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*Supplement of*

## **Patterns of (trace) metals and microorganisms in the Rainbow hydrothermal vent plume at the Mid-Atlantic Ridge**

**Sabine Haalboom et al.**

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**Supplementary material to “Patterns of (trace) metals and microorganisms in the Rainbow hydrothermal vent plume at the Mid-Atlantic Ridge” by Haalboom et al.**

*Tables*

Table S1. Dissimilarity (%) between biotopes based on SIMPER results of microbial classes.

	Above Plume	Plume	Below plume	Near-bottom water
Above Plume				
Plume	44.83			
Below plume	25.39	35.37		
Near-bottom water	32.79	47.13	35.47	
Sediment	44.46	56.42	46.6	32.89

Table S2-A. Comparison of (trace) metal data with work of German et al. (1991), Edmond et al. (1995) and Edmonds and German (2004).

Location	Sample	Depth [m]	Fe [nM]	Ca [nM]	Al [nM]	Mn [pM]	V [pM]	Cu [pM]	Zn [pM]	Co [pM]	Pb [pM]	Y [pM]	Reference
TAG	14	3477	56	34	1.4	140	260	980		9	15	3.5	German et al. (1991)
TAG	18	3364	87	39	1.2	140	393	620	205	8		6.7	German et al. (1991)
TAG	19	3392	67	35	1.4		323	760	167	6	11	3.7	German et al. (1991)
TAG	22	3337	192	53	1.6	180	888	15440	512	71	21	8.7	German et al. (1991)
TAG	403T	3340	50		0.52	189	239	1405					Edmond et al. (1995)
TAG	403B	3440	38		0.62	193	174	647					Edmond et al. (1995)
TAG	409T	3081	4		1.06	190	32	40					Edmond et al. (1995)
TAG	409B	3231	5		0.3	339	27	20					Edmond et al. (1995)
Rainbow	SAP 05_1	2025	278.8	83.6	0.3	184	1389	2386	287	47.2	24.5	13	Edmonds and German (2004)
Rainbow	SAP 06_1	1940	26.4	51	1	144	143	134	178	4.1	19.4	2.3	Edmonds and German (2004)
Rainbow	SAP 07_1	2150	18	72.2	3.4	216	98	153		5	24.6	2.4	Edmonds and German (2004)
Rainbow	SAP 09_1	2100	128.4	38.6	0.9	45	504	1781	751	43.5	7.2	4.1	Edmonds and German (2004)
Rainbow	27	2077	355.43	700.31	2.15	202.78	1910.64	5355.68	2030.09	117.40	32.97	15.61	This study
Rainbow	42	2209	38.42	446.55	0.04	22.47	205.65	396.33	25.47	15.71		0.97	This study
Rainbow	44	2002	132.73	1605.10	2.14	263.64	894.23	1355.13	729.65	77.71	37.23	10.05	This study
Rainbow	45	2166	171.11	1052.82	1.19	116.28	1213.40	1487.52	81.95	44.95	28.69	12.81	This study
Rainbow	46	2280	139.98	455.14	1.67	129.49	917.24	1195.15	353.27	31.14	26.29	9.99	This study

Table S2-B. Comparison of REE data with work of Edmonds and German (2004).

Location	Sample	Depth [m]	La [pM]	Ce [pM]	Pr [pM]	Nd [pM]	Sm [pM]	Eu [pM]	Gd [pM]	Tb [pM]	Dy [pM]	Ho [pM]	Er [pM]	Tm [pM]	Yb [pM]	Lu [pM]	Reference
Rainbow	SAP05_1	2025	6.830	3.630	1.330	5.190	0.951	0.379	0.823	0.150	0.917	0.196	0.543	0.072	0.418	0.061	Edmonds and German (2004)
Rainbow	SAP06_1	1940	1.180	1.290	0.272	1.117	0.217	0.071	0.203	0.035	0.194	0.038	0.108	0.013	0.093	0.013	Edmonds and German (2004)
Rainbow	SAP07_1	2150	1.540	2.380	0.392	1.563	0.293	0.083	0.225	0.041	0.229	0.044	0.121	0.015	0.091	0.012	Edmonds and German (2004)
Rainbow	SAP09_1	2100	2.300	1.380	0.439	1.788	0.330	0.180	0.294	0.050	0.307	0.064	0.174	0.022	0.137	0.018	Edmonds and German (2004)
Rainbow	27	2077	7.179	4.343	1.389	5.250	1.019	0.498	1.149	0.193	1.285	0.274	0.717	0.093	0.521	0.072	This study
Rainbow	42	2209	0.480		0.124		0.090	0.036	0.102	0.010	0.077	0.024	0.054	0.006	0.043	0.003	This study
Rainbow	44	2002	5.562	3.247	1.160	4.037	0.842	0.302	0.984	0.147	0.956	0.228	0.554	0.068	0.410	0.051	This study
Rainbow	45	2166	6.130	3.305	1.308	4.658	0.979	0.375	1.148	0.187	1.252	0.271	0.694	0.089	0.526	0.072	This study
Rainbow	46	2280	4.884	2.972	1.059	3.839	0.803	0.303	0.933	0.155	0.976	0.205	0.537	0.070	0.415	0.059	This study

Figures

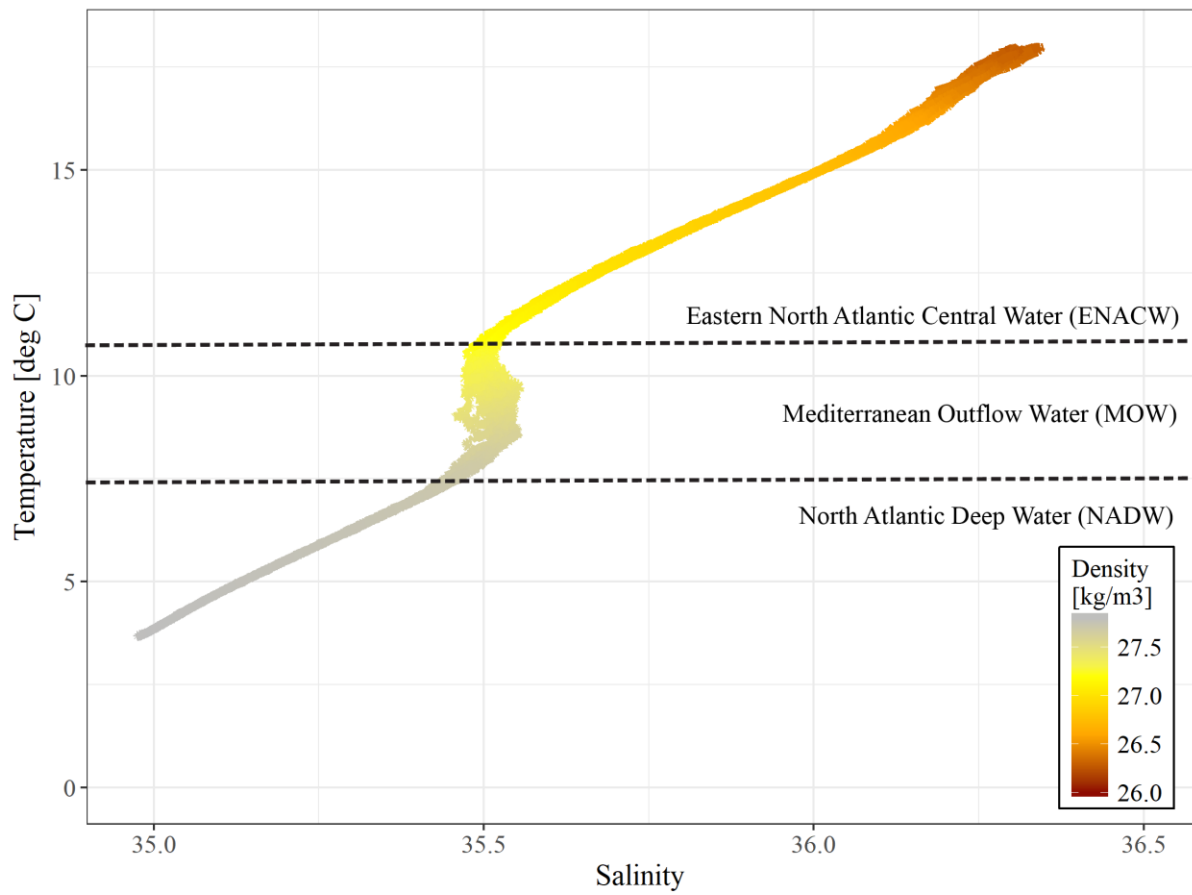


Figure S1: Temperature – salinity plot of all CTD casts showing the three distinct water masses found in the Rainbow area.

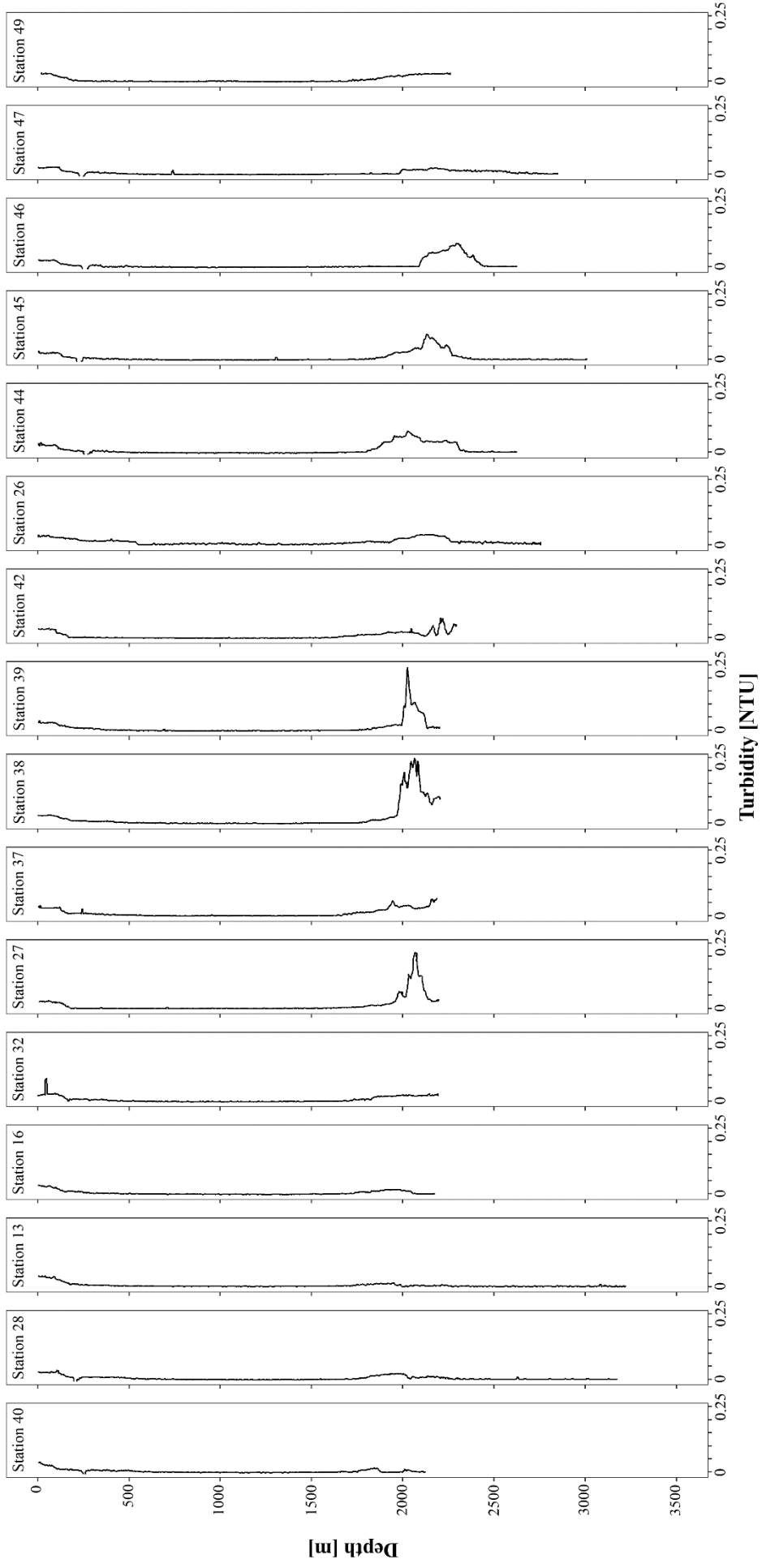


Figure S2. CTD casts of discussed stations showing the measured turbidity

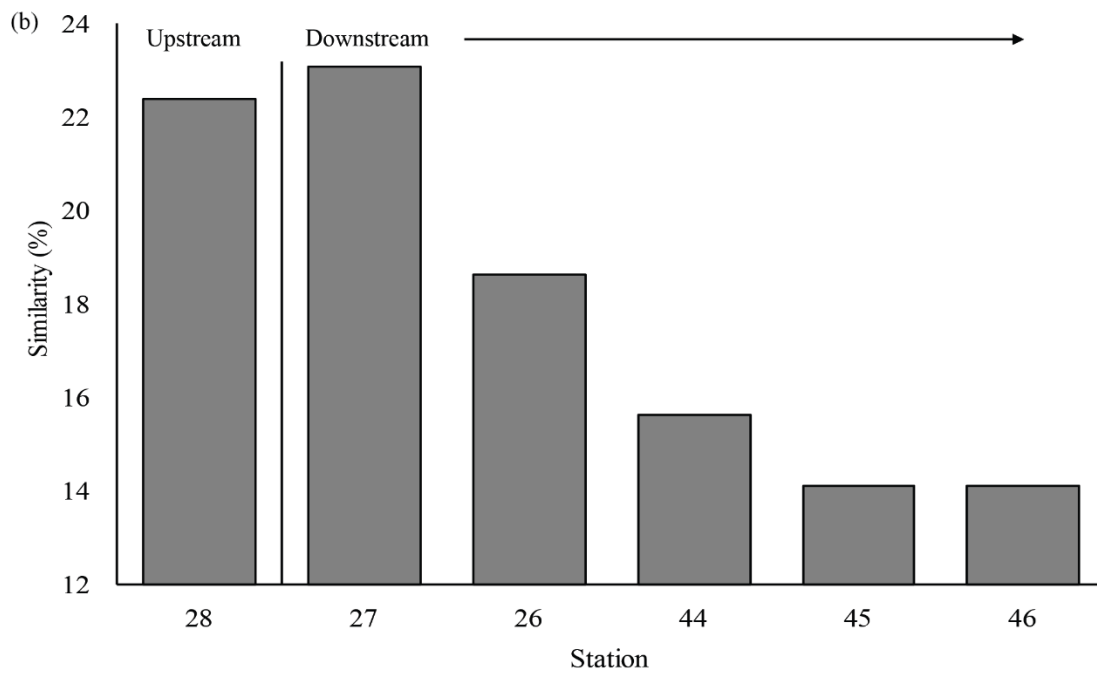
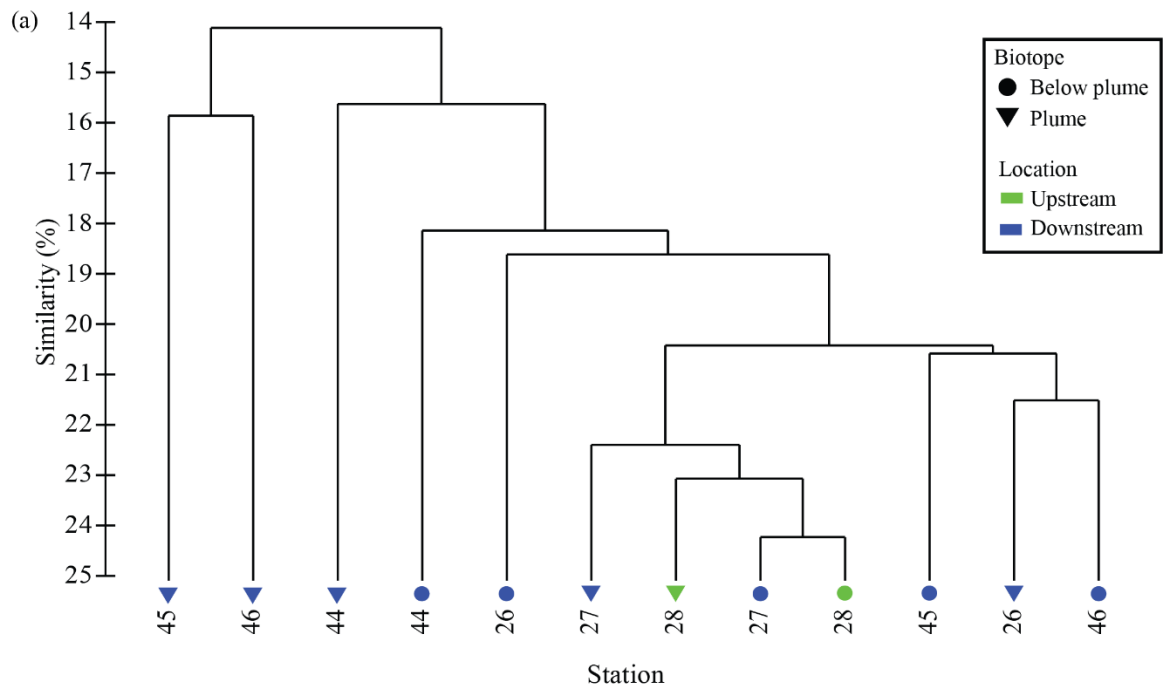


Figure S3: Group average clustering of plume and below plume microbial communities. (a) Dendrogram results (b) Similarity between plume and below plume samples.

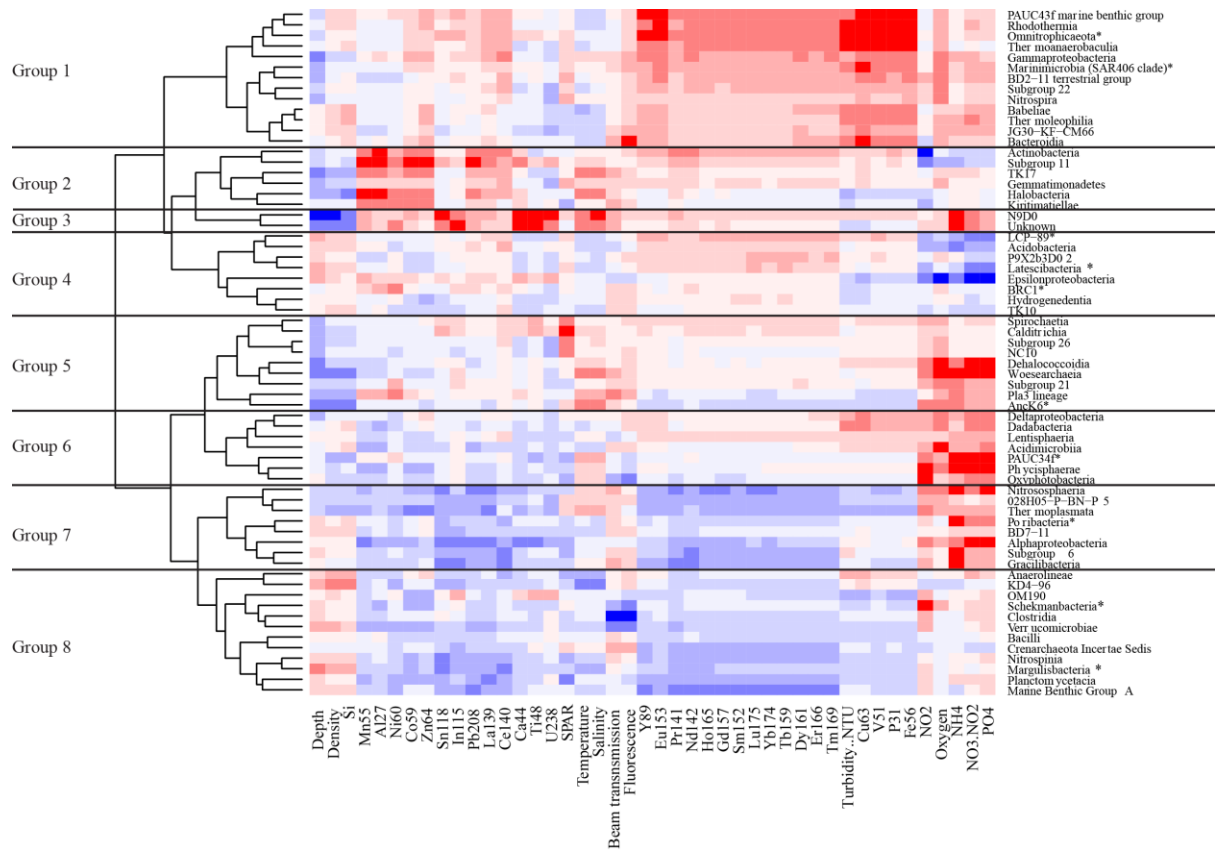


Figure S4: Pearson correlation heatmap of the correlation between all environmental variables and all classes that were present in multiple samples within plume samples. Colour intensity refers to the strength of the correlation, red indicates a positive correlation and blue indicates a negative correlation. Dendrograms based on hierarchical clustering and groups based on clustering to 8 distinct groups.