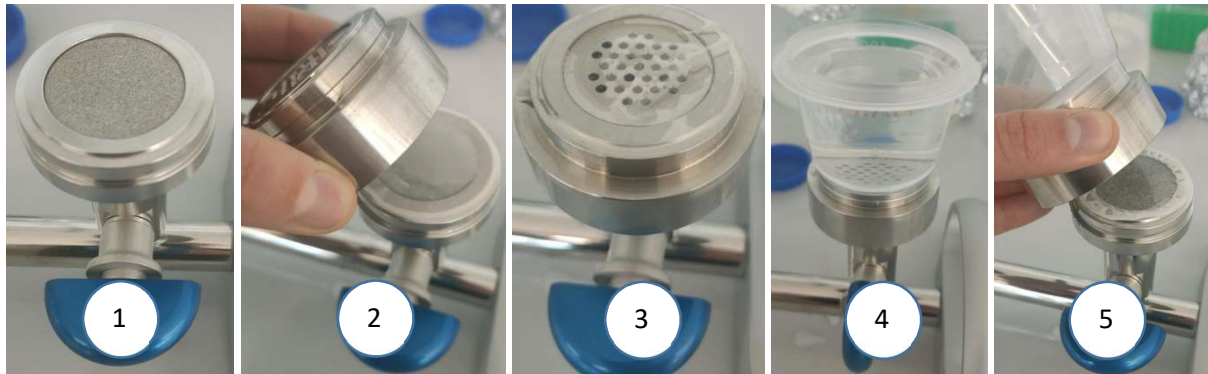


## Supporting information



**Figure S1. Schematic set-up of the membrane filtration.** 1) Drawing up the grid and placing the filter with 0.22  $\mu\text{m}$  pore size on top. 2) Putting the pre-filtration adapter unit on top with its corresponding grid. 3) Placing the filter with 5.0  $\mu\text{m}$  pore size. 4) Attaching the sample cup and adding the sample. 5) After the filtration is completed, the pre-filtration unit is removed and the bacteria can be washed from the membrane filter.



**Figure S2. Results of the cultivation of real samples.** Cultivation of real samples after acidic and heat treatment (left) and stroked suspicious colonies on BCYE agar without cysteine (right).

**Table S1. Summary of the collected and generated data about all ECS samples.**

<b>Sample Number</b>	<b>Sample Place</b>	<b>Biocide and concentration</b>	<b>Corrosion inhibitor</b>	<b>Sampling temperature</b>	<b>IMS-FCM (cells/100 mL)</b>	<b>Level of excess</b>
1.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	23.5 °C	36,447	>10,000 cells/100 mL
1.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	23.5 °C	8,003	
2.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	29.5 °C	14,585	>10,000 cells/100 mL
2.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	29.5 °C	16,428	
3.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	19.5 °C	20,435	>10,000 cells/100 mL
3.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	19.5 °C	22,139	
4.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	28.9 °C	11,383	>10,000 cells/100 mL
4.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	28.9 °C	13,203	
5.1	Unknown	Moracid 550 Con. unknown	Coragard OS 586 IW	28.5 °C	1,565	>1,000 cells/100 mL
5.2.	Unknown	Moracid 550 Con. unknown	Coragard OS 586 IW	28.5 °C	2,364	
6.1.	Unknown	Nades 2.0 Conc. unknown	Coragard OS 586 IW	30.4 °C	67	>100 cells/100 mL
6.2.	Unknown	Nades 2.0 Conc. unknown	Coragard OS 586 IW	30.4 °C	261	
7.1.	Unknown	Ac.Bion 331 70 ppm	Bayroquest T400	19.4 °C	849	>100 cells/100 mL
7.2.	Unknown	Ac.Bion 331	Bayroquest	19.4 °C	816	

		70 ppm	T400			
8.1.	Unknown	Ac.Bion 331 70 ppm	Bayroquest T400	20.4 °C	660	>1,000 cells/100 mL
8.2.	Unknown	Ac.Bion 331 70 ppm	Bayroquest T400	20.4 °C	1,182	
9.1.	Sample valve	Moracid 120 Con. unknown	Coragard OS 586 IW	23.2 °C	Clogged cartridge	>1,000 cells/100 mL
9.2.	Sample valve	Moracid 120 Con. unknown	Coragard OS 586 IW	23.2 °C	1,210	
10.1.	Sample valve	Moracid 120 Con. unknown	Coragard OS 586 IW	25.4 °C	0	< LoQ
10.2.	Sample valve	Moracid 120 Con. unknown	Coragard OS 586 IW	25.4 °C	0	
11.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	20.3 °C	30,764	>10,000 cells/100 mL
11.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	20.3 °C	41,153	
12.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	26.9 °C	Clogged cartridge	>1,000 cells/100 mL
12.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	26.9 °C	3,102	
13.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	19.3 °C	22,394	>10,000 cells/100 mL
13.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	19.3 °C	15,601	
14.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	27.3 °C	21,701	>10,000 cells/100 mL
14.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	27.3 °C	11,350	
15.1.	Unknown	Moracid 560	Coragard	24.7 °C	0	< LoQ

		Con. unknown	OS 586 IW			
15.2.	Unknown	Moracid 560 Con. unknown	Coragard OS 586 IW	24.7 °C	0	
16.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	21.3 °C	16,389	>10,000 cells/100 mL
16.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	21.3 °C	11,716	
17.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	25.9 °C	26,146	>10,000 cells/100 mL
17.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	25.9 °C	20,907	
18.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	19.7 °C	27,656	>10,000 cells/100 mL
18.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	19.7 °C	22,999	
19.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	24.5 °C	70,191	>10,000 cells/100 mL
19.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	24.5 °C	78,111	
20.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	20,0 °C	19,075	>10,000 cells/100 mL
20.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	20,0 °C	17,849	
21.1.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	29.3 °C	25,225	>10,000 cells/100 mL
21.2.	Disinfected sample valve	Moracid 506 150 ppm	Coragard OS 406	29.3 °C	74,303	
22.1.	Droplet basin	ST-DOS B589 Conc. unknown	ST-DOS K-310	17.7 °C	15,573	>10,000 cells/100 mL
22.2.	Droplet basin	ST-DOS B589	ST-DOS	17.7 °C	13,043	

		Conc. unknown	K-310			
23.1.	Droplet basin	ST-DOS B589 Conc. unknown	ST-DOS K-310	18.8 °C	1,615	>1,000 cells/100 mL
23.2.	Droplet basin	ST-DOS B589 Conc. unknown	ST-DOS K-310	18.8 °C	6,255	
24.1.	Droplet basin	ST-DOS B589 Con. unknown	ST-DOS K-310	31.8 °C	100	>100 cells/100 mL
24.2.	Droplet separator basin	ST-DOS B589 Conc. unknown	ST-DOS K-310	31.8 °C	144	
25.1.	Droplet separator basin	ST-DOS B589 Conc. unknown	ST-DOS K-310	30.4 °C	549	>100 cells/100 mL
25.2.	Droplet separator basin	ST-DOS B589 Conc. unknown	ST-DOS K-310	30.4 °C	67	
26.1.	Disinfected sample valve	ST-DOS B589 Conc. unknown	ST-DOS K-310	21.9 °C	194	>100 cells/100 mL
26.2.	Disinfected sample valve	ST-DOS B589 Conc. unknown	ST-DOS K-310	21.9 °C	222	