Guangdong-Hong Kong-Macao

Pearl River Delta

Regional Air Quality Monitoring Network

April to June 2025

Statistical Summary of the Second Quarter Monitoring Results

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1. Foreword

Since the Pearl River Delta (PRD) Regional Air Quality Monitoring Network came into operation on 30 November 2005, the PRD Regional Air Quality Index (RAQI) was reported to the public on a daily basis. Starting from 2006, half-yearly and annual air quality monitoring reports were also published every year. The network was subsequently enhanced and expanded in September 2014 and renamed to "Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network" (the "Network").

To cope with the enhancement of the network, the update of the national ambient air quality standards as well as the need for improving the reporting frequency of monitoring results, starting from 2014, the real-time hourly monitoring data was reported on a new internet platform to replace the daily RAQI, the half-yearly report was also replaced by a quarterly report while the annual air quality monitoring report was maintained. The quarterly report is a brief statistical summary of the regional air quality monitoring results in a quarter. The annual report, in addition to the reporting of the monitoring data, provides a more detailed analysis and comparison of the air quality in the year. From the fourth quarter of 2014, the statistical results of carbon monoxide (CO) and fine suspended particulates ($PM_{2.5}$ or FSP) were added to the quarterly report in addition to those of respirable suspended particulates (PM_{10} or RSP), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and ozone (O_3).

This report is the statistical summary of the monitoring results of the PRD Regional Air Quality Monitoring Network in April to June, the second quarter of 2025. It is the forty-sixth report published in the form of a quarterly report and the forty-third report with the statistical summaries of the six pollutants (i.e. PM_{10}, $PM_{2.5}$, SO_2, NO_2, O_3 and CO).

2. Introduction to Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network

The PRD Regional Air Quality Monitoring Network was jointly established by the Former Guangdong Provincial Environmental Monitoring Centre[1] (GDEMC) and the Environmental Protection Department of the Hong Kong Special Administrative Region (HKEPD) from 2003 to 2005, and commenced its operation to report the Regional Air Quality Index (RAQI) on 30 November 2005.

With the growing concerns of air pollution control and economic development of the region, the GDEMC[1] and HKEPD had worked in collaboration with the environmental protection cum meteorological authorities of Macao to enhance the network by extending the coverage of monitoring area to Guangdong, Hong Kong and Macao in September 2014. The enhancements included the addition of monitoring stations from 16 to 23 to further improve the spatial distribution and the inclusion of two new monitoring parameters, i.e. carbon monoxide (CO) and fine suspended particulates ($PM_{2.5}$), to enrich the air quality monitoring information. At the same

[1] In 2003, when the network was established, the unit was named Guangdong Provincial Environmental Protection Monitoring Centre, which was renamed as Guangdong Provincial Environmental Monitoring Centre in 2008, and was renamed again as Guangdong Ecological and Environmental Monitoring Centre in December 2020.

time, the network was renamed to “Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network” (the “Network”) while the "Quality Management Committee of Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network", which was jointly established by the Ecological and Environmental Monitoring Centre of Guangdong (GDEEMC), HKEPD, Environmental Protection Bureau of Macau SARG and the Meteorological and Geophysical Bureau of Macao SARG [2], was responsible for quality management of the Network and dissemination of information.

The Network comprises 23 automatic air quality monitoring stations (see Figure 2.1) across the Guangdong-Hong Kong-Macao PRD region. Among these, eighteen stations are in the PRD, four stations in Hong Kong and one station in Macau.

All stations are installed with monitoring equipment to measure the ambient concentrations of PM_{10}, $PM_{2.5}$, SO_2, NO_2, O_3 and CO.

Annexes A and B show the site information of the monitoring stations in the Network and the methods used for measuring air pollutant concentrations respectively.

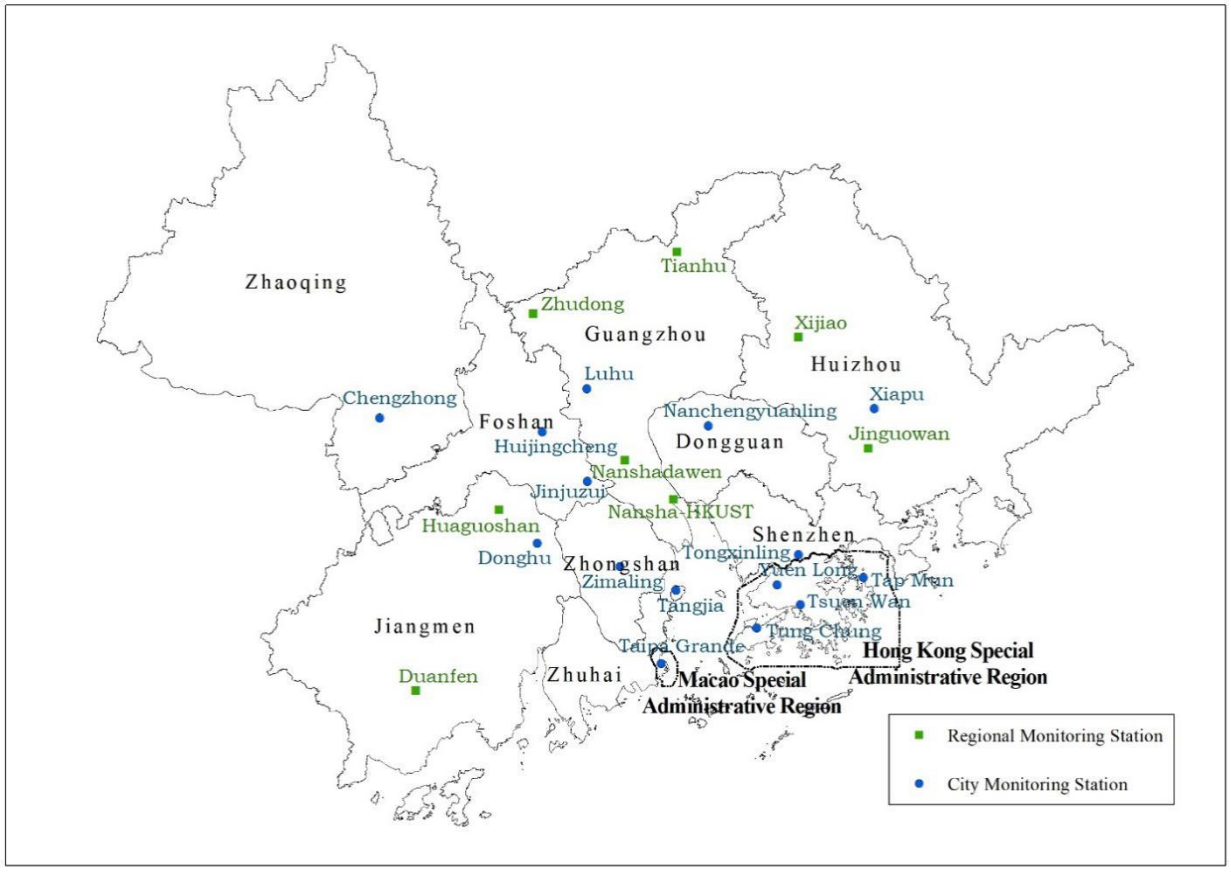

Figure 2.1：Spatial Distribution of Monitoring Stations in the Network[3]

[2] In 2014, when the monitoring network was expanded to cover Guangdong, Hong Kong and Macao, the unit's name was "Meteorological and Geophysical Bureau,Macao SAR". In December 2023, the unit's name was changed to "Meteorological and Geophysical Bureau, Macao SARG".

[3] The map was drawn with reference to the China National Standard Map "Map of the Pearl River Delta Region" (approval number: 粵S (2021) No. 169), and was re-submitted and approved for release. The approval number is GS粵 (2022) No. 378.

3. Operation of the Network

The overall operation of the Network was stable in the second quarter of 2025. The average data capture rate of hourly air pollutant monitoring data measured at all monitoring stations was 98.1% in the second quarter.

4. Statistical Results of Pollutant Concentrations

Tables 4.1a to 4.6b list the detailed statistical results of the six air pollutants (SO_2, NO_2, O_3, CO, PM_{10} and $PM_{2.5}$) from April to June 2025. Per the amended *GB 3095-2012: Ambient Air Quality Standards*, starting from 2019, the concentrations of gaseous pollutants are calculated at a reference temperature of 298.15K and a pressure of 101.325 kPa, while the concentrations of PM_{10} and $PM_{2.5}$ are measured at real-time temperature and atmospheric pressure during monitoring.

Table 4.1a：The monthly maxima and minima of hourly averages of SO_2 [4]

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	2	19	2	12	1	8
Nanshadawen (Guangzhou)	5	30	8	22	1	16
Nansha-HKUST (Guangzhou)	4	12	4	12	4	12
Tianhu (Guangzhou)	3	21	3	10	3	6
Zhudong (Guangzhou)	3	22	5	25	6	16
Tongxinling (Shenzhen)	4	12	4	10	6	11
Jinjuzui (Foshan)	2	14	3	9	3	13
Huijingcheng (Foshan)	7	32	7	22	5	13
Tangjia (Zhuhai)	4	12	3	21	2	6
Donghu (Jiangmen)	5	25	6	17	5	14
Duanfen (Jiangmen)	5	17	6	15	6	17
Huaguoshan (Jiangmen)	3	24	3	17	4	13
Chengzhong (Zhaoqing)	1	37	3	34	4	22
Xiapu (Huizhou)	7	16	3	15	2	14
Shixia (Huizhou)	6	38	2	22	2	32
Jinguowan (Huizhou)	4	14	6	32	4	10
Zimaling (Zhongshan)	6	19	4	10	4	9
Nanchengyuanling (Dongguan)	2	30	1	12	2	10
Tap Mun (Hong Kong)	0	7	0	7	0	4
Tsuen Wan (Hong Kong)	1	18	1	12	0	14
Yuen Long (Hong Kong)	0	8	0	22	0	6
Tung Chung (Hong Kong)	3	17	3	18	0	7
Taipa Grande (Macao)	3	10	3	6	2	7

[4] All pollutants, except for carbon monoxide, are measured in micrograms per cubic meter ($\mu g/m^3$). The unit for carbon monoxide concentration is milligrams per cubic meter (mg/m^3).

The above also applies to all the pollutant monitoring mentioned below.

Table 4.1b：The monthly maxima and minima of daily averages of SO_2

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	3	7	3	6	2	3
Nanshadawen (Guangzhou)	6	12	9	12	1	11
Nansha-HKUST (Guangzhou)	4	8	4	6	4	6
Tianhu (Guangzhou)	4	14	3	6	3	5
Zhudong (Guangzhou)	4	10	5	11	7	10
Tongxinling (Shenzhen)	5	10	5	8	6	8
Jinjuzui (Foshan)	3	9	3	6	3	5
Huijingcheng (Foshan)	8	16	8	12	6	10
Tangjia (Zhuhai)	4	8	4	7	3	4
Donghu (Jiangmen)	6	11	7	11	6	10
Duanfen (Jiangmen)	6	10	6	9	7	9
Huaguoshan (Jiangmen)	4	9	4	7	5	6
Chengzhong (Zhaoqing)	4	21	5	15	5	14
Xiapu (Huizhou)	7	11	4	11	4	7
Shixia (Huizhou)	7	11	3	11	4	12
Jinguowan (Huizhou)	5	8	6	10	4	7
Zimaling (Zhongshan)	6	10	4	8	5	6
Nanchengyuanling (Dongguan)	3	14	2	8	4	6
Tap Mun (Hong Kong)	1	4	1	4	0	2
Tsuen Wan (Hong Kong)	1	5	1	4	1	3
Yuen Long (Hong Kong)	1	5	0	5	1	2
Tung Chung (Hong Kong)	3	7	4	7	1	5
Taipa Grande (Macao)	3	8	4	5	4	5

Table 4.1c： The monthly averages of SO_2

Monitoring Station	April 2025	May 2025	June 2025
Luhu (Guangzhou)	5	4	2
Nanshadawen (Guangzhou)	8	10	7
Nansha-HKUST (Guangzhou)	5	5	5
Tianhu (Guangzhou)	7	5	4
Zhudong (Guangzhou)	6	6	8
Tongxinling (Shenzhen)	6	7	7
Jinjuzui (Foshan)	5	4	4
Huijingcheng (Foshan)	10	9	7
Tangjia (Zhuhai)	5	5	4
Donghu (Jiangmen)	8	8	8
Duanfen (Jiangmen)	7	7	7
Huaguoshan (Jiangmen)	6	5	5
Chengzhong (Zhaoqing)	9	9	9
Xiapu (Huizhou)	9	7	5
Shixia (Huizhou)	9	8	9
Jinguowan (Huizhou)	6	7	5
Zimaling (Zhongshan)	7	5	5
Nanchengyuanling (Dongguan)	6	4	5
Tap Mun (Hong Kong)	3	3	1
Tsuen Wan (Hong Kong)	3	2	2
Yuen Long (Hong Kong)	2	2	1
Tung Chung (Hong Kong)	4	4	2
Taipa Grande (Macao)	4	4	5

Table 4.2a：The monthly maxima and minima of hourly averages of NO_2

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	5	142	3	95	6	53
Nanshadawen (Guangzhou)	5	154	5	86	1	50
Nansha-HKUST (Guangzhou)	5	130	1	70	1	76
Tianhu (Guangzhou)	3	50	2	29	1	20
Zhudong (Guangzhou)	3	101	3	62	2	41
Tongxinling (Shenzhen)	2	82	1	74	1	31
Jinjuzui (Foshan)	5	175	2	70	1	49
Huijingcheng (Foshan)	5	133	6	89	7	54
Tangjia (Zhuhai)	2	72	1	47	1	43
Donghu (Jiangmen)	4	87	5	73	4	44
Duanfen (Jiangmen)	1	43	1	36	1	27
Huaguoshan (Jiangmen)	1	82	3	60	2	42
Chengzhong (Zhaoqing)	1	120	3	94	3	49
Xiapu (Huizhou)	7	78	5	51	1	31
Shixia (Huizhou)	4	57	4	31	4	34
Jinguowan (Huizhou)	4	48	3	28	1	20
Zimaling (Zhongshan)	4	67	4	50	1	50
Nanchengyuanling (Dongguan)	1	109	1	69	4	60
Tap Mun (Hong Kong)	0	50	0	38	0	22
Tsuen Wan (Hong Kong)	3	190	3	135	4	122
Yuen Long (Hong Kong)	8	144	5	125	3	87
Tung Chung (Hong Kong)	3	138	2	91	1	88
Taipa Grande (Macao)	3	79	2	49	1	52

Table 4.2b：The monthly maxima and minima of daily averages of NO_2

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	15	69	12	42	10	29
Nanshadawen (Guangzhou)	13	66	13	41	7	29
Nansha-HKUST (Guangzhou)	13	69	8	36	4	33
Tianhu (Guangzhou)	4	27	4	11	2	11
Zhudong (Guangzhou)	12	48	7	35	8	21
Tongxinling (Shenzhen)	4	51	4	24	4	17
Jinjuzui (Foshan)	9	66	7	32	4	25
Huijingcheng (Foshan)	12	72	14	51	11	34
Tangjia (Zhuhai)	6	35	3	30	2	31
Donghu (Jiangmen)	8	47	9	38	8	19
Duanfen (Jiangmen)	4	26	1	17	2	18
Huaguoshan (Jiangmen)	3	48	7	31	4	28
Chengzhong (Zhaoqing)	10	53	12	51	9	27
Xiapu (Huizhou)	11	35	9	21	5	16
Shixia (Huizhou)	8	34	7	18	7	18
Jinguowan (Huizhou)	9	27	6	15	4	11
Zimaling (Zhongshan)	6	40	6	31	2	30
Nanchengyuanling (Dongguan)	5	60	11	33	8	27
Tap Mun (Hong Kong)	4	33	2	12	1	9
Tsuen Wan (Hong Kong)	24	77	23	53	16	59
Yuen Long (Hong Kong)	17	83	15	56	11	42
Tung Chung (Hong Kong)	6	66	5	49	3	48
Taipa Grande (Macao)	5	46	6	30	3	32

Table 4.2c：The monthly averages of NO_2

Monitoring Station	April 2025	May 2025	June 2025
Luhu (Guangzhou)	35	25	20
Nanshadawen (Guangzhou)	31	24	19
Nansha-HKUST (Guangzhou)	31	20	17
Tianhu (Guangzhou)	13	7	6
Zhudong (Guangzhou)	28	19	16
Tongxinling (Shenzhen)	17	11	9
Jinjuzui (Foshan)	26	18	12
Huijingcheng (Foshan)	32	28	22
Tangjia (Zhuhai)	18	12	8
Donghu (Jiangmen)	22	16*	12
Duanfen (Jiangmen)	11	6	5
Huaguoshan (Jiangmen)	21	18	12
Chengzhong (Zhaoqing)	26	23	18
Xiapu (Huizhou)	19	14	10
Shixia (Huizhou)	19	13	12
Jinguowan (Huizhou)	14	10	8
Zimaling (Zhongshan)	18	13	8
Nanchengyuanling (Dongguan)	21	20	17
Tap Mun (Hong Kong)	9	6	3
Tsuen Wan (Hong Kong)	45	34	30
Yuen Long (Hong Kong)	38	29	24
Tung Chung (Hong Kong)	29	19	16
Taipa Grande (Macao)	21	15	9

[5] "*" The capture rate of validated daily data per month is below 85%.

Table 4.3a：The monthly maxima and minima of hourly averages of O_3

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	1	262	1	203	1	189
Nanshadawen (Guangzhou)	1	209	2	245	3	255
Nansha-HKUST (Guangzhou)	1	240	1	263	1	223
Tianhu (Guangzhou)	25	241	21	210	19	193
Zhudong (Guangzhou)	3	250	2	278	2	231
Tongxinling (Shenzhen)	1	208	2	194	3	144
Jinjuzui (Foshan)	2	225	2	214	2	209
Huijingcheng (Foshan)	2	261	3	258	6	267
Tangjia (Zhuhai)	3	313	9	228	3	156
Donghu (Jiangmen)	3	257	1	245	1	229
Duanfen (Jiangmen)	6	222	4	187	2	119
Huaguoshan (Jiangmen)	4	267	4	242	5	216
Chengzhong (Zhaoqing)	1	256	1	237	2	221
Xiapu (Huizhou)	2	210	2	170	1	179
Shixia (Huizhou)	1	284	1	187	4	204
Jinguowan (Huizhou)	1	210	1	167	1	154
Zimaling (Zhongshan)	2	237	1	223	3	202
Nanchengyuanling (Dongguan)	2	296	1	249	1	217
Tap Mun (Hong Kong)	9	214	7	200	8	164
Tsuen Wan (Hong Kong)	3	154	2	138	4	110
Yuen Long (Hong Kong)	0	215	0	184	1	94
Tung Chung (Hong Kong)	15	329	17	188	18	109
Taipa Grande (Macao)	6	327	7	177	9	122

Table 4.3b：Daily maximum 8-hour averages of O_3 (the monthly maxima, minima and the 90th percentile)

Monitoring Station	April 2025			May 2025			June 2025		
	Min	Max	90th per	Min	Max	90th per	Min	Max	90th per
Luhu (Guangzhou)	38	198	179	22	177	146	27	149	142
Nanshadawen (Guangzhou)	43	187	171	25	224	167	31	194	159
Nansha-HKUST (Guangzhou)	34	193	150	36	211	161	31	167	109
Tianhu (Guangzhou)	63	194	143	55	178	129	44	166	138
Zhudong (Guangzhou)	30	201	193	43	238	169	29	192	164
Tongxinling (Shenzhen)	45	187	166	40	162	144	22	115	97
Jinjuzui (Foshan)	35	175	149	35	191	144	26	169	111
Huijingcheng (Foshan)	38	207	189	25	219	171	37	200	154
Tangjia (Zhuhai)	50	266	178	51	199	177	40	132	106
Donghu (Jiangmen)	45	203	175	41	220	156	25	176	110
Duanfen (Jiangmen)	37	186	147	38	161	137	27	97	84
Huaguoshan (Jiangmen)	21	209	185	37	209	145	28	177	115
Chengzhong (Zhaoqing)	46	210	193	41	203	158	36	197	130
Xiapu (Huizhou)	60	183	154	52	157	139	37	147	132
Shixia (Huizhou)	45	213	185	35	167	113	39	169	145
Jinguowan (Huizhou)	43	180	152	38	144	126	29	125	114
Zimaling (Zhongshan)	47	213	158	38	187	154	30	136	98
Nanchengyuanling (Dongguan)	47	226	179	37	211	163	31	193	161
Tap Mun (Hong Kong)	48	205	186	51	187	156	42	151	101
Tsuen Wan (Hong Kong)	21	145	105	20	120	111	21	89	62
Yuen Long (Hong Kong)	32	162	129	25	142	118	22	78	66
Tung Chung (Hong Kong)	41	205	149	51	157	138	48	95	78
Taipa Grande (Macao)	43	252	165	39	153	142	35	104	87

Table 4.3c：The monthly averages of O_3

Monitoring Station	April 2025	May 2025	June 2025
Luhu (Guangzhou)	62	53	44
Nanshadawen (Guangzhou)	62	58	45
Nansha-HKUST (Guangzhou)	59	60	39
Tianhu (Guangzhou)	83	77	66
Zhudong (Guangzhou)	63	58	53
Tongxinling (Shenzhen)	73	72	44
Jinjuzui (Foshan)	61	56	43
Huijingcheng (Foshan)	73	67	58
Tangjia (Zhuhai)	78	81	51
Donghu (Jiangmen)	72	62	45
Duanfen (Jiangmen)	65	57	40
Huaguoshan (Jiangmen)	62	54	42
Chengzhong (Zhaoqing)	67	55	48
Xiapu (Huizhou)	74	69	50
Shixia (Huizhou)	66	53	50
Jinguowan (Huizhou)	65	56	39
Zimaling (Zhongshan)	67	63	46
Nanchengyuanling (Dongguan)	71	69	52
Tap Mun (Hong Kong)	83	82	54
Tsuen Wan (Hong Kong)	43	51	29
Yuen Long (Hong Kong)	54	54	30
Tung Chung (Hong Kong)	68	72	53
Taipa Grande (Macao)	75	71	47

Table 4.4a：The monthly maxima and minima of hourly averages of CO

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	0.1	1.7	0.3	1.1	0.4	2.9
Nanshadawen (Guangzhou)	0.3	1.4	0.4	1.0	0.2	1.0
Nansha-HKUST (Guangzhou)	0.1	0.9	0.1	0.7	0.1	1.0
Tianhu (Guangzhou)	0.0	1.0	0.1	1.2	0.3	1.0
Zhudong (Guangzhou)	0.3	1.4	0.3	1.2	0.1	2.7
Tongxinling (Shenzhen)	0.4	1.0	0.3	0.8	0.4	0.9
Jinjuzui (Foshan)	0.2	1.4	0.0	0.9	0.2	0.7
Huijingcheng (Foshan)	0.1	1.5	0.3	1.2	0.1	1.0
Tangjia (Zhuhai)	0.1	0.8	0.0	0.8	0.0	0.7
Donghu (Jiangmen)	0.2	1.5	0.3	1.1	0.3	0.8
Duanfen (Jiangmen)	0.3	1.2	0.2	1.0	0.2	0.9
Huaguoshan (Jiangmen)	0.2	1.0	0.2	0.8	0.2	3.3
Chengzhong (Zhaoqing)	0.3	1.2	0.4	1.1	0.0	1.0
Xiapu (Huizhou)	0.4	1.1	0.1	1.0	0.1	0.8
Shixia (Huizhou)	0.2	1.0	0.1	0.7	0.0	1.3
Jinguowan (Huizhou)	0.4	1.0	0.4	0.9	0.4	0.7
Zimaling (Zhongshan)	0.1	0.7	0.1	0.9	0.1	0.7
Nanchengyuanling (Dongguan)	0.4	1.4	0.4	0.9	0.2	1.0
Tap Mun (Hong Kong)	0.1	0.5	0.1	0.6	0.2	0.6
Tsuen Wan (Hong Kong)	0.4	1.2	0.2	0.9	0.2	0.8
Yuen Long (Hong Kong)	0.4	1.6	0.7	1.4	0.8	1.2
Tung Chung (Hong Kong)	0.1	0.7	0.2	0.7	0.3	0.9
Taipa Grande (Macao)	0.3	0.8	0.3	0.9	0.3	0.8

Table 4.4b：Daily averages of CO (the monthly maxima, minima and the 95th percentile)

Monitoring Station	April 2025			May 2025			June 2025		
	Min	Max	95th per	Min	Max	95th per	Min	Max	95th per
Luhu (Guangzhou)	0.3	0.9	0.7	0.4	0.7	0.7	0.4	0.8	0.7
Nanshadawen (Guangzhou)	0.3	0.9	0.9	0.4	0.9	0.9	0.3	0.9	0.8
Nansha-HKUST (Guangzhou)	0.2	0.7	0.7	0.3	0.6	0.5	0.3	0.8	0.7
Tianhu (Guangzhou)	0.4	0.8	0.8	0.5	1.0	1.0	0.3	0.9	0.8
Zhudong (Guangzhou)	0.6	1.0	1.0	0.6	1.0	1.0	0.3	1.0	0.9
Tongxinling (Shenzhen)	0.4	0.7	0.7	0.4	0.6	0.6	0.4	0.8	0.6
Jinjuzui (Foshan)	0.3	0.8	0.7	0.3	0.7	0.7	0.3	0.7	0.6
Huijingcheng (Foshan)	0.2	1.2	0.7	0.4	0.9	0.8	0.4	0.8	0.8
Tangjia (Zhuhai)	0.2	0.6	0.5	0.1	0.7	0.7	0.1	0.7	0.5
Donghu (Jiangmen)	0.3	0.8	0.7	0.4	0.8	0.7	0.4	0.7	0.5
Duanfen (Jiangmen)	0.4	0.8	0.7	0.4	0.7	0.7	0.3	0.8	0.6
Huaguoshan (Jiangmen)	0.5	0.8	0.8	0.3	0.7	0.6	0.2	1.2	0.6
Chengzhong (Zhaoqing)	0.4	0.8	0.8	0.5	0.9	0.8	0.1	0.9	0.8
Xiapu (Huizhou)	0.4	0.7	0.7	0.2	0.7	0.7	0.2	0.7	0.6
Shixia (Huizhou)	0.3	0.7	0.6	0.2	0.6	0.6	0.3	0.6	0.6
Jinguowan (Huizhou)	0.4	0.8	0.7	0.4	0.8	0.8	0.4	0.6	0.6
Zimaling (Zhongshan)	0.1	0.6	0.5	0.1	0.8	0.7	0.2	0.6	0.5
Nanchengyuanling (Dongguan)	0.4	0.9	0.9	0.5	0.8	0.8	0.4	0.9	0.9
Tap Mun (Hong Kong)	0.2	0.5	0.5	0.2	0.6	0.5	0.3	0.6	0.6
Tsuen Wan (Hong Kong)	0.5	1.0	0.9	0.3	0.8	0.7	0.3	0.5	0.5
Yuen Long (Hong Kong)	0.5	1.3	1.3	0.7	1.1	1.1	0.8	1.0	1.0
Tung Chung (Hong Kong)	0.2	0.5	0.5	0.3	0.5	0.5	0.3	0.6	0.6
Taipa Grande (Macao)	0.4	0.6	0.6	0.4	0.7	0.6	0.4	0.7	0.6

Table 4.4c：The monthly averages of CO

Monitoring Station	April 2025	May 2025	June 2025
Luhu (Guangzhou)	0.5	0.6	0.6
Nanshadawen (Guangzhou)	0.6	0.6	0.5
Nansha-HKUST (Guangzhou)	0.5	0.4	0.4
Tianhu (Guangzhou)	0.6	0.7	0.6
Zhudong (Guangzhou)	0.8	0.8	0.6
Tongxinling (Shenzhen)	0.6	0.5	0.5
Jinjuzui (Foshan)	0.5	0.5	0.4
Huijingcheng (Foshan)	0.4	0.7	0.6
Tangjia (Zhuhai)	0.4	0.4	0.3
Donghu (Jiangmen)	0.5	0.6	0.5
Duanfen (Jiangmen)	0.6	0.5	0.4
Huaguoshan (Jiangmen)	0.6	0.5	0.4
Chengzhong (Zhaoqing)	0.6	0.6	0.5
Xiapu (Huizhou)	0.6	0.5	0.3
Shixia (Huizhou)	0.5	0.4	0.5
Jinguowan (Huizhou)	0.6	0.6	0.5
Zimaling (Zhongshan)	0.3	0.4	0.4
Nanchengyuanling (Dongguan)	0.7	0.6	0.6
Tap Mun (Hong Kong)	0.3	0.4	0.4
Tsuen Wan (Hong Kong)	0.7	0.5	0.3
Yuen Long (Hong Kong)	1.0	0.9	0.9
Tung Chung (Hong Kong)	0.3	0.4	0.4
Taipa Grande (Macao)	0.5	0.5	0.4

Table 4.5a：The monthly maxima and minima of daily averages of PM_{10}

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	15	393	17	47	15	34
Nanshadawen (Guangzhou)	17	390	16	59	12	37
Nansha-HKUST (Guangzhou)	25	386	18	59	14	35
Tianhu (Guangzhou)	8	365	7	43	5	31
Zhudong (Guangzhou)	15	351	17	54	12	38
Tongxinling (Shenzhen)	13	269	12	43	7	29
Jinjuzui (Foshan)	18	426	14	50	10	32
Huijingcheng (Foshan)	17	371	18	67	9	38
Tangjia (Zhuhai)	18	275	10	43	2	28
Donghu (Jiangmen)	23	366	15	63	10	35
Duanfen (Jiangmen)	11	342	9	44	9	21
Huaguoshan (Jiangmen)	20	369	17	63	9	34
Chengzhong (Zhaoqing)	22	333	18	67	13	43
Xiapu (Huizhou)	18	329	18	58	12	34
Shixia (Huizhou)	10	337	13	46	11	39
Jinguowan (Huizhou)	16	338	19	47	13	34
Zimaling (Zhongshan)	19	345	11	54	9	28
Nanchengyuanling (Dongguan)	18	376	17	48	12	40
Tap Mun (Hong Kong)	10	191	6	39	5	19
Tsuen Wan (Hong Kong)	11	195	7	33	6	22
Yuen Long (Hong Kong)	11	136	8	37	6	22
Tung Chung (Hong Kong)	10	207	5	38	3	25
Taipa Grande (Macao)	16	370	7	46	4	25

Table 4.5b：The monthly averages of PM_{10}

Monitoring Station	April 2025	May 2025	June 2025
Luhu (Guangzhou)	69	29	21
Nanshadawen (Guangzhou)	73	31	21
Nansha-HKUST (Guangzhou)	74	34	23
Tianhu (Guangzhou)	58	21	14
Zhudong (Guangzhou)	74	32	23
Tongxinling (Shenzhen)	54	25	15
Jinjuzui (Foshan)	72	27	17
Huijingcheng (Foshan)	77	33	21
Tangjia (Zhuhai)	56	23	14
Donghu (Jiangmen)	71	30	18
Duanfen (Jiangmen)	55	21	14
Huaguoshan (Jiangmen)	74	31	20
Chengzhong (Zhaoqing)	76	32	21
Xiapu (Huizhou)	65	31	20
Shixia (Huizhou)	62	29	23
Jinguowan (Huizhou)	65	31	22
Zimaling (Zhongshan)	59	26	16
Nanchengyuanling (Dongguan)	69	29	19
Tap Mun (Hong Kong)	33	18	10
Tsuen Wan (Hong Kong)	40	17	10
Yuen Long (Hong Kong)	32	20	11
Tung Chung (Hong Kong)	35	17	11
Taipa Grande (Macao)	64	22	11

Table 4.6a：The monthly maxima and minima of daily averages of $PM_{2.5}$

Monitoring Station	April 2025		May 2025		June 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	9	90	8	34	6	20
Nanshadawen (Guangzhou)	13	97	10	40	6	21
Nansha-HKUST (Guangzhou)	5	85	5	33	4	18
Tianhu (Guangzhou)	7	82	5	28	5	18
Zhudong (Guangzhou)	9	90	10	36	6	23
Tongxinling (Shenzhen)	6	84	4	27	3	18
Jinjuzui (Foshan)	11	96	8	34	5	15
Huijingcheng (Foshan)	10	91	8	33	3	18
Tangjia (Zhuhai)	4	74	3	28	3	26
Donghu (Jiangmen)	13	91	9	40	5	20
Duanfen (Jiangmen)	7	81	5	30	4	15
Huaguoshan (Jiangmen)	15	107	11	45	5	19
Chengzhong (Zhaoqing)	12	82	9	47	7	27
Xiapu (Huizhou)	12	79	8	36	5	19
Shixia (Huizhou)	12	86	8	34	5	31
Jinguowan (Huizhou)	9	78	5	30	3	16
Zimaling (Zhongshan)	10	80	5	35	3	18
Nanchengyuanling (Dongguan)	11	88	8	34	6	24
Tap Mun (Hong Kong)	6	58	4	30	2	13
Tsuen Wan (Hong Kong)	9	60	6	25	4	14
Yuen Long (Hong Kong)	9	40	6	27	4	13
Tung Chung (Hong Kong)	8	73	5	29	2	18
Taipa Grande (Macao)	9	78	5	31	3	16

Table 4.6b：The monthly averages of $PM_{2.5}$

Monitoring Station	April 2025	May 2025	June 2025
Luhu (Guangzhou)	28	17	10
Nanshadawen (Guangzhou)	32	20	12
Nansha-HKUST (Guangzhou)	24	14	8
Tianhu (Guangzhou)	23	11	7
Zhudong (Guangzhou)	34	20	14
Tongxinling (Shenzhen)	24	13	7
Jinjuzui (Foshan)	27	15	8
Huijingcheng (Foshan)	30	17	8
Tangjia (Zhuhai)	25	15	8
Donghu (Jiangmen)	30	18	10
Duanfen (Jiangmen)	22	12	7
Huaguoshan (Jiangmen)	33	20	13
Chengzhong (Zhaoqing)	35	20	12
Xiapu (Huizhou)	27	19	10
Shixia (Huizhou)	30	18	14
Jinguowan (Huizhou)	24	14	7
Zimaling (Zhongshan)	25	15	8
Nanchengyuanling (Dongguan)	28	18	10
Tap Mun (Hong Kong)	16	11	4
Tsuen Wan (Hong Kong)	20	12	6
Yuen Long (Hong Kong)	17	13	6
Tung Chung (Hong Kong)	19	13	8
Taipa Grande (Macao)	22	13	6

Annex A：Site Information of Monitoring Stations

Monitoring Stations	Address	Area Type	Sampling Height (Above) P.D.)	Above Ground	Date Commenced Operation
Luhu (Guangzhou)	Jufong Garden of Luhu Park,Yuexiu District (Big yard, No. 11 Luhu Park)	City	30m	9m	Jan 1993
Nanshadawen[6] (Guangzhou)	Shinan Road, Dongchong Town, Nansha District	City	23m	10m	Jan 2021
Nansha-HKUST[7] (Guangzhou)	HKUST Fok Ying Tung Research Institute, Nansha District	Mixed educational/ commercial and residential/industrial	54m	28m	Oct 2004
Tianhu (Guangzhou)	Tianhu Park, Conghua District	Background : rural	251m	13m	Oct 2004
Zhudong (Guangzhou)	Zhudong Village Committee, Chini Town, Huadu District	Rural	19m	10m	Dec 2011
Tongxinling[8] (Shenzhen)	Shennan Zhong Road, Futian District	City	38m	12m	Sep 1997
Jinjuzui (Foshan)	Foshan City Communist Party School, Jinjuzui, Shunde District	Tourist and cultural /educational	27m	17m	Oct 1999
Huijingcheng (Foshan)	No. 127, Fenjiang Nan Road, Chancheng District	Urban: mixed residential/commercial/ industrial	24m	14m	Feb 2000
Tangjia (Zhuhai)	Qiao Island Mangrove Monitoring Station, Tangjia Town,Xiangzhou District	Touristl/ eco-protected	13m	13m	Jan 2010
Donghu (Jiangmen)	Donghu Park,Pengjiang District	City	17.5m	5m	Nov 2001
Duanfen (Jiangmen)	Duanfen Middle School, Taishan	Rural	15m	12m	Dec 2011
Huaguoshan (Jiangmen)	Huaguoshan, Taoyuan, Heshan	Rural	25m	15m	Feb 2012
Chengzhong (Zhaoqing)	No. 63, Zhengdong Road, Duanzhou District	Urban: mixed residential/commercial	38m	16m	Jun 2001
Xiapu (Huizhou)	No. 4 Xiabuhengjiang Road No. 3, Huicheng District	Urban: commercial	49m	20m	Dec 1999

[6] Modiesha (Guangzhou) station closed permanently owing to insufficient space after the extensive renovation work at station, whereas Nanshadawen (Guangzhou) station joined the network in the 1st quarter of 2021.

[7] Wanqingsha (Guangzhou) station was renamed as Nansha-HKUST (Guangzhou) station in the 1st quarter of 2019.

[8] Liyuan (Shenzhen) station was renamed as Tongxinling (Shenzhen) station in the 1st quarter of 2019.

Monitoring Stations	Address	Area Type	Sampling Height (Above) P.D.)	Above Ground	Date Commenced Operation
Shixia[9] (Huizhou)	Community Service Center, Shixiatun Village, Changning Town，Boluo County	Rural	44m	10m	Dec 2011
Jinguowan (Huizhou)	Jinguowan Ecological Farm,Yonghu Town, Huiyang District	Residential	77m	8m	Oct 2004
Zimaling (Zhongshan)	Zimaling Park,Bo'ai Road No.6, East District	Mixed residential/ commercial	45 m	7m	Aug 2002
Nancheng-yuanling[10] (Dongguan)	Dongguan Administration Center, Nancheng Street, Urban District	Mixed residential/ commercial/industrial	40 m	19m	May 2021
Tap Mun (Hong Kong)	Tap Mun Police Station, Tai Po District, New Territories	Background: rural	26m	11m	Apr 1998
Tsuen Wan (Hong Kong)	60 Tai Ho Road, Tsuen Wan, Tsuen Wan District, New Territories	Urban: mixed residential/commercial/ industrial	21m	17m	Aug 1988
Yuen Long (Hong Kong)	Yuen Long District Office, 269 Castle Peak Road, Yuen Long District, New Territories	New Town: residential	31m	25m	Jul 1995
Tung Chung (Hong Kong)	6 Fu Tung Street, Tung Chung, Islands District, NewTerritories	New Town: residential	34.5m	27.5m	Apr 1999
Taipa Grande (Macao)	Rampa do Observatorio, Taipa Grande, Taipa Island	Rural	113.1m	3m (gaseous pollutants)[11] / 5m (particulate matter)	Mar 1999

[9] Xijiao (Huizhou) station was relocated to a monitoring station located in Shixiatun Village, Changning Town, Boluo County, Huizhou City in the 2nd quarter of 2023, and changed its name to " Shixia (Huizhou)"

[10] Nancheng-yuanling (Dongguan) station was relocated to Dongguan administration center in May 2021. The distance between the old and new sites is about 600 metres.

[11] Gaseous pollutants include Sulphur dioxide (SO2), Nitrogen dioxide (NO2), Ozone (O3) and Carbon monoxide (CO).

Annex B：Measurement Methods of Air Pollutant Concentration

Pollutants	**Measuring Principles**
Sulphur dioxide (SO_2)	UV fluorescence / Differential Optical Absorption Spectroscopy
Nitrogen dioxide (NO_2)	Chemiluminescence / Differential Optical Absorption Spectroscopy
Ozone (O_3)	UV absorption / Differential Optical Absorption Spectroscopy
Respirable suspended particulates (PM_{10})	Oscillating microbalance (TEOM) / Beta particulate monitor
Fine suspended particulates ($PM_{2.5}$)	Oscillating microbalance (TEOM) / Beta particulate monitor / Hybrid nephelometric / radiometric particulate mass monitor
Carbon monoxide (CO)	Gas filter correlation infrared absorption method / Non-dispersive infrared absorption method