Guangdong-Hong Kong-Macao

Pearl River Delta

Regional Air Quality Monitoring Network

January to March 2025

Statistical Summary of the First Quarter Monitoring Results

Report Number	**:**	**PRDAIR-2025-1**
Report Prepared by	**:**	**Guangdong Ecological and Environmental Monitoring Centre** **Environmental Protection Department, Hong Kong SARG** **Environmental Protection Bureau, Macao SARG** **Meteorological and Geophysical Bureau, Macao SARG**
Approved by	**:**	**Quality Management Committee of Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network**
Security Classification	**:**	**Unrestricted**

Contents

		Page
1.	Foreword	3
2.	Introduction to Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network	3
3.	Operation of the Network	5
4.	Statistical Results of Pollutant Concentrations	5
Annex A：	Site Information of Monitoring Stations	22
Annex B：	Measurement Methods of Air Pollutant Concentration	24

List of Tables

	Page
Table 4.1a： The monthly maxima and minima of hourly averages of SO_2	6
Table 4.1b： The monthly maxima and minima of daily averages of SO_2	7
Table 4.1c ： The monthly averages of SO_2	8
Table 4.2a： The monthly maxima and minima of hourly averages of NO_2	9
Table 4.2b： The monthly maxima and minima of daily averages of NO_2	10
Table 4.2c： The monthly averages of NO_2	11
Table 4.3a： The monthly maxima and minima of hourly averages of O_3	12
Table 4.3b： Daily maximum 8-hour averages of O_3 (the monthly maxima, minima and the 90^{th} percentile)	13
Table 4.3c： The monthly averages of O_3	14
Table 4.4a： The monthly maxima and minima of hourly averages of CO	15
Table 4.4b： Daily averages of CO (the monthly maxima, minima and the 95^{th} percentile)	16
Table 4.4c： The monthly averages of CO	17
Table 4.5a： The monthly maxima and minima of daily averages of PM_{10}	18
Table 4.5b： The monthly averages of PM_{10}	19
Table 4.6a： The monthly maxima and minima of daily averages of $PM_{2.5}$	20
Table 4.6b： The monthly averages of $PM_{2.5}$	21

List of Figures

	Page
Figure 2.1： Spatial Distribution of Monitoring Stations in the Network	4

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 January to March, the first quarter of 2025. It is the forty-fifth report published in the form of a quarterly report and the forty-second 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, 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.

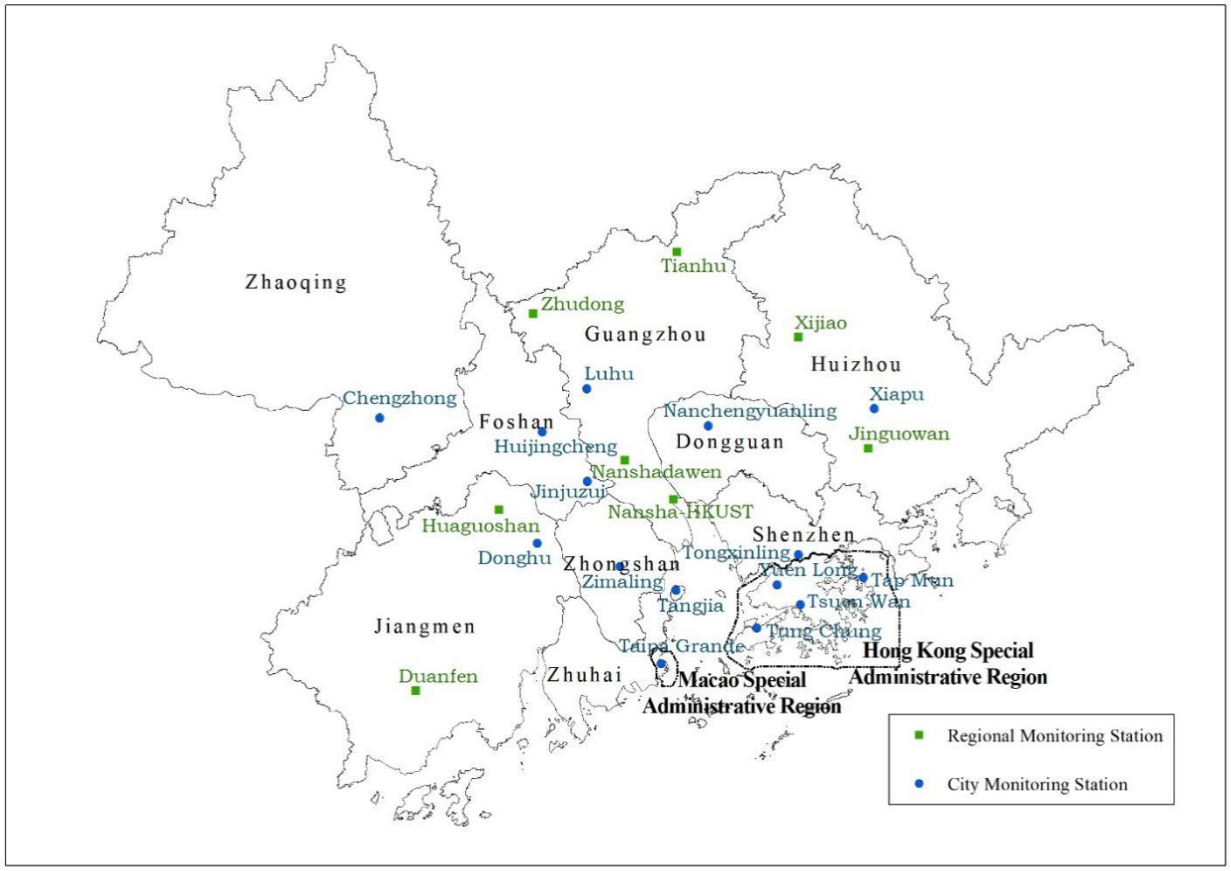

Figure 2.1：Spatial Distribution of Monitoring Stations in the Network[2]

[2] 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 smooth in the first quarter of 2025. The average data capture rate of hourly air pollutant monitoring data measured at all monitoring stations was 98.7% in the first 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 January to March 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 [3]

Monitoring Station	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	1	30	1	11	2	62
Nanshadawen (Guangzhou)	3	35	3	12	5	20
Nansha-HKUST (Guangzhou)	4	16	4	12	4	16
Tianhu (Guangzhou)	3	17	7	18	7	32
Zhudong (Guangzhou)	1	95	2	21	2	28
Tongxinling (Shenzhen)	5	13	4	8	4	10
Jinjuzui (Foshan)	3	23	3	8	2	28
Huijingcheng (Foshan)	6	33	6	14	7	22
Tangjia (Zhuhai)	3	11	3	9	4	9
Donghu (Jiangmen)	4	16	5	12	6	22
Duanfen (Jiangmen)	7	18	6	19	7	15
Huaguoshan (Jiangmen)	1	67	1	11	3	18
Chengzhong (Zhaoqing)	5	31	1	17	1	36
Xiapu (Huizhou)	5	21	5	10	6	20
Shixia (Huizhou)	2	177	2	25	6	38
Jinguowan (Huizhou)	6	22	4	8	4	15
Zimaling (Zhongshan)	4	48	4	10	5	12
Nanchengyuanling (Dongguan)	5	28	3	11	3	12
Tap Mun (Hong Kong)	0	10	0	3	0	10
Tsuen Wan (Hong Kong)	0	12	0	11	1	23
Yuen Long (Hong Kong)	0	8	0	5	0	6
Tung Chung (Hong Kong)	0	12	0	10	0	10
Taipa Grande (Macao)	4	15	4	9	3	15

[3] 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	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	2	8	2	5	3	10
Nanshadawen (Guangzhou)	3	9	4	8	5	10
Nansha-HKUST (Guangzhou)	4	11	4	7	5	8
Tianhu (Guangzhou)	4	12	7	11	7	13
Zhudong (Guangzhou)	3	15	4	15	3	10
Tongxinling (Shenzhen)	6	10	5	7	5	8
Jinjuzui (Foshan)	4	10	3	6	2	10
Huijingcheng (Foshan)	7	17	7	10	7	14
Tangjia (Zhuhai)	3	7	4	6	4	7
Donghu (Jiangmen)	5	12	5	10	6	11
Duanfen (Jiangmen)	8	13	7	11	7	10
Huaguoshan (Jiangmen)	2	13	2	8	4	8
Chengzhong (Zhaoqing)	6	11	2	10	3	17
Xiapu (Huizhou)	5	12	6	8	7	13
Shixia (Huizhou)	3	17	3	9	7	12
Jinguowan (Huizhou)	6	11	4	7	5	8
Zimaling (Zhongshan)	4	13	5	7	6	9
Nanchengyuanling (Dongguan)	5	11	4	9	4	8
Tap Mun (Hong Kong)	0	5	0	2	0	5
Tsuen Wan (Hong Kong)	1	4	0	5	1	7
Yuen Long (Hong Kong)	0	4	0	2	1	4
Tung Chung (Hong Kong)	1	4	1	4	1	4
Taipa Grande (Macao)	5	8	5	6	3	7

Table 4.1c： The monthly averages of SO_2

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

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

Monitoring Station	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	3	140	3	112	7	174
Nanshadawen (Guangzhou)	5	165	5	95	7	136
Nansha-HKUST (Guangzhou)	1	135	6	100	9	108
Tianhu (Guangzhou)	6	37	5	36	6	39
Zhudong (Guangzhou)	1	89	6	81	12	115
Tongxinling (Shenzhen)	1	118	3	74	2	75
Jinjuzui (Foshan)	4	148	4	76	7	111
Huijingcheng (Foshan)	3	162	2	122	11	131
Tangjia (Zhuhai)	6	113	5	74	5	76
Donghu (Jiangmen)	4	135	6	76	5	87
Duanfen (Jiangmen)	6	51	5	63	2	45
Huaguoshan (Jiangmen)	6	131	6	73	4	88
Chengzhong (Zhaoqing)	7	131	6	100	6	127
Xiapu (Huizhou)	4	91	4	56	7	64
Shixia (Huizhou)	3	63	3	53	6	67
Jinguowan (Huizhou)	4	45	4	28	4	49
Zimaling (Zhongshan)	6	123	5	70	5	77
Nanchengyuanling (Dongguan)	1	121	1	71	2	115
Tap Mun (Hong Kong)	4	60	3	34	2	56
Tsuen Wan (Hong Kong)	8	150	6	166	9	149
Yuen Long (Hong Kong)	8	163	9	112	12	121
Tung Chung (Hong Kong)	6	153	6	107	4	135
Taipa Grande (Macao)	6	112	4	73	6	91

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

Monitoring Station	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	6	89	7	57	17	70
Nanshadawen (Guangzhou)	9	85	6	45	15	63
Nansha-HKUST (Guangzhou)	5	59	9	53	19	56
Tianhu (Guangzhou)	7	21	6	23	7	26
Zhudong (Guangzhou)	3	52	8	48	15	54
Tongxinling (Shenzhen)	5	58	6	32	10	40
Jinjuzui (Foshan)	8	80	8	52	13	57
Huijingcheng (Foshan)	9	94	6	61	18	82
Tangjia (Zhuhai)	8	45	7	46	12	40
Donghu (Jiangmen)	9	81	9	47	10	45
Duanfen (Jiangmen)	9	34	10	29	5	28
Huaguoshan (Jiangmen)	10	76	9	48	9	50
Chengzhong (Zhaoqing)	9	79	7	55	11	66
Xiapu (Huizhou)	6	42	5	27	9	32
Shixia (Huizhou)	5	24	4	25	8	36
Jinguowan (Huizhou)	5	24	5	17	7	31
Zimaling (Zhongshan)	11	65	9	55	8	41
Nanchengyuanling (Dongguan)	4	63	3	36	8	47
Tap Mun (Hong Kong)	5	19	5	18	6	23
Tsuen Wan (Hong Kong)	23	83	19	81	21	67
Yuen Long (Hong Kong)	22	92	18	59	19	67
Tung Chung (Hong Kong)	12	68	20	60	14	70
Taipa Grande (Macao)	12	55	13	42	9	45

Table 4.2c：The monthly averages of NO_2

Monitoring Station	January 2025	February 2025	March 2025
Luhu (Guangzhou)	45	29	37
Nanshadawen (Guangzhou)	49	29	37
Nansha-HKUST (Guangzhou)	31	32	37
Tianhu (Guangzhou)	15	11	13
Zhudong (Guangzhou)	22	24	30
Tongxinling (Shenzhen)	26	14	21
Jinjuzui (Foshan)	44	27	29
Huijingcheng (Foshan)	50	34	38
Tangjia (Zhuhai)	30	23	22
Donghu (Jiangmen)	40	25	24
Duanfen (Jiangmen)	22	17	15
Huaguoshan (Jiangmen)	41	27	26
Chengzhong (Zhaoqing)	45	25	28
Xiapu (Huizhou)	21	14	19
Shixia (Huizhou)	16	12	19
Jinguowan (Huizhou)	16	11	14
Zimaling (Zhongshan)	38	23	24
Nanchengyuanling (Dongguan)	31	18	25
Tap Mun (Hong Kong)	12	9	12
Tsuen Wan (Hong Kong)	50	43	46
Yuen Long (Hong Kong)	48	37	42
Tung Chung (Hong Kong)	41	37	39
Taipa Grande (Macao)	35	26	28

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

Monitoring Station	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	2	178	2	191	2	283
Nanshadawen (Guangzhou)	1	189	1	183	2	299
Nansha-HKUST (Guangzhou)	1	228	1	178	1	245
Tianhu (Guangzhou)	33	160	14	162	11	237
Zhudong (Guangzhou)	3	214	3	184	2	267
Tongxinling (Shenzhen)	1	189	2	200	1	205
Jinjuzui (Foshan)	2	207	2	171	2	256
Huijingcheng (Foshan)	1	191	2	190	2	269
Tangjia (Zhuhai)	3	222	5	177	1	234
Donghu (Jiangmen)	3	197	2	191	3	302
Duanfen (Jiangmen)	17	211	3	189	3	192
Huaguoshan (Jiangmen)	1	180	3	171	5	250
Chengzhong (Zhaoqing)	4	185	2	171	4	256
Xiapu (Huizhou)	4	160	5	159	8	302
Shixia (Huizhou)	13	162	7	258	1	322
Jinguowan (Huizhou)	3	137	4	148	2	287
Zimaling (Zhongshan)	2	232	2	181	2	265
Nanchengyuanling (Dongguan)	3	205	1	201	1	250
Tap Mun (Hong Kong)	37	186	22	194	9	204
Tsuen Wan (Hong Kong)	3	123	2	167	2	124
Yuen Long (Hong Kong)	0	190	0	210	0	180
Tung Chung (Hong Kong)	13	174	13	184	13	220
Taipa Grande (Macao)	10	193	2	162	2	223

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

Monitoring Station	January 2025			February 2025			March 2025		
	Min	Max	90th per	Min	Max	90th per	Min	Max	90th per
Luhu (Guangzhou)	62	151	139	23	149	122	15	234	200
Nanshadawen (Guangzhou)	54	168	146	22	138	127	8	232	205
Nansha-HKUST (Guangzhou)	60	174	145	35	144	113	5	211	159
Tianhu (Guangzhou)	62	145	140	41	134	120	38	224	181
Zhudong (Guangzhou)	74	180	159	36	170	130	24	239	221
Tongxinling (Shenzhen)	65	155	152	51	152	122	6	181	169
Jinjuzui (Foshan)	61	174	152	17	124	114	7	198	181
Huijingcheng (Foshan)	69	163	142	23	146	122	12	241	209
Tangjia (Zhuhai)	69	183	156	50	156	116	7	206	161
Donghu (Jiangmen)	68	177	154	22	145	127	9	267	199
Duanfen (Jiangmen)	62	174	167	42	166	117	8	162	131
Huaguoshan (Jiangmen)	70	146	136	28	126	118	12	218	176
Chengzhong (Zhaoqing)	84	163	146	34	153	134	30	223	202
Xiapu (Huizhou)	78	145	135	49	129	116	24	245	164
Shixia (Huizhou)	55	138	133	45	200	126	19	265	182
Jinguowan (Huizhou)	47	122	116	39	119	100	12	225	158
Zimaling (Zhongshan)	64	182	156	19	146	120	6	223	178
Nanchengyuanling (Dongguan)	64	170	151	40	147	122	11	210	194
Tap Mun (Hong Kong)	100	179	159	58	163	143	36	190	173
Tsuen Wan (Hong Kong)	32	109	98	34	109	82	15	102	96
Yuen Long (Hong Kong)	31	141	116	41	128	96	12	154	126
Tung Chung (Hong Kong)	36	132	124	43	138	108	25	161	125
Taipa Grande (Macao)	74	154	139	36	141	106	5	177	151

Table 4.3c: The monthly averages of O_3

Monitoring Station	January 2025	February 2025	March 2025
Luhu (Guangzhou)	66	50	54
Nanshadawen (Guangzhou)	66	53	52
Nansha-HKUST (Guangzhou)	76	53	49
Tianhu (Guangzhou)	103	68	78
Zhudong (Guangzhou)	81	55	64
Tongxinling (Shenzhen)	90	74	62
Jinjuzui (Foshan)	73	52	55
Huijingcheng (Foshan)	70	53	62
Tangjia (Zhuhai)	82	65	61
Donghu (Jiangmen)	74	61	67
Duanfen (Jiangmen)	87	66	58
Huaguoshan (Jiangmen)	67	51	60
Chengzhong (Zhaoqing)	71	57	63
Xiapu (Huizhou)	88	66	69
Shixia (Huizhou)	80	58	63
Jinguowan (Huizhou)	69	53	62
Zimaling (Zhongshan)	73	60	59
Nanchengyuanling (Dongguan)	81	58	59
Tap Mun (Hong Kong)	111	87	75
Tsuen Wan (Hong Kong)	65	48	42
Yuen Long (Hong Kong)	71	53	43
Tung Chung (Hong Kong)	81	60	56
Taipa Grande (Macao)	88	65	61

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

Monitoring Station	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	0.4	1.4	0.2	1.2	0.0	1.5
Nanshadawen (Guangzhou)	0.4	1.4	0.4	1.2	0.3	0.9
Nansha-HKUST (Guangzhou)	0.2	1.2	0.3	1.2	0.2	1.0
Tianhu (Guangzhou)	0.3	1.1	0.4	1.2	0.3	1.0
Zhudong (Guangzhou)	0.1	1.5	0.1	1.3	0.2	1.2
Tongxinling (Shenzhen)	0.3	1.5	0.3	0.9	0.4	1.0
Jinjuzui (Foshan)	0.3	1.4	0.3	1.1	0.3	1.2
Huijingcheng (Foshan)	0.1	2.1	0.1	1.4	0.4	1.5
Tangjia (Zhuhai)	0.1	0.8	0.2	0.7	0.0	0.8
Donghu (Jiangmen)	0.3	1.8	0.3	1.4	0.2	1.3
Duanfen (Jiangmen)	0.5	1.2	0.3	1.3	0.3	1.1
Huaguoshan (Jiangmen)	0.3	1.2	0.3	1.1	0.3	1.1
Chengzhong (Zhaoqing)	0.2	1.3	0.3	1.3	0.4	1.2
Xiapu (Huizhou)	0.3	1.3	0.4	1.1	0.4	0.9
Shixia (Huizhou)	0.1	0.9	0.4	0.9	0.4	1.0
Jinguowan (Huizhou)	0.3	0.8	0.4	1.0	0.4	0.9
Zimaling (Zhongshan)	0.2	0.9	0.3	0.9	0.2	0.9
Nanchengyuanling (Dongguan)	0.3	1.7	0.4	1.1	0.3	1.1
Tap Mun (Hong Kong)	0.1	0.7	0.2	0.6	0.2	0.6
Tsuen Wan (Hong Kong)	0.4	1.1	0.5	1.4	0.4	1.1
Yuen Long (Hong Kong)	0.4	1.5	0.4	1.6	0.8	1.4
Tung Chung (Hong Kong)	0.5	1.1	0.6	1.2	0.2	1.2
Taipa Grande (Macao)	0.3	0.9	0.4	0.9	0.3	0.9

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

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

Table 4.4c：The monthly averages of CO

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

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

Monitoring Station	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	17	97	10	63	10	82
Nanshadawen (Guangzhou)	15	111	8	70	8	77
Nansha-HKUST (Guangzhou)	23	96	13	84	13	79
Tianhu (Guangzhou)	16	61	6	62	3	77
Zhudong (Guangzhou)	16	98	7	75	10	91
Tongxinling (Shenzhen)	17	81	9	71	9	52
Jinjuzui (Foshan)	19	112	11	74	13	73
Huijingcheng (Foshan)	19	126	8	95	14	116
Tangjia (Zhuhai)	15	82	12	70	10	52
Donghu (Jiangmen)	16	113	7	69	11	71
Duanfen (Jiangmen)	16	85	10	55	11	45
Huaguoshan (Jiangmen)	14	117	10	79	16	92
Chengzhong (Zhaoqing)	15	92	6	105	6	79
Xiapu (Huizhou)	17	87	7	62	6	74
Shixia (Huizhou)	16	86	8	58	7	78
Jinguowan (Huizhou)	16	91	10	70	4	67
Zimaling (Zhongshan)	15	87	9	67	10	55
Nanchengyuanling (Dongguan)	16	98	5	66	6	66
Tap Mun (Hong Kong)	22	72	11	62	2	36
Tsuen Wan (Hong Kong)	15	60	8	69	4	33
Yuen Long (Hong Kong)	16	67	9	66	8	44
Tung Chung (Hong Kong)	17	67	9	68	7	38
Taipa Grande (Macao)	24	89	13	87	12	60

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

Monitoring Station	January 2025	February 2025	March 2025
Luhu (Guangzhou)	58	38	40
Nanshadawen (Guangzhou)	69	43	40
Nansha-HKUST (Guangzhou)	66	45	41
Tianhu (Guangzhou)	37	30	28
Zhudong (Guangzhou)	60	40	41
Tongxinling (Shenzhen)	49	33	29
Jinjuzui (Foshan)	72	45	39
Huijingcheng (Foshan)	75	51	47
Tangjia (Zhuhai)	54	37	29
Donghu (Jiangmen)	72	45	39
Duanfen (Jiangmen)	52	33	26
Huaguoshan (Jiangmen)	74	49	43
Chengzhong (Zhaoqing)	64	50	39
Xiapu (Huizhou)	57	35	35
Shixia (Huizhou)	51	34	34
Jinguowan (Huizhou)	51	32	30
Zimaling (Zhongshan)	55	36	31
Nanchengyuanling (Dongguan)	58	39	36
Tap Mun (Hong Kong)	43	29	19
Tsuen Wan (Hong Kong)	36	28	21
Yuen Long (Hong Kong)	42	29	25
Tung Chung (Hong Kong)	41	29	21
Taipa Grande (Macao)	56	38	32

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

Monitoring Station	January 2025		February 2025		March 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	12	64	7	43	6	43
Nanshadawen (Guangzhou)	10	70	5	44	4	47
Nansha-HKUST (Guangzhou)	7	60	4	37	4	34
Tianhu (Guangzhou)	9	40	4	42	5	39
Zhudong (Guangzhou)	11	77	5	45	7	57
Tongxinling (Shenzhen)	9	48	4	36	3	30
Jinjuzui (Foshan)	10	64	7	34	5	39
Huijingcheng (Foshan)	9	73	4	62	6	70
Tangjia (Zhuhai)	8	56	5	55	2	33
Donghu (Jiangmen)	11	77	8	45	9	45
Duanfen (Jiangmen)	7	72	6	32	7	27
Huaguoshan (Jiangmen)	9	77	6	48	8	50
Chengzhong (Zhaoqing)	8	61	3	85	3	52
Xiapu (Huizhou)	9	58	5	37	3	41
Shixia (Huizhou)	10	67	4	40	4	49
Jinguowan (Huizhou)	8	56	5	29	2	33
Zimaling (Zhongshan)	7	61	5	48	5	36
Nanchengyuanling (Dongguan)	8	60	4	43	3	40
Tap Mun (Hong Kong)	12	42	7	31	2	22
Tsuen Wan (Hong Kong)	11	45	6	50	4	23
Yuen Long (Hong Kong)	11	49	7	46	6	28
Tung Chung (Hong Kong)	12	44	7	44	6	25
Taipa Grande (Macao)	15	53	9	43	7	31

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

Monitoring Station	January 2025	February 2025	March 2025
Luhu (Guangzhou)	36	24	22
Nanshadawen (Guangzhou)	42	28	23
Nansha-HKUST (Guangzhou)	31	22	17
Tianhu (Guangzhou)	19	16	13
Zhudong (Guangzhou)	40	26	25
Tongxinling (Shenzhen)	28	19	16
Jinjuzui (Foshan)	36	23	20
Huijingcheng (Foshan)	42	29	24
Tangjia (Zhuhai)	33	24	18
Donghu (Jiangmen)	43	29	23
Duanfen (Jiangmen)	34	20	15
Huaguoshan (Jiangmen)	44	30	24
Chengzhong (Zhaoqing)	39	33	24
Xiapu (Huizhou)	34	22	20
Shixia (Huizhou)	33	23	21
Jinguowan (Huizhou)	26	17	14
Zimaling (Zhongshan)	34	23	18
Nanchengyuanling (Dongguan)	33	24	19
Tap Mun (Hong Kong)	24	17	12
Tsuen Wan (Hong Kong)	25	20	15
Yuen Long (Hong Kong)	27	20	16
Tung Chung (Hong Kong)	27	20	14
Taipa Grande (Macao)	32	23	17

Annex A：Site Information of Monitoring Stations

Monitoring Stations	Address	Area Type	Sampling Height (Above)	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[4] (Guangzhou)	Shinan Road, Dongchong Town, Nansha District	City	23m	10m	Jan 2021
Nansha-HKUST[5] (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[6] (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	Urban: commercial	49m	20m	Dec 1999

[4] 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.

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

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

Shixia[7] (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[8] (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)[9] / 5m (particulate matter)	Mar 1999

[7] 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)"

[8] 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.

[9] Gaseous pollutants include Sulphur dioxide (SO_2), Nitrogen dioxide (NO_2), Ozone (O_3) 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 /
Carbon monoxide (CO)	Gas filter correlation infrared absorption method / Non-dispersive infrared absorption method