

Supplementary materials

Table S1. Physicochemical parameters of sediments and surface water for four sample sites.

Physicochemical parameters													
Surface water					Sediment								
Samples	T (°C)	pH	Do (mg/L)	NH ₄ ⁺ -N (mg/L)	Samples	TN (mg/g, dry mass) ^a	TP (mg/g, dry mass) ^a	TOC (mg/g, dry mass) ^a	Cu (mg/kg, dry mass) ^a	Zn (mg/kg, dry mass) ^a	Pb (mg/kg, dry mass) ^a	Cd (mg/kg, dry mass) ^a	Cr (mg/kg, dry mass) ^a
GGW	22.7	7.49	8.72±0.03	1.00±0.08	GGS	4.88±0.02	2.83±0.02	10.67±0.08	123.03 ±5.80	382.92 ±12.18	60.12 ±5.61	0.28 ±0.02	74.65 ±5.94
ZMW	21.2	7.53	8.77±0.06	1.02±0.10	ZMS	2.48±0.10	1.39±0.01	4.27±0.14	82.12 ± 3.89	256.38 ± 10.24	178.01 ± 6.28	1.83 ± 0.16	87.35 ± 5.29
SPW	21.3	7.24	8.92±0.03	1.11±0.13	SPS	2.24±0.05	1.76±0.07	3.17±0.03	52.88 ± 2.74	122.59 ± 8.15	71.79 ± 2.55	1.57 ± 0.12	56.95 ± 3.50
FZW	22.1	9.96	8.83±0.12	0.82±0.05	FZS	1.65±0.06	0.63±0.02	2.78±0.11	94.09 ± 6.34	262.52 ± 6.19	62.50 ± 3.34	3.60 ± 0.39	68.53 ± 4.38

Note: T, temperature; DO, dissolved oxygen; NH₄⁺-N, ammonia nitrogen; TN, total nitrogen; TP, total phosphorus; TOC, total organic carbon; Zn, zinc; Cu, copper;

Pb, lead; Cd, cadmium; Cr, chromium. a Values are given as mean ± standard deviation.

Table S2. Contamination levels of heavy metal concentrations in sediments at four sampling sites

Samples	Heavy metal				
	Cu	Zn	Pb	Cd	Cr
GGs	III	III	II	II	I
ZMS	II	III	II	IV	I
SPS	II	II	II	IV	I
FZS	II	II	II	V	I

Note: According to the Environmental Quality standards for Soils of China (GB15618- 1995), concentrations of heavy metals are classified into five classes (I, II, III, IV, and V, which correspond to clean, relatively clean, normal, polluted, and moderately to heavily polluted, respectively).

Table S3. Estimates of richness and diversity for operational taxonomic units (OTUs) definition of 97% similarity for different types of industrial contaminated sediments from four sample sites.

Samples	Sequences	OTUs	Chao 1	ACE	Simpson	Shannon	coverage
GGs1	31412	737	844.78	830.18	0.0174	5.09	0.994
GGs2	42236	715	864.86	812.78	0.0218	4.90	0.994
GGs3	42481	708	813.92	791.45	0.0194	4.94	0.995
SPS1	35160	1116	1298.89	1246.89	0.0152	5.59	0.991
SPS2	40386	1141	1280.94	1249.26	0.0170	5.59	0.992
SPS3	33796	1115	1287.33	1230.45	0.0200	5.56	0.992
FZS1	53831	950	1027.00	995.40	0.0058	5.96	0.996
FZS2	54342	893	974.58	934.80	0.0045	6.01	0.996
FZS3	48180	915	1024.00	971.60	0.0053	5.97	0.995
ZMS1	44184	1145	1286.92	1252.86	0.0069	5.92	0.992
ZMS2	38863	1150	1231.88	1209.78	0.0078	5.96	0.994
ZMS3	41040	1135	1277.92	1223.57	0.0066	6.01	0.993

Table S4. ANOSIM test for differences among location groups.

Groups	r (Correlation)	P (Significance)	Permutation Number
All	0.8951	0.001	999

Fig. S1. Pairwise comparison of the relative abundance of dominant bacteria in different industrial contaminated sediments. (a) Proteobacteria; (b) Actinobacteria; (c) Chloroflexi; (d) Acidobacteria; (e) Firmicutes; (f) Bacteroidetes. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

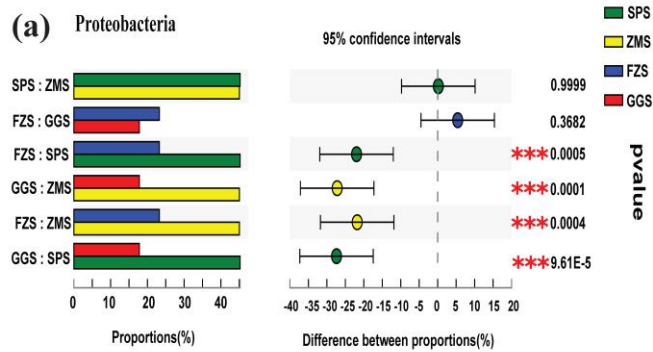
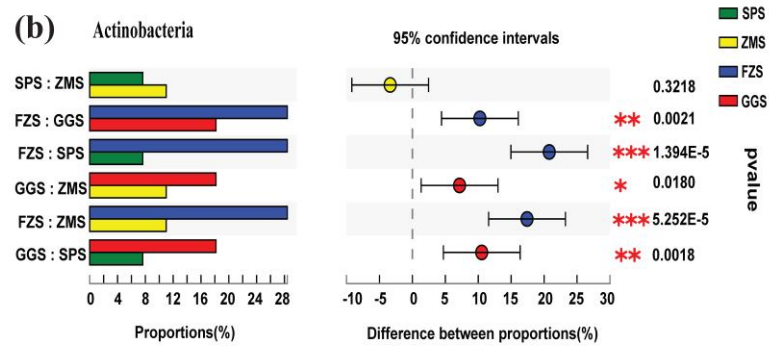
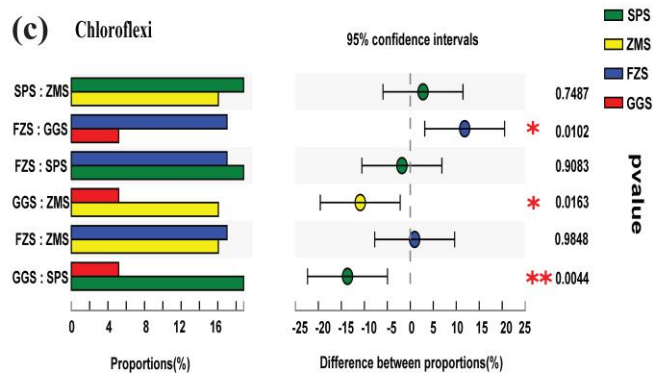
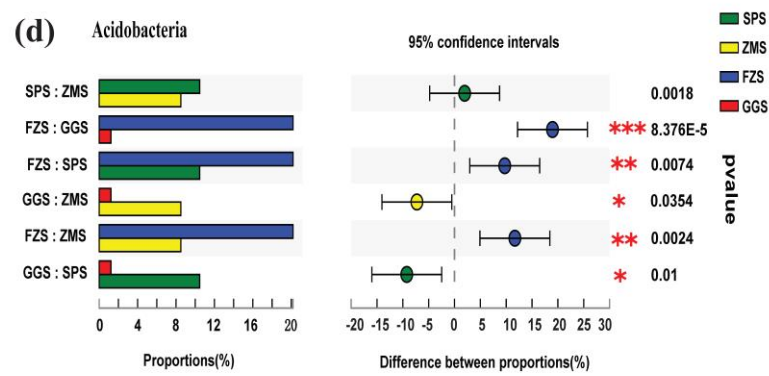
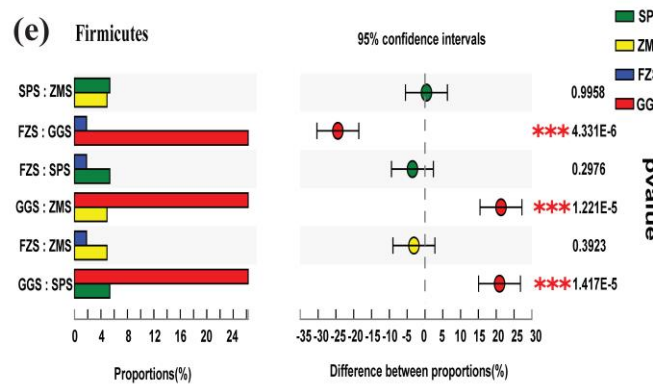
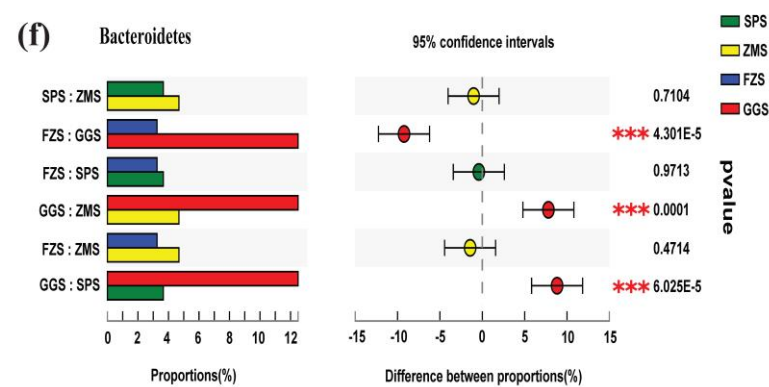
(a) Proteobacteria**(b) Actinobacteria****(c) Chloroflexi****(d) Acidobacteria****(e) Firmicutes****(f) Bacteroidetes**

Fig. S2. Indicator bacteria with LDA score of 3.5 or greater in bacterial communities associated with different industrial polluted sediments.

