Table. S1 Regional Integration of each process effluent for pre-ozone (50% PW)

Pre-ozone 50%	Aromatic protein Ⅰ	aromatic protein Ⅱ	Fulvic acid	Soluble microbial metabolite	Humic acid	ΦT, n/au·nm2
DW	8162.80	39082.97	42243.40	12423.45	5516.90	107429.52
PW	38248.42	312594.94	160340.26	55463.92	44821.40	611468.94
Hydrolysis pod	34008.20	280002.45	155519.69	48872.31	41921.94	560324.60
Ozone oxidation tank	31507.09	258103.09	126514.12	50885.71	31431.22	498441.22
Mixing tank	25808.30	211540.99	108520.34	35937.35	25049.19	406856.17
Anaerobic pod	21022.12	177690.34	98745.12	29008.44	22371.77	348837.79
Anoxic pod	16010.97	124620.38	77062.48	21879.44	15409.68	254982.94
Aerobic pod	15806.52	136937.25	78473.86	21862.03	15804.59	268884.26
Settling pod	14108.30	119055.41	79049.34	21039.33	18274.14	251526.53
decrease （%）	45.3	43.7	27.2	41.5	27.1	38.2

Table S2. Regional Integration of each process effluent for post-ozone (50% PW).

Post-ozone 50%	aromatic protein Ⅰ	aromatic protein Ⅱ	Fulvic acid	Soluble microbial metabolite	Humic acid	ΦT, n/au·nm2
DW	7151.10	16131.95	30603.09	9815.05	3197.80	66899.00
PW	24398.42	150572.06	119953.13	35161.53	32370.09	362455.24
Hydrolysis pod	31462.16	143601.08	114299.94	34453.10	32480.04	356296.30
Mixing tank	24815.94	176404.65	118635.23	34866.29	33141.73	387863.83
Anaerobic pod	31524.46	126082.65	81594.87	21515.54	17379.99	278097.50
Anoxic pod	18743.79	159192.41	95281.65	25465.50	21608.55	320291.90
Aerobic pod	27584.92	233650.31	130766.1	35814.83	32748.57	460564.74
Settling pod	17751.33	151500.94	88434.00	24219.86	19734.08	301640.21
Ozone oxidation tank	13316.27	107375.25	31024.31	18132.53	4009.16	173857.52
decrease （%）	46.3	39.1	73.9	48.0	87.9	55.2