

Appendix L Summary Statistics

Table L1 Summary Hourly Mean Statistics – NO₂ (µg m⁻³)

Statistic	Fixed or Mobile	Mobile Exercises							
		14-Mar	10-Apr	21-May	08-Jul	13-Jul	09-Aug	15-Aug	ALL
Minimum	Kerbside	38	38	44	51	14	28	70	14
	Townhead	23	21	18	10	8	13	31	8
	Mobile – 0.80 m	50	53	55	44	27	9	20	9
	Mobile – 1.68 m	56	65	66	49	36	18	30	18
2nd Quartile	Kerbside	38	38	44	51	14	28	70	14
	Townhead	23	21	18	10	8	13	31	8
	Mobile – 0.80 m	50	53	55	44	27	9	20	9
	Mobile – 1.68 m	56	65	66	49	36	18	30	18
Median	Kerbside	47	56	57	96	18	33	99	56
	Townhead	27	26	22	22	9	15	40	25
	Mobile – 0.80 m	60	67	73	60	36	25	43	58
	Mobile – 1.68 m	68	86	90	72	47	25	50	69
Mean	Kerbside	49	60	61	100	20	36	100	63
	Townhead	30	30	23	23	9	17	39	25
	Mobile – 0.80 m	60	67	72	63	39	26	43	56
	Mobile – 1.68 m	71	82	89	74	49	29	48	68
3rd Quartile	Kerbside	38	38	44	51	14	28	70	14
	Townhead	23	21	18	10	8	13	31	8
	Mobile – 0.80 m	50	53	55	44	27	9	20	9
	Mobile – 1.68 m	56	65	66	49	36	18	30	18
Maximum	Hope St	71	92	105	150	33	60	121	150
	Townhead	40	48	32	36	10	27	43	48
	Mobile – 0.80 m	71	79	84	81	59	43	57	84
	Mobile – 1.68 m	92	97	117	98	72	49	59	117

Figure L1 Hourly Average NO₂ Concentrations Box Plots - Mobile vs Fixed (µg m⁻³)

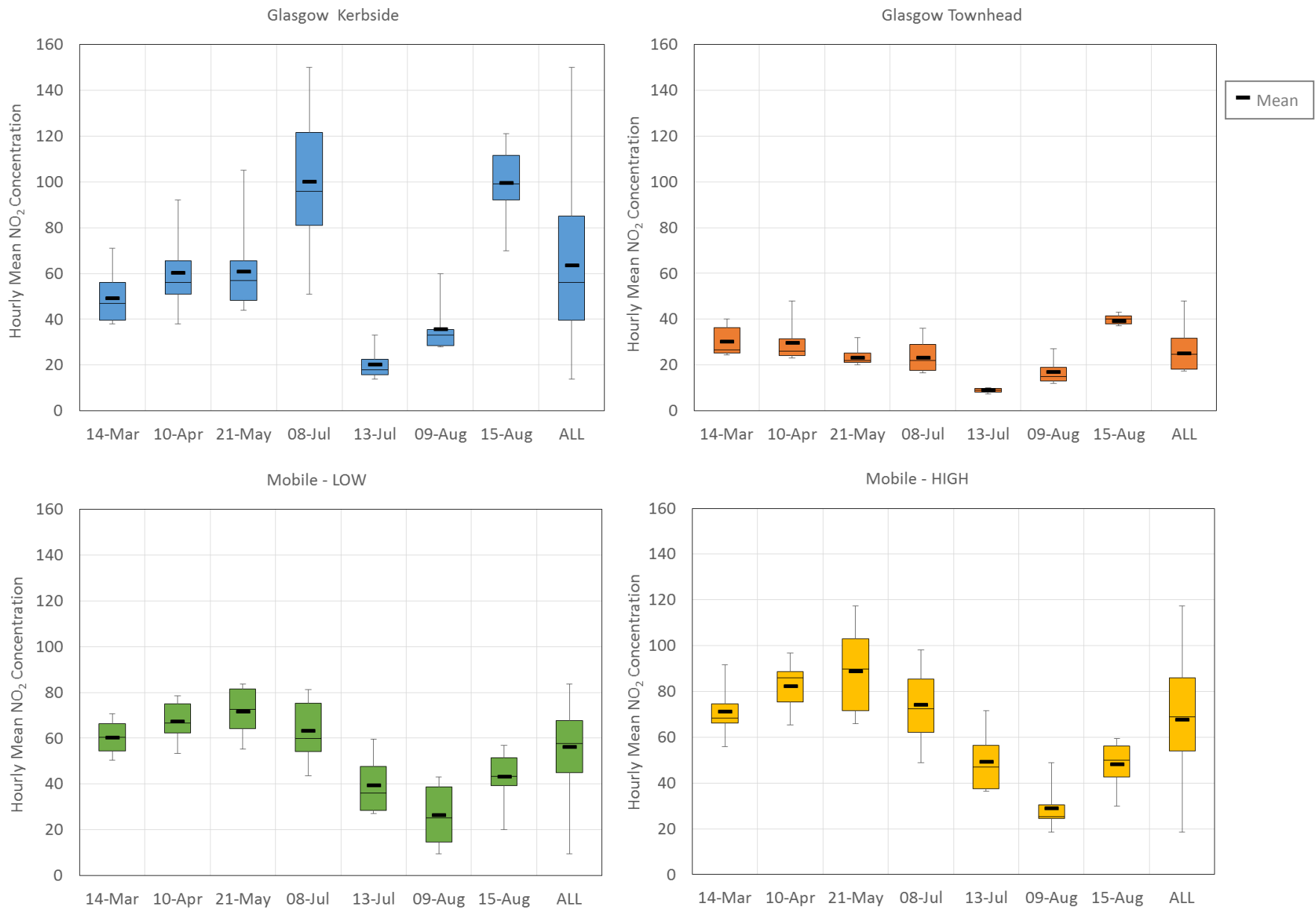


Table L2 Summary Hourly Mean Statistics – NO ($\mu\text{g m}^{-3}$)

Statistic	Fixed or Mobile	Mobile Exercises							
		14-Mar	10-Apr	21-May	08-Jul	13-Jul	09-Aug	15-Aug	ALL
Minimum	Kerbside	18	27	43	49	18	30	157	18
	Townhead	2	3	3	1	2	4	9	1
	Mobile – 0.80 m	17	19	4	12	5	14	50	4
	Mobile – 1.68 m	4	14	12	25	13	17	57	4
2nd Quartile	Kerbside	30	44	63	170	24	33	246	35
	Townhead	3	5	4	3	2	4	13	3
	Mobile – 0.80 m	30	27	12	27	5	18	94	25
	Mobile – 1.68 m	23	26	17	43	15	25	103	25
Median	Kerbside	31	45	68	231	26	35	279	63
	Townhead	4	6	4	5	3	5	16	5
	Mobile – 0.80 m	49	41	31	39	5	29	130	39
	Mobile – 1.68 m	38	33	40	65	17	31	137	41
Mean	Kerbside	50	52	69	212	28	41	255	102
	Townhead	6	6	4	6	3	5	25	7
	Mobile – 0.80 m	56	44	35	54	5	27	119	54
	Mobile – 1.68 m	46	39	41	70	18	32	126	54
3rd Quartile	Kerbside	65	59	75	270	32	37	281	138
	Townhead	9	7	4	8	3	6	29	7
	Mobile – 0.80 m	78	58	44	62	5	34	140	68
	Mobile – 1.68 m	69	51	47	70	18	41	149	67
Maximum	Hope St	114	88	106	321	38	84	296	321
	Townhead	13	10	5	18	3	8	66	66
	Mobile – 0.80 m	122	82	105	129	5	39	187	187
	Mobile – 1.68 m	113	74	106	154	27	46	186	186

Figure L2 Hourly Average NO Concentrations Box Plots - Mobile vs Fixed ($\mu\text{g m}^{-3}$)

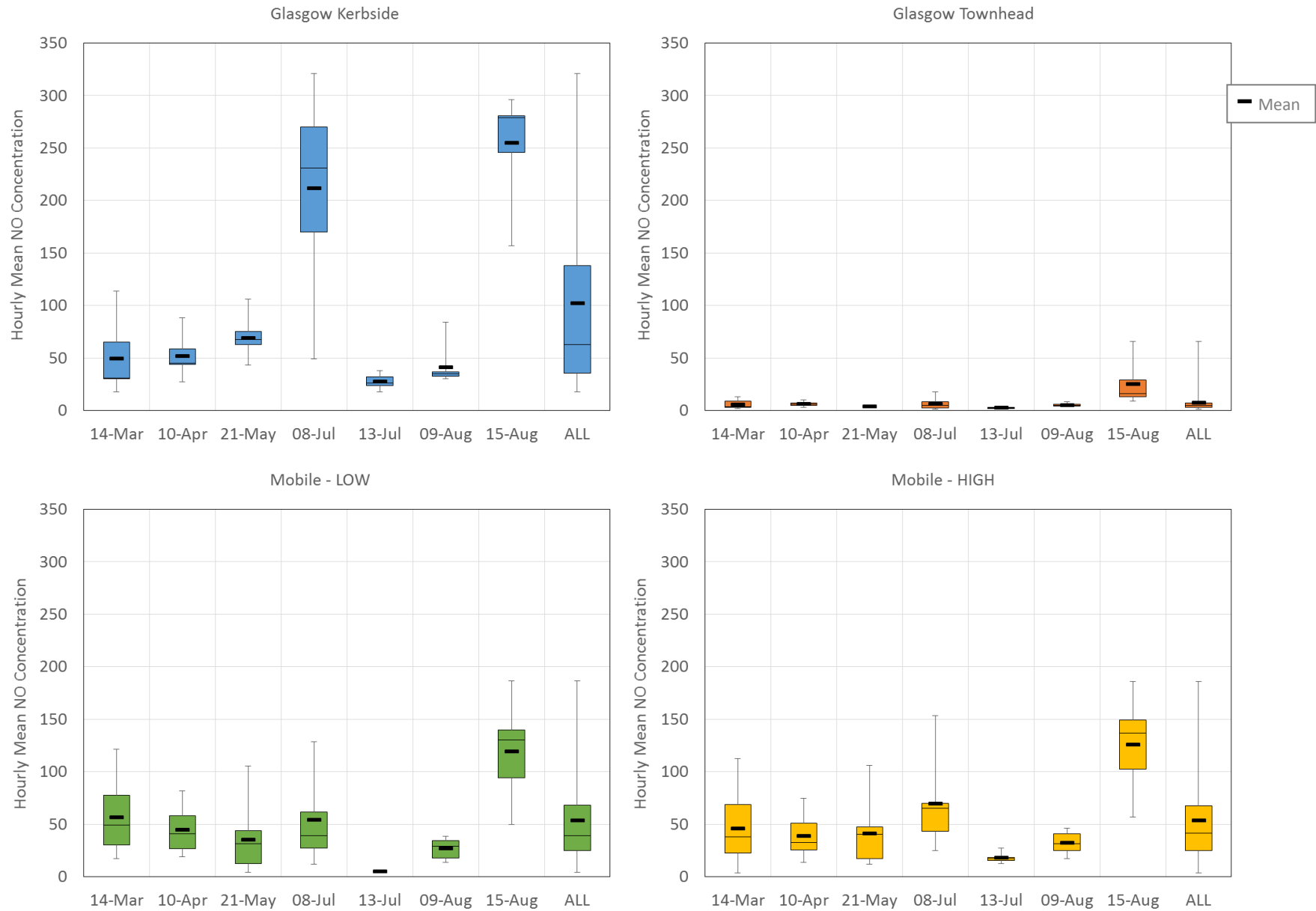


Table L3 Summary Hourly Mean Statistics – PM_{2.5} (µg m⁻³)

Statistic	Fixed or Mobile	Mobile Exercises								
		14-Mar	10-Apr	21-May	08-Jul	23-Jun	13-Jul	09-Aug	15-Aug	ALL
Minimum	Kerbside	16	6	-	8	-	-	5	10	5
	Townhead	3	1	1	2	2	0	3	-	0
	Mobile – 0.80 m	16	15	13	13	13	11	14	14	11
	Mobile – 1.68 m	16	15	13	13	13	11	14	14	11
2nd Quartile	Kerbside	17	9	-	9	-	-	6	15	9
	Townhead	6	3	4	5	6	1	4	-	3
	Mobile – 0.80 m	22	16	14	14	15	11	14	16	14
	Mobile – 1.68 m	21	16	14	14	15	12	14	16	14
Median	Kerbside	18	10	-	10	-	-	7	17	10
	Townhead	8	4	5	5	6	1	5	-	5
	Mobile – 0.80 m	27	18	14	15	16	11	14	18	16
	Mobile – 1.68 m	27	18	14	15	17	13	15	18	16
Mean	Kerbside	19	11	-	10	-	-	7	17	12
	Townhead	9	4	5	5	6	2	5		5
	Mobile – 0.80 m	29	18	14	15	16	12	15	17	17
	Mobile – 1.68 m	28	18	14	15	16	13	15	17	17
3rd Quartile	Kerbside	19	13	-	12	-	-	7	20	16
	Townhead	13	5	7	5	7	2	6	-	7
	Mobile – 0.80 m	35	20	15	15	17	12	15	18	18
	Mobile – 1.68 m	33	20	15	16	18	14	15	18	18
Maximum	Hope St	23	18	-	13	-	-	9	22	23
	Townhead	18	6	9	8	8	4	8	-	18
	Mobile – 0.80 m	43	22	17	16	18	13	15	20	43
	Mobile – 1.68 m	40	21	17	16	18	19	15	20	40

Figure L3 Hourly Average PM_{2.5} Concentrations Box Plots - Mobile vs Fixed (µg m⁻³)

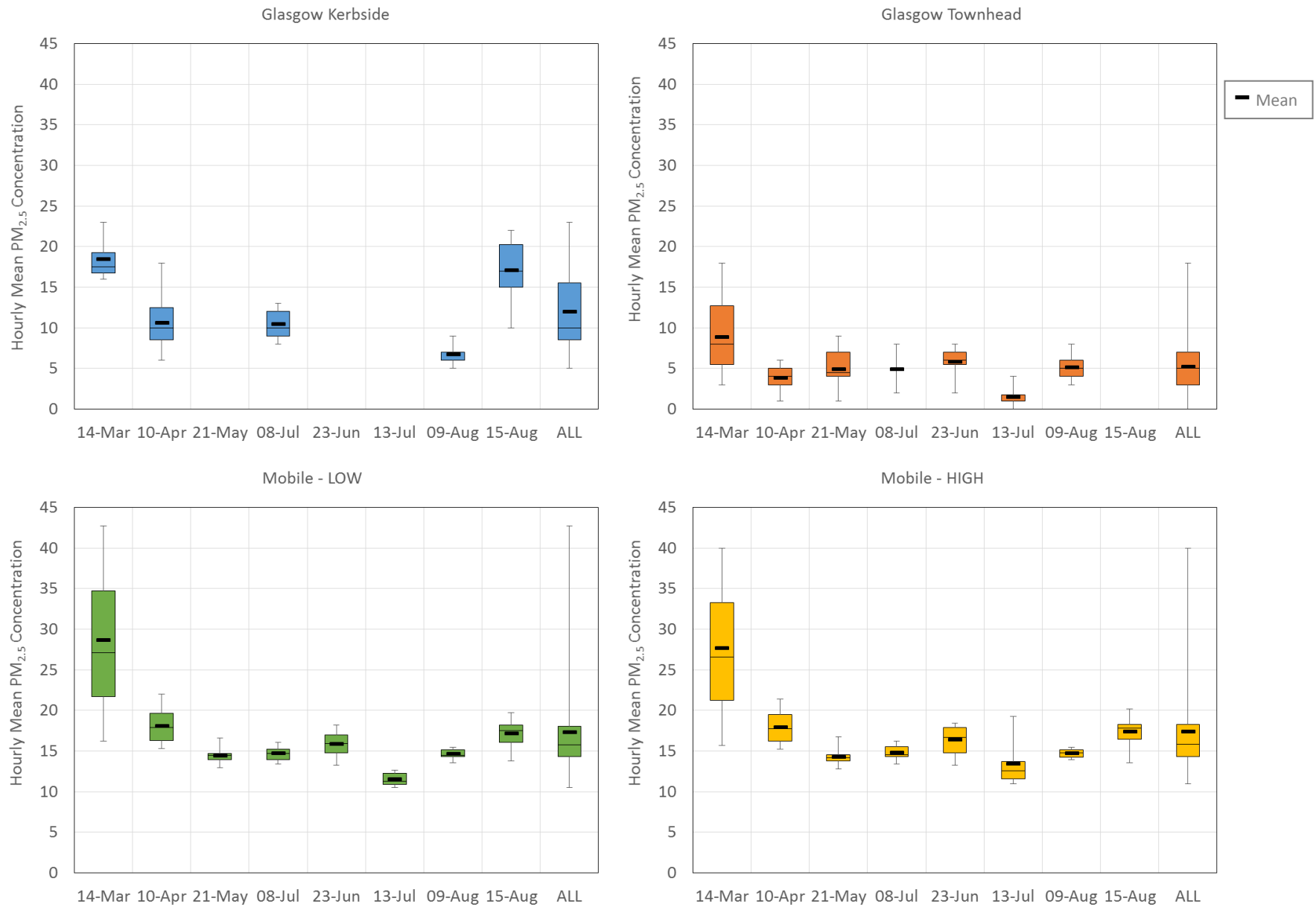


Table L4 Summary Hourly Mean Statistics – PM₁₀ (µg m⁻³)

Statistic	Fixed or Mobile	Mobile Exercises								
		14-Mar	10-Apr	21-May	08-Jul	23-Jun	13-Jul	09-Aug	15-Aug	ALL
Minimum	Kerbside	-	12	-	9	21	6	8	9	6
	Townhead	7	4	-	7	6	5	6	3	3
	Mobile – 0.80 m	22	23	7	13	16	2	10	12	2
	Mobile – 1.68 m	16	25	2	8	7	0	6	7	0
2nd Quartile	Kerbside	-	15	-	12	23	8	10	22	12
	Townhead	10	6	-	10	10	6	7	6	8
	Mobile – 0.80 m	55	35	9	15	20	3	11	21	15
	Mobile – 1.68 m	48	35	5	10	17	1	7	19	11
Median	Kerbside	-	17	-	15	25	9	11	28	17
	Townhead	16	8	-	10	12	8	8	10	10
	Mobile – 0.80 m	84	39	14	18	26	3	12	25	23
	Mobile – 1.68 m	73	39	9	14	32	6	8	23	20
Mean	Kerbside	-	17	-	17	28	9	11	25	19
	Townhead	15	9	-	11	12	8	8	8	10
	Mobile – 0.80 m	72	43	15	20	31	5	16	25	31
	Mobile – 1.68 m	63	43	11	14	30	6	11	23	28
3rd Quartile	Kerbside	-	19	-	17	31	11	13	31	25
	Townhead	20	12	-	13	15	9	9	11	13
	Mobile – 0.80 m	88	50	18	24	43	8	22	29	40
	Mobile – 1.68 m	79	46	13	18	40	9	16	28	37
Maximum	Hope St	-	22	-	34	41	12	15	33	41
	Townhead	23	15	-	18	17	11	11	12	23
	Mobile – 0.80 m	105	74	33	31	54	11	25	40	105
	Mobile – 1.68 m	105	66	27	26	51	16	19	36	105

Figure L4 Hourly Average PM₁₀ Concentrations Box Plots - Mobile vs Fixed (µg m⁻³)

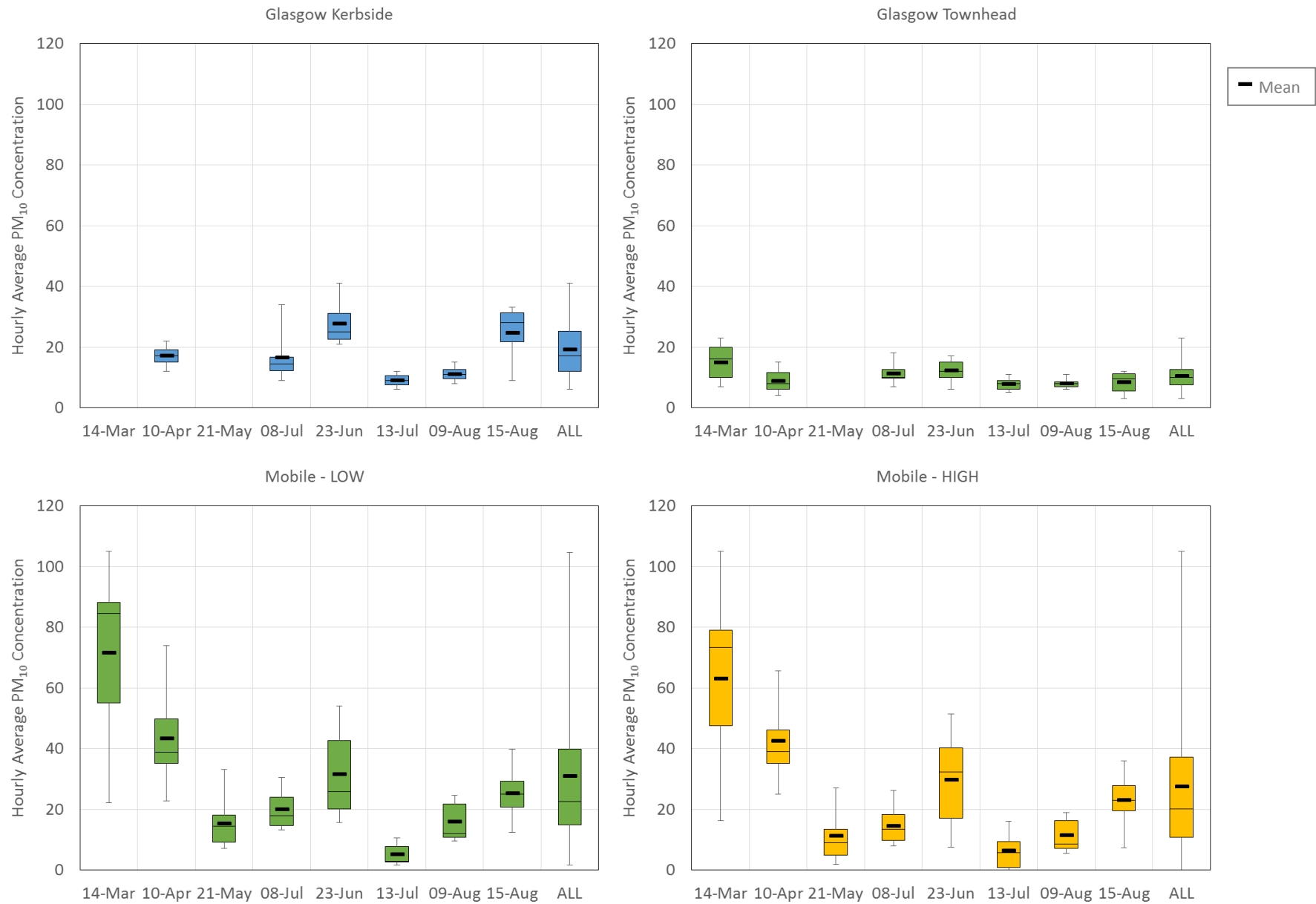
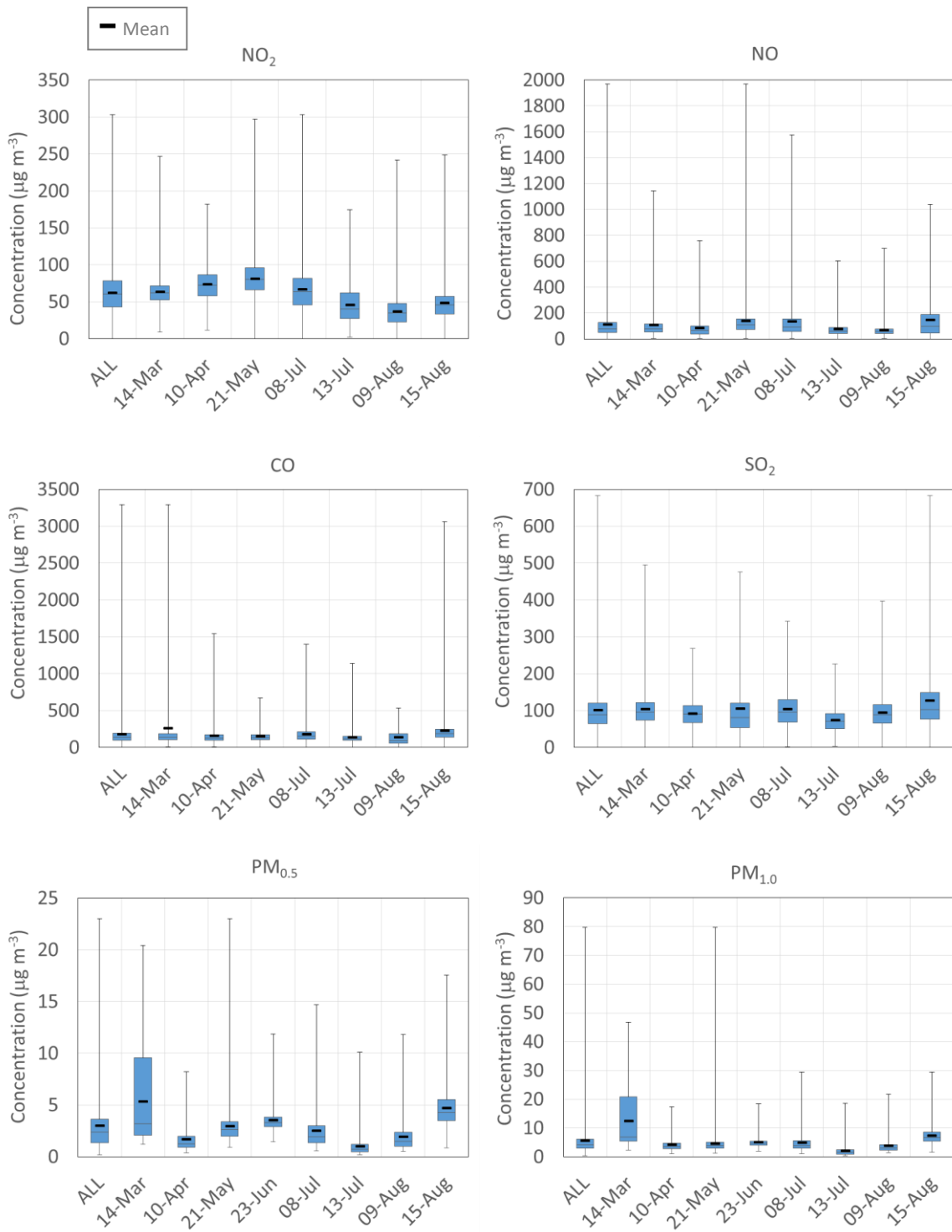


Table L5 Summary Statistics and Percentage Difference in Measured 1-minute Average Concentrations at 0.80 m and 1.68 m

Statistic	Pollutant	Mobile Exercises ($\mu\text{g m}^{-3}$, N Particles cm^{-2})									P - ALL
		14-Mar	10-Apr	21-May	23-Jun	08-Jul	13-Jul	09-Aug	15-Aug	ALL	
Min	NO ₂	9	12	0	-	0	2	0	0	0	-
2nd Q		52	58	66	-	46	27	23	34	43	1.1%
Med		62	72	80	-	63	40	35	45	61	7.4%
Mean		63	73	81	-	67	45	36	48	62	7.6%
3rd Q		71	87	96	-	82	62	48	57	79	10.8%
Max		246	182	297	-	303	174	242	249	303	19.4%
Min	NO	1	1	2	-	4	0	1	0	0	-
2nd Q		53	37	72	-	58	41	44	48	48	12.1%
Med		77	64	109	-	94	61	58	95	77	5.9%
Mean		107	81	138	-	133	74	66	146	109	2.9%
3rd Q		115	101	155	-	156	89	77	188	127	1.9%
Max		1145	756	1968	-	1576	603	700	1037	1968	-3.9%
Min	CO	11	8	4	-	1	0	1	3	0	-
2nd Q		100	99	106	-	111	99	54	141	100	7.0%
Med		134	125	132	-	151	120	89	184	135	5.2%
Mean		254	156	148	-	175	138	135	220	177	3.9%
3rd Q		183	171	173	-	212	150	188	250	194	3.6%
Max		3293	1541	671	-	1396	1137	535	3063	3293	0.2%
Min	SO ₂	0	1	0	-	2	3	0	1	0	-
2nd Q		74	67	54	-	69	51	66	77	65	40.1%
Med		96	91	81	-	96	71	88	102	89	25.1%
Mean		104	91	104	-	103	73	94	127	100	20.6%
3rd Q		122	113	120	-	130	91	117	148	120	14.6%
Max		495	269	477	-	342	227	397	683	683	-10.2%
Min	PM _{0.5}	1	0	1	1	1	0	1	1	0	-
2nd Q		2	1	2	3	1	0	1	3	1	-0.5%
Med		3	1	3	3	2	1	2	4	2	-0.2%
Mean		5	2	3	4	3	1	2	5	3	-0.2%
3rd Q		10	2	3	4	3	1	2	6	4	-0.1%
Max		20	8	23	12	15	10	12	18	23	0.0%
Min	PM _{1.0}	2	1	1	2	1	0	1	2	0	-
2nd Q		5	3	3	4	3	1	2	5	3	4.0%
Med		7	4	4	5	4	2	3	7	4	1.4%
Mean		12	4	4	5	5	2	4	7	6	-1.2%
3rd Q		21	5	5	5	6	2	4	9	6	-1.2%
Max		47	17	80	18	29	19	22	30	80	-5.9%
Min	PM _{2.5}	13	11	10	11	11	9	12	11	9	1.6%
2nd Q		20	16	13	13	14	11	13	15	13	-1.0%
Med		26	18	14	14	16	11	14	17	15	-1.7%
Mean		28	18	14	15	16	12	15	17	17	-2.3%
3rd Q		35	20	15	15	18	13	15	19	18	-2.6%
Max		83	31	115	26	46	62	30	38	115	-6.1%

Statistic	Pollutant	Mobile Exercises ($\mu\text{g m}^{-3}$, N Particles cm^{-2})									P - ALL
		14-Mar	10-Apr	21-May	23-Jun	08-Jul	13-Jul	09-Aug	15-Aug	ALL	
Min	PM _{5.0}	13	9	4	8	6	3	9	9	3	79.1%
2nd Q		41	28	12	14	17	7	16	20	15	4.5%
Med		62	36	16	17	26	10	19	23	22	-1.4%
Mean		59	37	18	18	26	13	20	24	28	-4.1%
3rd Q		76	44	19	20	31	14	23	27	33	-5.7%
Max		191	111	301	134	266	476	55	86	476	-13.5%
Min	PM ₁₀	1	1	0	0	0	0	0	0	0	-
2nd Q		45	27	5	8	17	3	6	15	11	-8.1%
Med		69	37	10	13	28	6	12	21	22	-11.1%
Mean		66	43	16	17	32	13	14	25	31	-12.0%
3rd Q		86	53	16	20	39	12	19	29	40	-12.5%
Max		316	300	931	322	773	904	69	246	931	-14.0%
Min	TPM	17	12	6	9	9	5	10	12	5	-21.4%
2nd Q		63	45	20	26	34	15	22	34	26	-21.4%
Med		83	56	27	33	48	19	29	40	39	-21.4%
Mean		85	66	35	39	54	26	32	46	50	-21.4%
3rd Q		103	74	36	44	63	26	37	50	60	-21.4%
Max		590	424	1238	510	1110	1377	129	371	1377	-21.4%
Min	BC	0.1	-0.5	-0.6	-0.4	-0.4	-0.6	-0.5	0.2	-0.6	-
2nd Q		1.2	1.2	1.2	1.2	1.8	0.6	0.9	2.7	1.3	-7.8%
Med		1.9	2.0	2.1	1.9	2.8	1.3	1.7	4.6	2.2	-4.6%
Mean		3.3	2.9	3.2	2.9	4.7	2.2	2.5	6.8	3.6	-2.8%
3rd Q		3.2	3.2	3.6	3.1	4.9	2.5	3.0	8.4	3.9	-2.6%
Max		92.5	45.4	64.7	43.2	60.3	29.7	72.5	40.8	92.5	-0.1%
Min	UFP	1608	3684	4541	5787	7652	4050	4096	6126	1608	-
2nd Q		10034	12507	13882	17200	20022	11544	10278	20808	13734	11.3%
Med		14823	18040	19745	23399	26135	15989	14343	28707	20162	6.9%
Mean		19821	23380	25462	27875	34161	20087	17393	38107	26054	4.7%
3rd Q		22577	26748	28570	30344	36097	22234	20945	43915	29598	3.8%
Max		172383	203999	345311	748760	329527	140116	120811	450732	748760	-2.4%

Figure L5 1-minute Average Pollutant Concentrations - Box Plots



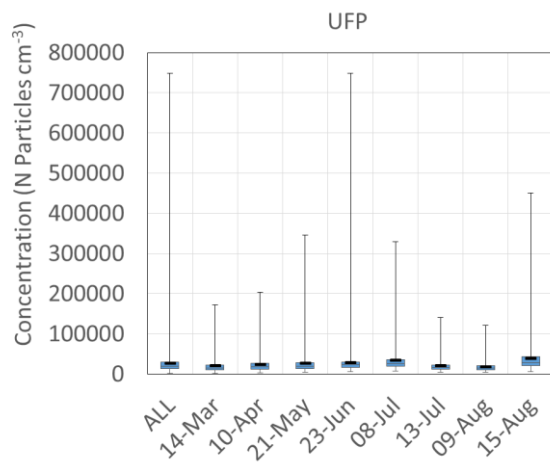
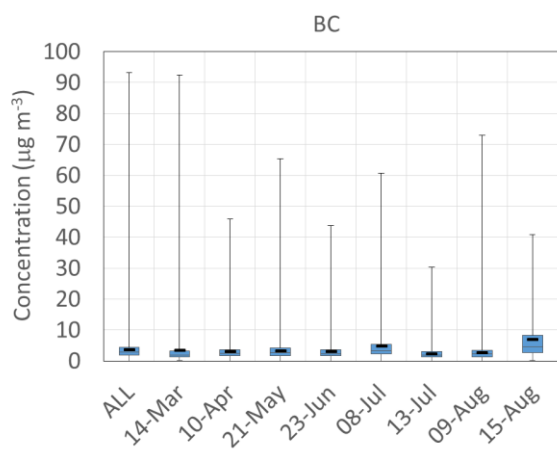
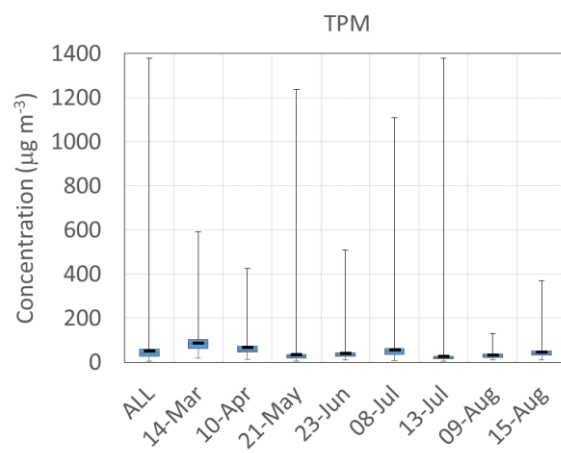
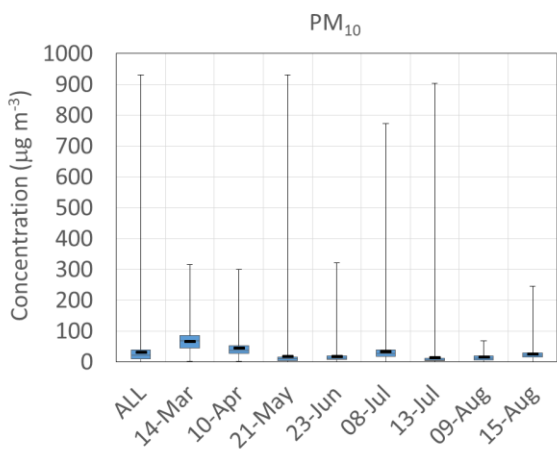
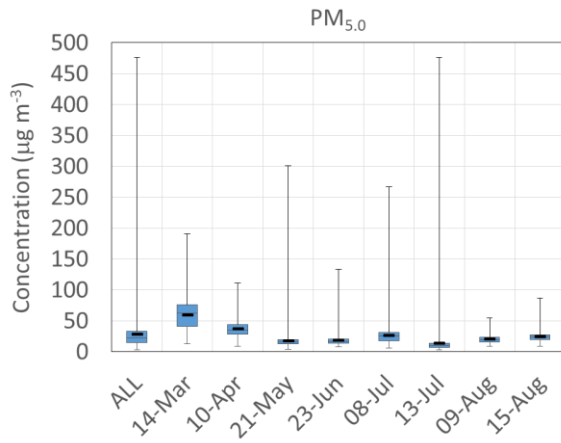
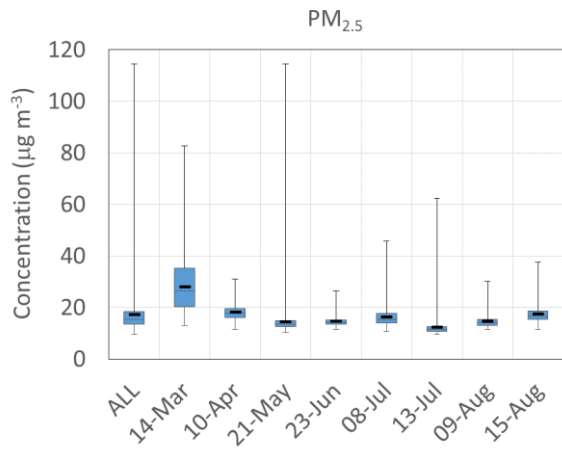


Table L6 Summary Statistics and Percentage Difference in Measured 1-minute Average Concentrations at 0.80 m and 1.68 m by Street

Statistic	Pollutant	Mobile Exercises ($\mu\text{g m}^{-3}$ and N Particles cm^{-2})				P – All Exercises			
		Hope St	Sauchiehall St/Buchanan St	High St	City Centre	Hope St	Sauchiehall St/Buchanan St	High St	City Centre
Min	NO ₂	0	2	2	0	-	-	-	-
2nd Q		47	42	45	43	-1.2%	-4.2%	0.2%	1.1%
Med		70	61	62	61	7.7%	7.8%	8.5%	7.4%
Mean		72	65	65	62	8.3%	9.6%	9.3%	7.6%
3rd Q		90	84	84	79	11.8%	15.4%	14.1%	10.8%
Max		286	285	207	303	21.6%	29.4%	23.6%	19.4%
Min	NO	0	0	1	0	-	-	-	-
2nd Q		47	39	40	48	18.3%	24.6%	0.4%	12.1%
Med		80	62	67	77	5.8%	15.5%	-6.4%	5.9%
Mean		121	83	88	109	-0.3%	11.6%	-8.7%	2.9%
3rd Q		138	93	108	127	-1.7%	10.3%	-10.2%	1.9%
Max		1723	1968	756	1968	-11.4%	0.5%	-15.6%	-3.9%
Min	CO	11	1	4	0	-	-	-	-
2nd Q		96	95	101	100	12.5%	8.8%	17.4%	7.0%
Med		126	128	148	135	7.4%	4.7%	7.5%	5.2%
Mean		180	137	217	177	2.5%	4.0%	0.9%	3.9%
3rd Q		176	158	234	194	2.8%	2.6%	-0.2%	3.6%
Max		3131	1727	3063	3293	-8.2%	-5.9%	-12.4%	0.2%
Min	SO ₂	1	2	7	0	-	-	-	-
2nd Q		62	70	73	65	34.3%	21.6%	41.1%	40.1%
Med		88	90	96	89	18.9%	13.8%	29.0%	25.1%
Mean		99	105	113	100	15.1%	10.0%	23.5%	20.6%
3rd Q		122	121	127	120	9.1%	6.9%	20.0%	14.6%
Max		664	418	440	683	-12.0%	-7.5%	0.2%	-10.2%
Min	PM _{0.5}	0	0	0	0	-	-	-	-
2nd Q		2	1	1	1	0.0%	-3.6%	0.0%	-0.5%
Med		3	2	2	2	0.0%	-3.6%	0.0%	-0.2%
Mean		3	3	3	3	0.0%	-3.6%	0.0%	-0.2%
3rd Q		4	4	3	4	0.0%	-3.6%	0.0%	-0.1%
Max		20	12	11	23	0.0%	-3.6%	0.0%	0.0%
Min	PM _{1.0}	1	1	0	0	-	-	-	-
2nd Q		3	3	3	3	4.4%	4.0%	6.3%	4.0%
Med		5	4	4	4	1.8%	-0.2%	2.6%	1.4%
Mean		6	5	5	6	0.6%	-1.5%	1.3%	-1.2%
3rd Q		7	6	6	6	-0.1%	-3.1%	-0.1%	-1.2%
Max		47	24	24	80	-3.7%	-7.7%	-4.6%	-5.9%
Min	PM _{2.5}	10	10	10	9	2.3%	0.3%	4.7%	1.6%
2nd Q		14	13	13	13	-0.8%	-2.0%	2.4%	-1.0%
Med		16	15	15	15	-1.8%	-2.9%	1.7%	-1.7%

Statistic	Pollutant	Mobile Exercises ($\mu\text{g m}^{-3}$ and N Particles cm^{-2})				P – All Exercises			
		Hope St	Sauchiehall St/Buchanan St	High St	City Centre	Hope St	Sauchiehall St/Buchanan St	High St	City Centre
Mean		18	16	17	17	-2.5%	-3.3%	1.3%	-2.3%
3rd Q		19	18	18	18	-3.0%	-3.7%	0.9%	-2.6%
Max		83	38	39	115	-7.4%	-6.3%	-1.4%	-6.1%
Min	PM _{5.0}	5	5	4	3	67.8%	37.0%	55.2%	79.1%
2nd Q		16	15	15	15	6.2%	4.4%	7.7%	4.5%
Med		23	23	23	22	-1.5%	-1.2%	1.9%	-1.4%
Mean		29	27	27	28	-5.2%	-2.8%	-0.4%	-4.1%
3rd Q		35	33	32	33	-7.4%	-4.6%	-2.0%	-5.7%
Max		266	93	112	476	-17.3%	-9.3%	-8.3%	-13.5%
Min		PM ₁₀	0	0	0	0	-	-	-
2nd Q	13		12	14	11	33.0%	-6.5%	8.1%	-8.1%
Med	25		27	27	22	1.7%	-6.5%	-5.1%	-11.1%
Mean	39		35	36	31	-10.5%	-6.5%	-8.9%	-12.0%
3rd Q	50		50	46	40	-15.5%	-6.5%	-11.3%	-12.5%
Max	867		291	296	931	-30.8%	-6.5%	-18.6%	-14.0%
Min	TPM	7	8	5	5	126.1%	-81.8%	90.1%	-21.4%
2nd Q		28	26	26	26	-1.9%	-24.4%	-6.9%	-21.4%
Med		40	41	39	39	-13.8%	-15.8%	-15.1%	-21.4%
Mean		52	48	47	50	-20.6%	-13.4%	-18.1%	-21.4%
3rd Q		63	60	59	60	-24.1%	-10.7%	-20.9%	-21.4%
Max		1110	365	362	1377	-40.8%	-1.8%	-30.1%	-21.4%
Min	BC	-0.6	-0.6	-0.5	-0.6	-	-	-	-
2nd Q		1.4	1.2	1.3	1.3	16.3%	0.0%	-11.8%	-7.8%
Med		2.4	2.0	2.1	2.2	3.7%	0.0%	-11.8%	-4.6%
Mean		4.3	2.9	3.0	3.6	-3.3%	0.0%	-11.8%	-2.8%
3rd Q		4.6	3.3	3.5	3.9	-3.9%	0.0%	-11.8%	-2.6%
Max		92.5	43.2	23.7	92.5	-12.1%	0.0%	-11.8%	-0.1%
Min	UFP	3691	4096	3114	1608	65.5%	0.0%	115.5%	-
2nd Q		15883	14301	12165	13734	9.4%	0.0%	18.4%	11.3%
Med		22548	19128	18285	20162	4.4%	0.0%	7.2%	6.9%
Mean		29027	24093	21976	26054	1.8%	0.0%	3.5%	4.7%
3rd Q		32318	26796	27335	29598	0.8%	0.0%	-0.2%	3.8%
Max		198269	345311	122599	748760	-6.2%	0.0%	-11.7%	-2.4%

Figure L6 Percentage Difference in Measured 1-minute Average NO_2 , NO , CO , SO_2 , $PM_{0.5}$ and $PM_{1.0}$ Concentrations at 0.80 m and 1.68 m by Street

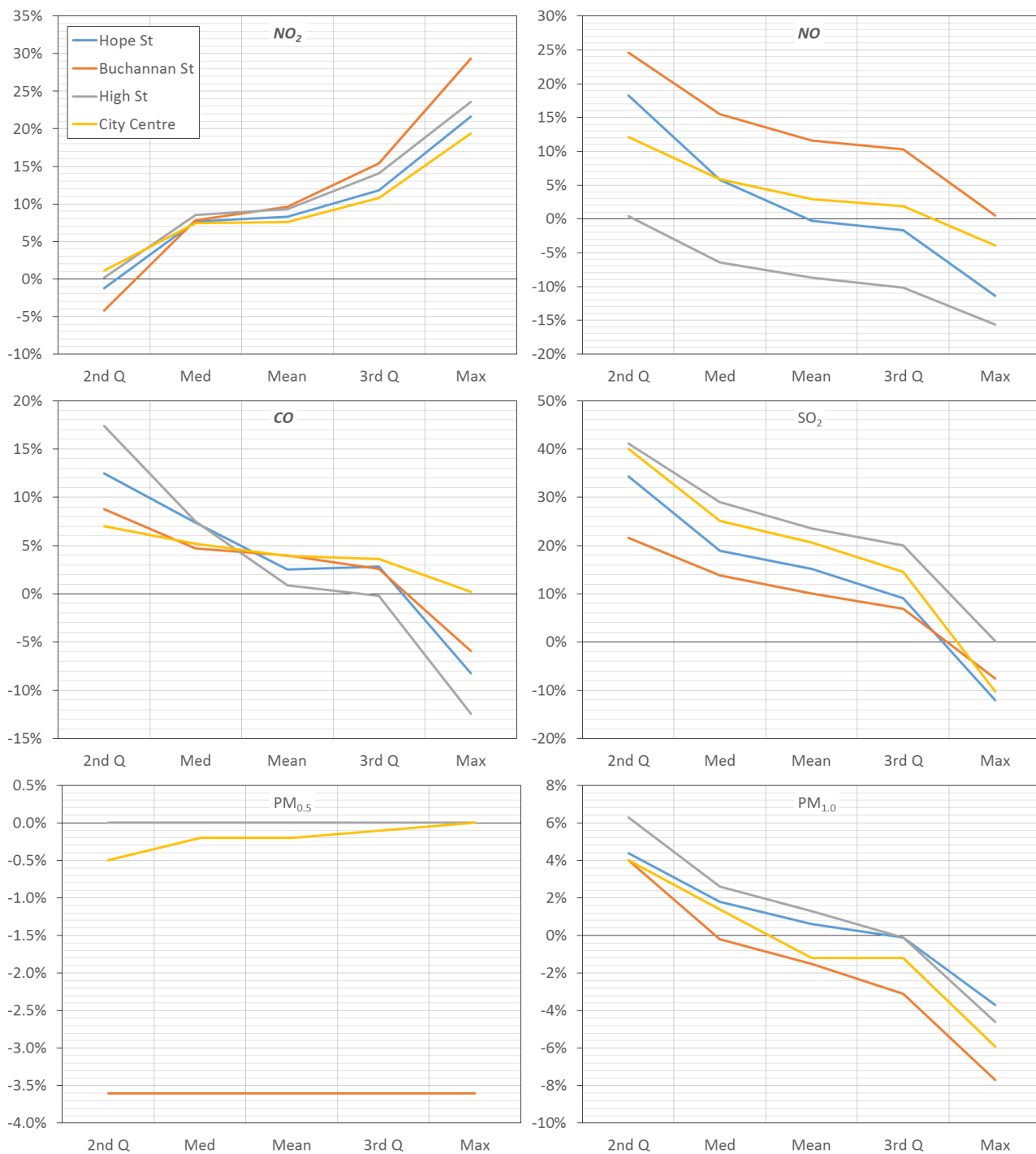


Figure L7 Percentage Difference in Measured 1-minute Average $PM_{2.5}$, $PM_{5.0}$, PM_{10} , TPM, BC and UFP Concentrations at 0.80 m and 1.68 m

