

Supporting Information

Microbial community dynamics in an anaerobic biofilm reactor treating heavy oil refinery wastewater

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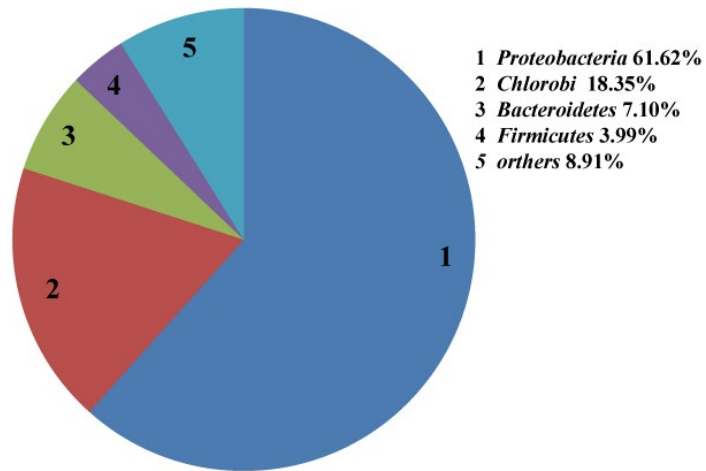


Fig. S1. Abundance of bacterial phyla in the total reads in all communities.

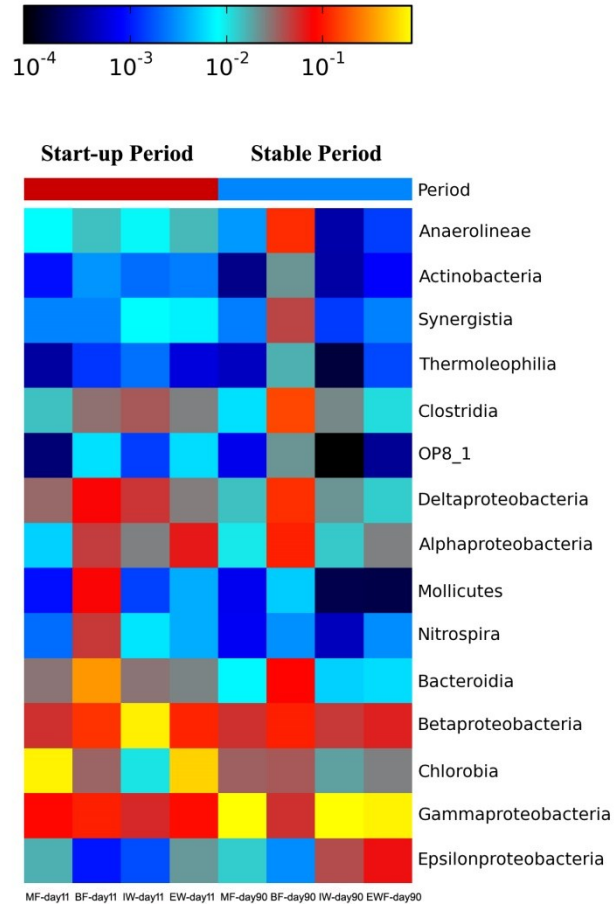


Fig. S2. The relative proportions of bacterial populations at the class level in the IW, EW, and biofilm samples of the anaerobic biofilm reactor during the start-up and stable periods. The colors from black to yellow indicate low to high representations of OTUs.

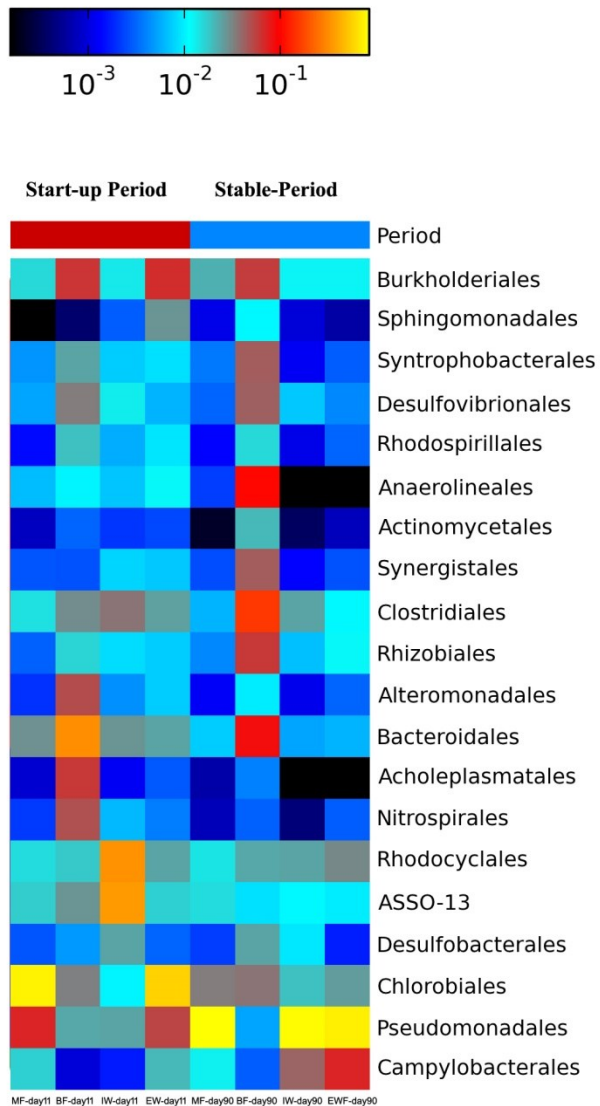


Fig. S3. The relative proportions of bacterial populations at the order level in the IW, EW, and biofilm samples of the anaerobic biofilm reactor during the start-up and stable periods. The colors from black to yellow indicate low to high representations of OTUs.

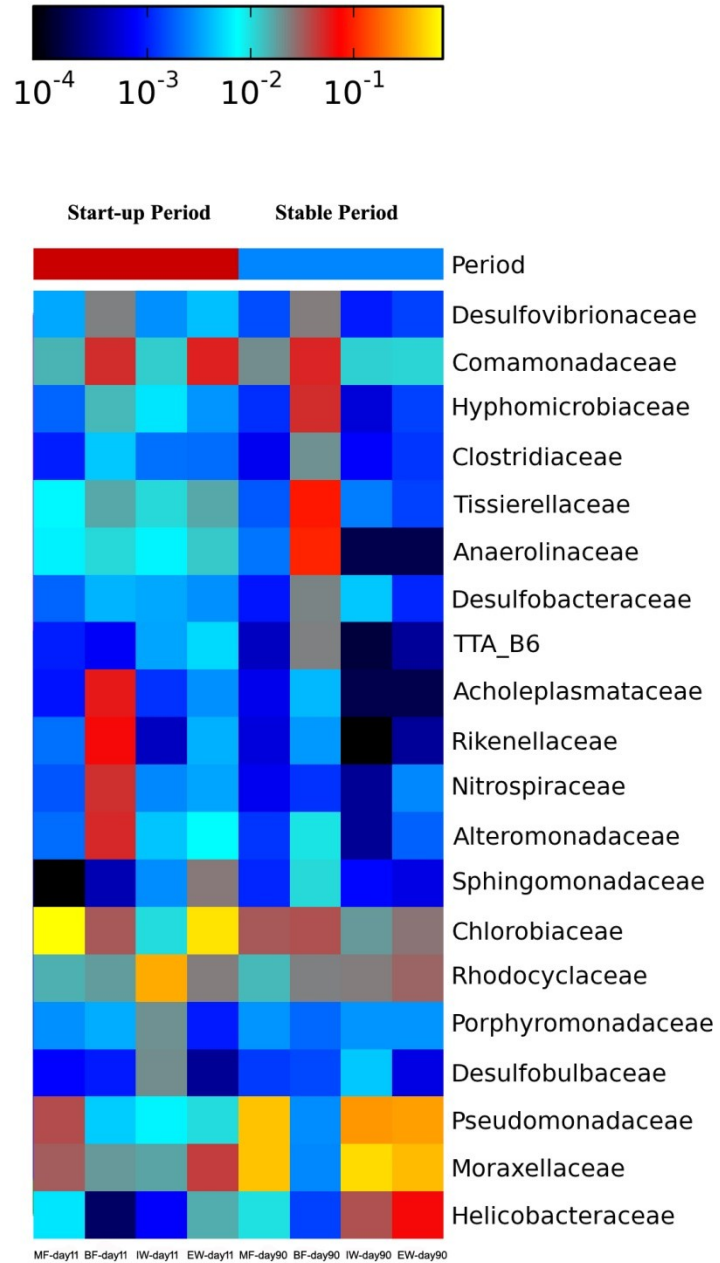


Fig. S4. The relative proportions of bacterial populations at the family level in the IW, EW, and biofilm samples of anaerobic biofilm reactor during the start-up and stable periods. The colors from black to yellow indicate low to high representation of OTUs.

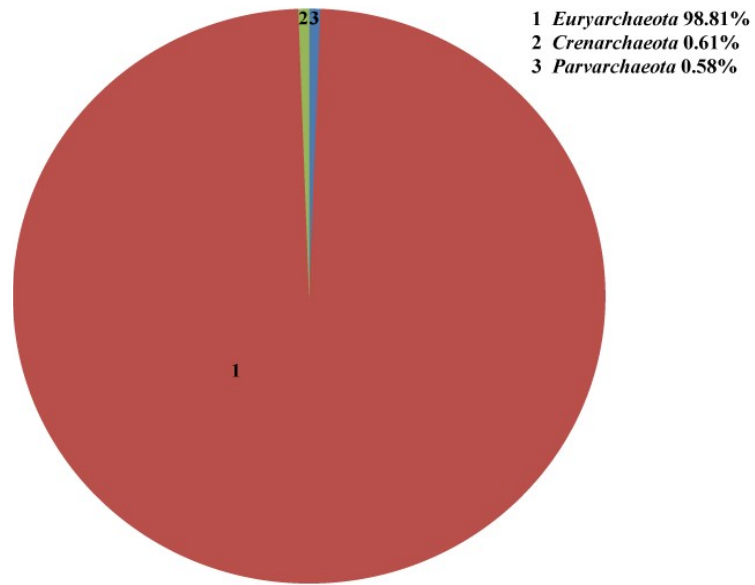


Fig. S5. Abundance of archaeal phyla in the total reads in all communities.

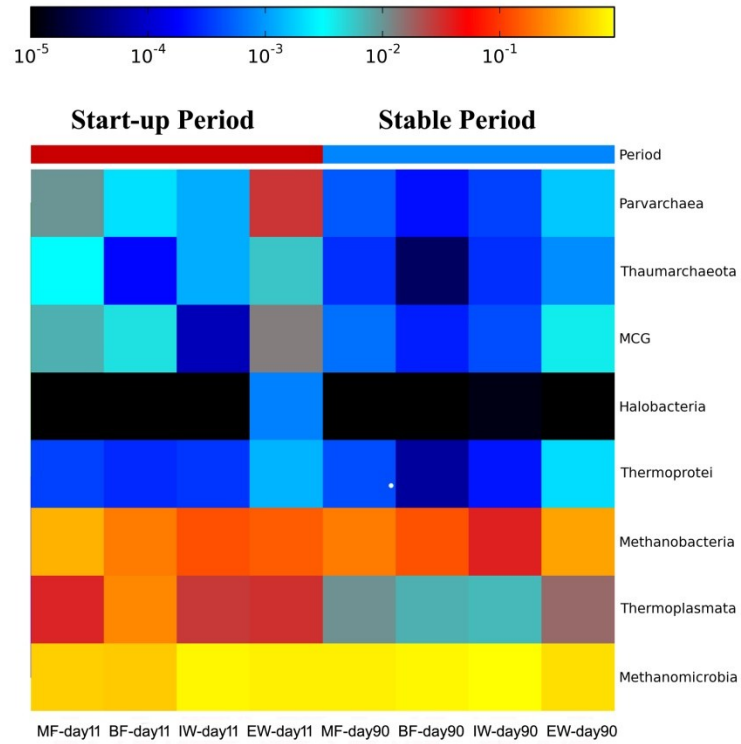


Fig. S6. The relative proportions of archaeal populations at the class level in the IW, EW, and biofilm samples of the anaerobic biofilm reactor during the start-up and stable periods. The colors from black to yellow indicate low to high representation of OTUs.

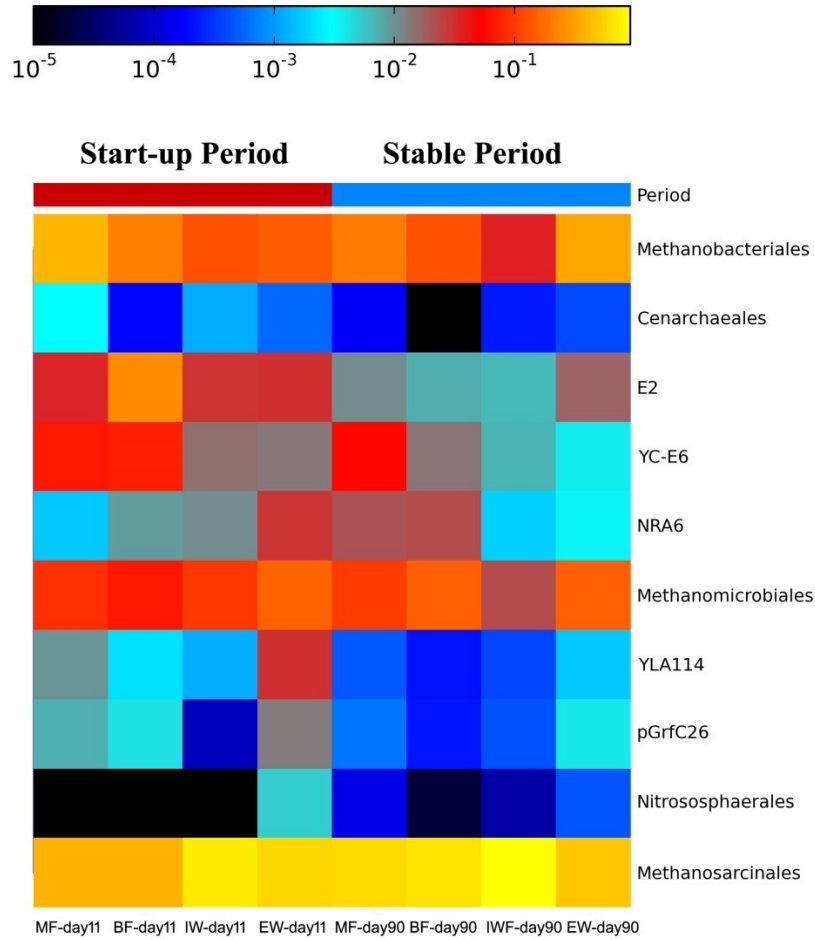


Fig. S7. The relative proportions of archaeal populations at the order level in the IW, EW, and biofilm samples of the anaerobic biofilm reactor during the start-up and stable periods. The colors from black to yellow indicate low to high representations of OTUs.

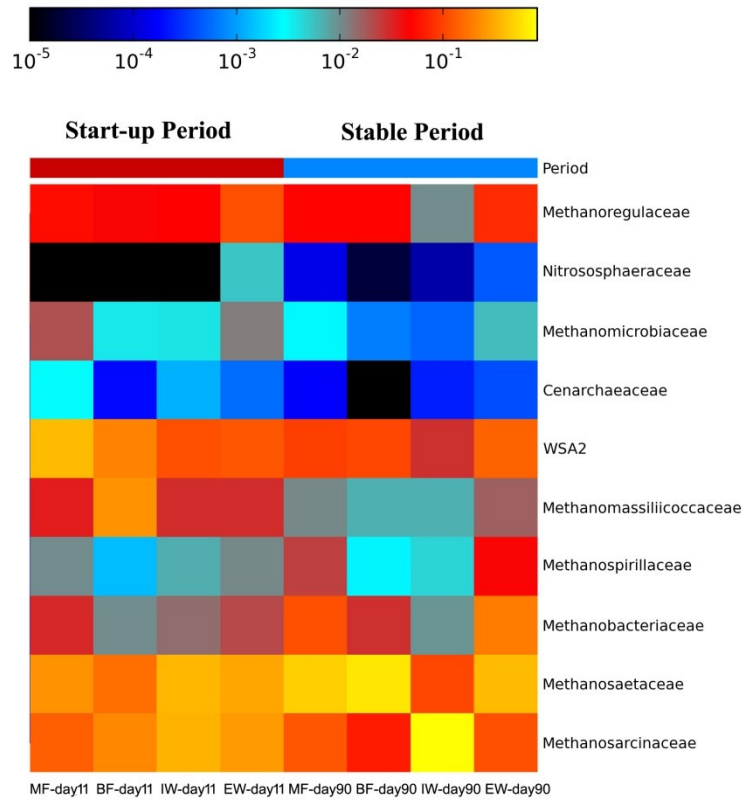


Fig. S8. The relative proportions of archaeal populations at the family level in the IW, EW, and biofilm samples of the anaerobic biofilm reactor during the start-up and stable periods. The colors from black to yellow indicate low to high representations of OTUs.

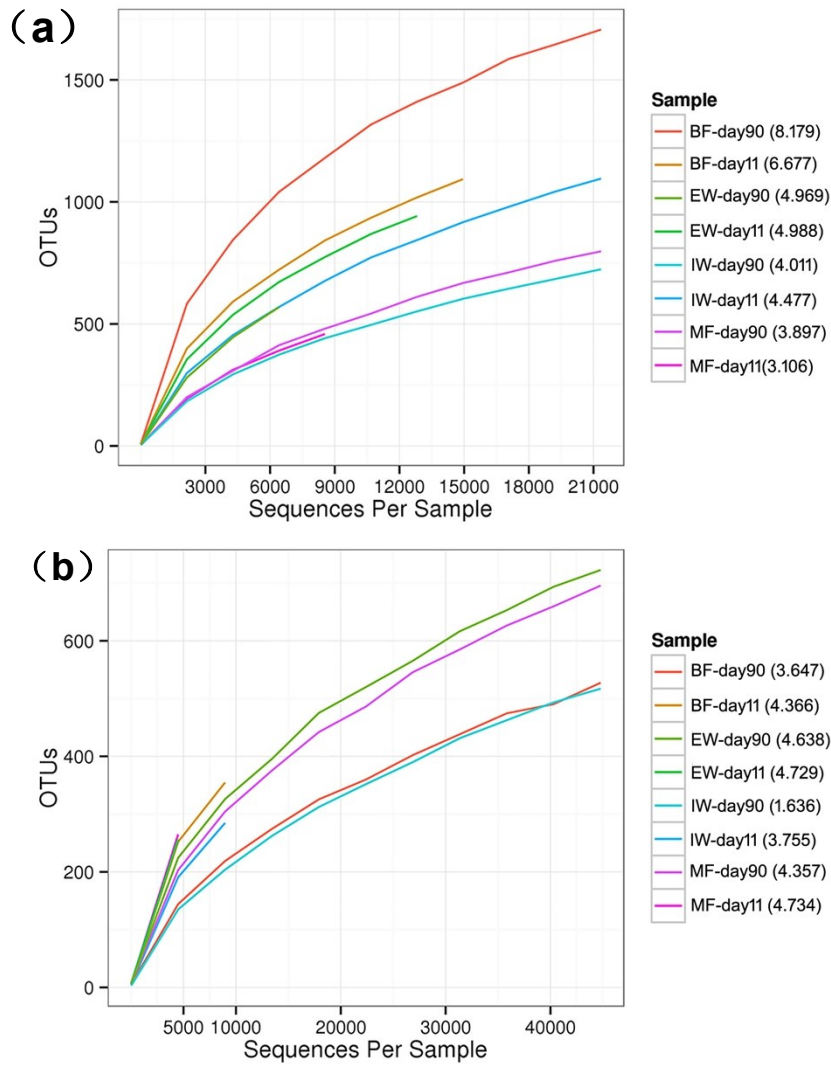


Fig. S9. The rarefaction curves of bacteria (a) and archaea (b) in the anaerobic reactor. The rarefaction curves in Figures S9a, b represent the OTUs vs sequences in each sample. MF-day11, BF-day11, IW-day11, and EW-day11 represent the MF, BF, IW, and EW samples from the start-up phase of the AnBR for 11 days and the HRT of 72 h, respectively. MF-day90, BF-day90, IW-day90, and EW-day90 represent the MF, BF, IW, and EW samples from the stable phase of AnBR for 79 days and the HRT of 60 h, respectively. Numbers in parentheses in the legends are the Shannon indices of each sample.

Table S1. The parameters of inoculation sludge.

The test items	Dalian petrochemical mud
MLSS (mg/L)	36202.0
MLVSS (mg/L)	25072.0
SVI (mL/g)	2486.1
SV (%)	90.0

Table S2. All the used PCR primers in this study.

Target	Primers	Number of cycles	PCR conditions								References
			initial denaturation		Denaturation		Annealing		Elongation		
			°C	min	°C	S	°C	S	°C	min	
Bacteria	Bac349F Uni806R	34	94	5	96	30	52	30	72	10	Takai and Horikoshi (2000)
Archaea	Arc349F Arc806R	34	94	5	96	30	50	40	72	10	Takai and Horikoshi (2000)

Reference:

Takai, K., Horikoshi, K. 2000. Rapid detection and quantification of members of the archaeal community by quantitative PCR using fluorogenic probes. *Applied and Environmental Microbiology*, 66(11), 5066-5072.