microorganisms

MDPI

Supplementary Materials

Table S1. Spearman's ranked correlation between the alpha diversity and water quality indexes.

	Shannon	**Observed richness**	**Chao 1**
pH	0.016*	<0.001***	<0.001***
NH_3-N	0.314	0.040*	0.021*
TP	0.334	0.022*	0.014*
COD	0.217	0.866	0.831
TN	0.479	0.812	0.589

Significant correlation coefficient at: *$P \leq 0.05$; **$P \leq 0.01$; ***$P \leq 0.001$.

Table S2. Spearman's ranked correlation between the alpha diversity and environmental variables in sediment samples.

	Shannon	**Inv_Simpson**	**Observed richness**	**Chao 1**
pH	0.348	0.467	0.243	0.378
B	0.694	0.908	0.534	0.306
Cr	0.821	0.691	0.71	0.869
Ni	0.659	0.575	0.595	0.691
Cu	0.003***	0.025*	0.001***	0.001**
Zn	0.003**	0.018*	0.003**	0.003**
As	0.17	0.15	0.171	0.285
Cd	0.716	0.339	0.891	0.981
Pb	0.576	0.64	0.609	0.343
Hg	0.558	0.494	0.434	0.831
TP	0.977	0.801	0.856	0.915
TN	0.609	0.354	0.78	0.703
NH_3-N	0.777	0.461	0.86	0.84
OM	0.65	0.956	0.539	0.606

Significant correlation coefficient at: *$P \leq 0.05$; **$P \leq 0.01$; ***$P \leq 0.001$.

Table S3. Mantel test of dominant bacteria at phylum level among different pollutant levels in water samples.

Environmental factor	**Proteobacteria**	**Bacteroidetes**	**Firmicutes**	**Cyanobacteria/Chloroplast**	**Actinobacteria**
	p	*p*	*p*	*p*	*p*
pH	0.228	0.001***	0.001***	0.001***	0.003**
NH_3-N	0.007**	0.266	0.040*	0.047*	0.009**
TP	0.009**	0.068	0.031*	0.039*	0.245
COD	0.290	0.495	0.097	0.112	0.224
TN	0.004**	0.256	0.128	0.123	0.005**

Table S4. Mantel test of dominant phylum and environmental factors in sediment.

Environmental factor	Proteobacteria	Bacteroidetes	Firmicutes	Chloroflexi	Actinobacteria	Acidobacteria
	p	*p*	*p*	*p*	*p*	*p*
pH	0.440	0.109	0.234	0.923	0.178	0.019*
B	0.698	0.133	0.315	0.859	0.752	0.322
Cr	0.103	0.290	0.236	0.264	0.041*	0.297
Ni	0.204	0.294	0.272	0.267	0.064	0.274
Cu	0.024*	0.165	0.036*	0.210	0.014*	0.169
Zn	0.004**	0.098	0.010**	0.531	0.020*	0.100
As	0.131	0.169	0.118	0.029*	0.031*	0.033*
Cd	0.963	0.130	0.241	0.183	0.842	0.262
Pb	0.243	0.715	0.504	0.594	0.294	0.544
Hg	0.850	0.140	0.074	0.437	0.630	0.307
TP	0.131	0.768	0.616	0.150	0.052	0.610
TN	0.103	0.358	0.420	0.185	0.018*	0.317
NH_3-N	0.036*	0.326	0.236	0.038*	0.011*	0.272
OM	0.105	0.302	0.209	0.200	0.007**	0.538

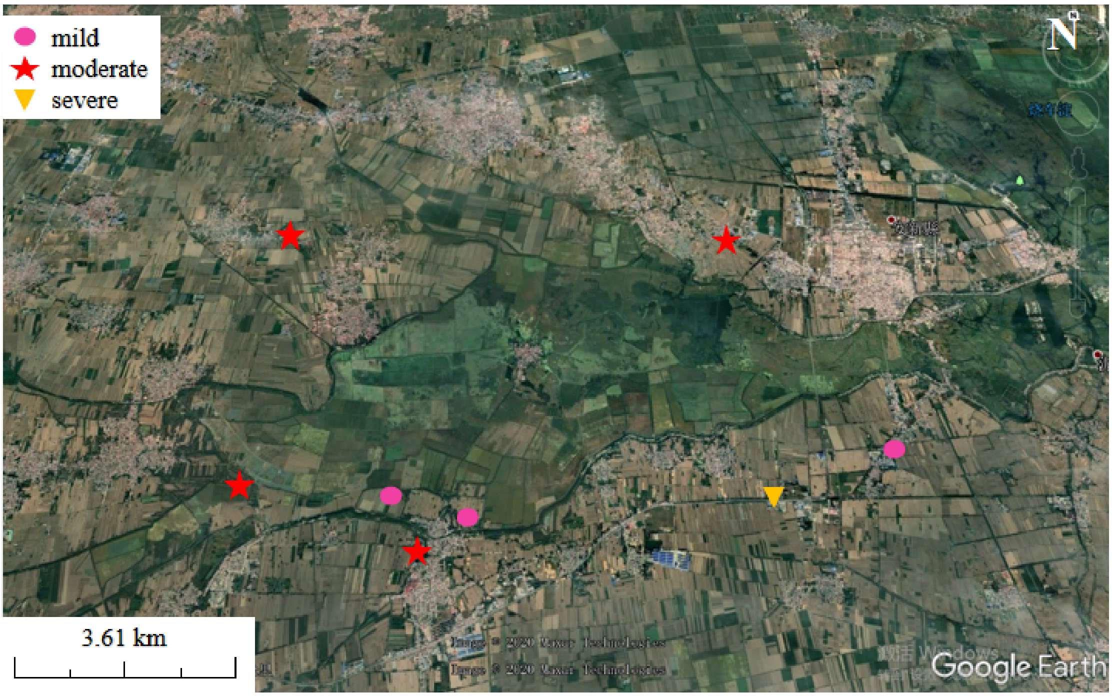

Figure S1. The geological locations of sampling sites.