**Supplementary material**

Table SI. List of PPCPs studied and their properties

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Abbreviation | Molecular weight (g⋅mol-1) | Octanol / water partition coefficient |
| Benzophenone1 | BP | 182.222 | 3.18 |
| Benzophenone-32 | BP-3 | 228.247 | 3.79 |
| Carbamazepine3 | CBZ | 236.274 | 2.45 |
| Caffeine4 | CF | 194.194 | -0.07 |

1;25

2;26

3;27

4;28

Table SII. List of target ions (m / z) of compounds used for analysis

|  |  |
| --- | --- |
| Analyte | Target  Ion, m / z |
| BP | 105 |
| BP-3 | 151 |
| CBZ | 193 |
| CF | 194 |

Table SIII. Parameters for river water during phase of biofilm development

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameters | I cycle | | II cycle | | III cycle | | IV cycle | |
| I day | VII day | I day | VII day | I day | VII day | I day | VII day |
| pH | 8.1 | 8.2 | 8.3 | 7.5 | 8.02 | 8.1 | 8.1 | 8.02 |
| Conductivity, µS⋅cm-1 | 390 | 396 | 394 | 392 | 377 | 393 | 351 | 342 |
| Temperature, °C | 17 | 23 | 26.3 | 24.2 | 23.5 | 26 | 19 | 26 |
| KMnO4 consumption , mg⋅L-1 | 5.8 | 2.5 | 9 | 6.3 | 14 | 12.6 | 11.4 | 10 |

Table SIV. Results of weathering tests in glass beakers

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phase of experiment | BP | | BP-3 | | CF | | CBZ | |
| Removal, % | Night-day circle | Dark | Night-day circle | Dark | Night-day circle | Dark | Night-day circle | Dark |
| B1 | 83 | 25 | 15 | 54 | 54 | 47 | Not calculated | Not calculated |
| B2 | 90 | 29 | 7 | 53 | 54 | 51 | 0 | 0 |

Figure S1. Biologically test filter set-up

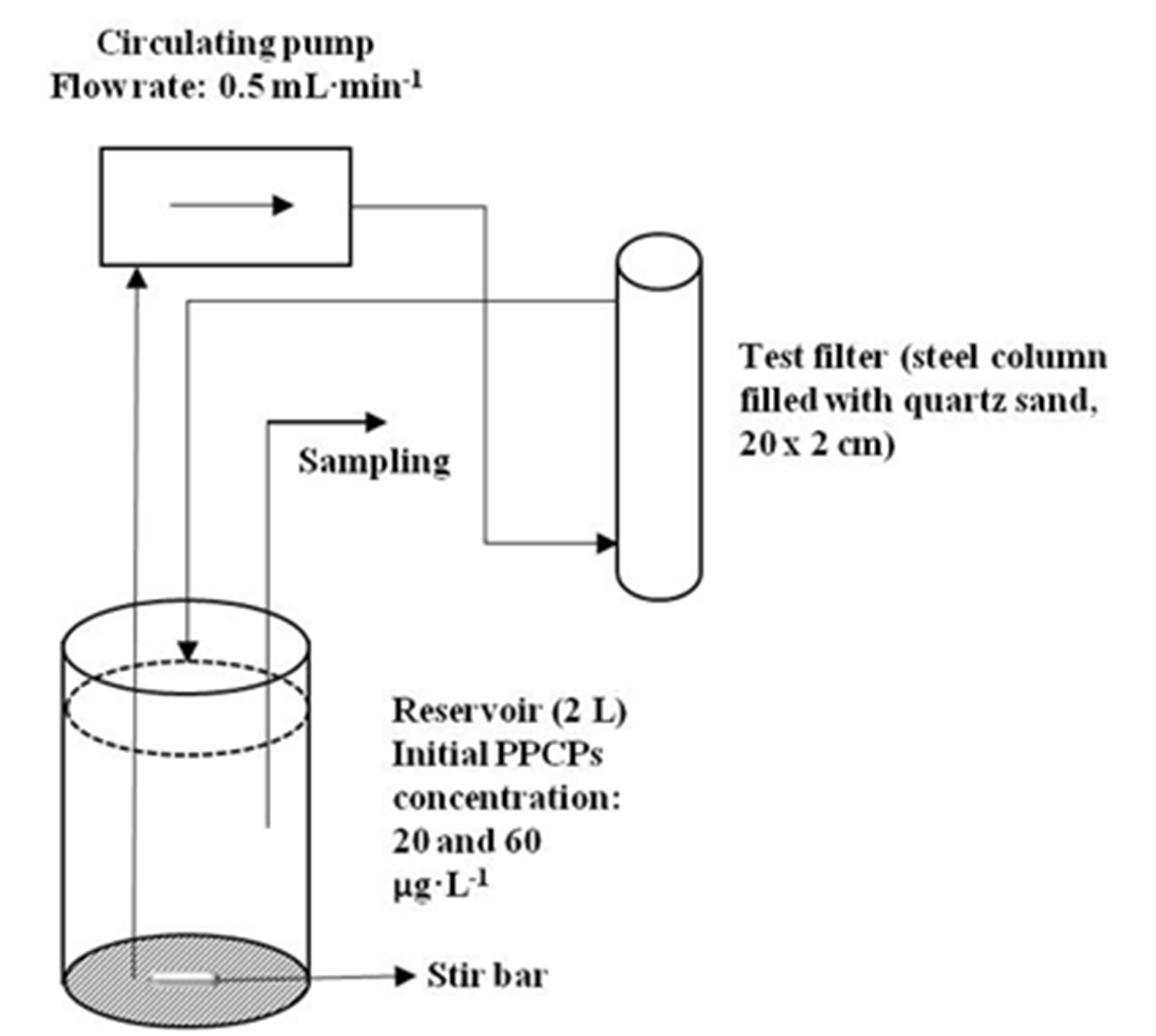


Figure S2. Images of stained samples showing bacteria (coccal and rod forms) and diatoms

Figure 2.tif

Figure S3. Images of native samples showing diatoms present in the biofilm

Figure 3a.tif

*a) Synedra sp.*

Figure 3b.tif

*b) Cyclotella sp.*

Figure 3c.tif

*c) Melosira sp.*

Figure 3d.tif

*d)* *Asterionella sp.*

Figure 3e.tif

*e) Nitzschia sp.*