

Supporting Information for

Remediation of polychlorinated biphenyl impacted sediment by

concurrent bioaugmentation with anaerobic halorespiring and

aerobic degrading bacteria

Rayford B Payne[†], Sonja K. Fagervold[‡], Harold D May[§], Kevin R Sowers^{†*}

[†] Department of Marine Biotechnology, Institute of Marine and Environmental Technology,

University of Maryland Baltimore County, Baltimore MD

[‡]UPMC Univ Paris 06, FRE 3350, LECOB, Observatoire Océanologique, F-66650,

Banyuls/Mer, France

[§] Marine Biomedicine and Environmental Science Center, Department of Microbiology and

Immunology, Medical University of South Carolina, Charleston SC

* Corresponding author: Kevin Sowers, Department of Marine Biotechnology, Institute of Marine and Environmental Technology, 701 E. Pratt St., Baltimore, Maryland 21202
Telephone: (410) 234-8878/FAX: (410) 234-8896, e-mail: Sowers@umbc.edu

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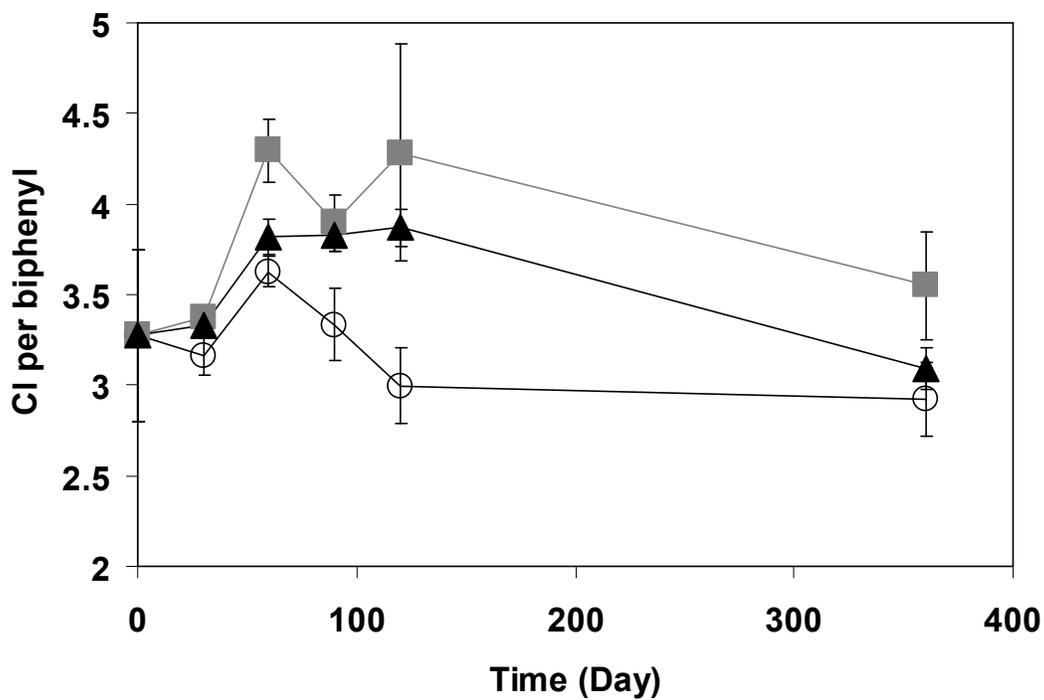


Figure S1. Changes in chlorines per biphenyl over 365 days in mesocosms. Average and standard deviation at time 0 (N=27) and at other times (N=3). *Open circles* (○), GAC plus spent growth medium; *Grey squares* (■), GAC plus LB400; *Black triangles* (▲) GAC plus LB400 and DF1. Error bars are calculated from replicate sediment subsamples.

Table S1. PCR primers used in this study.

Primers used in this study			
Name	Sequence 5'-3'	Target Gene	Reference
CIOP0	CGATCTGCGGCTGGACGGGCTCAT	298 nt LB400 <i>bphA1</i> upstream	(Beltrametti, Renierob et al. 2001)
CIOP1	AGATTCGTCGCTGTCGTGCACCTC	298 nt LB400 <i>bphA1</i> upstream	(Beltrametti, Renierob et al. 2001)
SKFPat9F	GACAATGAGGACCCGGAATT	DF1 reductive dehalogenase	This work
SKFPat9R	TCCGCCAAAATAACGAACTG	DF1 reductive dehalogenase	This work
Chl348F	GAGGCAGCAGCAAGGAA	Chloroflexi 16S rRNA	(Fagervold, Watts et al. 2005)
Dehal884R	GGCCGGACACTTAAAGCG	Chloroflexi 16S rRNA	(Fagervold, Watts et al. 2005)

Table S2. Inferred pathways resulting from PCB dechlorination and degradation in mesocosm bioaugmented with DF1 and LB400 adsorbed to GAC with lactate added. Numbers in parentheses indicate position of Cl atoms on biphenyl ring. Symbols indicate: ↓, a decrease in absolute amount after 365 days; ↑, an increase in absolute amount after 365 days; NA, congener not assayed by this method; ND, congener not detected; NC, no change in absolute amount of congener; LB400, congener inferred to be degraded by LB400.

Substrate Congener	Possible Intermediate Congeners				Final Congeners
206(23456-2345) ↓	199(2345-2356)NC 198(23456-235) ↓	178(2356-235) ↓	135(235-236) ↓	94(236-25) ↓ 95(235-26) ↓LB400	53(25-26) ↑
205(23456-345) ↓	193(2356-345) ↓ 192(23456-35) ↓	165(2356-35) ↑	113(236-35)ND		73(26-35) ↓LB400
203(23456-245) ↓	187(2356-246)NA 183(2346-245)NC	149(236-245) ↓	95(236-25) ↓ LB400 102(245-26) ↓LB400		53(25-26) ↑ 51(24-26) ↓LB400
196(2345-2346) ↓	175(2346-235)ND 182(2345-246) ↑	164(235-246)ND			53(25-26) ↑
191(2346-345) ↓	168(246-345)NA 161(2346-35) ↓	121(246-35)NA 113(236-35) ↑			73(26-35) ↓LB400
193(2356-345) ↓	165(2356-35) ↑	113(236-35) ↑			73(26-35) ↓LB400
192(23456-35) ↓	165(2356-35) ↑	113(236-35) ↑			73(26-35) ↓LB400
126(345-34) ↓					79(34-35)ND
129(2345-23) ↓	83(235-23)NA				44(23-25)NC
178(2356-235) ↓	151(2356-25) ↓ 135(235-236) ↓	95(236-25)↓LB400 94(235-26)↓LB400			53(25-26) ↑
146(235-245) ↓	101(245-25)NC 90(235-24) ↑				52(25-25) ↓LB400 49(24-25) ↓LB400
139(2346-24) ↓	100(246-24) ↑				
149(236-245) ↓	125(245-26)NA 95(236-25)↓LB400 91(236-24) LB400				53(25-26) ↑ 51(24-26) ↓
123(345-24) ↓					68(24-35) ↑
144(2346-25) ↓					103(246-25) ↑
124(345-25) ↓					72(25-35)NC
147(2356-24) ↓	91(236-24)↓LB400				51(24-26) ↓
145(2346-26) ↓					104(246-26) ↑ 96(236-26)NA
99(245-24) ↓					49(24-25) ↓
74(245-4) ↓					31(25-4) NC 28(24-4) ↓
94(235-26) ↓					53(25-26) ↑

