Supplement Material

Supplement Tables

Table S1: Categories for Air Quality Index (AQI) and PM (minimum and maximum) for calculation of AQI

Table S2: comparison of $PM_{2.5}$ hourly average measurements lower than 40 $\mu g/m^3$ between AQMS and the different PA-II units, each table represent a different location (A-G). Each table contains information on the distance between each AQMS and PA-II unit. As well as the number of observation (hours) used for each comparison. Result of the liner regression of each comparison as the R^2, RMSE values as well as the slop and intercept presented. Bold R^2 values represent values > 0.5. (A) Pittsburgh; (B) Denver; (C) Berkeley-Oakland; (D) San Francisco; (E) Vallejo; (F) Ogden - South Ogden; (G) Lindon – Orem, and (H) Salt Lake City.

Table S3: comparison of $PM_{2.5}$ daily average measurements between AQMS and the different PA-II units, each table represent a different location (A-G). Each table contains information on the distance between each AQMS and PA-II unit. As well as the number of observation (days) used for each comparison. Result of the liner regression of each comparison as the R^2, RMSE values as well as the slop and intercept presented. Bold R^2 values represent values > 0.5. (A) Pittsburgh; (B) Denver; (C) Berkeley-Oakland; (D) San Francisco; (E) Vallejo; (F) Ogden - South Ogden; (G) Lindon – Orem, and (H) Salt Lake City.

Table S4: Sensitivity of $PM_{2.5}$ hourly average measurements in the PA-II units to changes in temperature and two ranges of Relative Humidity, (all measured ranged 0-100, and only >75%). Each table represent a different AQMS units from which temperature and RH measurements were taken. Each table contains information on the number of observation (hours) used for each comparison, as well as result of the liner regression of each comparison as the R^2, RMSE values. (A-B) Pittsburgh; (C-D) Denver; (E) Ogden - South Ogden; (F) Lindon – Orem, and (G) Salt Lake City.

Supplement Figures

Figure S1: Maps of location with AQMS and PA-II units, each map (A-H) represent a different location. (A) Pittsburgh; (B) Denver; (C)Berkeley-Oakland; (D) San Francisco; (E) Vallejo; (F) Ogden - South Ogden; (G) Lindon – Orem, and Salt Lake City (H). Maps created using © Google map.

Figure S2: Comparison between each of the different PA-II units in Ogden - South Ogden. Scatter plots comparing each PA-II unit to the other PA-II unit with R^2 values. Information on the number of concurrent $PM_{2.5}$ hourly measurements for each comparison as well as the distance (km) between the two presented in each plot.

Figure S3: Comparison of number of observation (hours) for each AQMS and PA-II units to different R^2 (A) and RMSE (B) values received for the $PM_{2.5}$ hourly AQMS PA-III comparison. Comparison of distance (km) between each AQMS and PA-II units to different R^2 (C) and RMSE (D) values received from the $PM_{2.5}$ hourly measurements AQMS PA-III comparison.

Table S1: Categories for Air Quality Index (AQI) and PM (minimum and maximum) for calculation of AQI

AQI Category	**AQI Value**	**24-hr Average $PM_{2.5}$ Concentration (**$\mu g/m^3$)	**Color code**
Good	0 - 50	0 - 15.4	Green
Moderate	51 - 100	15.5 - 40.4	Yellow
Unhealthy for Sensitive Groups	101 - 150	40.5 - 65.4	Orange
Unhealthy	151 - 200	65.5 - 150.4	Red
Very Unhealthy	201 - 300	150.5 - 250.4	Purple
Hazardous	301 - 500	250.5 - 500.4	Marron

Table S2: comparison of $PM_{2.5}$ hourly average measurements lower than 40 $\mu g/m^3$ between AQMS and the different PA-II units, each table represent a different location (A-G). Each table contains information on the distance between each AQMS and PA-II unit. As well as the number of observation (hours) used for each comparison. Result of the liner regression of each comparison as the R^2, RMSE values as well as the slop and intercept presented. Bold R^2 values represent values > 0.5. (A) Pittsburgh; (B) Denver; (C) Berkeley-Oakland; (D) San Francisco; (E) Vallejo; (F) Ogden - South Ogden; (G) Lindon – Orem, and (H) Salt Lake City.

A. Pittsburgh		**EPA AQMS ID**					
		42-3-1376-1			**42-3-8-3**		
$PM^{2.5}$< 40µg/m^3		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**3723**	3369	**0.50**	7.75	3201	**0.52**	7.96
	3981	2094	**0.42**	8.36	2029	**0.51**	7.99
	9016	2849	**0.58**	7.00	2736	**0.46**	8.08
	9026	3368	**0.58**	6.01	3185	**0.58**	6.21
	9038	4194	**0.60**	7.00	4025	**0.56**	7.39
	9096	3458	**0.63**	6.24	3300	**0.49**	7.48
	9878	4364	**0.63**	6.07	4131	**0.57**	6.60
	9880	3898	**0.54**	7.20	3676	**0.50**	7.63
	9892	5657	**0.59**	6.75	5417	**0.52**	7.37
	9896	3340	**0.57**	6.90	3127	0.46	7.91
	9906	5543	**0.51**	7.44	5299	**0.53**	7.37

B. Denver	**EPA AQMS ID**								
	8-31-26-3			**8-31-27-3**			**8-31-28-3**		
$PM^{2.5}$< 40µg/m^3	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE

PurpleAir sensor ID	**2249**	9097	**0.75**	4.68	8678	**0.65**	5.55	8681	**0.56**	6.02
	2267	2126	**0.90**	4.03	2128	**0.80**	5.82	2129	**0.74**	6.62
	2269	7022	**0.79**	4.77	6823	**0.71**	5.66	6931	**0.62**	6.46
	2719	6297	**0.79**	4.82	6283	**0.71**	5.68	5917	**0.59**	6.89
	2900	11713	**0.80**	4.52	11291	**0.71**	5.42	11294	**0.56**	6.62
	3924	8774	**0.81**	4.31	8378	**0.68**	5.69	8374	**0.55**	6.55
	4022	9730	**0.72**	5.00	9306	**0.68**	5.39	9310	**0.50**	6.60
	7956	7139	**0.75**	4.24	6896	**0.67**	4.80	6819	**0.61**	4.94

C. Berkeley -Oakland		**EPA AQMS ID**								
		6-1-11-3			**6-1-12-3**			**6-1-13-3**		
$PM^{2.5}$< 40µg/m^3		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**2574**	9980	0.36	8.67	9868	**0.51**	7.28	9772	**0.50**	7.65
	3082	9811	0.34	8.84	9704	0.48	7.76	9634	0.43	8.30
	3854	7870	0.30	7.75	7843	**0.50**	6.49	7761	0.42	7.25
	4335	9072	**0.51**	7.57	8949	**0.59**	6.89	8820	**0.57**	7.25
	4506	9032	0.37	8.74	8909	**0.54**	7.22	8766	**0.54**	6.97
	4795	4034	0.41	6.95	4023	**0.53**	6.23	3997	0.49	6.72
	4825	8365	0.45	8.36	8236	**0.59**	7.08	8111	**0.52**	7.98
	5414	947	0.04	12.96	942	0.06	12.90	919	0.04	12.47
	6410	6609	0.27	8.93	6492	0.40	7.89	6372	0.38	7.71
	10114	3645	0.14	9.70	3616	0.26	8.90	3447	0.17	9.63

D. San Francisco		EPA AQMS ID 6-75-5-3		
$PM^{2.5}$< 40µg/m^3		Obs (h)	R^2	RMSE
PurpleAir sensor ID	**1226**	9214	**0.60**	6.51
	2031	10030	**0.56**	7.05
	2910	9601	**0.58**	7.19
	3348	3486	**0.61**	6.86
	3996	7486	**0.53**	7.15
	4372	6925	**0.53**	6.93
	4770	7815	**0.53**	6.95
	5776	6997	**0.40**	6.81
	6344	3217	0.17	7.36

F. Ogden- South Ogden		EPA AQMS ID 49-57-2-5		
$PM^{2.5}$< 40µg/m^3		Obs (h)	R^2	RMSE
PurpleAir sensor ID	**465**	5044	0.42	6.43
	1104	7618	**0.62**	6.54
	5178	6883	**0.61**	6.60
	5454	5084	0.46	6.53
	6604	5601	**0.56**	7.69
	7858	6046	**0.66**	7.13
	7860	6158	**0.64**	6.68

E. Vallejo		EPA AQMS ID 6-95-4-4		
$PM^{2.5}$< 40µg/m^3		Obs (h)	R^2	RMSE
PurpleAir sensor ID	**1142**	9295	**0.61**	7.22
	1870	11322	**0.67**	6.79
	1874	11149	0.49	8.57
	1878	6027	**0.55**	9.00
	1882	10173	**0.51**	7.58
	2480	10589	**0.61**	6.65
	2906	8092	**0.53**	8.46
	3686	6698	0.49	9.15
	3758	6350	**0.65**	6.70
	3769	9276	**0.50**	8.62
	3782	6950	**0.63**	6.39
	3784	8975	**0.60**	7.14
	3960	6168	**0.50**	7.72
	4928	7104	**0.64**	7.94
	5127	8237	**0.64**	7.20

G. Lindon - Orem		EPA AQMS ID 49-49-4001-5		
$PM^{2.5}$< 40µg/m^3		Obs (h)	R^2	RMSE
PurpleAir sensor ID	**5135**	8331	**0.60**	7.06
	5143	3899	0.46	4.01
	5145	3461	0.23	4.34
	5728	7186	**0.60**	7.20
	5732	7354	**0.60**	7.35
	5736	7250	**0.59**	6.69
	5750	6170	**0.72**	5.44
	5754	6024	**0.72**	4.67
	5760	1626	**0.66**	8.60
	6304	7793	**0.58**	6.45
	6948	2923	**0.73**	2.89
	6986	4895	**0.59**	7.80

H. Salt Lake City		EPA AQMS ID 49-35-3006-4			EPA AQMS ID 49-35-3006-5		
$PM^{2.5}$< 40µg/m^3		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**884**	13400	**0.69**	5.77	13835	**0.66**	6.42
	3388	9157	**0.71**	5.93	10022	**0.66**	6.63
	5014	8444	**0.79**	6.12	9292	**0.73**	7.20
	5460	7394	**0.82**	4.48	7981	**0.71**	5.73
	5742	6029	**0.75**	5.81	6711	**0.66**	6.60
	5802	2123	0.42	3.75	2569	**0.39**	5.10
	5990	3870	**0.74**	6.97	3940	**0.68**	7.76
	6078	1197	**0.47**	3.86	1221	0.22	4.64
	6356	7705	**0.78**	5.19	7936	**0.68**	6.32
	6360	7705	**0.79**	4.86	7991	**0.69**	5.90
	6434	7480	**0.74**	6.68	7762	**0.67**	7.54
	6608	6883	**0.64**	6.74	7096	**0.56**	7.37
	6622	6199	**0.83**	4.74	6381	**0.74**	5.72
	10050	5556	**0.78**	6.35	5691	**0.72**	7.20

Table S3: comparison of $PM_{2.5}$ daily average measurements between AQMS and the different PA-II units, each table represent a different location (A-G). Each table contains information on the distance between each AQMS and PA-II unit. As well as the number of observation (days) used for each comparison. Result of the liner regression of each comparison as the R^2, RMSE values as well as the slop and intercept presented. Bold R^2 values represent values > 0.5. (A) Pittsburgh; (B) Denver; (C) Berkeley-Oakland; (D) San Francisco; (E) Vallejo; (F) Ogden - South Ogden; (G) Lindon – Orem, and (H) Salt Lake City.

A. Pittsburgh			**PurpleAir sensor ID**										
			3723	**3981**	**9016**	**9026**	**9038**	**9096**	**9878**	**9880**	**9892**	**9896**	**9906**
EPA AQMS ID	**42-3-1376-1**	Obs (days)	141	84	117	138	173	129	180	159	235	139	231
		R^2	**0.73**	**0.65**	**0.76**	**0.79**	**0.84**	**0.82**	**0.84**	**0.84**	**0.84**	**0.83**	**0.80**
		RMSE	4.69	5.21	4.36	3.53	3.55	3.57	3.28	3.37	3.40	3.49	3.81
		Slop	1.44	1.22	1.52	1.46	1.57	1.57	1.50	1.51	1.59	1.58	1.51
		Intercept	-0.61	1.85	-1.45	-1.14	-2.18	-2.27	-1.91	-2.07	-2.28	-1.65	-1.36
	42-3-8-3	Obs (days)	127	77	110	128	163	119	166	146	220	127	216
		R^2	**0.84**	**0.80**	**0.74**	**0.79**	**0.84**	**0.80**	**0.81**	**0.83**	**0.81**	**0.76**	**0.82**
		RMSE	3.68	3.90	4.65	3.65	3.60	3.88	3.59	3.61	3.72	4.23	3.61
		Slop	1.64	1.63	1.68	1.45	1.65	1.60	1.55	1.57	1.63	1.59	1.62
		Intercept	-1.60	-1.69	-8.07	-4.83	-7.02	-6.38	-6.29	-6.89	-6.25	-5.84	-6.20

B. Denver			**PurpleAir sensor ID**							
			2249	**2267**	**2269**	**2719**	**2900**	**3924**	**4022**	**7956**
EPA AQMS ID	**8-31-26-3**	Obs (days)	377	88	288	262	488	349	403	296
		R^2	**0.90**	**0.97**	**0.93**	**0.92**	**0.93**	**0.89**	**0.87**	**0.90**
		RMSE	2.36	2.10	2.50	2.78	2.34	2.83	2.94	2.13
		Slop	1.57	1.79	1.67	1.72	1.67	1.70	1.59	1.60
		Intercept	-2.57	-3.17	-3.46	-4.17	-2.93	-3.07	-3.19	-2.24

	8-31-27-3	Obs (days)	358	88	279	261	468	332	383	284
		R^2	**0.84**	**0.94**	**0.89**	**0.86**	**0.87**	**0.81**	**0.81**	**0.85**
		RMSE	3.06	2.93	3.07	3.57	3.09	3.69	3.50	2.68
		Slop	1.58	1.78	1.70	1.72	1.66	1.69	1.60	1.58
		Intercept	-3.63	-4.19	-4.63	-5.41	-3.97	-4.08	-4.35	-2.98
	8-31-28-3	Obs (days)	361	88	284	246	472	335	387	285
		R^2	**0.73**	**0.90**	**0.78**	**0.74**	**0.75**	**0.68**	**0.67**	**0.78**
		RMSE	3.90	3.73	4.33	4.97	4.31	4.66	4.56	3.20
		Slop	1.22	1.95	1.61	1.60	1.39	1.26	1.22	1.18
		Intercept	-2.00	-6.75	-4.67	-5.43	-3.02	-2.02	-2.53	-1.05

C. Berkeley -Oakland			**PurpleAir sensor ID**									
			2574	**3082**	**3854**	**4335**	**4506**	**4795**	**4825**	**5414**	**6410**	**10114**
EPA AQMS ID	**6-1-11-3**	Obs (days)	419	408	331	394	393	172	362	43	286	156
		R^2	**0.84**	**0.84**	**0.56**	**0.74**	**0.91**	**0.60**	**0.93**	0.02	**0.91**	**0.77**
		RMSE	6.35	6.86	5.82	12.55	7.43	5.81	6.71	9.83	8.10	7.51
		Slop	1.41	1.45	0.99	1.26	1.39	0.97	1.48	0.08	1.39	0.61
		Intercept	-6.96	-6.84	-3.32	-3.25	-6.22	-4.39	-6.42	6.69	-4.04	5.76
	6-1-12-3	Obs (days)	414	403	330	389	388	171	357	43	282	156
		R^2	**0.90**	**0.90**	**0.74**	**0.76**	**0.94**	**0.68**	**0.95**	0.02	**0.94**	**0.80**
		RMSE	4.87	5.48	4.49	12.07	5.82	5.14	5.61	9.82	6.68	6.99
		Slop	1.42	1.47	1.18	1.27	1.40	1.08	1.48	0.08	1.40	0.63
		Intercept	-7.57	-7.78	-6.02	-3.47	-6.56	-5.29	-6.70	6.71	-4.53	5.22
	6-1-13-3	Obs (days)	406	400	324	381	378	168	349	41	275	147
		R^2	**0.88**	**0.84**	**0.59**	**0.73**	**0.93**	**0.63**	**0.94**	0.02	**0.94**	**0.77**
		RMSE	5.50	6.88	5.69	12.81	6.34	5.61	6.55	9.71	6.89	7.81

		Slop	1.41	1.42	1.07	1.25	1.40	1.07	1.47	0.08	1.40	0.62
		Intercept	-2.95	-2.09	-1.12	0.22	-2.74	-2.19	-2.71	6.25	-1.45	6.53

D. San Francisco			**PurpleAir sensor ID**								
			1226	**2031**	**2910**	**3348**	**3996**	**4372**	**4770**	**5776**	**6344**
EPA AQMS ID	**6-75-5-3**	Obs (days)	383	421	403	100	314	286	325	285	134
		R^2	**0.81**	**0.80**	**0.82**	**0.84**	**0.78**	**0.74**	**0.75**	**0.59**	0.48
		RMSE	4.34	4.72	4.85	4.31	4.71	4.78	4.78	5.33	4.01
		Slop	1.34	1.31	1.40	1.30	1.29	1.36	1.32	1.09	0.80
		Intercept	-2.26	-1.70	-1.40	-2.78	-0.84	-2.14	0.18	-1.23	0.68

E. Vallejo			**PurpleAir sensor ID**													
			1142	**1870**	**1874**	**1878**	**1882**	**2480**	**2906**	**3686**	**3758**	**3769**	**3782**	**3784**	**3960**	**4928**	**5127**
EPA AQMS ID	**6-95-4-4**	Obs (days)	380	488	484	258	441	458	350	278	267	398	290	388	254	308	357
		R^2	**0.89**	**0.94**	**0.92**	**0.92**	**0.94**	**0.94**	**0.94**	**0.72**	**0.83**	**0.92**	**0.78**	**0.94**	**0.76**	**0.95**	**0.93**
		RMSE	5.80	5.67	6.62	5.05	5.88	5.15	6.74	6.26	4.43	6.56	4.62	5.62	5.37	6.26	6.08
		Slop	1.70	1.36	1.32	1.50	1.32	1.32	1.45	1.55	1.47	1.37	1.36	1.32	1.27	1.37	1.28
		Intercept	-7.92	-2.56	-3.28	-5.58	-3.45	-3.69	-3.60	-5.20	-3.74	-3.04	-4.09	-3.37	-2.78	-1.98	-2.71

F. Ogden- South Ogden			**PurpleAir sensor ID**						
			465	**1104**	**5178**	**5454**	**6604**	**7858**	**7860**
EPA AQMS ID	**49-57-2-5**	Obs (days)	211	320	287	201	229	251	257
		R^2	0.37	**0.61**	**0.62**	0.35	**0.57**	**0.61**	**0.60**
		RMSE	6.87	6.53	6.35	6.82	7.41	7.67	7.03
		Slop	0.65	1.14	1.12	0.82	1.11	1.25	1.14
		Intercept	1.55	-1.85	-0.52	0.06	-2.20	-2.01	-1.88

G. Lindon - Orem			PurpleAir sensor ID										
			5135	**5143**	**5145**	**5728**	**5732**	**5736**	**5750**	**5754**	**5760**	**6304**	**6948**	**6986**
EPA AQMS ID	**49-49-4001-5**	Obs (days)	347	97	140	258	282	273	248	249	67	320	107	201
		R^2	**0.59**	0.31	0.19	**0.59**	**0.59**	**0.56**	**0.71**	**0.68**	**0.81**	**0.59**	**0.52**	**0.52**
		RMSE	6.85	3.29	3.30	7.28	6.78	6.10	5.37	4.63	5.95	6.07	2.71	8.00
		Slop	1.53	0.89	0.82	1.49	1.48	1.35	1.43	1.27	3.90	1.33	0.56	1.50
		Intercept	-0.78	-0.59	0.29	-1.44	-0.53	-0.97	-1.82	-2.05	-7.45	-1.55	0.26	-0.71

H. Salt Lake City			PurpleAir sensor ID												
			884	**3388**	**5014**	**5460**	**5742**	**5802**	**5990**	**6078**	**6356**	**6360**	**6434**	**6608**	**6622**	**10050**
EPA AQMS ID	**49-35-3006-4**	Obs (days)	557	384	355	308	239	77	162	18	321	321	312	286	258	231
		R^2	**0.81**	**0.83**	**0.86**	**0.86**	**0.83**	0.42	**0.84**	**0.63**	**0.87**	**0.86**	**0.83**	**0.83**	**0.86**	**0.85**
		RMSE	4.45	4.56	4.97	3.76	4.08	2.53	4.88	2.56	3.88	3.74	5.12	4.11	3.94	4.89
		Slop	1.52	1.40	1.66	1.58	1.44	0.90	1.52	1.45	1.59	1.52	1.79	1.41	1.59	1.77
		Intercept	-3.62	-3.58	-3.59	-4.51	-3.38	-1.03	-3.89	-3.17	-4.74	-4.33	-3.56	-4.40	-4.29	-3.74
	49-35-3006-5	Obs (days)	574	419	389	331	267	93	163	18	329	332	323	294	266	235
		R^2	**0.83**	**0.80**	**0.83**	**0.79**	**0.77**	**0.56**	**0.80**	0.17	**0.80**	**0.80**	**0.78**	**0.75**	**0.82**	**0.81**
		RMSE	4.49	4.89	5.52	4.45	4.58	3.27	5.42	3.83	4.65	4.39	5.70	4.84	4.37	5.43
		Slop	1.55	1.36	1.65	1.62	1.50	1.46	1.57	0.67	1.62	1.54	1.83	1.42	1.62	1.82
		Intercept	-2.86	-2.40	-2.19	-3.45	-2.64	-2.45	-2.75	2.18	-3.69	-3.32	-2.41	-3.35	-3.36	-2.37

Table S4: Sensitivity of $PM_{2.5}$ hourly average measurements in the PA-II units to changes in temperature and two ranges of Relative Humidity, (all measured ranged 0-100, and only >75%). Each table represent a different AQMS units from which temperature and RH measurements were taken. Each table contains information on the number of observation (hours) used for each comparison, as well as result of the liner regression of each comparison as the R^2, RMSE values. (A-B) Pittsburgh; (C-D) Denver; (E) Ogden - South Ogden; (F) Lindon – Orem, and (G) Salt Lake City.

A. Pittsburgh		**EPA AQMS ID - 42-3-1376-1**								
		Temperature			**Relative Humidity (14-98%)**			**Relative Humidity (>75%)**		
$PM_{2.5}$ hourly		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**3723**	3419	0.03	11.27	3419	0.11	10.78	1580	0.00	13.00
	3981	1947	0.03	11.49	1947	0.12	10.92	907	0.00	13.51
	9016	2209	0.01	9.66	2209	0.04	9.55	1210	0.00	10.25
	9026	2598	0.06	8.78	2598	0.02	8.97	1276	0.00	9.57
	9038	2234	0.01	10.70	2234	0.03	10.59	1186	0.01	10.73
	9096	2608	0.02	10.08	2608	0.00	10.17	1491	0.01	11.09
	9878	2581	0.02	9.41	2581	0.03	9.36	1407	0.00	10.05
	9880	2488	0.02	10.55	2488	0.02	10.59	1328	0.00	10.29
	9892	3556	0.02	10.09	3556	0.00	10.19	2032	0.00	10.76
	9896	2730	0.02	10.11	2730	0.01	10.17	1458	0.00	10.49
	9906	3464	0.04	9.94	3464	0.00	10.15	2007	0.01	10.42

B. Pittsburgh		**EPA AQMS ID - 42-3-8-3**								
		Temperature			**Relative Humidity (7-99%)**			**Relative Humidity (>75%)**		
$PM_{2.5}$ hourly		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
Purple Air	**3723**	3433	0.04	11.22	3433	0.15	10.50	1309	0.02	13.15

	3981	1961	0.04	11.40	1961	0.17	10.66	772	0.02	13.36
	9016	2120	0.03	9.56	2120	0.03	9.59	822	0.01	10.29
	9026	2534	0.08	8.74	2534	0.02	9.03	917	0.01	9.54
	9038	2210	0.02	10.55	2210	0.03	10.53	877	0.01	10.71
	9096	2542	0.04	10.05	2542	0.00	10.25	1112	0.00	11.30
	9878	2492	0.03	9.29	2492	0.02	9.34	1000	0.01	9.98
	9880	2401	0.04	10.43	2401	0.01	10.59	937	0.01	9.82
	9892	3467	0.04	9.99	3467	0.00	10.17	1507	0.00	10.95
	9896	2641	0.04	10.00	2641	0.01	10.17	1041	0.00	10.38
	9906	3375	0.07	9.74	3375	0.00	10.10	1479	0.00	9.96

C. Denver		**EPA AQMS ID - 8-31-26-3**								
		Temperature			**Relative Humidity (0-97%)**			**Relative Humidity (>75%)**		
$PM_{2.5}$ hourly		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**2249**	7054	0.02	9.99	7054	0.11	9.56	1130	0.01	12.88
	2267	2153	0.00	14.44	2153	0.05	14.07	460	0.02	14.86
	2269	7087	0.01	11.50	7087	0.09	11.01	1393	0.00	12.30
	2719	5639	0.01	12.05	5639	0.09	11.54	870	0.01	14.02
	2900	9696	0.01	11.19	9696	0.08	10.76	1626	0.02	12.80
	3924	6727	0.03	10.77	6727	0.13	10.15	1084	0.01	13.94
	4022	7691	0.01	10.24	7691	0.12	9.67	1214	0.01	12.94
	7956	5075	0.00	8.61	5075	0.08	8.27	677	0.00	10.16

D. Denver	**EPA AQMS ID - 8-31-28-3**		
	Temperature	**Relative Humidity (3-99%)**	**Relative Humidity (>75%)**

$PM_{2.5}$ hourly		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**2249**	7054	0.02	9.99	7020	0.11	9.53	920	0.01	12.08
	2267	2153	0.00	14.44	2154	0.04	14.11	364	0.15	13.87
	2269	7087	0.01	11.50	7007	0.09	11.05	1134	0.04	11.56
	2719	5639	0.01	12.05	5576	0.09	11.57	706	0.10	12.94
	2900	9696	0.01	11.19	9666	0.08	10.75	1306	0.05	12.03
	3924	6727	0.03	10.76	6713	0.15	10.01	877	0.00	13.64
	4022	7691	0.01	10.23	7661	0.13	9.58	979	0.02	12.61
	7956	5075	0.00	8.61	5134	0.08	8.22	536	0.01	9.51

E. Ogden- South Ogden		**EPA AQMS ID - 49-57-2-5**								
		Temperature			**Relative Humidity (1-100%)**			**Relative Humidity (>75%)**		
$PM_{2.5}$ hourly		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**465**	7985	0.01	8.79	5556	0.03	7.29	2051	0.02	10.46
	1104	5518	0.11	10.65	5514	0.04	11.07	592	0.01	6.07
	5178	5653	0.06	11.55	5645	0.01	11.83	996	0.08	10.78
	5454	3003	0.06	5.66	3002	0.02	5.76	257	0.00	2.95
	6604	4085	0.09	11.92	4080	0.04	12.26	282	0.05	4.99
	7858	3992	0.09	12.86	3987	0.03	13.30	259	0.01	6.04
	7860	4083	0.10	11.63	4078	0.03	12.05	259	0.01	5.26

F. Lindon - Orem		**EPA AQMS ID - 49-49-4001-5**								
		Temperature			**Relative Humidity (5-100%)**			**Relative Humidity (>75%)**		
$PM_{2.5}$ hourly		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
Purple Air	**5135**	6993	0.03	11.19	6992	0.00	11.32	1121	0.00	7.73

	5143	3632	0.00	5.87	3927	0.00	5.73	875	0.00	6.32
	5145	3471	0.04	4.87	3471	0.05	4.83	657	0.01	7.41
	5728	6062	0.05	11.19	6061	0.01	11.42	859	0.00	5.36
	5732	6165	0.03	12.14	6164	0.00	12.30	923	0.00	7.43
	5736	6088	0.03	10.28	6087	0.01	10.42	938	0.00	6.82
	5750	6235	0.04	11.56	6234	0.01	11.75	867	0.00	7.64
	5754	6071	0.06	9.35	6070	0.01	9.58	928	0.00	6.13
	5760	225	0.00	3.82	225	0.05	3.74	63	0.13	3.75
	6304	6460	0.05	9.71	6459	0.01	9.89	918	0.01	6.32
	6948	2972	0.04	6.99	2972	0.00	7.14	329	0.08	4.39
	6986	3536	0.07	11.17	3536	0.01	11.54	338	0.08	5.03

G. Salt Lake City		**EPA AQMS ID - 49-35-3006-4**								
		Temperature			**Relative Humidity (2-93%)**			**Relative Humidity (>75%)**		
$PM_{2.5}$ hourly		Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE	Obs (h)	R^2	RMSE
PurpleAir sensor ID	**884**	13995	0.00	11.95	13995	0.00	11.93	757	0.02	18.75
	3388	8981	0.00	11.80	8981	0.01	11.76	522	0.00	18.96
	5014	8069	0.01	14.33	8069	0.02	14.22	479	0.03	22.18
	5460	6979	0.07	9.69	6979	0.02	9.93	297	0.00	4.15
	5742	5450	0.13	9.92	5450	0.04	10.42	276	0.01	6.15
	5802	2605	0.04	6.37	2605	0.08	6.24	219	0.03	7.93
	5990	2581	0.11	12.73	2581	0.08	12.96	62	0.14	3.43
	6078	1230	0.03	5.18	1230	0.05	5.14	78	0.08	4.67
	6356	6623	0.11	9.64	6623	0.04	10.01	267	0.00	3.55

	6360	6677	0.10	9.16	6677	0.04	9.49	267	0.01	3.99
	6434	6447	0.05	11.33	6447	0.01	11.54	237	0.02	6.26
	6608	5783	0.13	10.23	5783	0.05	10.65	224	0.00	3.23
	6622	5039	0.09	9.04	5039	0.02	9.37	237	0.01	4.01
	10050	4366	0.03	12.62	4366	0.01	12.74	102	0.18	4.86


Pittsburgh, PA
A
9026
9880
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3723
9878
9038
9896
3981
9096
42-3-1376-1
9906
9892
9016
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LAWRENCEVILLE
GARFIELD
EAST LIBERTY
LARIMER
BLOOMFIELD
POLISH HILL
SHADYSIDE
NORTH OAKLAND
SQUIRREL HILL NORTH
Wilkinsburg
Edgewood
SOUTH SIDE FLATS
GREENFIELD
Swissvale
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Rankin
Homestead
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Whitaker
Forest
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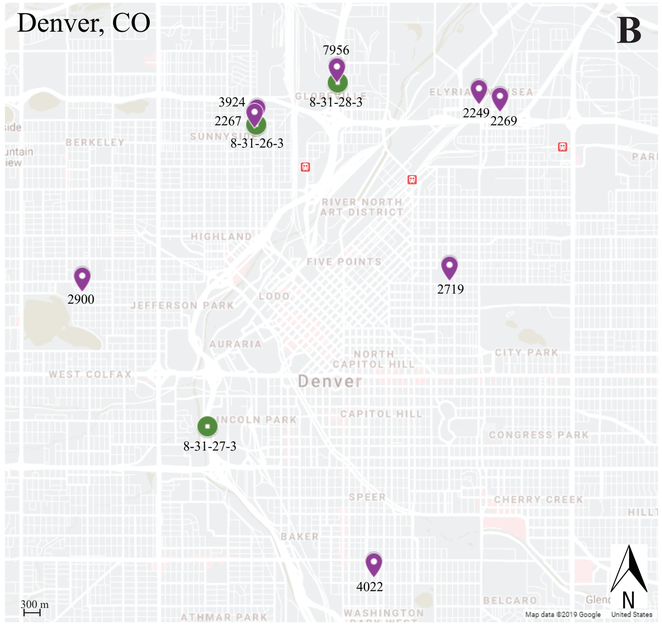
United States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HIGHLAND
FIVE POINTS
JEFFERSON PARK
LODO
AURARIA
NORTH CAPITOL HILL
CITY PARK
WEST COLFAX
Denver
LINCOLN PARK
CAPITOL HILL
CONGRESS PARK
SPEER
CHERRY CREEK
BAKER
ATHMAR PARK
WASHINGTON
BELCARO
300 m
Map data ©2019 Google
United States


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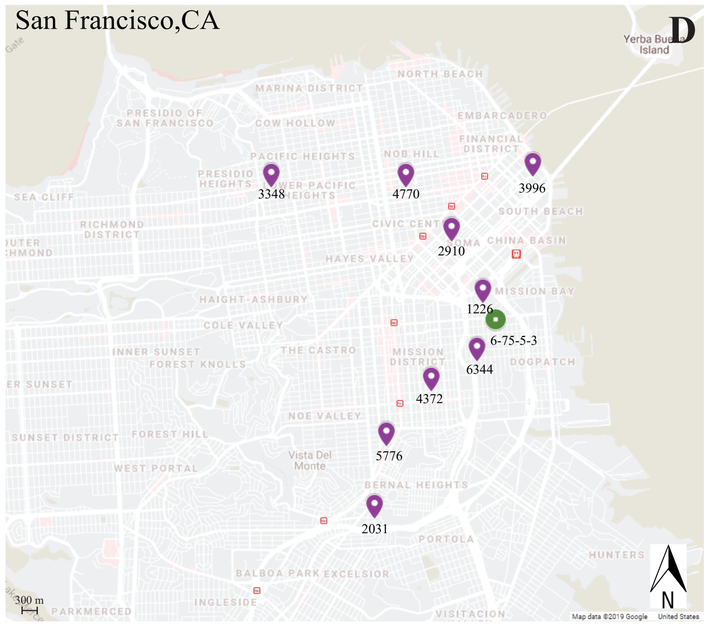
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PRESIDIO OF SAN FRANCISCO
COW HOLLOW
EMBARCADERO
FINANCIAL DISTRICT
PACIFIC HEIGHTS
NOB HILL
SEA CLIFF
SOUTH BEACH
CIVIC CENTER
CHINA BASIN
HAYES VALLEY
MISSION BAY
HAIGHT-ASHBURY
COLE VALLEY
INNER SUNSET
THE CASTRO
MISSION DISTRICT
DOGPATCH
FOREST KNOLLS
NOE VALLEY
SUNSET DISTRICT
FOREST HILL
WEST PORTAL
Vista Del Monte
BERNAL HEIGHTS
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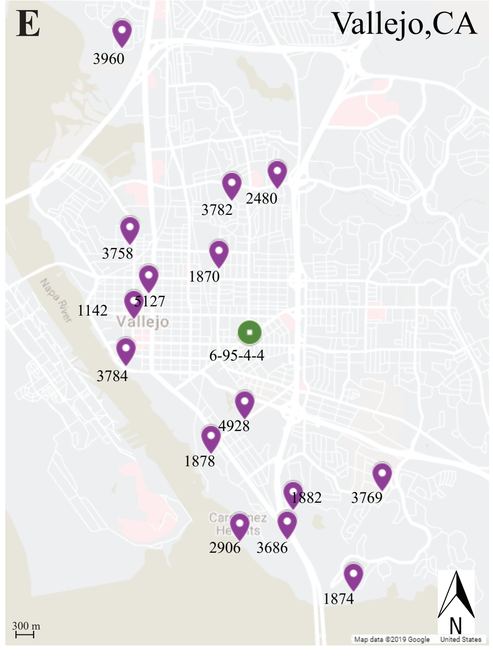
VISITACION
300 m
Map data ©2019 Google
United States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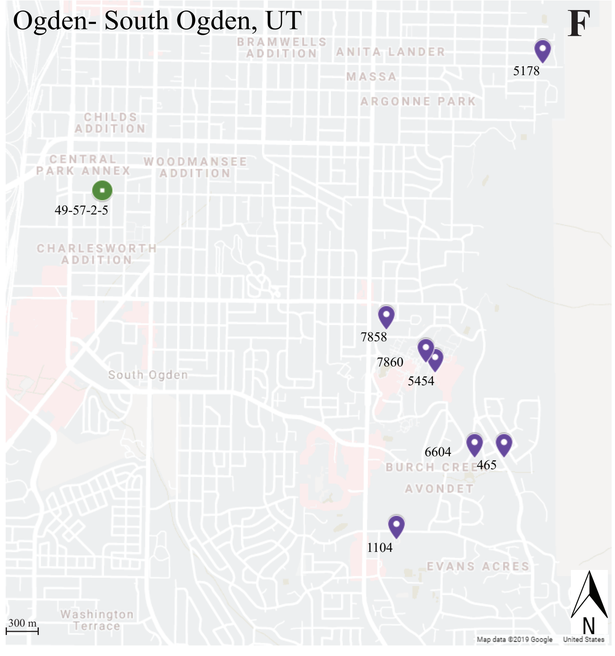
Ogden- South Ogden, UT
F
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5454
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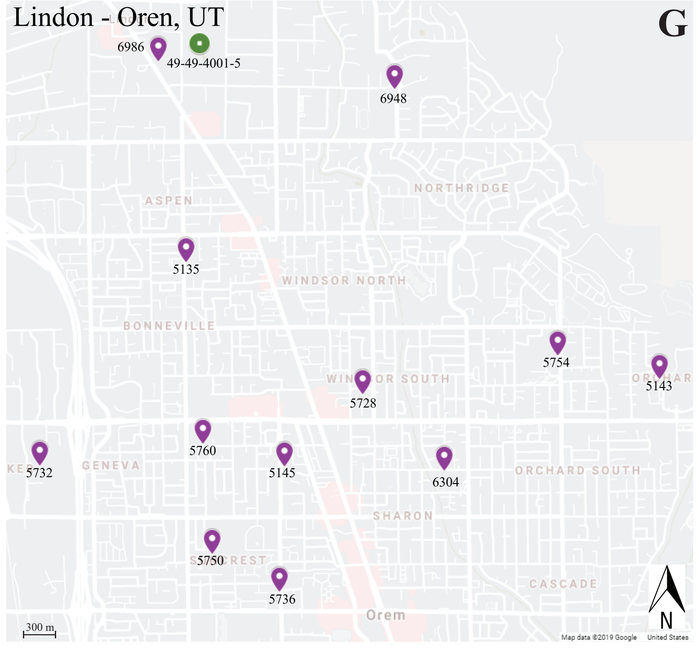
465
1104
BRAMWELLS ADDITION
ANITA LANDER
MASSA
ARGONNE PARK
CHILDS ADDITION
CENTRAL PARK ANNEX
WOODMANSEE ADDITION
CHARLESWORTH ADDITION
South Ogden
BURCH CREEK
AVONDET
EVANS ACRES
Washington Terrace
300 m
Map data ©2019 Google
United States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5750
5736
ASPEN
NORTHRIDGE
WINDSOR NORTH
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WINDSOR SOUTH
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Orem
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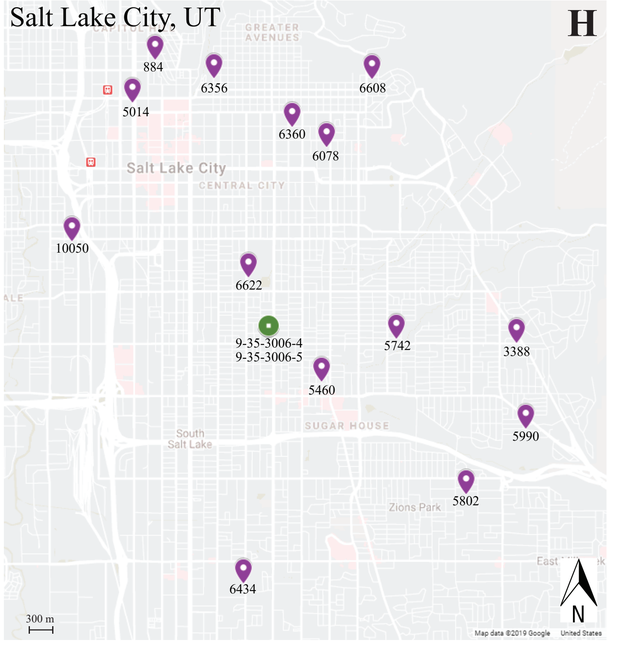
Salt Lake City, UT
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GREATER AVENUES
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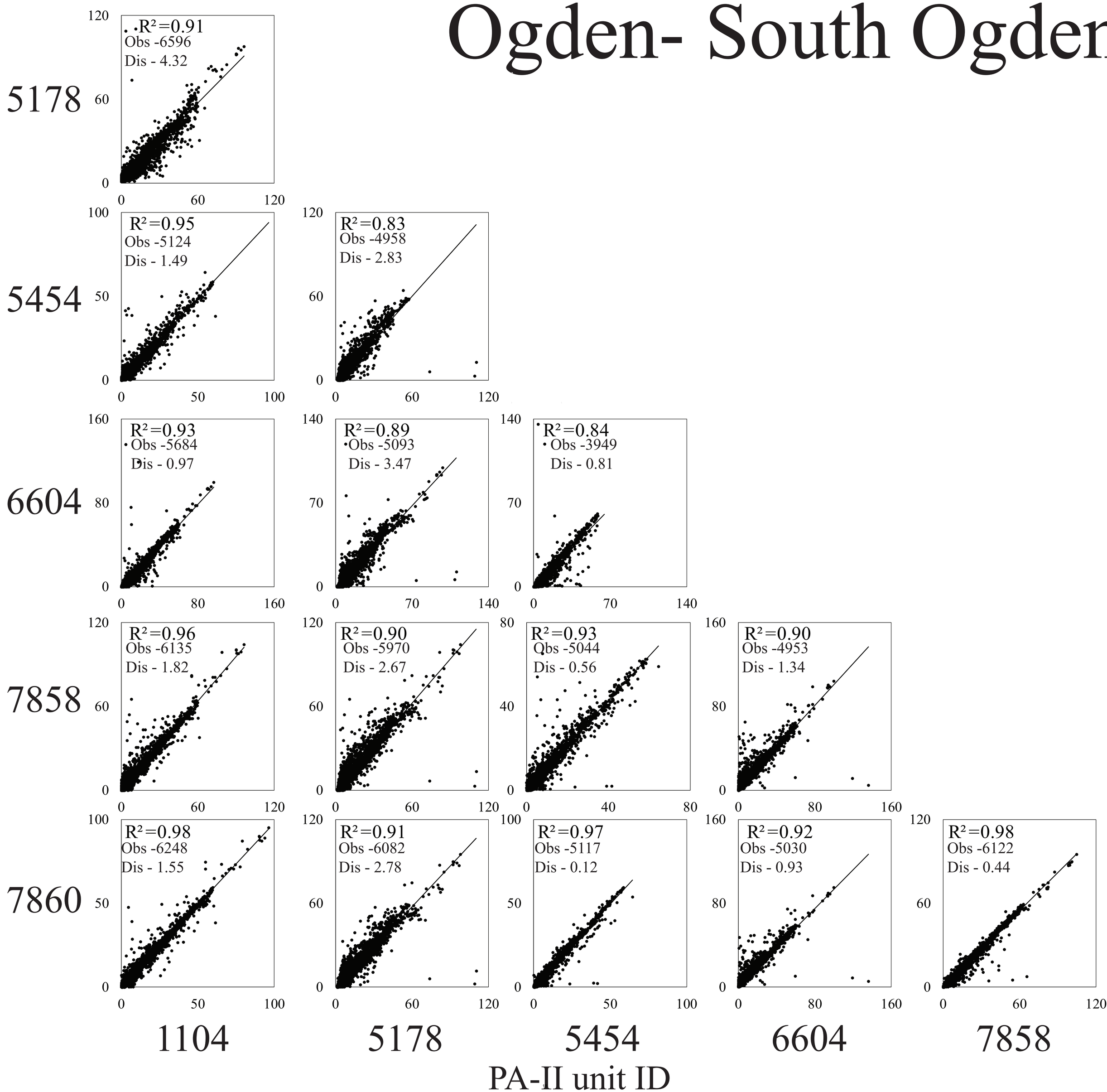
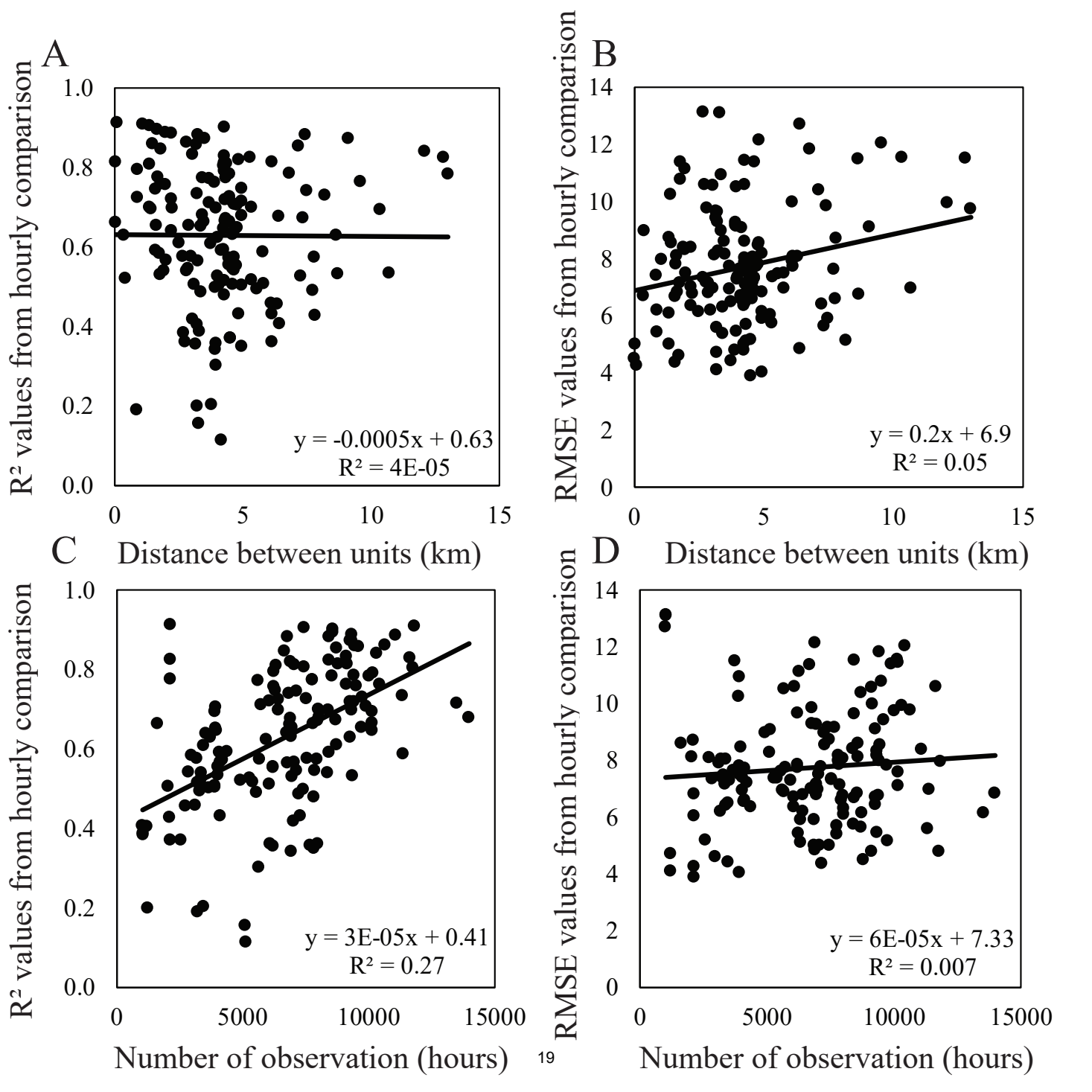
Ogden- South Ogden




A
R² values from hourly comparison
1.0
0.8
0.6
0.4
0.2
0.0
0
5
10
15
y = -0.0005x + 0.63
R² = 4E-05
Distance between units (km)
B
RMSE values from hourly comparison
14
12
10
8
6
4
2
0
y = 0.2x + 6.9
R² = 0.05
Distance between units (km)
C
R² values from hourly comparison
y = 3E-05x + 0.41
R² = 0.27
0
5000
10000
15000
Number of observation (hours)
D
RMSE values from hourly comparison
y = 6E-05x + 7.33
R² = 0.007
Number of observation (hours)