they were received prior to dilution (FE and IW-2) and pH adjustments (IW-1 and IW-2).

**Figure S3.** Current profiles for (a) cube and (b) mini MECs fed sample IW-2. Both reactors were switched from the full strength to diluted IW-2 samples around day 40, after exhibiting low and unstable current generation.
**Figure S4.** (a) Initial sample pH, measured prior to neutralization for IW-1 and IW-2 and (b) conductivity of samples as they were used in MEC reactors.

**Figure S5.** COD removal during open circuit (OC) operation when electrodes were disconnected and no current was generated.
Figure S6. Representative current density profiles for (a) cube and (b) mini MECs fed DW sample.

Figure S7. Time to 90% charge accumulation ($t_{90}$) in mini and cube MECs.
Figure S8. (a) Treatment energy based on measured current, applied potential, and COD removal with various substrates in mini and cube MECs.
Figure S9. Charge accumulation in triplicate mini and duplicate cube MEC reactors as a percentage of the total coulombs measured over a cycle for each substrate, with average total coulombs for each reactor set shown.
Figure S10. Residual percent difference between cube and mini MEC measurements of (a) total COD removal and (b) effluent COD.

Figure S11. (a) Linear relationship between mini and cube MEC $I_{avg-90}$ current density and (b) effluent COD concentration.
**Figure S12.** Energy efficiency for cube MECs with each sample based on the energy content of the gas recovered and the energy added through the external power supply. The efficiency was calculated using only recovered hydrogen and combined hydrogen and methane, using the heat of combustion to calculate the energy contained in the gas.

**Figure S13.** Open circuit gas production and COD removal in cube MECs, showing substantial methane generation with IW-1 and IW-3.