Table 2. Average (Avg) concentration ± standard deviation (SD) for air (dissolved) and Milli-Q (MQ; filter) blanks, quality controls (QCs), and reference materials during dissolved and leachable particulate trace metal analyses. The limit of detection (LOD) for dissolved and leachable particulate trace analyses were determined from three times the standard deviation of the air blanks. An internal QC surface seawater sample was made from the North Pacific (NP) EXPORTS cruise in August 2018. Reference materials (SAFe S, GSP) with consensus values available on the GEOTRACES website (https://www.geotraces.org/standards-and-reference-materials/) were used. Notation 'na' = 'not applicable' was used when no value was available.

Dissolved Trace Metals

	Mn	Fe	Co*	Ni	Cu*	Zn	Cd	Pb
	nM	nM	pM	nM	nM	nM	nM	pM
SD of Air Blank Averages	0.00 (n = 7)	0.009 (n = 7)	0.1 (n = 7)	0.01 (n = 7)	0.00 (n = 7)	0.015 (n = 7)	0.1 (n = 7)	0.4 (n = 7)
Air Blank LOD	0.002	0.028	0.2	0.02	0.01	0.045	0.2	1.3
NP QC Bottle 1	0.85 ± 0.07 (n = 43)	0.120 ± 0.062 (n = 29)	32.3 ± 3.1 (n = 5)	4.62 ± 0.16 (n = 39)	1.17 ± 0.10 (n = 6)	0.500 ± 0.084 (n = 35)	47.2 ± 4.5 (n = 37)	22.5 ± 2.3 (n = 40)
GSP	0.74 ± 0.09 (n = 16)	0.178 ± 0.058 (n = 14)	7.1 ± 0.6 (n = 7)	2.50 ± 0.21 (n = 16)	0.55 ± 0.04 (n = 8)	0.037 ± 0.031 (n = 9)	1.5 ± 1.4 (n = 4)	68.8 ± 2.6 (n = 13)
GSP, consensus	0.778 ± 0.034 (n = 9)	0.155 ± 0.045 (n = 11)	na	2.595 ± 0.100 (n = 11)	0.574 ± 0.053 (n = 9)	0.030 ± 0.052 (n = 10)	2 ± 2 (n = 4)	62 ± 5 (n = 11)
SAFe S	0.80 ± 0.07 (n = 9)	0.095 ± 0.017 (n = 9)	4.4 ± 0.7 (n =7)	2.31 ± 0.08 (n = 12)	0.50 ± 0.02 (n = 8)	0.111 ± 0.046 (n = 11)	2.1 ± 1.3 (n = 4)	51.0 ± 1.7 (n = 12)
SAFe S, consensus**	0.81 ± 0.06	0.095 ± 0.008	4.9 ± 1.2	2.34 ± 0.09	0.53 ± 0.05	0.071 ± 0.010	1.1 ± 0.3	49.2 ± 2.3

Leachable Particulate Elements

		P	V	Mn	Fe	Added Fe57	Co	Ni	Cu	Zn	Cd	Pb
		nM	nM	nM	nM	nM	pM	nM	nM	nM	nM	pM
0.4 µm MQ Blank	Avg	0.21	0.0003	0.0009	0.03	0.03	0.12	0.002	0.002	0.05	0.08	0.1
	SD	0.07	0.0002	0.0005	0.01	0.01	0.03	0.001	0.001	0.04	0.03	0.1
	n	14	18	20	15	14	17	20	17	12	21	16
	LOD	0.22	0.0005	0.0014	0.04	0.04	0.08	0.002	0.003	0.13	0.09	0.2
0.4 µm MQ Blank for Fe57 Rig	Avg	1.0	0.0004	0.0009	0.026	0.052	0.13	0.0017	0.003	0.028	0.09	0.2
	SD	0.8	0.0002	0.0005	0.006	0.027	0.02	0.0005	0.001	0.009	0.02	0.2
	n	11	8	11	6	7	9	9	10	6	8	10
	LOD	2.4	0.0005	0.0015	0.017	0.081	0.07	0.0015	0.004	0.028	0.05	0.5
5 µm MQ Blank	Avg	0.15	0.0003	0.0009	0.028	0.030	0.14	0.005	0.008	0.036	0.08	0.1
	SD	0.07	0.0001	0.0003	0.013	0.013	0.04	0.002	0.002	0.014	0.03	0.1
	n	13	19	18	19	19	18	20	14	13	20	18
	LOD	0.21	0.0003	0.0010	0.039	0.039	0.13	0.005	0.005	0.043	0.08	0.2
5 µm MQ Blank for Fe57 Rig	Avg	0.9	0.0003	0.0013	0.027	0.032	0.1	0.007	0.009	0.035	0.08	0.1
	SD	0.8	0.0002	0.0004	0.005	0.004	0.1	0.004	0.001	0.016	0.04	0.1
	n	10	8	11	8	6	9	12	10	8	9	10
	LOD	2.4	0.0006	0.0013	0.016	0.011	0.2	0.012	0.004	0.048	0.12	0.2

*Dissolved Co and Cu concentrations are reported for UV-oxidized samples only.

**Reference sample consensus concentrations were converted to units of nM (Mn, Fe, Ni, Cu, and Zn) or pM (Co, Cd, and Pb) using average seawater density of 1.025 kg/L.