

Supplementary Table 2. Site-to-site Sørensen dissimilarity values according to functional groups.

	16S (Phylochip)	Function (Geochip)	Core (no metals or organic pollutants)
2565I-2565DB	0.717	0.409	0.410
2565S-2565DB	0.936	0.404	0.498
3510I-2565DB	0.658	0.565	0.574
RP-2565DB	0.981	0.658	0.611
AI-2565DB	0.932	0.837	0.854
FB-2565DB	0.949	0.491	0.507
3510DB-2565DB	0.808	0.685	0.713
3510S-2565DB	0.803	0.863	0.518
2565S-2565I	0.941	0.677	0.700
3510I-2565I	0.875	0.736	0.745
RP-2565I	0.989	0.532	0.492
AI-2565I	0.947	0.883	0.896
FB-2565I	0.963	0.518	0.522
3510DB-2565I	0.835	0.746	0.759
3510S-2565I	0.831	0.903	0.918
3510I-2565S	0.441	0.184	0.182
RP-2565S	0.847	0.838	0.830
AI-2565S	0.927	0.735	0.765
FB-2565S	0.353	0.619	0.662
3510DB-2565S	0.839	0.782	0.825
3510S-2565S	0.486	0.807	0.839
RP-3510I	0.886	0.869	0.855
AI-3510I	0.920	0.696	0.737
FB-3510I	0.547	0.669	0.699
3510DB-3510I	0.779	0.800	0.839
3510S-3510I	0.537	0.787	0.822
AI-RP	0.961	0.941	0.949
FB-RP	0.776	0.655	0.611
3510DB-RP	0.910	0.865	0.865
3510S-RP	0.914	0.941	0.949
FB-AI	0.921	0.859	0.891
3510DB-AI	0.937	0.751	0.760
3510S-AI	0.931	0.376	0.372
3510DB-FB	0.817	0.700	0.713
3510S-FB	0.620	0.887	0.907
3510S-3510DB	0.792	0.730	0.743

Cl- compounds	N- compounds	BTEX	Benzoate	S- compounds	PAH	Other Organic	Tellurium	Mercury
0.429	0.411	0.412	0.422	0.429	0.377	0.595	0.294	0.381
0.465	0.421	0.511	0.454	0.544	0.516	0.495	0.563	0.383
0.574	0.556	0.589	0.539	0.652	0.574	0.564	0.642	0.461
0.826	0.721	0.769	0.650	0.882	0.796	0.859	0.481	0.800
0.802	0.804	0.844	0.784	0.957	0.796	0.850	0.908	0.886
0.543	0.480	0.368	0.452	0.556	0.452	0.530	0.535	0.550
0.852	0.643	0.556	0.707	0.625	0.623	0.567	0.739	0.688
0.922	0.826	0.831	0.801	1.000	0.891	0.844	0.955	0.887
0.594	0.613	0.700	0.659	0.731	0.718	0.798	0.679	0.549
0.678	0.708	0.753	0.734	0.781	0.751	0.821	0.740	0.646
0.750	0.500	0.625	0.518	0.833	0.600	0.742	0.429	0.700
0.838	0.844	0.881	0.848	0.952	0.891	0.900	0.966	0.900
0.571	0.419	0.429	0.515	0.273	0.519	0.627	0.568	0.533
1.000	0.683	0.692	0.764	0.455	0.720	0.719	0.765	0.727
0.909	0.847	0.918	0.855	1.000	0.945	0.912	1.000	0.860
0.203	0.212	0.176	0.160	0.200	0.160	0.209	0.176	0.169
0.923	0.849	0.889	0.823	0.875	0.892	0.903	0.811	0.898
0.727	0.713	0.724	0.668	0.795	0.684	0.707	0.839	0.737
0.594	0.570	0.619	0.592	0.621	0.597	0.541	0.556	0.652
0.893	0.717	0.659	0.738	0.872	0.720	0.728	0.914	0.836
0.800	0.816	0.771	0.722	0.815	0.803	0.774	0.868	0.805
0.947	0.882	0.910	0.867	0.867	0.885	0.928	0.849	0.940
0.669	0.629	0.671	0.623	0.733	0.624	0.670	0.817	0.757
0.701	0.664	0.683	0.657	0.657	0.635	0.609	0.596	0.662
0.873	0.772	0.737	0.743	0.898	0.740	0.718	0.933	0.855
0.767	0.758	0.754	0.689	0.792	0.770	0.751	0.855	0.822
1.000	0.933	0.932	0.915	1.000	0.931	0.959	0.962	1.000
0.750	0.731	0.800	0.631	0.667	0.619	0.742	0.667	0.889
1.000	0.857	1.000	0.827	1.000	0.947	0.864	1.000	0.800
1.000	0.943	0.951	0.910	1.000	0.967	0.960	1.000	1.000
0.892	0.806	0.859	0.806	0.875	0.843	0.801	0.941	0.862
0.818	0.707	0.768	0.721	0.946	0.662	0.746	0.958	0.840
0.444	0.339	0.370	0.370	0.273	0.459	0.383	0.420	0.296
0.900	0.656	0.733	0.662	0.647	0.710	0.636	0.846	0.600
0.955	0.845	0.925	0.859	0.943	0.906	0.834	0.957	0.805
0.778	0.710	0.725	0.707	1.000	0.679	0.685	0.926	0.818

Copper	Chromium	Cadmium	Arsenic	Other Metals	Sulfate reduction	C cycling	C Deg	C Fix
0.429	0.300	0.333	0.362	0.360	0.569	0.377	0.388	0.333
0.451	0.219	0.385	0.495	0.491	0.560	0.456	0.451	0.477
0.616	0.385	0.543	0.561	0.563	0.611	0.563	0.548	0.622
0.667	0.389	1.000	0.590	0.667	0.636	0.648	0.615	0.793
0.966	0.774	0.826	0.833	0.892	0.916	0.863	0.855	0.897
0.714	0.429	0.455	0.500	0.500	0.508	0.519	0.547	0.400
0.810	0.793	0.429	0.608	0.818	0.793	0.681	0.699	0.611
0.947	0.846	0.714	0.859	0.957	0.947	0.896	0.898	0.887
0.682	0.444	0.636	0.660	0.640	0.783	0.656	0.666	0.620
0.788	0.588	0.742	0.714	0.661	0.829	0.717	0.719	0.706
0.273	0.231	1.000	0.571	0.692	0.652	0.538	0.500	0.700
0.961	0.814	0.905	0.876	0.913	0.959	0.898	0.901	0.884
0.714	0.500	0.429	0.659	0.565	0.545	0.541	0.571	0.419
0.714	0.789	0.400	0.750	0.765	0.892	0.732	0.760	0.630
1.000	0.793	0.833	0.900	0.952	1.000	0.931	0.937	0.909
0.271	0.174	0.244	0.148	0.191	0.199	0.197	0.188	0.232
0.805	0.560	1.000	0.804	0.860	0.878	0.834	0.822	0.884
0.852	0.672	0.679	0.727	0.798	0.825	0.743	0.726	0.814
0.727	0.464	0.714	0.619	0.547	0.671	0.618	0.622	0.600
0.773	0.814	0.583	0.692	0.872	0.834	0.780	0.785	0.763
0.902	0.811	0.632	0.823	0.806	0.865	0.837	0.824	0.892
0.873	0.688	1.000	0.846	0.885	0.898	0.859	0.851	0.891
0.845	0.704	0.569	0.723	0.759	0.776	0.704	0.676	0.816
0.788	0.543	0.800	0.624	0.613	0.697	0.669	0.663	0.689
0.848	0.860	0.697	0.690	0.893	0.836	0.803	0.794	0.838
0.904	0.821	0.617	0.824	0.827	0.862	0.811	0.790	0.897
0.958	0.846	1.000	0.933	0.968	0.978	0.949	0.945	0.966
0.636	0.571	1.000	0.697	0.750	0.730	0.692	0.688	0.714
0.818	0.867	1.000	0.813	0.800	0.933	0.839	0.857	0.765
1.000	0.840	1.000	0.885	0.943	0.958	0.959	0.962	0.882
0.922	0.822	0.951	0.882	0.806	0.911	0.874	0.851	0.971
0.882	0.750	0.818	0.663	0.788	0.733	0.756	0.756	0.758
0.441	0.333	0.310	0.405	0.363	0.447	0.362	0.359	0.373
0.714	0.905	0.556	0.733	0.700	0.725	0.657	0.661	0.643
1.000	0.871	0.913	0.908	0.822	0.942	0.894	0.891	0.911
0.871	0.667	0.692	0.656	0.692	0.645	0.769	0.783	0.707

Methane oxidation	Methane generation	N Cycling	Nred	Nitrification	N Fixation
0.286	0.556	0.401	0.397	0.376	0.474
0.433	0.586	0.501	0.501	0.496	0.514
0.485	0.667	0.572	0.569	0.555	0.618
0.440	1.000	0.568	0.559	0.525	0.706
0.625	0.818	0.875	0.849	0.902	0.891
0.313	0.750	0.485	0.465	0.458	0.619
0.813	0.600	0.728	0.723	0.722	0.765
0.800	0.929	0.889	0.860	0.907	0.934
0.630	0.769	0.702	0.691	0.675	0.802
0.633	0.778	0.749	0.739	0.721	0.833
0.368	1.000	0.408	0.457	0.358	0.333
0.692	0.867	0.913	0.883	0.949	0.921
0.385	1.000	0.515	0.532	0.449	0.615
0.684	0.714	0.779	0.810	0.769	0.667
0.833	1.000	0.909	0.911	0.935	0.911
0.065	0.362	0.131	0.182	0.169	0.185
0.686	1.000	0.810	0.788	0.800	0.908
0.724	0.800	0.771	0.746	0.795	0.793
0.483	0.840	0.669	0.634	0.680	0.768
0.765	0.852	0.849	0.837	0.852	0.885
0.821	0.867	0.832	0.835	0.808	0.877
0.719	1.000	0.840	0.838	0.815	0.897
0.719	0.804	0.752	0.710	0.799	0.782
0.531	0.846	0.712	0.695	0.707	0.774
0.789	0.857	0.861	0.839	0.870	0.914
0.806	0.870	0.818	0.808	0.818	0.846
0.826	1.000	0.940	0.925	0.958	0.944
0.565	1.000	0.506	0.522	0.464	0.545
0.875	1.000	0.847	0.938	0.744	0.714
0.905	1.000	0.934	0.917	0.945	0.951
0.800	0.931	0.868	0.880	0.950	0.950
0.652	0.742	0.676	0.747	0.764	0.833
0.214	0.265	0.373	0.382	0.333	0.434
0.652	0.667	0.756	0.747	0.782	0.727
0.857	0.917	0.920	0.881	0.952	0.959
0.619	0.769	0.759	0.726	0.780	0.805