

Supporting Information

Using single particle ICP-MS for monitoring metal-containing particles in tap waters

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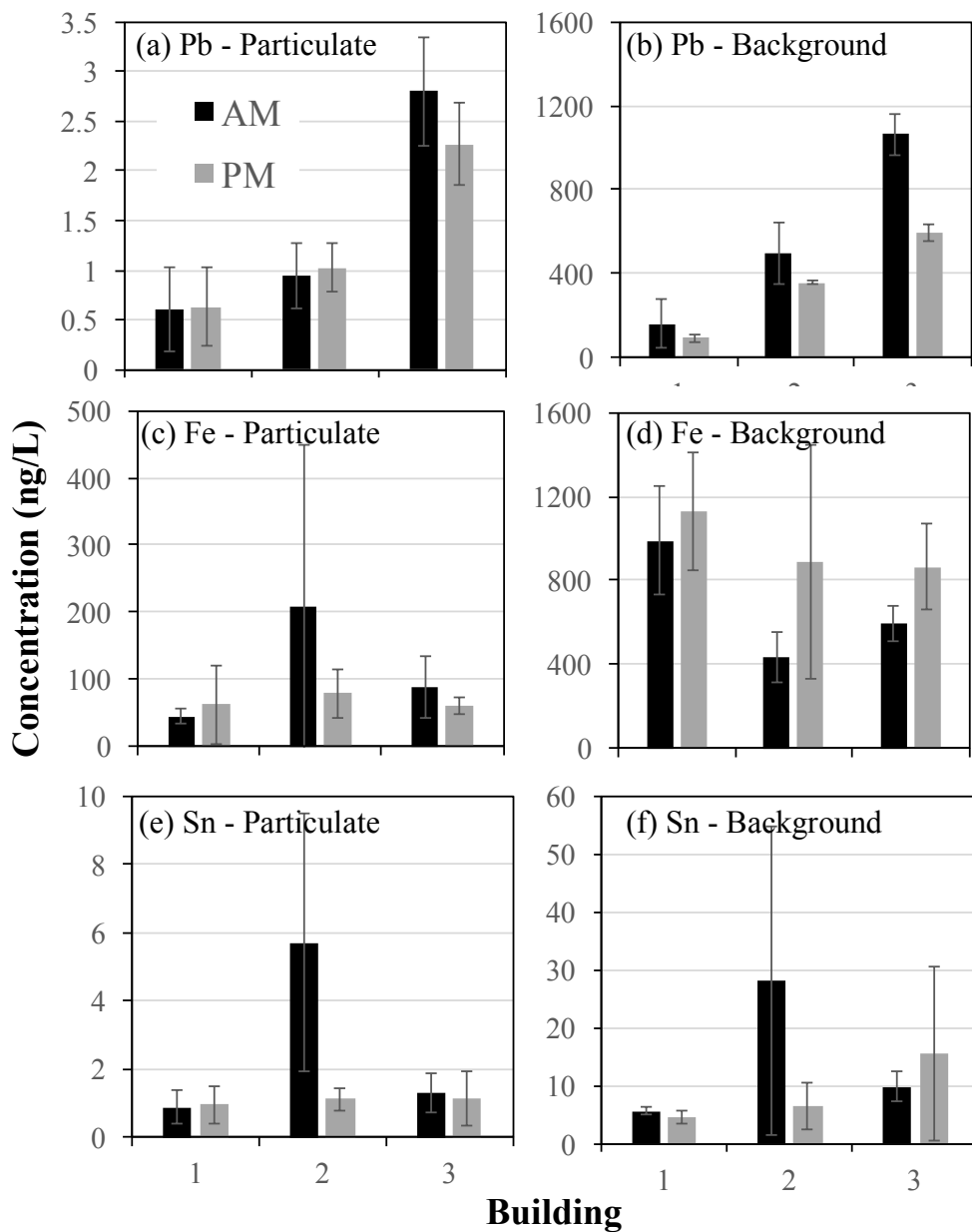


Figure S1. Average particulate (a – Pb; c – Fe; e – Sn) and background (b – Pb; d – Fe; f – Sn) elemental concentrations in the morning (AM) and afternoon (PM) samples of tap water collected from three buildings determined by spICP-MS. Error bars represent plus/minus one standard deviation.

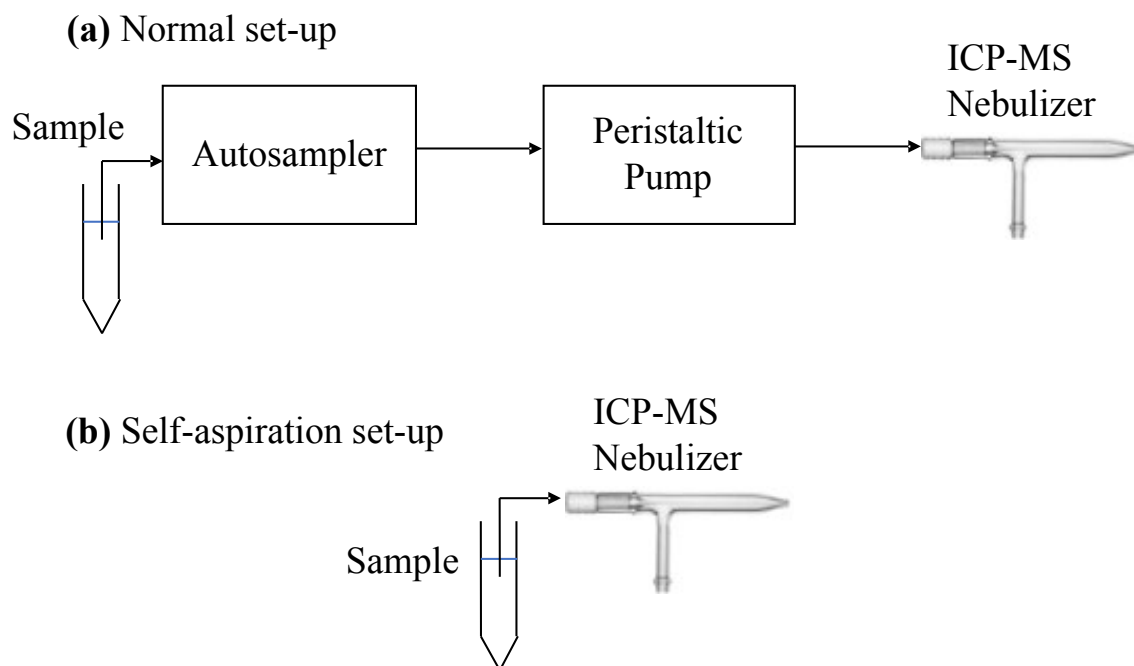


Figure S2. (a) Normal, and (b) modified self-aspiration set-up for spICP-MS analysis of Cu particles in tap water.

Table S1. Background and particulate lead concentrations measured by spICP-MS at three locations during four consecutive days.

Day 1 pm and Day 3 were not sampled on ASU campus because of limited access to the buildings.

<i>Sample (Time)</i>	<i>Building 1</i>				<i>Building 2</i>				<i>Building 3</i>			
	<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>		<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>		<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>	
	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>
Day 1 - AM	476	181	1.2	0.85	476	181	1.2	0.85	1726	213	3.9	1.6
Day 1- PM	152	59.5	0.38	0.35								
Day 2 - AM	178	66.2	0.34	0.18	668	485	0.57	0.67	2059	254	4.8	0.48
Day 2 - PM	143	47.2	0.58	0.14	445	270	0.7	1	1062	182	4.2	0.45
Day 3 - AM	134	43.9	0.62	0.23								
Day 3 - PM	90.4	33.6	1.6	0.11								
Day 4- AM	155	41.8	1.4	0.06	690	492	1.1	1.3	1857	266	4.7	1.3
Day 4 - PM	143	58	1.7	0.17	449	249	1	1.4	959	177	3.5	0.91

Table S2. Background and particulate Fe concentrations measured by spICP-MS at three locations during four consecutive days. Day 1 pm and Day 3 were not sampled on ASU campus because of limited access to the buildings.

<i>Sample (Time)</i>	<i>Building 1</i>				<i>Building 2</i>				<i>Building 3</i>			
	<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>		<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>		<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>	
	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>
<i>Day 1 - AM</i>	595	764	54.3	53.7	369	402	890	84.2	518	662	84.2	66.1
<i>Day 1- PM</i>	960	1163	34.4	37.6								
<i>Day 2 - AM</i>	893	1132	31	61.7	361	336	71.4	66.1	528	501	49.4	53.6
<i>Day 2 - PM</i>	766	926	37	58.9	488	497	66.1	142	829	613	94.8	33.5
<i>Day 3 - AM</i>	923	1179	34.1	36.6								
<i>Day 3 - PM</i>	944	1231	237	25.8								
<i>Day 4 - AM</i>	1385	1042	35.7	47.1	684	447	66.5	61.4	612	745	213	63.4
<i>Day 4 - PM</i>	1290	1738	27.4	36.7	1281	1289	50.8	54.4	931	1088	67.8	40.9

Table S3. Background and particulate Sn concentrations measured by spICP-MS at three locations during four consecutive days. Day 1 pm and Day 3 were not sampled on ASU campus because of limited access to the buildings.

<i>Sample (Time)</i>	<i>Building 1</i>				<i>Building 2</i>				<i>Building 3</i>			
	<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>		<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>		<i>Background (ng/L)</i>		<i>Particulate (ng/L)</i>	
	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>	<i>F125</i>	<i>Bulk</i>
<i>Day 1 - AM</i>	7.9	5.3	1.5	1.3	9.4	8	1.7	1.8	8.9	14.3	1.3	1
<i>Day 1- PM</i>	4.5	5.2	0.81	2								
<i>Day 2 - AM</i>	6	5.3	0.91	0.9	4.8	106	2.4	14.1	8.7	6.2	1.2	2.2
<i>Day 2 - PM</i>	6.2	4.2	0.84	1.3	9.3	9.5	0.96	1.5	7	45.2	1.7	1.7
<i>Day 3 - AM</i>	6.4	4.7	0.29	0.81								
<i>Day 3 - PM</i>	5.3	3.8	1.2	0.63								
<i>Day 4- AM</i>	4.9	5.1	1.2	0.13	7.4	33.3	1	13.2	7.7	13.5	1.7	0.38
<i>Day 4 - PM</i>	2.7	4.9	0.6	0.11	3.1	4.4	1.2	0.81	5.5	4.2	0.77	0.32

Table S4. Background and particulate Cu concentrations measured using modified (direct self-aspiration) spICP-MS. Additional samples (n = 14) were collected from Building 2 to test the modified method. Only detects (n = 7) are reported below.

<i>Sample</i>	<i>Background ($\mu\text{g/L}$)</i>	<i>Particulate (ng/L)</i>
1	8.8	14.9
2	7.7	24.9
3	28.1	110
4	15	37.7
5	59	136
6	50.5	81.4
7	52.2	76.3