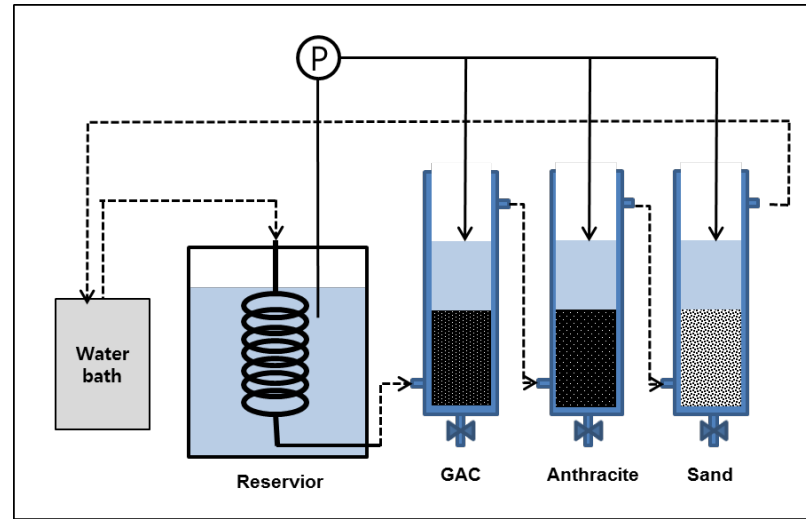
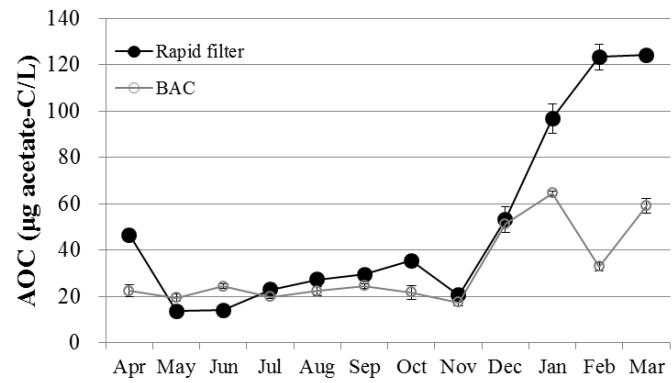


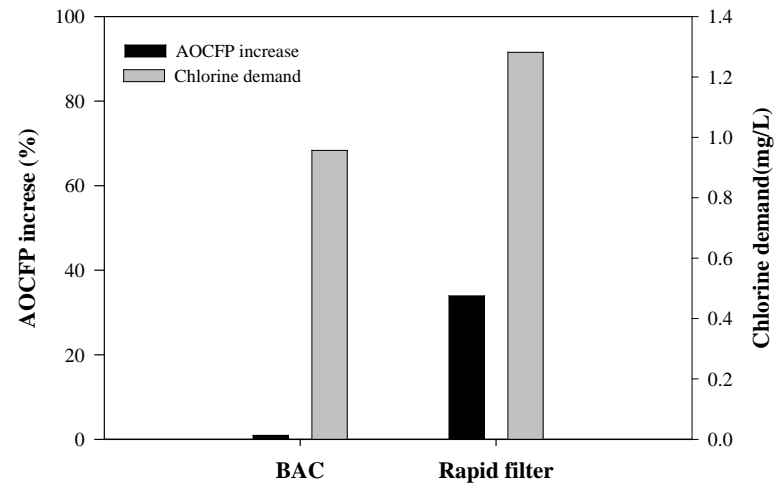
**Fig. S1.** Flow diagram of process at YWTP.



**Fig. S2.** Schematic diagram of small column test. Solid arrows and dash arrows indicate dispense of ozonated sample water into each column by peristaltic pump and water circulation to keep constant temperature by water bath, respectively.



**Fig. S3.** The seasonal variation of AOC concentration after rapid filtration and BAC filtration.



**Fig. S4.** The increase of AOCFP and chlorine demand of effluents of BAC filter and rapid filter after incubation for 7 d at 25°C.

**Table S1.** TOC and DOC Concentration in the Drinking Water Treatment Processes at YWTP and *p*-values of Paired t-tests in the Two Samples before and after Each Treatment (2013.4 - 2014.3)

Month	TOC (mg/L)							DOC (mg/L)						
	Raw water	Pre-chlorine	Coag./Sed.	Anthra-cite	Ozone	BAC	Post-chlorine	Raw water	Pre-chlorine	Coag./Sed.	Anthra-cite	Ozone	BAC	Post-chlorine
2013.04	1.30	1.28	0.86	0.81	0.80	0.54	0.54	1.18	1.18	0.84	0.83	0.83	0.59	0.59
2013.05	2.39	2.53	1.68	1.50	1.46	1.14	1.07	1.88	1.90	1.28	1.23	1.17	0.87	0.80
2013.06	1.97	1.96	1.32	1.09	1.08	0.80	0.84	1.45	1.50	1.05	1.05	1.03	0.77	0.75
2013.07	1.96	1.62	1.22	1.10	1.05	0.81	0.75	1.68	1.67	1.00	1.11	1.05	0.70	0.73
2013.08	1.96	1.95	1.19	1.14	1.22	0.76	0.79	1.66	1.79	1.11	1.20	1.09	0.76	0.73
2013.09	2.35	1.96	1.31	1.18	1.14	0.75	0.78	1.98	1.73	1.35	1.17	1.15	0.73	0.76
2013.10	1.69	1.45	1.12	1.04	1.00	0.58	0.69	1.48	1.43	1.00	1.01	1.00	0.63	0.61
2013.11	1.65	1.29	0.86	0.84	0.82	0.63	0.67	1.51	1.17	0.89	0.85	0.86	0.63	0.68
2013.12	1.38	1.38	1.01	0.90	0.93	0.60	0.64	1.22	1.27	0.94	0.90	0.93	0.61	0.67
2014.01	1.66	1.50	1.21	1.12	1.11	0.81	0.82	1.28	1.44	1.03	1.04	1.06	0.75	0.76
2014.02	1.85	1.76	1.21	1.14	1.12	0.79	0.79	1.48	1.50	1.10	1.14	1.10	0.72	0.76
2014.03	1.89	1.73	1.10	1.06	1.04	0.78	0.80	1.53	1.57	1.09	1.01	1.00	0.74	0.80
Paired t-test	0.017		< 0.001		< 0.001			0.730		0.569		< 0.001		
<i>p</i> -value	< 0.001		0.310		0.237			< 0.001		0.072		0.398		

**Table S2.** Water Quality Parameters of Raw Water (Han River)

Month	Temperature ( °C)	pH	Conductivity μS/cm	Turbidity (NTU)	SS (mg/L)	TOC (mg/L)	NH <sub>3</sub> (mg/L)	TN (mg/L)	TP (mg/L)	Algae (cells/mL)
2013.04	8.7	8.2	186	4.3	6.0	1.30	0.043	2.366	0.029	11,130
2013.05	16.0	7.9	161	5.6	7.6	2.39	0.061	2.107	0.036	5,420
2013.06	21.0	7.8	160	6.4	4.4	1.97	0.021	2.455	0.026	5,780
2013.07	23.7	7.5	130	19.4	8.8	1.96	0.128	2.305	0.055	1,520
2013.08	23.4	6.9	116	27.0	24.0	1.96	0.057	2.355	0.052	450
2013.09	21.4	7.3	146	6.0	10.0	2.35	0.050	1.994	0.038	2,864
2013/10	17.4	7.4	177	4.0	12.1	1.69	0.011	2.381	0.021	5,740
2013.11	11.7	8.3	198	3.7	5.5	1.65	0.009	2.118	0.019	3,640
2013.12	3.8	7.6	225	3.3	1.0	1.38	0.075	2.491	0.019	3,242
2014.01	2.1	8.7	212	2.5	3.0	1.66	0.110	2.683	0.030	18,870
2014.02	4.7	8.1	190	3.0	4.2	1.85	0.372	2.701	0.025	28,020
2014.03	11.9	8.1	167	2.8	4.0	1.89	0.121	2.520	0.038	4,430

\*SS (Suspended solids), TN (Total nitrogen), TP (Total phosphorus)