Figure S1. Technological scheme of Wastewater Treatment Plant

Table S1. Oligonucleotide sequences and product size of primers for identifying enterococci.

Name	Gene	Sequences (5'-3')	Lenght (bp)	References
Enterococcus	*tuf*	TACTGACAAACCATTCATGATG AACTTCGTCACCAACGCGAAC	112	Ke et al., [1]
Enterococcus	*sod*A	TCA ACC GGG GAG GGT ATT ACT AGC GAT TCC GG	733	Deasy et al., [2]
E. faecalis	*ddl*	ATCAAGTACAGTTAGTCTTTATTAG ACGATTCAAAGCTAACTGAATCAGT	941	Kariyama et al., [3]
E. faecium	*ddl*	TTGAGGCAGACCAGATTGACG TATGACAGCGACTCCGATTCC	658	Cheng et al., [4]
E. durans	*ddl*	CCTACTGATATTAAGACAGCG TAATCCTAAGATAGGTGTTTG	295	Jackson et al., [5]
E. hirae	*ddl*	CTTTCTGATATGGATGCTGTC TAAATTCTTCCTTAAATGTTG	187	
E. avium	*ddl*	GCTGCGATTGAAAAATATCCG AAGCCAATGATCGGTGTTTTT	368	
E. gallinarum	*van*C1	GGTATCAAGGAAACCTC CTTCCGCCATCATAGCT	822	Dutka–Malen et al., [6]
E. casseliflavus	*van*C2/C3	CGGGGAAGATGGCAGTAT CGCAGGGACGGTGATTTT	484	Kariyama et al., [3]
Control	*rrs*(16S rRNA)	GGATTAGATACCCTGGTAGTCC TCGTTGCGGGACTTAACCCAAC	320	Van de Klundert and Vliegenthart et al., [7]

Table S2. Sequences of oligonucleotides and primers for identifying vancomycin resistance genes in enterococci.

Gene	Sequences (5'-3')	Lenght (bp)	References
*van*A	CATGAATAGAATAAAAGTTGCAATA CCCCTTTAACGCTAATACGATCAA	1.030	
*van*B	GTGACAAACCGGAGGCGAGGA CCGCCATCCTCCTGCAAAAAA	433	Kariyama et al., [3]
*van*C1	GGTATCAAGGAAACCTC CTTCCGCCATCATAGCT	822	
*van*C2/C3	CGGGGAAGATGGCAGTAT CGCAGGGACGGTGATTTT	484	

Table S3. Sequences of oligonucleotides and primers for identifying virulence factors in enterococci

Virulence factor	Gene	Sequences (5'-3')	Lenght (bp)	References
Cytolysin	*cyl*A	Cyl1–ACTCGGGGATTGATAGGC Cyl2–GCTGCTAAAGCTGCGCTT	688	Vankerckhoven et al., [8]
Hyaluronidase	*hyl*	Hyl1–ACAGAAGAGCTGCAGGAAATG Hyl2–GACTGACGTCCAAGTTTCCAA	276	
Adhesion colaagen	*ace*	Ace1–AAAGTAGAATTAGATCCACAC Ace2–TCTATCACATTCGGTTGCG	320	Mannu et al., [9]
Antigen A	*efa*A	efaA1–CGTGAGAAAGAAATGGAGGA efaA2–CTACTAACACGTCACGAATG	499	
Gelatinase	*gel*E	gelE1–AGTTCATGTCTATTTTCTTCAC gelE2–CTTCATTATTTACACGTTTG	402	
Aggregation substance	*as*	AS1–CCAGTAATCAGTCCAGAAACAACC AS2–TAGCTTTTTTCATTCTTGTGTTTGTT	406	
Enterococcal surface protein	*esp*	Esp1–TTACCAAGATGGTTCTGTAGGCAC Esp2–CCAAGTATACTTAGCATCTTTTGG	913	Shankar et al., [10]
Sex pheromones	*cpd*	Cpd1–TGGTGGGTTATTTTTCAATTC Cpd2–TACGGCTCTGGCTTACTA	782	Eaton and Gasson [11]
Sex pheromones	*cob*	Cob1–AACATTCAGCAAACAAAGC Cob2–TTGTCATAAAGAGTGGTCAT	1405	
Sex pheromones	*ccf*	Ccf1–GGGAATTGAGTAGTGAAGAAG Ccf2–AGCCGCTAAAATCGGTAAAAT	543	

Table S4–Part A. Correlations between the analyzed physicochemical parameters, total enterococcus counts, different species and the number of MDR and virulent strains (Spearman's rank correlation coefficient; marked in red are values with p < 0.05).

Variable	Season	Sampling sites	Temperature	pH	Dissolved oxygen (mg O_2 L^{-1})	Enterococci (log cfu·100mL^{-1})
Sampling sites	0.000					
Temperature	0.374	-0.086				
pH	0.337	-0.703	0.530			
Dissolved oxygen (mg O_2 L^{-1})	-0.249	0.632	-0.200	-0.580		
Enterococci (log cfu·100mL^{-1})	0.064	-0.886	0.162	0.792	-0.606	
Other *Enterococcus* spp	0.035	-0.146	-0.023	0.220	0.294	0.199
E. faecalis	-0.304	-0.613	-0.183	0.466	-0.204	0.530
E. faecium	0.179	-0.620	0.058	0.657	-0.495	0.633
E. durans	-0.088	-0.139	0.047	0.268	-0.007	0.139
E. avium	-0.147	-0.599	-0.006	0.269	-0.123	0.532
E. hiare	-0.163	-0.184	-0.209	0.185	-0.043	0.179
E. gallinarum	0.046	0.181	-0.050	-0.084	-0.245	-0.063
E. casseliflavus/flavescens	0.308	-0.324	-0.118	0.227	-0.575	0.232
AMP	0.210	-0.680	-0.015	0.456	-0.581	0.506
IPM	0.158	-0.715	0.046	0.569	-0.541	0.576
GEN	0.095	-0.681	0.096	0.572	-0.496	0.534
S	-0.023	-0.693	-0.046	0.605	-0.317	0.619
TEC	-0.021	-0.034	0.054	0.235	0.006	0.229
VAN	-0.237	-0.292	-0.105	0.347	0.129	0.397
QD	-0.069	-0.588	-0.103	0.572	-0.286	0.582
TGC	0.282	-0.678	-0.085	0.631	-0.507	0.673
LZD	0.208	-0.518	-0.094	0.550	-0.295	0.509

Variable						
NIT	0.344	-0.554	0.148	0.713	-0.388	0.591
W5	0.168	-0.639	0.014	0.670	-0.354	0.646
CIP	0.096	-0.671	-0.003	0.671	-0.377	0.633
DO	-0.129	-0.012	-0.205	0.092	0.381	0.053
*van*A	0.088	0.092	-0.234	-0.324	-0.049	-0.131
*van*B	-0.198	-0.256	-0.201	0.021	-0.136	0.198
*van*C1	-0.178	-0.259	0.162	0.350	-0.046	0.331
*van*C2/VC3	0.140	-0.497	0.343	0.555	-0.600	0.527
*cyl*A	-0.081	-0.428	-0.099	0.320	-0.400	0.365
hyl	0.044	-0.267	0.233	0.486	0.051	0.304
ace	-0.342	-0.262	-0.047	0.337	0.058	0.338
*efa*A	-0.342	-0.436	-0.183	0.381	-0.130	0.422
*gel*E	-0.422	-0.306	-0.037	0.278	-0.043	0.254
as	-0.227	-0.556	-0.019	0.396	-0.237	0.446
esp	-0.064	-0.214	-0.116	0.287	-0.166	0.173
cob	-0.430	-0.291	-0.135	0.162	0.210	0.273
cpd	-0.356	-0.459	-0.088	0.374	-0.032	0.441
ccf	-0.347	-0.512	-0.135	0.372	-0.108	0.474

AMP–ampicillin; IPM–imipenem; GEN–gentamicin; S–streptomycin; TEC–teicoplanin; VAN–vancomycin; QD–quinupristin/dalfopristin; TGC–tigecycline; LZD–linezolid; NIT–nitrofurantoin; W5–trimethoprim; CIP–ciprofloxacin; DO–doxycycline; vancomycin resistance genes (vanA-C2/C3); virulence factors: cytolysin (cylA), aggregation substance (AS), gelatinase (gel E), hyaluronidase (hyl), endocarditis antigen (efaA), factor encoding surface protein (esp), and sex pheromones (cob, cpd and ccf)

Table S4–Part B

Variable	Other	Enterococcus:						casseliflavus/ flavescens
	Enterococcus spp	*faecalis*	*faecium*	*durans*	*avium*	*hiare*	*gallinarum*	
E. faecalis	0.213							
E. faecium	-0.001	0.668						
E. durans	0.496	0.466	0.295					
E. avium	0.009	0.381	0.279	-0.148				
E. hiare	0.420	0.549	0.177	0.876	0.022			
E. gallinarum	0.066	-0.007	-0.020	0.101	-0.121	0.133		
E. casseliflavus/flavescens	-0.243	0.242	0.512	0.360	0.076	0.393	0.118	
AMP	-0.031	0.446	0.659	0.324	0.338	0.277	-0.046	0.703
IPM	0.029	0.596	0.711	0.305	0.403	0.301	-0.036	0.583
GEN	0.093	0.573	0.721	0.445	0.354	0.347	-0.047	0.598
S	0.243	0.863	0.805	0.591	0.429	0.604	-0.132	0.500
TEC	0.565	0.368	0.283	0.593	-0.064	0.532	0.465	-0.091
VAN	0.468	0.777	0.527	0.439	0.305	0.460	0.169	-0.129
QD	0.231	0.890	0.760	0.581	0.406	0.675	0.006	0.473
TGC	0.018	0.629	0.807	0.240	0.423	0.334	-0.092	0.636
LZD	0.069	0.712	0.826	0.395	0.338	0.450	-0.091	0.614
NIT	0.107	0.613	0.845	0.397	0.273	0.366	-0.091	0.580
W5	0.268	0.790	0.885	0.504	0.390	0.496	-0.026	0.501
CIP	0.231	0.772	0.819	0.534	0.314	0.530	-0.142	0.581
DO	0.239	0.584	0.355	0.212	0.041	0.236	-0.026	-0.128
*van*A	0.025	-0.074	-0.031	-0.128	-0.077	-0.119	0.435	-0.075
*van*B	-0.209	0.396	0.297	-0.331	0.505	-0.182	0.227	-0.194
*van*C1	-0.007	0.537	0.581	-0.044	0.450	-0.115	0.221	-0.135
*van*C2/VC3	0.028	0.181	0.211	-0.031	0.007	-0.008	0.080	0.251
*cyl*A	0.127	0.625	0.755	0.490	0.210	0.384	0.211	0.478

hyl	0.446	0.595	0.599	0.559	0.080	0.376	0.036	-0.010
ace	0.260	0.737	0.560	0.291	0.240	0.257	0.110	-0.214
efaA	0.343	0.886	0.633	0.591	0.335	0.635	0.140	0.185
gelE	0.299	0.724	0.524	0.418	0.143	0.304	0.154	-0.150
as	0,134	0,813	0,770	0,465	0,422	0,351	0,087	0,343
esp	-0,138	0,714	0,735	0,187	0,168	0,194	0,171	0,310
cob	0,206	0,766	0,482	0,244	0,469	0,252	0,023	-0,183
cpd	0,259	0,886	0,644	0,395	0,506	0,404	0,142	0,063
ccf	0,256	0,906	0,664	0,420	0,511	0,461	0,128	0,133

Table S4–Part C

Variable	AMP	IPM	GEN	S	TEC	VAN	QD	TGC	LZD	NIT	W5	CIP	DO
IPM	0.944												
GEN	0.925	0.938											
S	0.730	0.818	0.817										
TEC	-0.005	0.097	0.133	0.360									
VAN	0.098	0.293	0.260	0.646	0.740								
QD	0.549	0.681	0.654	0.949	0.450	0.740							
TGC	0.785	0.863	0.786	0.842	0.131	0.385	0.801						
LZD	0.673	0.773	0.722	0.890	0.221	0.534	0.892	0.933					
NIT	0.678	0.783	0.770	0.846	0.255	0.463	0.819	0.923	0.952				
W5	0.667	0.776	0.770	0.948	0.459	0.682	0.930	0.885	0.924	0.920			
CIP	0.746	0.841	0.820	0.951	0.262	0.539	0.908	0.901	0.937	0.925	0.935		
DO	0.004	0.193	0.076	0.439	0.305	0.737	0.527	0.298	0.529	0.406	0.444	0.447	
vanA	0.211	0.200	0.069	-0.071	0.347	0.124	-0.138	-0.003	-0.092	-0.130	-0.020	-0.139	0.061
vanB	0.123	0.225	0.064	0.216	0.176	0.472	0.252	0.187	0.155	0.024	0.228	0.052	0.304
vanC1	0.003	0.167	0.163	0.372	0.334	0.691	0.462	0.236	0.354	0.329	0.467	0.288	0.491
vanC2/VC3	0.265	0.382	0.350	0.182	-0.062	-0.093	0.178	0.360	0.201	0.365	0.234	0.349	-0.156
cylA	0.597	0.592	0.656	0.714	0.506	0.520	0.662	0.531	0.556	0.517	0.733	0.611	0.119
hyl	0.316	0.471	0.559	0.675	0.658	0.724	0.630	0.450	0.580	0.655	0.723	0.614	0.520
ace	-0.028	0.156	0.204	0.535	0.618	0.882	0.623	0.257	0.401	0.362	0.581	0.396	0.572
efaA	0.342	0.480	0.505	0.811	0.644	0.860	0.869	0.508	0.621	0.527	0.782	0.678	0.481
gelE	0.185	0.312	0.372	0.561	0.609	0.776	0.555	0.189	0.298	0.256	0.528	0.396	0.427
as	0,576	0,622	0,652	0,797	0,359	0,680	0,750	0,522	0,620	0,545	0,746	0,689	0,438
esp	0,315	0,456	0,389	0,624	0,269	0,645	0,709	0,536	0,705	0,593	0,673	0,600	0,669
cob	0,065	0,232	0,219	0,568	0,464	0,883	0,627	0,252	0,420	0,300	0,544	0,398	0,686
cpd	0,267	0,428	0,450	0,741	0,510	0,886	0,800	0,456	0,589	0,500	0,728	0,605	0,589
ccf	0,340	0,494	0,493	0,792	0,535	0,876	0,842	0,512	0,621	0,520	0,770	0,649	0,546

Table S4–Part D

Variable	van A	van B	van C1	van C2/C3	cylA	hyl	ace	efaA	gelE	as	esp	cob	cpd
vanB	0,459												
vanC1	-0,047	0,643											
vanC2/VC3	-0,153	-0,270	-0,052										
cylA	0,243	0,363	0,446	-0,008									
hyl	0,096	0,122	0,470	0,068	0,537								
ace	-0,023	0,510	0,807	-0,082	0,553	0,709							
efaA	0,025	0,421	0,583	-0,016	0,786	0,672	0,829						
gelE	0,178	0,519	0,659	-0,099	0,721	0,692	0,877	0,851					
as	0,065	0,456	0,666	-0,022	0,822	0,557	0,653	0,811	0,764				
esp	0,047	0,540	0,732	-0,037	0,624	0,501	0,679	0,696	0,625	0,739			
cob	0,063	0,623	0,809	-0,230	0,494	0,585	0,884	0,795	0,800	0,762	0,686		

| cpd | -0,026 | 0,533 | 0,805 | -0,023 | 0,664 | 0,658 | 0,885 | 0,912 | 0,827 | 0,866 | 0,748 | 0,932 | |
| ccf | 0,042 | 0,556 | 0,741 | 0,001 | 0,734 | 0,641 | 0,856 | 0,950 | 0,834 | 0,877 | 0,747 | 0,905 | 0,984 |

Table S5. Number and percentage of antibiotic resistant enterococci in wastewater and river water

Antibiotic	Sampling sites	*faecium*	*faecalis*	*durans*	*avium*	*hirae*	*gallinarum*	*casseliflavus/ flavescens*	Other *Enterococcus spp*
AMP	HWW	26(72.2)	7(26.9)	1(100)	0.0	1(50.0)	0	0.0	9(90)
	UWW	6(21.4)	0(0.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)
	TWW	10(26.3)	1(3.4)	1(33.3)	0.0	1(25.0)	0.0	0.0	2(9.5)
	URW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	DRW	1(25)	0.0	0.0	0.0	0.0	1(20.0)	0.0	1(16.6)
IPM	HWW	26(72.2)	8(30.8)	1(100)	1(14.3)	1(50)	0.0	0.0	8(80.0)
	UWW	7(25.0)	3(15.0)	0.0	0.0	0.0	0.0	0.0	3(25.0)
	TWW	10(26.3)	8(27.6)	1(33.3)	0.0	1(25.0)	0.0	0.0	2(9.5)
	URW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	DRW	2(50)	1(100)	0.0	0.0	0.0	1 (20)	0.0	3(50)
GEN	HWW	22(61.1)	14(53.8)	1(100)	2(28.6)	0.0	0.0	1(100)	8(80)
	UWW	5(17.8)	3(15.0)	0.0	1(25.0)	0.0	0.0	0.0	1(8.3)
	TWW	9(23.7)	11(37.9)	1(33.3)	1(50)	1(25.0)	0.0	0.0	1(4.8)
	URW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	DRW	3(75)	0.0	0.0	0.0	0.0	0.0	0.0	1(16.6)
S	HWW	36(100)	25(96.2)	1(100)	7(100)	2(100)	1(100)	1(100)	10(100)
	UWW	22(78.6)	17(85.0)	0.0	3(75.0)	1(100)	0.0	0.0	7(58.3)
	TWW	33(86.8)	27(93.1)	3(100)	2(100)	4(100)	1(100)	0.0	10(47.6)
	URW	0.0	4(80)	0.0	0.0	0.0	0.0	0.0	4(33.3)
	DRW	3 (75)	0.0	0.0	0.0	0.0	0.0	0.0	2(33.3)
TEC	HWW	2(5.6)	2(7.7)	0.0	1(14.3)	1(50)	0.0	1(100)	0.0
	UWW	6(21.4)	4(20.0)	0.0	1(25.0)	0.0	1(33.3)	0.0	9(75.0)
	TWW	4(10.5)	9(31)	0.0	0.0	0.0	0.0	0.0	11(52.4)
	URW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2(16.6)
	DRW	4 (100)	1(100)	0.0	0.0	0.0	3(60)	0.0	5(83.3)
VAN	HWW	8(22.2)	9(34.6)	0.0	1(14.3)	0.0	1(100)	1(100)	1(10)
	UWW	15(53.6)	14(70.0)	0.0	0.0	0.0	3(100)	0.0	6(50.0)
	TWW	22(57.9)	18(62.1)	0.0	0.0	3(75.0)	1(100)	0.0	13(61.9)
	URW	0.0	1 (20)	0.0	0.0	0.0	0.0	0.0	2(16.6)
	DRW	3 (75)	1(100)	0.0	0.0	0.0	3(60)	0.0	5(83.3)
QD	HWW	23(63.9)	24(92.3)	1(100)	6(85.7)	2(100)	1(100)	1(100)	6(60)
	UWW	20(71.4)	17(85.0)	0.0	4(100)	1(100)	1(33.3)	0.0	11(91.7)
	TWW	27(71.1)	27(93.1)	2(66.7)	2(100)	4(100)	1(100)	0.0	13(61.9)
	URW	0.0	3(60)	0.0	0.0	0.0	0.0	0.0	5(41.6)
	DRW	3 (75)	1(100)	0.0	0.0	0.0	2(40)	0.0	4(66.6)
TGC	HWW	16(44.4)	19(73.1)	1(100)	3(42.9)	1(50)	0.0	0.0	5(50)
	UWW	12(42.9)	7(35.0)	0.0	2(50.0)	1(100)	0.0	0.0	4(33.3)
	TWW	13(34.2)	12(41.4)	0.0	1(50)	1(25.0)	0.0	0.0	3(14.3)
	URW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	DRW	0.0	0.0	0.0	0.0	0.0	1(20)	0.0	5(83.3)
LZD	HWW	23(63.9)	18(69.2)	1(100)	3(42.9)	2(100)	1(100)	1(100)	5(50)
	UWW	16(57.1)	9(45.0)	0.0	2(50.0)	1(100)	0.0	0.0	4(33.3)
	TWW	25(65.8)	19(65.5)	2(66.7)	2(100)	2(50)	1(100)	0.0	6(28.6)
	URW	0.0	1(20)	0.0	0.0	0.0	0.0	0.0	4(33.3)
	DRW	4(100)	0.0	0.0	0.0	0.0	1(20)	0.0	4(66.6)
NIT	HWW	26(72.2)	11(42.3)	1(100)	3(42.9)	2(100)	1(100)	0.0	5(50)
	UWW	13(46.4)	9(45.0)	0.0	2(50.0)	1(100)	0.0	0.0	6(50.0)

		faecium	faecalis	durans	avium	hirae	gallinarum	casseliflavus/flavescens	Other Enterococcus spp
	TWW	24(63.2)	14(48.3)	3(100)	1(50)	3(75.0)	0.0	0.0	7(33.3)
	URW	0.0	29(40)	0.0	0.0	0.0	0.0	0.0	0.0
	DRW	3(75)	1(100)	0.0	0.0	0.0	3(60)	0.0	2(33.3)
W5	HWW	32(88.9)	23(88.5)	1(100)	4(57.1)	2(100)	1(100)	1(100)	9(90)
	UWW	25(89.3)	13(65.0)	0.0	4(100))	1(100)	0.0	0.0	12(100)
	TWW	34(89.5)	23(79.3)	1(100)	1(50)	3(75.0)	1(100)	0.0	16(76.2)
	URW	0.0	3(60)	0.0	0.0	0.0	0.0	0.0	7(33.3)
	DRW	4 (100)	1(100)	0.0	0.0	0.0	3(60)	0.0	6(100)
CIP	HWW	30(83.3)	21(80.8)	1(100)	2(28.6)	2(100)	0.0	1(100)	9(90)
	UWW	17(60.7)	8(40.0)	0.0	2(50.0)	1(100)	2(66.7)	0.0	7(58.3)
	TWW	28(73.7)	19(65.5)	1(33.3)	1(50)	1(25.0)	0.0	0.0	15(71.4)
	URW	0.0	1(20)	0.0	0.0	0.0	0.0	0.0	4(33.3)
	DRW	1 (25)	0.0	0.0	0.0	0.0	0.0	0.0	1(16.6)
DO	HWW	0.0	3(11.5)	0.0	0.0	0.0	0.0	0.0	0.0
	UWW	2(7.1)	1(5.0)	0.0	0.0	0.0	0.0	0.0	0.0
	TWW	14(36.8)	8(27.6)	0.0	0.0	0.0	0.0	0.0	0.0
	URW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2(16.6)
	DRW	1(25)	0.0	0.0	0.0	0.0	2(40.0)	0.0	0.0

HWW – hospital waste water; UWW and TWW – untreated and treated wastewater; URW and DRW – upstream and downstream river water; AMP–ampicillin; IPM–imipenem; GEN–gentamicin; S–streptomycin; TEC–teicoplanin; VAN–vancomycin; QD–quinupristin/dalfopristin; TGC–tigecycline; LZD–linezolid; NIT–nitrofurantoin; W5–trimethoprim; CIP–ciprofloxacin; DO–doxycycline

Table S6 Number and percentage of virulent enterococci in wastewater and river water

Virulence factors	Sampling sites	Number (%) of virulent *Enterococci:*							
		faecium	*faecalis*	*durans*	*avium*	*hirae*	*gallinarum*	*casseliflavus/ flavescens*	Other *Enterococcus spp*
cyl A	HWW	9(25.0)	11(42.3)	0.0	2(28.6)	0.0	1(100)	1(100)	1(10.0)
	UWW	6(21.4)	8(40.0)	0.0	0.0	0.0	1(33.3)	0.0	1(8.3)
	TWW	9(23.7)	12(41.4)	0.0	1(50.0)	0.0	1(10.0)	0.0	3(14.3)
	URW	0.0	2(40.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)
	DRW	1(25.0)	0.0	0.0	0.0	0.0	3(60.0)	0.0	4(66.6)
hyl	HWW	11(30.6)	7(26.9)	0.0	1(14.3)	0.0	0.0	0.0	0.0
	UWW	7(25.0)	5(25. 0)	0.0	0.0	0.0	0.0	0.0	2(16.7)
	TWW	13(34.2)	15(51.7)	1(33.3)	0.0	0.0	0.0	0.0	6(28.6)
	URW	0.0	2(40.0)	0.0	0.0	0.0	0.0	0.0	3(25)
	DRW	2(50.0)	0.0	0.0	0.0	0.0	5(10.0)	0.0	3(50.0)
ace	HWW	0.0	8(30. 8)	0.0	1(14.3)	0.0	0.0	0.0	1(10.0)
	UWW	8(28.6)	15(75.0)	0.0	0.0	0.0	2(66.7)	0.0	0.0
	TWW	15(39.5)	15(51.7)	1(33.3)	1(50.0)	1(25. 0)	0.0	0.0	1(4.8)
	URW	0.0	2(40.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)
	DRW	2(50.0)	0.0	0.0	0.0	0.0	2(40.0)	0.0	2(33.3)
efa A	HWW	9(25.0)	23(88.5)	0.0	4(57.1)	0.0	0.0	0.0	1(10.0)
	UWW	13(46.4)	15(75.0)	0.0	3(75.0)	0.0	2(66.7)	0.0	2(16.7)
	TWW	21(55.3)	25(86.2)	2(66.7)	2(10.0)	3(75.0)	0.0	0.0	7(33.3)
	URW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2(16.6)
	DRW	3(75)	1(10.0)	0.0	0.0	0.0	3(60.0)	0.0	2(33.3)
gel E	HWW	3(8.3)	13(50.0)	0.0	1(14.3)	0.0	0.0	0.0	1(10.0)
	UWW	8(28.6)	9(45.0)	0.0	0.0	0.0	0.0	0.0	0.0
	TWW	14(36.8)	17(58.6)	2(66.7)	1(50.0)	0.0	0.0	0.0	1(4.8)
	URW	0.0	2(40.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)

	DRW	2(50.0)	1(10.0)	0.0	0.0	0.0	2(40.0)	0.0	1(16.6)
as	HWW	4(11.1)	10.0(38.5)	0.0	4(57.1)	1(10.0)	1(10.0)	1(10.0)	2(20.0)
	UWW	4(14.3)	6(30.0)	0.0	0.0	1(10.0)	0.0	0.0	0.0
	TWW	8(21.1)	13(44.8)	2(66.7)	2(10.0)	0.0	0.0	0.0	0.0
	URW	0.0	1(20.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)
	DRW	2(50.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
esp	HWW	2(5.6)	9(34.6)	0.0	1(14.3)	0.0	1(10.0)	0.0	0.0
	UWW	6(21.4)	1(5.0)	0.0	1(25.0)	0.0	0.0	0.0	1(8.3)
	TWW	7(18.4)	12(41.4)	13(3.3)	1(50.0)	0.0	0.0	0.0	1(4.8)
	URW	0.0	2(40.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)
	DRW	2(50.0)	1(10.0)	0.0	0.0	0.0	4(80.0)	0.0	0.0
cob	HWW	0.0	10.0(38.5)	0.0	5(71.4)	0.0	0.0	0.0	3(30.0)
	UWW	10.0(35.7)	9(45.0)	0.0	1(25.0)	0.0	0.0	0.0	1(8.3)
	TWW	10.0(26.0)3	24(82.8)	2(66.7)	1(50.0)	0.0	0.0	0.0	2(9.5)
	URW	0.0	2(40.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)
	DRW	3(75)	0.0	0.0	0.0	0.0	1(20.0)	0.0	1(16.6)
cpd	HWW	4(11.1)	20.0(76.9))	0.0	6(85.7)	0.0	0.0	0.0	3(30.0)
	UWW	13(46.6)	14(70.0)	0.0	1(25.0)	0.0	1(33.3)	0.0	2(16.7)
	TWW	14(36.8)	29(10.0)	2(66.7)	1(50.0)	1(25.0)	0.0	0.0	4(19.0)
	URW	0.0	3(60.0)	0.0	0.0	0.0	0.0	0.0	1(8.3)
	DRW	2(50.0)	0.0	0.0	0.0	0.0	4(80.0)	0.0	1(16.6)
ccf	HWW	7(19.4)	22(84.6)	0.0	7(10.0)	0.0	1(10.0)	0.0	3(30.0)
	UWW	16(57.1)	14(70.0)	0.0	2(50.0)	0.0	2(66.7)	0.0	2(16.7)
	TWW	15(39.5)	29(10.0)	2(66.7)	1(50.0)	3(75.0)	1(10.0)	0.0	3(14.3)
	URW	0.0	3(60.0)	0.0	0.0	0.0	0.0	0.0	2(16.6)
	DRW	3(75)	0.0	0.0	0.0	0.0	4.80.0)	0.0	1(16.6)

virulence factors: cytolysin (cylA), aggregation substance (AS), gelatinase (gel E), hyaluronidase (hyl), endocarditis antigen (efaA), factor encoding surface protein (esp), and sex pheromones (cob, cpd and ccf); HWW – hospital waste water; UWW and TWW – untreated and treated wastewater; URW and DRW – upstream and downstream river water;

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