

Assessing the Groundwater Quality at a Saudi Arabian Agricultural Site and the Occurrence of Opportunistic Pathogens on Irrigated Food Produce

Table S1. Primer assays used in this study for fecal source tracking.

Primer Assays	Gene Target	Oligonucleotide Sequence (5'–3')	Amplification Factor
927F Bvg1016R	Human-associated <i>Bacteroides vulgatus</i>	GGG CCC GCA CAA GCG G ATG CCT TGC GGC TTA CGG C	1.59
927F Bfrg1024R	Human-associated <i>Bacteroides fragilis</i>	GGG CCC GCA CAA GCG G TCA CAG CGG TGA TTG CTC A	1.70
927F Bufm1018R	Human-associated <i>Bacteroides uniformis</i>	GGG CCC GCA CAA GCG G CTG CCT TGC GGC TGA CA	1.70
CP2-9F CP2-9R	Chicken-specific metabolism inorganic ion of <i>B. fragilis</i>	GTAAGACAGCAACCCCATGTA ACCTATGGTTCAACACGCTTTA	1.91
27F 338F	16S rRNA genes	AGAGTTTGATCCTGGCTCAG GCTGCCTCCCGTAGGAGT	1.96

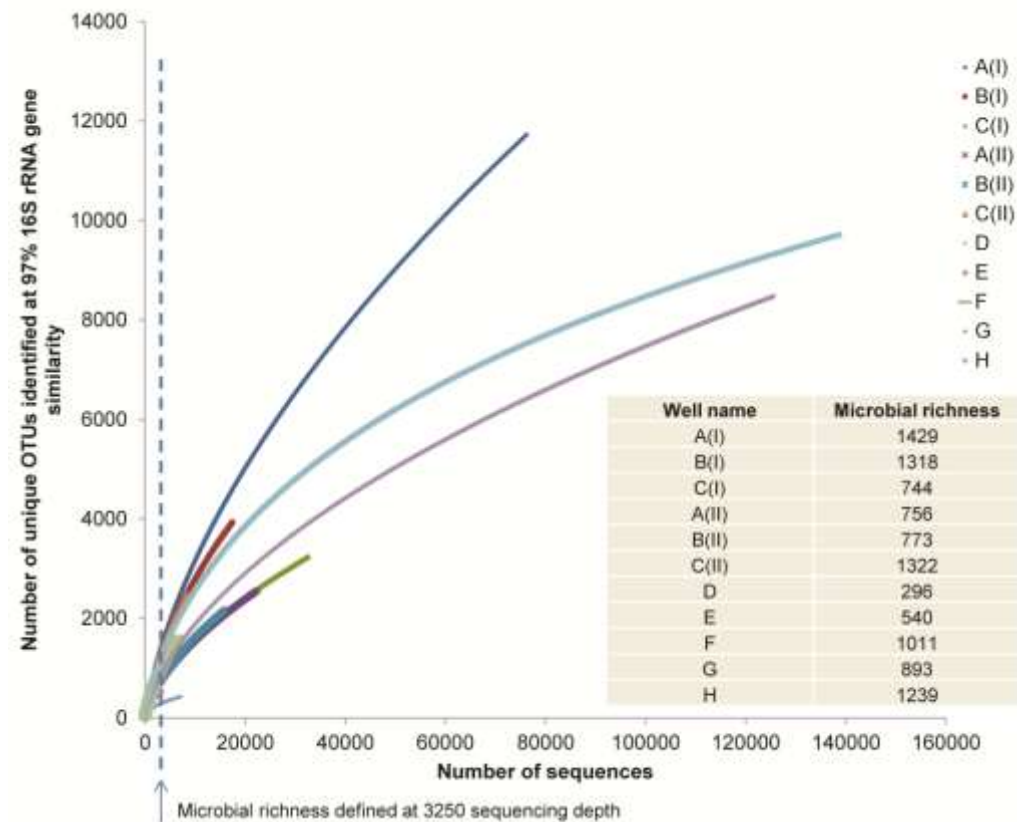


Figure S1. Rarefaction curves for groundwater samples collected from wells A through H. Microbial richness denoted at a depth of 3250 sequences was collated and shown in the table.

Table S2. 16S rRNA gene sequences of *Pseudomonas aeruginosa* and *Enterococcus faecalis*.

<i>Pseudomonas aeruginosa</i> (Sequence in the direction of 5'–3')
1-T-Mac-M
CCAGCCATGCCGCGTGTGTGAAGAAGGTCTTCGGATTGTAAAGCACTTTAAGTTGGGAGGAAGGGCAGTAAGTTAATACCTTGCTGTTTTG ACGTTACCAACAGAATAAGCACCGGCTAACTTCGTGCCAGCAGCCGCGGTAATACGAAGGGTGCAAGCGTTAATCGGAATTACTGGGCGTA AAGCGCGCGTAGGTGGTTCAGCAAGTTGGATGTGAAATCCCCGGGCTCAACCTGGGAACTGCATCCAAAACCTACTGAGCTAGAGTACGGTA GAGGGTGGTGGAAATTTCTGTGTAGCGGTGAAATGCGTAGATATAGGAAGGAACACCAGTGGCGAAGGCGACCACTGGACTGATACTGA CACTGAGGTGCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGTGCGACTAGCCGTTGGGATCCTTG AGATCTTAGTGGCGCAGCTAACGCGATAAGTCGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAACCTCAAATGAATTGACGGGGGCCCGC ACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCCTTACCTGGCCTTGACATGCTGAGAACTTTCCAGAGATGGATTGGT GCCTTCGGGAACTCAGACACAGGTGCTGCATGGCTGTCGTCAGCTCGTGTGCTGAGATGTTGGGTAAAGTCCCGTAACGAGCGCAACCCTTG TCCTTAGTTACCAGCACCTCGGGTGGGCACTCTAAGGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAGTCATCATGGC CCTTACGGCCAGGGCTACACACGTGCTACAATGGTCGGTACAAAGGGT
2-T-Mac-M
CCAGCCATGCCGCGTGTGTGAAGAAGGTCTTCGGATTGTAAAGCACTTTAAGTTGGGAGGAAGGGCAGTAAGTTAATACCTTGCTGTTTTG ACGTTACCAACAGAATAAGCACCGGCTAACTTCGTGCCAGCAGCCGCGGTAATACGAAGGGTGCAAGCGTTAATCGGAATTACTGGGCGTA AAGCGCGCGTAGGTGGTTCAGCAAGTTGGATGTGAAATCCCCGGGCTCAACCTGGGAACTGCATCCAAAACCTACTGAGCTAGAGTACGGTA GAGGGTGGTGGAAATTTCTGTGTAGCGGTGAAATGCGTAGATATAGGAAGGAACACCAGTGGCGAAGGCGACCACTGGACTGATACTGA CACTGAGGTGCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGTGCGACTAGCCGTTGGGATCCTTG AGATCTTAGTGGCGCAGCTAACGCGATAAGTCGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAACCTCAAATGAATTGACGGGGGCCCGC ACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCCTTACCTGGCCTTGACATGCTGAGAACTTTCCAGAGATGGATTGGT GCCTTCGGGAACTCAGACACAGGTGCTGCATGGCTGTCGTCAGCTCGTGTGCTGAGATGTTGGGTAAAGTCCCGTAACGAGCGCAACCCTTG TCCTTAGTTACCAGCACCTCGGGTGGGCACTCTAAGGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAGTCATCATGGC CCTTACGGCCAGGGCTACACACGTGCTACAATGGTCGGTACAAAGGGTTGCCAAGCCGCGAGGTGGAGCTAATCCCATAAAACCGATCGTA GTCCGGATCGCAGTCTGCAACTCGACTGCGTGAAGTCGGAATCGCTAGTAATCGTGAATCAGAATG
5-T-Mac-M
CCAGCCATGCCGCGTGTGTGAAGAAGGTCTTCGGATTGTAAAGCACTTTAAGTTGGGAGGAAGGGCAGTAAGTTAATACCTTGCTGTTTTG ACGTTACCAACAGAATAAGCACCGGCTAACTTCGTGCCAGCAGCCGCGGTAATACGAAGGGTGCAAGCGTTAATCGGAATTACTGGGCGTA AAGCGCGCGTAGGTGGTTCAGCAAGTTGGATGTGAAATCCCCGGGCTCAACCTGGGAACTGCATCCAAAACCTACTGAGCTAGAGTACGGTA GAGGGTGGTGGAAATTTCTGTGTAGCGGTGAAATGCGTAGATATAGGAAGGAACACCAGTGGCGAAGGCGACCACTGGACTGATACTGA CACTGAGGTGCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGTGCGACTAGCCGTTGGGATCCTTG AGATCTTAGTGGCGCAGCTAACGCGATAAGTCGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAACCTCAAATGAATTGACGGGGGCCCGC ACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCCTTACCTGGCCTTGACATGCTGAGAACTTTCCAGAGATGGATTGGT GCCTTCGGGAACTCAGACACAGGTGCTGCATGGCTGTCGTCAGCTCGTGTGCTGAGATGTTGGGTAAAGTCCCGTAACGAGCGCAACCCTTG TCCTTAGTTACCAGCACCTCGGGTGGGCACTCTAAGGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAGTCATCATGGC CCTTACGGCCAGGGCTACACACGTGCTACAATGGTCGGTACAAAGGGTTGCCAAGCCGCGAGGTGGAGCTAATCCCATAAAACCGATCGTA GTCCGGATCGCAGTCTGCAACTCGACTGCGTGAAGTCGGAATCGCTAGTAATCGTGAATCAGAATG

Table S2. Cont.

<i>Enterococcus faecalis</i> (Sequence in the direction of 5'-3')
1-P-Ceft
TCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACCTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGTC CCCTGACGGTATCTAACCAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTGG GCGTAAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGTG CAGAAGAGGAGAGTGGAATTCCATGTGTACGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGTAA CTGACGCTGAGGCTCGAAAGCGTGCGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGAGG GTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGG CCCGCACAAGCGGTGGAGCATGTGGTTTAATTGGAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAGA GCTT TCTCTTCGGGGACAAAGTGACAGGTGGTGCATGGTTTGTCTGTCAGCTCGTGTCTGTGAGATGTTGGGTAAAGTCCCGCAACGAGCGCAACCCCT TATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGC
2-P-Ceft
AAGTCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACCTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAAC GTCCCCTGACGGTATCTAACCAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTAT TGGGCGTAAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGA GTGCAGAAGAGGAGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCT GTAACGTACGCTGAGGCTCGAAAGCGTGCGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTG GAGGGTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACG GGGGCCCGCACAAGCGGTGGAGCATGTGGTTTAATTGGAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGA TAGAGCTTTCCCTTCGGGGACAAAGTGACAGGTGGTGCATGGTTGTCTGTCAGCTCGTGTCTGTGAGATGTTGGGTAAAGTCCCGCAACGAGC GCAACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAAT CATCATGCCCCTTATGACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAG CTTCTCTCAGTTTCG
3-P-Ceft
GTCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACCTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGT CCCCTGACGGTATCTAACCAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTG GGCGTAAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGT GCAGAAGAGGAGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGT AACTGACGCTGAGGCTCGAAAGCGTGCGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGA GGGTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGG GGCCCGCACAAGCGGTGGAGCATGTGGTTTAATTGGAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATA GAGCTTTCCCTTCGGGGACAAAGTGACAGGTGGTGCATGGTTGTCTGTCAGCTCGTGTCTGTGAGATGTTGGGTAAAGTCCCGCAACGAGCGC AACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCA TCATGCCCCTTATGACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAGCT TCTCTCAGTTTCGATTGCAGGCTGCAACTCGCCTGC

Table S2. Cont.

<i>Enterococcus faecalis</i> (Sequence in the direction of 5'-3')
4-P-Ceft
ACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGTCCCCTGACGGTA TCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTGGGCGTAAAGCGA GCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGTGCAGAAGAGGA GAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCACTGGCGAAGGCGGCTCTCTGGTCTGTAAGTACGCTGA GGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTGGAGGGTTTTCCGCCCT TCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGGGCCCGCACAAAG CGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAGAGCTTTCCCTTC GGGGACAAAGTGACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTCTGAGATGTTGG
1-T-Ceft
CTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGTCC CCTGACGGTATCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTGGG CGTAAAGCGAGCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGTGC AGAAGAGGAGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCACTGGCGAAGGCGGCTCTCTGGTCTGTAA CTGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGG ATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTGGAGGGTTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCA CTCCGCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGGGCCCGCACAAAGCGGTGGAGCATGTGGTTTAATTCGAAG CAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAGAGCTTTCTCTTCGGGGACAAAGTGACAGGTGGTGCATG GTTGTCTGTCAGCTCGTGTCTGAGATGTTGGGTTAAGTCCCAGCAACGAGCGCAACCCCTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTA GCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGG GATGACGTCAAATCATCATGCCCCTTATGACCTGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGC
2-T-Ceft
ACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGTCCCCTGACGGTA TCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTGGGCGTAAAGCGA GCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGTGCAGAAGAGGA GAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCACTGGCGAAGGCGGCTCTCTGGTCTGTAAGTACGCTGA GGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTGGAGGGTTTTCCGCCCT TCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGGGCCCGCACAAAG CGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAGAGCTTTCCCTTC GGGGACAAAGTGACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTCTGAGATGTTGGGTTAAGTCCCAGCAACGAGCGCAACCCCTATTGTT AGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCATCATGCCCCTTAT GACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAGCTTCTCTCAGTTCGG ATTGCAGGCTGCAACTCGCCTGCATGAAGCCGGAATCGCTAGTAATCGCGGATCAGCACG

Table S2. Cont.

<i>Enterococcus faecalis</i> (Sequence in the direction of 5'-3')
3-T-Ceft
TCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGTC CCCTGACGGTATCTAACCAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTGG GCGTAAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGTG CAGAAGAGGAGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGTA ACTGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGAG GGTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGG GCCCCGACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAG AGCTTTCCTTCGGGGACAAAGTGACAGGTGGTGATGGTTGTCGTCAGCTCGTGTGCTGAGATGTTGGGTAAAGTCCCGCAACGAGCGCA ACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCAT CATGCCCTTATGACCTGGGCTACACACGTGCTACA
4-T-Ceft
CGTCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACG TCCCCTGACGGTATCTAACCAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATT GGGCGTAAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGT GTGCAGAAGAGGAGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCT GTAACGTACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTG GAGGGTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACG GGGGCCCCGACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGA TAGAGCTTTCCTTCGGGGACAAAGTGACAGGTGGTGATGGTTGTCGTCAGCTCGTGTGCTGAGATGTTGGGTAAAGTCCCGCAACGAGC GCAACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAAT CATCATGCCCTTATGACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCG
5-T-Ceft
GTCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGT CCCCTGACGGTATCTAACCAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTG GGCGTAAAGCGAGCGCAGGCGGTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGT GCAGAAGAGGAGAGTGGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGT AACTGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGA GGGTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGG GGCCCCGACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATA GAGCTTTCCTTCGGGGACAAAGTGACAGGTGGTGATGGTTGTCGTCAGCTCGTGTGCTGAGATGTTGGGTAAAGTCCCGCAACGAGCGC AACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCA TCATGCCCTTATGACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAGCT TCTCTCAGTTCGGATTGCAGGCTGCAACTCGCCTGCATGAAGCCGGAATCGCTAGTAATCGCGGATCAGCACGCCG

Table S2. Cont.

<i>Enterococcus faecalis</i> (Sequence in the direction of 5'-3')
6-T-Ceft
GAAGTCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAA CGTCCCCTGACGGTATCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTA TTGGGCGTAAAGCGAGCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTG AGTGCAGAAGAGGAGAGTGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTC TGTAAC TGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTG GAGGGTTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACG GGGGCCCGCACAAAGCGGTGGAGCATGTGGTTTAATTGCAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGA TAGAGCTTTCCCTTCGGGGACAAAGTGACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTCTGAGATGTTGGGTAAAGTCCCGCAACGAGC GCAACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAAT CATCATGCCC
7-T-Ceft
TCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGTC CCCTGACGGTATCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTGG GCGTAAAGCGAGCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGTG CAGAAGAGGAGAGTGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGTA ACTGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTGGAG GGTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGG GCCCCGACAAGCGGTGGAGCATGTGGTTTAATTGCAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAG AGCTTTCCCTTCGGGGACAAAGTGACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTCTGAGATGTTGGGTAAAGTCCCGCAACGAGCGCA ACCCCTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCAT CATGCCCTTATGACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAGCTT CTCTCAGTTCGGATTGCAGGCTGCAACTCGCCTGCATGAAGCCGGAATCGCTAGTAATCGCGGATCAGCACGCCGCGT
8-T-Ceft
TCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTTCGGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGTC CCCTGACGGTATCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTGG GCGTAAAGCGAGCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGTG CAGAAGAGGAGAGTGAATTCCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGTA ACTGACGCTGAGGCTCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTGGAG GGTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGG GCCCCGACAAGCGGTGGAGCATGTGGTTTAATTGCAAGCAACGCGAAGAACCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAG AGCTTTCCCTTCGGGGACAAAGTGACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTCTGAGATGTTGGGTAAAGTCCCGCAACGAGCGCA ACCCCTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCAT CATGCCCTTATGACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAGCTT CTCTCAGTTCGGATTGCAGGCTGCAACTCGCCTGCATGAAGCCGGAATCGCTAGTAATCGCGGATCAGCACGCC

Table S2. Cont.

<i>Enterococcus faecalis</i> (Sequence in the direction of 5'-3')
9-T-Ceft
GTCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCCGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAACGT CCCCTGACGGTATCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTATTG GGCGTAAAGCGAGCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGAGT GCAGAAGAGGAGAGTGGAATTCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCTGT AACTGACGCTGAGGCTCGAAAGCGTGCGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGA GGGTTTTCCGCCCTTCAGTGCTGCAGCAAACGCATTAAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGG GGCCCGCACAAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGAAGAACCCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATA GAGCTTTCTCTTCGGGGACAAAGTGACAGGTGGTGCATGGTTGTCGTCAGCTCGTGTGTCGTGAGATGTTGGGTAAAGTCCCGCAACGAGCGC AACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCACTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCA TCATGCCCCTTATGACCTGGGCTACACACGTGCTACAATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAGCT TCTCTCAGTTCGGATTGCAGGCTGCAACTCGCCTGCATGAAGCCGGAATCGCTAGTAA
10-T-Ceft
GAAGTCTGACCGAGCACGCCGCGTGAGTGAAGAAGGTTTTCCGATCGTAAAACTCTGTTGTTAGAGAAGAACAAGGACGTTAGTAACTGAA CGTCCCCTGCGGTATCTAACCAGAAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGTGGCAAGCGTTGTCCGGATTTAT TGGGCGTAAAGCGAGCGCAGGCGGTTTTCTTAAGTCTGATGTGAAAGCCCCCGGCTCAACCGGGGAGGGTCATTGGAAACTGGGAGACTTGA GTGCAGAAGAGGAGAGTGGAATTCATGTGTAGCGGTGAAATGCGTAGATATATGGAGGAACACCAGTGGCGAAGGCGGCTCTCTGGTCT GTAAGTACGCTGAGGCTCGAAAGCGTGCGGAGCAA ACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGAGTGCTAAGTGTTGGAGGGTTTTCCGCCCTTCAGTGCTGCAGCAAACGCATT AAGCACTCCGCCTGGGGAGTACGACCGCAAGGTTGAAACTCAAAGGAATTGACGGGGGCCCGCACAAAGCGGTGGAGCATGTGGTTTAATT CGAAGCAACGCGAAGAACCCTTACCAGGTCTTGACATCCTTTGACCACTCTAGAGATAGAGCTTTCCCTTCGGGGACAAAGTGACAGGTGGT GCATGGTTGTCGTCAGCTCGTGTGTCGTGAGATTTGGGTAAAGTCCCGCAACGAGCGCAACCCTTATTGTTAGTTGCCATCATTTAGTTGGGCA CTCTAGCGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAATCATCATGCCCCTTATGACCTGGGCTACACACGTGCTAC AATGGGAAGTACAACGAGTCGCTAGACCGCGAGGTCATGCAAATCTCTTAAAGCTTCTCTCAGTTCGGATTGCAGGCTGCAACTCGCCTGC ATGAAGCCGGAATCGCTAGTAATCGCGGATCAGCACGCCGC

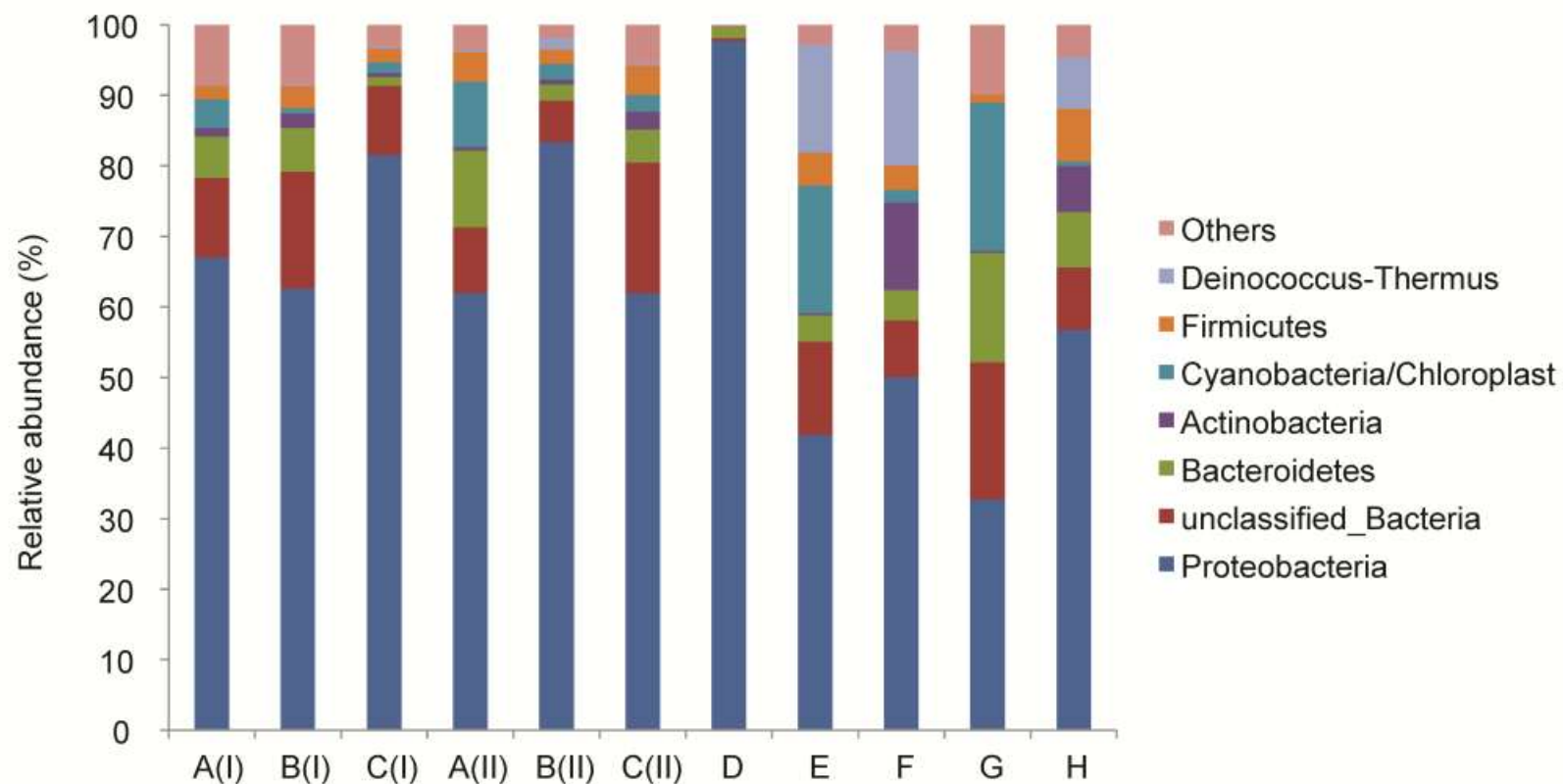


Figure S2. Relative abundance of microbial communities in wells A through H at the bacterial phylum level. Relative abundance was compared to the total groundwater microbial community analyzed using high-throughput sequencing.

Table S3. Minimum inhibitory concentrations of antibiotics in µg/mL exhibited by *Pseudomonas aeruginosa*.

	1-T-Mac-M	2-T-Mac-M	5-T-Mac-M
Gentamicin	4	4	4
Sulfamethaxazole	256	256	256
Kanamycin	128	64	64
Erythromycin	128	64	64
Tetracycline	2	2	2
Ciprofloxacin	Susceptible	Susceptible	Susceptible
Ampicilin	256	256	256
Cetazidime	8	8	2
Trimethoprim	256	256	128