

Supplementary material

Table S1 Characteristics of the sampling sites.

Site	Description	Motor vehicle traffic ^a	Regional Population density ^b	Drainage area for the sampling point
CV	Urban residential area, on the main traffic lane of a trunk road	2000 h ⁻¹	16387 km ⁻²	300 m ²
CB	Urban residential area, on the bicycle lane of a trunk road	NA ^c	16387 km ⁻²	140 m ²
HD	Urban commercial area, on a branch road	1000 h ⁻¹	23080 km ⁻²	180 m ²

^a Traffic volume was recorded on-site.

^b according to the Beijing Statistics Year Book 2007

^c NA = not applicable.

Table S2 Hydrologic data for the sampled runoff events.

Storm event	Runoff duration (h)	Antecedent dry day (days)	Rainfall intensity (mm h ⁻¹)	Runoff volume (L)		
				HD	CB	CV
2006-05-04	2.5	30	1.8	-	340	720
2006-05-26	1.8	1.7	1.1	290	130	220
2006-06-28	2.0	0.8	12.2	4152	3070	6580
2006-07-23	1.3	4.7	15.6	2300	2210	4730
2006-07-31	2.0	3.0	20.5	1690	2040	4380
2006-08-08	1.8	8.0	4.1	1130	840	1800
2007-05-22	2.3	11.0	4.1	2920	1270	2720
2007-06-24	0.5	5.6	8.6	740	610	1300
2007-06-27	1.9	2.8	10.2	3260	2490	5340
2007-07-07	0.5	6.5	4.1	70	220	480

Table S3 Concentrations (particulate+gaseous) of OCPs in air ($\mu\text{g m}^{-3}$)

Sample ID	Sampling Date	HCB	α -HCH	β -HCH	γ -HCH	δ -HCH	Σ HCHs	o,p'-DDE	p,p'-DDE	o,p'-DDD	p,p'-DDD	o,p'-DDT	p,p'-DDT	Σ DDTs
A1	04-17-2007	579	1055	309	ND ^a	ND	1367	ND	170	115	219	ND	375	882
A2	05-29-2007	151	278	749	24	87	1139	324	80	9	684	ND	138	1235
A3	06-15-2007	54	117	500	ND	ND	617	487	38	ND	ND	ND	47	578

^a ND = not detected above LOD

Table S4 Concentrations of OCPs in dust (ng g⁻¹)

Sample ID	Sampling Date	HCB	α -HCH	β -HCH	γ -HCH	δ -HCH	Σ HCHs	o,p'-DDE	p,p'-DDE	o,p'-DDD	p,p'-DDD	o,p'-DDT	p,p'-DDT	Σ DDTs
CB1	05-15-2006	0.53	1.35	0.42	0.51	0.64	2.92	2.36	6.35	0.43	1.37	1.40	2.04	14.0
CB2	06-15-2006	1.50	1.30	0.98	2.41	3.60	8.29	6.45	6.64	2.31	0.85	0.88	3.31	20.4
CB3	07-16-2006	1.55	ND ^a	ND	1.81	0.87	2.68	8.00	11.9	7.94	4.30	0.70	1.92	34.7
CB4	07-19-2006	0.83	0.92	1.57	1.38	2.33	6.20	7.51	17.4	29.6	3.48	ND	1.40	59.3
CB5	05-29-2007	2.26	0.75	15.1	2.29	2.23	20.4	4.88	0.36	30.7	10.3	0.25	1.09	47.6
CB6	06-15-2007	0.55	0.33	9.74	0.08	0.44	10.6	2.01	0.32	2.79	17.0	0.54	1.83	24.5
CB7	07-20-2007	0.71	0.11	3.05	0.13	1.49	4.79	0.75	0.24	2.07	7.93	0.24	0.67	11.9
CV1	05-15-2006	0.42	0.50	0.44	0.40	1.25	2.59	1.46	4.28	0.75	1.74	0.41	3.14	11.8
CV2	06-15-2006	0.38	0.73	0.27	0.76	1.45	3.21	0.82	3.74	1.70	0.77	ND	4.78	11.8
CV3	07-16-2006	1.51	ND	0.40	1.13	2.13	3.67	ND	5.81	ND	ND	ND	2.84	8.64
CV4	07-19-2006	1.70	0.47	1.35	1.59	1.46	4.86	0.75	8.24	0.05	0.47	0.76	ND	10.3
CV5	05-29-2007	1.27	0.75	4.36	0.10	0.58	5.79	1.02	0.13	0.97	6.55	ND	0.98	9.66
CV6	06-15-2007	2.39	0.38	5.94	0.23	0.45	7.00	1.39	0.21	1.25	9.85	ND	1.41	14.1
CV7	07-20-2007	0.52	0.06	1.72	0.04	0.13	1.95	0.90	ND	0.79	6.40	ND	0.58	8.68
HD1	05-15-2006	0.42	0.59	0.60	1.34	1.38	3.92	1.31	3.69	0.78	0.38	1.43	1.93	9.52
HD2	06-15-2006	2.95	1.80	0.77	2.70	4.10	9.37	1.47	4.85	0.63	0.87	1.77	1.62	11.2
HD3	07-16-2006	0.42	1.30	1.20	0.67	1.39	4.56	2.72	11.2	0.58	3.38	1.75	3.66	23.3
HD4	07-19-2006	1.43	1.22	1.34	3.15	2.44	8.16	3.88	4.12	3.38	3.48	2.48	7.94	25.3
HD5	05-29-2007	0.09	0.09	0.07	0.36	0.74	1.26	1.39	0.16	2.10	20.3	ND	1.04	25.0
HD6	06-15-2007	0.19	0.31	5.39	0.03	0.41	6.13	1.82	0.28	1.53	19.3	ND	1.55	24.4
HD7	07-20-2007	0.35	0.03	3.29	0.13	0.10	3.55	1.85	ND	1.28	15.1	ND	0.92	19.1

^a ND = not detected above LOD

Table S5 Concentrations of OCPs in rain (ng L⁻¹)

Sample ID	Sampling Date	HCB	α -HCH	β -HCH	γ -HCH	δ -HCH	Σ HCHs	o,p'-DDE	p,p'-DDE	o,p'-DDD	p,p'-DDD	o,p'-DDT	p,p'-DDT	Σ DDTs
R0504	05-04-2006	6.61	14.5	10.3	13.6	11.3	49.7	0.08	1.70	1.72	1.06	0.14	0.61	5.30
R0526	05-26-2006	3.11	19.8	4.27	14.8	6.07	44.9	0.45	0.13	1.15	0.03	0.08	0.04	1.89
R0628	06-28-2006	2.50	3.42	2.21	5.60	7.23	18.5	0.11	0.43	0.48	0.19	0.06	0.17	1.43
R0723	07-23-2006	1.25	4.29	1.43	6.05	4.61	16.4	0.10	0.71	1.25	0.12	0.09	0.09	2.34
R0731	07-31-2006	1.56	1.89	1.29	1.53	1.68	6.40	0.19	ND ^a	0.19	ND	ND	ND	0.38
R0808	08-08-2006	1.98	5.76	0.46	5.94	5.19	17.4	0.02	0.35	1.26	0.05	0.04	0.17	1.88
R0522	05-22-2007	0.41	0.73	1.67	0.26	0.43	3.09	0.01	0.11	1.02	0.04	0.04	0.14	1.35
R0624	06-24-2007	10.2	0.26	2.90	0.14	2.30	5.60	0.56	1.45	1.04	1.75	1.11	0.40	6.30
R0627	06-27-2007	20.2	0.16	13.7	0.04	1.47	15.4	0.96	0.68	3.59	3.41	1.46	0.09	10.2
R0707	07-07-2007	29.5	1.39	ND	ND	ND	1.39	ND	0.54	3.94	ND	2.48	0.85	7.81

^a ND = not detected above LOD

Table S6 Concentrations of OCPs in canopy throughfall water (ng L⁻¹)

Sample ID	Sampling Date	HCB	α-HCH	β-HCH	γ-HCH	δ-HCH	∑HCHs	o,p'-DDE	p,p'-DDE	o,p'-DDD	p,p'-DDD	o,p'-DDT	p,p'-DDT	∑DDTs
CT0526	05-26-2006	12.0	54.1	39.2	28.2	13.6	135	1.11	1.20	2.19	1.73	0.702	1.78	8.73
CT0628	06-28-2006	5.68	9.16	7.75	11.9	10.5	39.3	0.308	1.21	1.07	0.265	0.792	0.962	4.6
CT0723	07-23-2006	1.20	9.54	7.33	9.05	6.52	32.4	0.483	0.897	1.71	0.042	0.527	0.266	3.93
CT0731	07-31-2006	0.836	1.92	2.01	3.18	2.02	9.13	0.049	0.425	0.018	ND ^a	0.138	0.164	0.794
CT0808	08-08-2006	0.231	13.0	9.59	17.5	10.7	50.8	0.083	1.01	1.63	0.296	0.282	0.732	4.04
CT0522	05-22-2007	1.73	3.04	8.68	2.85	1.16	15.7	0.377	0.046	0.333	0.152	0.264	0.838	2.01
CT0624	06-24-2007	18.2	2.22	0.016	0.173	0.55	2.96	2.33	0.932	0.475	2.25	0.215	1.81	8.01
CT0627	06-27-2007	49.0	0.89	10.5	ND	1.10	12.5	15.0	9.05	0.52	1.31	ND	1.32	27.2

^a ND = not detected above LOD

Table S7 Event mean concentrations of OCPs in runoff (ng L⁻¹)

Sample ID	Sampling Date	HCB	α -HCH	β -HCH	γ -HCH	δ -HCH	Σ HCHs	o,p'-DDE	p,p'-DDE	o,p'-DDD	p,p'-DDD	o,p'-DDT	p,p'-DDT	Σ DDTs
CB0504	05-04-2006	13.1	20.4	12.6	35.9	13.0	81.9	1.23	2.08	1.39	2.76	0.703	0.551	8.72
CB0526	05-26-2006	10.3	14.3	1.77	27.0	9.21	52.3	1.18	1.70	1.39	0.852	1.00	3.06	9.18
CB0628	06-28-2006	6.53	7.60	6.27	13.9	11.5	39.2	2.04	2.07	3.52	1.28	1.32	0.502	10.7
CB0723	07-23-2006	1.71	5.69	2.05	7.92	7.06	22.7	0.140	0.665	1.46	0.275	0.106	1.42	4.07
CB0731	07-31-2006	1.85	1.94	2.17	3.72	2.64	10.5	0.205	0.443	0.314	0.047	ND ^a	0.285	1.29
CB0808	08-08-2006	3.41	7.36	7.07	20.0	14.2	48.6	3.44	4.44	2.89	1.96	0.605	1.89	15.2
CB0522	05-22-2007	3.76	2.23	2.61	1.70	1.66	8.20	1.23	3.03	1.28	4.82	0.545	7.79	18.7
CB0624	06-24-2007	11.8	1.22	1.82	0.735	2.69	6.46	3.28	1.27	0.187	4.03	1.93	5.37	16.1
CB0627	06-27-2007	22.2	2.04	13.2	1.37	7.45	24.0	7.68	3.25	2.06	8.76	1.31	3.26	26.3
CB0707	07-07-2007	30.6	1.40	15.2	3.29	2.72	22.6	1.47	ND	3.96	1.39	1.88	1.91	10.6
CV0504	05-04-2006	14.6	19.1	12.9	36.1	19.6	87.7	0.709	2.52	3.00	2.20	1.19	1.86	11.5
CV0526	05-26-2006	15.2	16.9	8.10	27.1	14.7	66.8	0.110	2.67	1.36	2.43	1.22	4.97	12.8
CV0628	06-28-2006	9.04	7.40	7.79	16.6	13.4	45.3	1.90	1.95	1.78	0.927	0.800	0.778	8.14
CV0723	07-23-2006	2.48	8.11	5.07	10.4	9.10	32.7	0.555	2.85	3.03	0.967	1.22	2.61	11.2
CV0731	07-31-2006	2.39	2.41	0.336	2.99	2.74	8.48	0.065	0.818	0.956	0.019	0.079	1.12	3.06
CV0808	08-08-2006	2.93	8.80	10.7	21.9	15.1	56.5	0.511	2.25	1.50	0.419	1.03	0.877	6.58
CV0522	05-22-2007	5.40	8.99	0.968	1.90	1.93	13.8	1.87	3.62	4.64	2.31	1.85	4.89	19.2
CV0624	06-24-2007	23.1	2.86	3.00	1.50	2.01	9.36	5.36	2.02	3.46	3.80	3.76	0.431	18.8
CV0627	06-27-2007	22.7	5.96	2.64	1.10	10.1	19.8	2.51	1.35	2.57	4.22	1.64	2.20	14.5
CV0707	07-07-2007	33.3	6.76	3.54	1.97	7.02	19.3	2.12	1.59	2.35	2.79	2.72	1.56	13.1
HD0526	05-26-2006	17.5	30.1	18.4	42.3	16.1	107	0.807	1.88	4.25	1.71	1.74	4.15	14.5
HD0628	06-28-2006	8.29	21.3	14.6	17.8	12.5	66.3	1.32	2.67	2.84	1.17	1.11	2.14	11.3
HD0723	07-23-2006	2.49	5.82	6.16	6.23	7.48	25.7	0.595	3.46	1.93	0.626	1.16	2.19	9.97

HD0731	07-31-2006	2.27	2.34	2.35	1.99	1.89	8.56	0.248	1.30	0.930	0.208	0.270	0.765	3.73
HD0808	08-08-2006	12.6	20.4	17.1	18.0	19.0	74.6	2.52	5.99	4.24	0.843	1.23	2.71	17.5
HD0522	05-22-2007	1.21	5.11	5.92	4.98	4.66	20.7	7.99	1.29	2.24	0.734	0.389	5.44	18.1
HD0624	06-24-2007	30.1	2.29	2.83	0.737	1.29	7.14	3.82	2.73	1.42	3.76	2.06	1.02	14.8
HD0627	06-27-2007	25.2	1.17	15.2	0.895	4.65	21.9	1.30	0.514	1.44	6.45	2.80	1.23	13.7
HD0707	07-07-2007	46.2	4.38	2.56	0.287	1.44	8.66	1.98	1.76	2.94	3.00	1.83	1.49	13.0

^a ND = not detected above LOD

Table S8 Spearman's rank correlation analysis between OCPs and auxiliary parameters ^a

		DOC ^a (10 ⁻⁶)	pH	Rain intensity (mm min ⁻¹)	Dry period (day)
HCB	Correlation coefficient	0.558	-0.518	-0.306	0.414
	Significance	0.000	0.000	0.000	0.026
∑HCHs	Correlation coefficient	0.203	-0.368	-0.337	0.070
	Significance	0.016	0.000	0.000	0.720
∑DDTs	Correlation coefficient	0.523	-0.271	-0.087	0.514
	Significance	0.000	0.001	0.310	0.004

^a the sample number for correlation analysis with DOC, pH and rain intensity was 139, and was based on the measured or recorded data of each runoff sample. For correlation analysis with dry period, the sample number was 29, which was based on the antecedent dry days and EMCs of each runoff event.

^b DOC = dissolved organic carbon.