

1 **Supporting Information**

2 **Sequestration of Nonylphenol in Sediment from Bohai Bay, North China**

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11 **Instrumental Conditions for NP and 4-n-NP.** NP was measured with gas chromatograph  
12 with mass spectrometer (GC-MS). GC-MS analysis was performed with a Hewlett-Packard  
13 5890 gas chromatograph connected to a Hewlett-Packard 5971 mass spectrometer. The mass  
14 spectrometer was operated in the electron impact ionization mode with an ionizing energy of  
15 70 eV. The injector temperature was maintained at 250°C, and the transfer line temperature  
16 was kept at 280°C. An HP-5MS capillary column (30 m × 0.25 mm i.d. with a film thickness  
17 of 0.25 µm) used for NP and 4-n-NP analysis, and was programmed from 50°C (2 min) to  
18 200°C at 20°C /min (2 min), and to 260°C at 5°C /min, and then to 280°C at 20°C /min (5 min).  
19 The injection volume was 1 µL, and the splitless mode was used. Quantitative analysis was  
20 performed using selected ion monitoring mode, and the fragment ions were selected  
21 according to the most abundant ions in each oligomer. The concentrations of NP were  
22 quantified by comparing the integrated peak area by the summed selected ion monitor (*m/z*  
23 179, 193, 221, 207) with the peak area of the injection internal standard (4-n-NP, *m/z* 179) (15,  
24 22).

25 **Quantitation and Quality Assurance Quality Control (QA/QC).** NP is ubiquitous  
26 throughout the world. Procedural blanks for the sedimentary sample originated from the SPE  
27 column itself and also from the analytical procedure, despite all the precautions taken to avoid  
28 it. In this study, all SPE cartridges used in this study were rinsed 4 times with the eluted  
29 reagents before conditioning in order to minimize blanks from the SPE cartridges. The  
30 procedural blanks provided a means to accurately assess background contamination  
31 throughout the sample extraction and clean-up process. In this study, the composition of each  
32 sample batch consisted of 2 procedural blanks and 3 to 6 sedimentary samples, and procedural

33 blanks for the sedimentary samples consisted of approximately 20 g of pre-baked sodium  
34 sulfate that underwent all the sample extraction and cleanup steps. Mean NP concentration in  
35 the procedural blanks was 0.08 ng/g. All samples were blank-corrected by subtracting the  
36 mean NP concentration in the batch blanks from each sample.

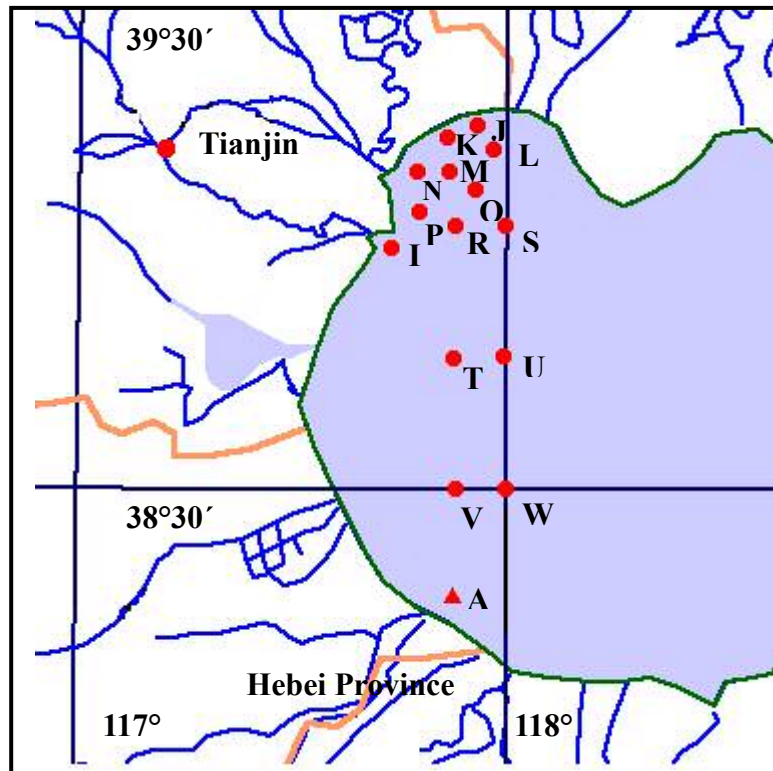
37 Method detection limits (MDLs) were defined as the mean blank concentration of 3  
38 standard deviations. Based on the procedural blanks, MDLs were determined as 3 standard  
39 deviations above the mean NP concentrations in the blanks. The MDLs of NP were  
40 determined to be 0.1 ng/g using all sediment batch procedural blanks since inter-batch  
41 variability was negligible.

**TABLE S1.** Concentrations (ng/g dw) of Extractable and Nonextractable NP in Sedimentary Core (Station A) from Bohai Bay, North China

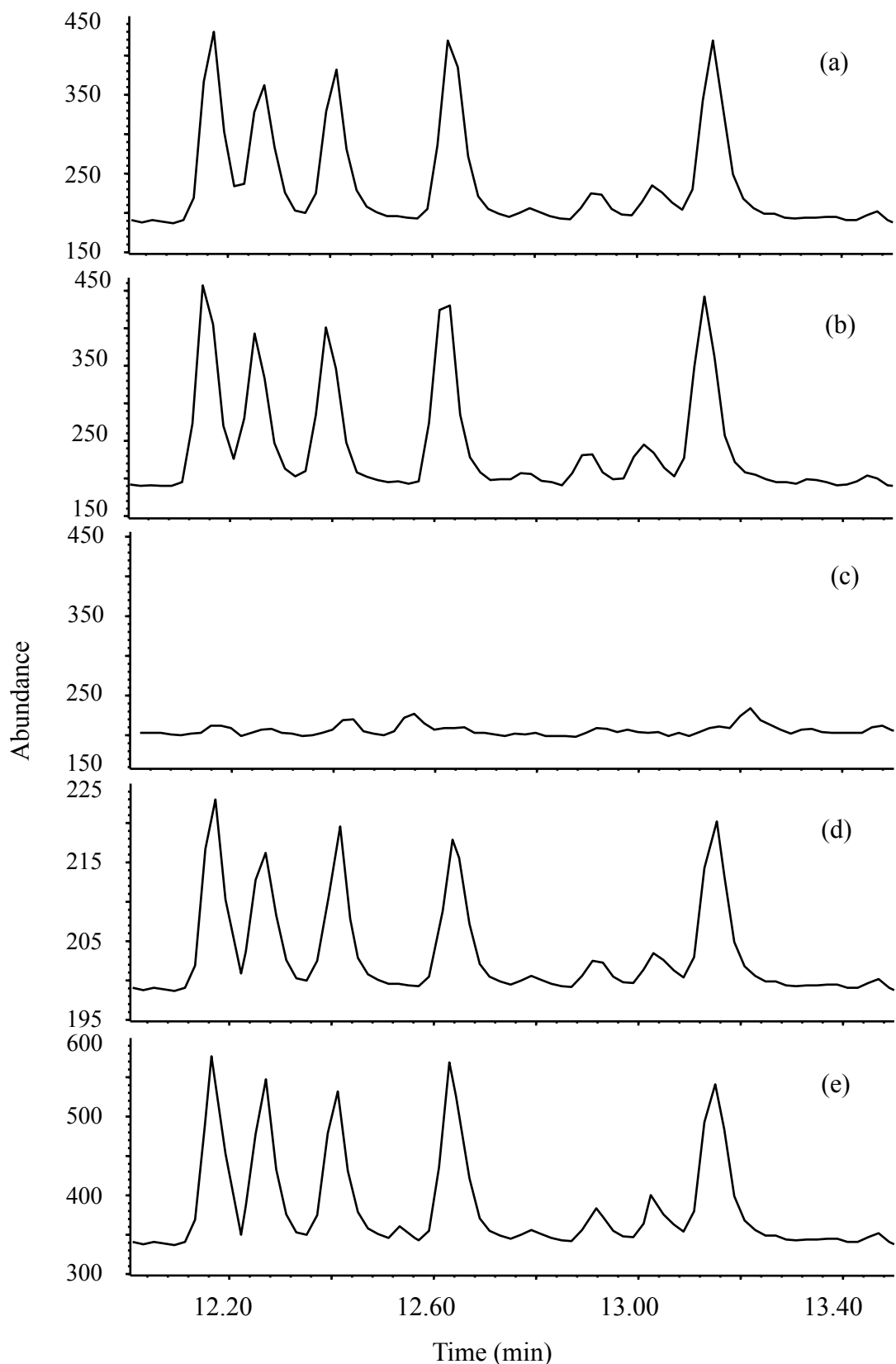
Depth (cm)	NP(ng/g dw)	
	Extractable	Nonextractable
7-10	9.5	5.9
10-13	5.4	4.6
13-16	6.1	5.4
16-21	4.0	5.3
21-24	6.4	6.4
31-34	7.2	3.6
34-36	6.1	1.9
36-39	2.5	4.3
39-41	0.4	3.0
44-46	0.8	2.6
46-49	1.0	3.3
49-51	3.2	2.3
51-54	3.0	5.8
54-56	3.0	4.3
56-58	4.3	7.9
61-66	3.7	14.0
66-71	5.6	7.6
71-78	3.7	7.8
78-83	3.5	6.8
83-88	2.3	4.9
88-94	2.3	9.9
94-99	1.3	10.3
99-105	0.7	7.3
105-110	0.8	1.4
110-115	0.8	2.5
115-121	0.6	5.5
121-125	0.1	7.6
129-134	1.9	3.2
134-138	0.5	6.2
138-141	0.6	3.0
141-146	1.2	5.0
146-150	0.9	6.8

**TABLE S2.** Production of NP in China (t/year)

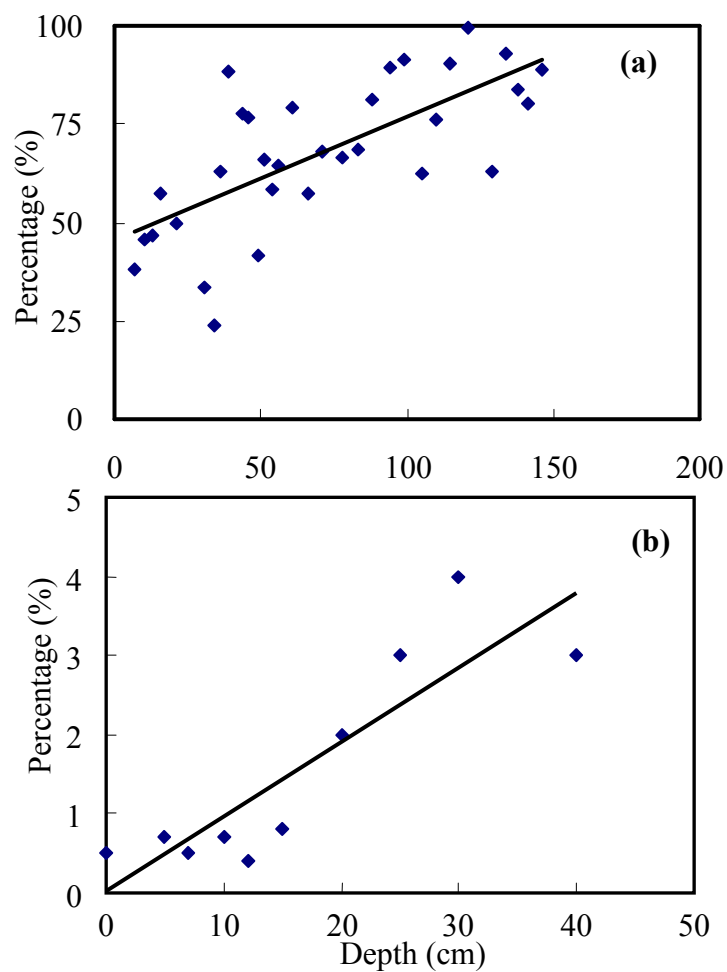
Year	Production of NP in China
1995	14,378
1996	15,300
1997	17,920
1998	18,070
1999	18,550
2000	20,678
2001	24,290



**FIGURE S1.** Map of sampling sites in Bohai Bay, north China. I-W: surface sediments; A: sedimentary core.



**FIGURE S2.** GC-MS chromatograms of NP. (a) standard (500  $\mu\text{g/L}$ ); (b) sample after application of the hydrolysis procedure; (c) sample after application of  $\text{BBr}_3$ -treatment procedure. (d) extractable fraction at site J (2.2  $\text{ng/g dw}$ ); (e) nonextractable fraction at site J (9.7  $\text{ng/g dw}$ ).



**FIGURE S3.** Relationship between the percentage of nonextractable fraction (%) and the depth in the sedimentary core. (a) Bohai Bay, north China (present study:  $p < 0.001$ ,  $r^2 = 0.4915$ ); (b) Pawtuxet River, U.S.A (9) ( $p < 0.001$ ,  $r^2 = 0.7685$ ).