

Supplemental Information

Air Bubbling Assisted Soil Washing to Treat PFAS in High Organic Content Soils

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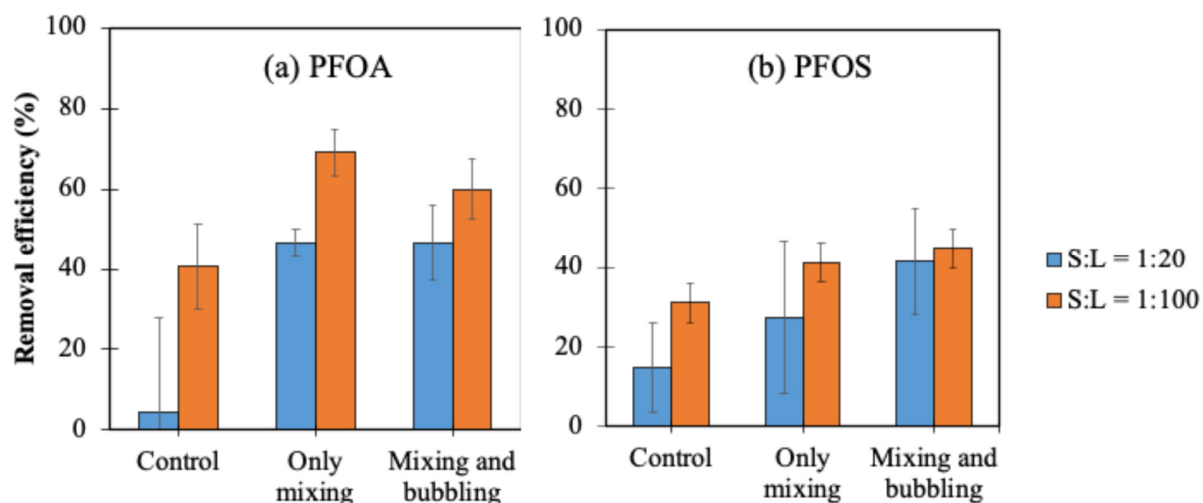


Figure S1. Extractability of (a) PFOA and (b) PFOS with varying soil-to-liquid (S:L) ratio.

Table S1. Liquid chromatography and mass spectrometry conditions

<i>Parameter</i>	<i>Value</i>												
LC	Agilent G7120A 1290 Binary Pump Agilent G7116A 1260 Multicolumn Thermostat Agilent G7167A 1260 Multisampler												
Analytical column	Agilent ZOBRAx Eclipse Plus C18 3.0 x 50 mm, 1.8 μ m												
Delayed column	Agilent ZOBRAx Eclipse Plus C18 4.6 x 50 mm, 3.5 μ m												
Column temperature	50 °C												
Injection volume	5 μ L												
Mobile phase	A) 5 mM Ammonium acetate in water B) 100% MeOH												
Flow rate	0.4 mL/min												
Gradient	<table> <tr> <th>Time (min)</th><th>%B</th></tr> <tr> <td>0.0</td><td>10</td></tr> <tr> <td>0.5</td><td>10</td></tr> <tr> <td>2.0</td><td>30</td></tr> <tr> <td>14.0</td><td>95</td></tr> <tr> <td>14.5</td><td>100</td></tr> </table>	Time (min)	%B	0.0	10	0.5	10	2.0	30	14.0	95	14.5	100
Time (min)	%B												
0.0	10												
0.5	10												
2.0	30												
14.0	95												
14.5	100												
Stop time	16.5 minutes												
Post time	6 minutes												
MS Instrument conditions													
<i>Parameter</i>	<i>Value</i>												
MS	Agilent 6495 Triple Quadrupole MS/MS Agilent Jet Stream ESI source												
Gas Temperature	175 °C												
Gas flow	17 L/min												
Nebulizer	20 psi												
Sheath gas temperature	275 °C												
Sheath gas flow	11 L/min												
Capillary voltage (Neg)	2500 V												
Nozzle voltage (Neg)	0 V												
iFunnel													
High pressure RF (Neg)	90 V												
Low pressure RF (Neg)	40 V												

Table S2. The MRM transitions for PFAS analytes and internal standards (IS) applied.

Analyte		Precursor Ion (m/z)	Product Ion 1 (m/z)	Product Ion 2 (m/z)
PFBS	Perfluorobutanesulfonic acid	299	80	99
PFOA	Perfluorooctanoic acid	413	369	169
PFOS*	Perfluorooctanesulfonic acid	499	80	99
PFDA	Perfluorodecanoic acid	513	469	219
Internal standard		Precursor Ion (m/z)	Product Ion (m/z)	Product Ion 2 (m/z)
¹³ C ₃ -PFBS	Perfluoro-1-[2,3,4- ¹³ C ₃] butanesulfonate	302	80	-
¹³ C ₈ -PFOA	Perfluoro-n-[¹³ C ₈] octanoic acid	421	376	-
¹³ C ₈ -PFOS	Perfluoro-1-[¹³ C ₈] octanesulfonate	507	80	-
¹³ C ₂ -PFDA	Perfluoro-n-[¹³ C ₂] decanoic acid	515	470	-

Table S3. Average surrogate recoveries for PFAS.

PFAS analyzed	Average surrogate recovery in water (%)	Average surrogate recovery in soil (%)
PFBS	96	75
PFOA	93	85
PFOS	91	76
PFDA	88	90