Guangdong-Hong Kong-Macao

Pearl River Delta

Regional Air Quality Monitoring Network

July to September 2025

Statistical Summary of the Third Quarter Monitoring Results

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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 July to September, the third quarter of 2025. It is the forty-seventh report published in the form of a quarterly report and the forty-fourth 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.

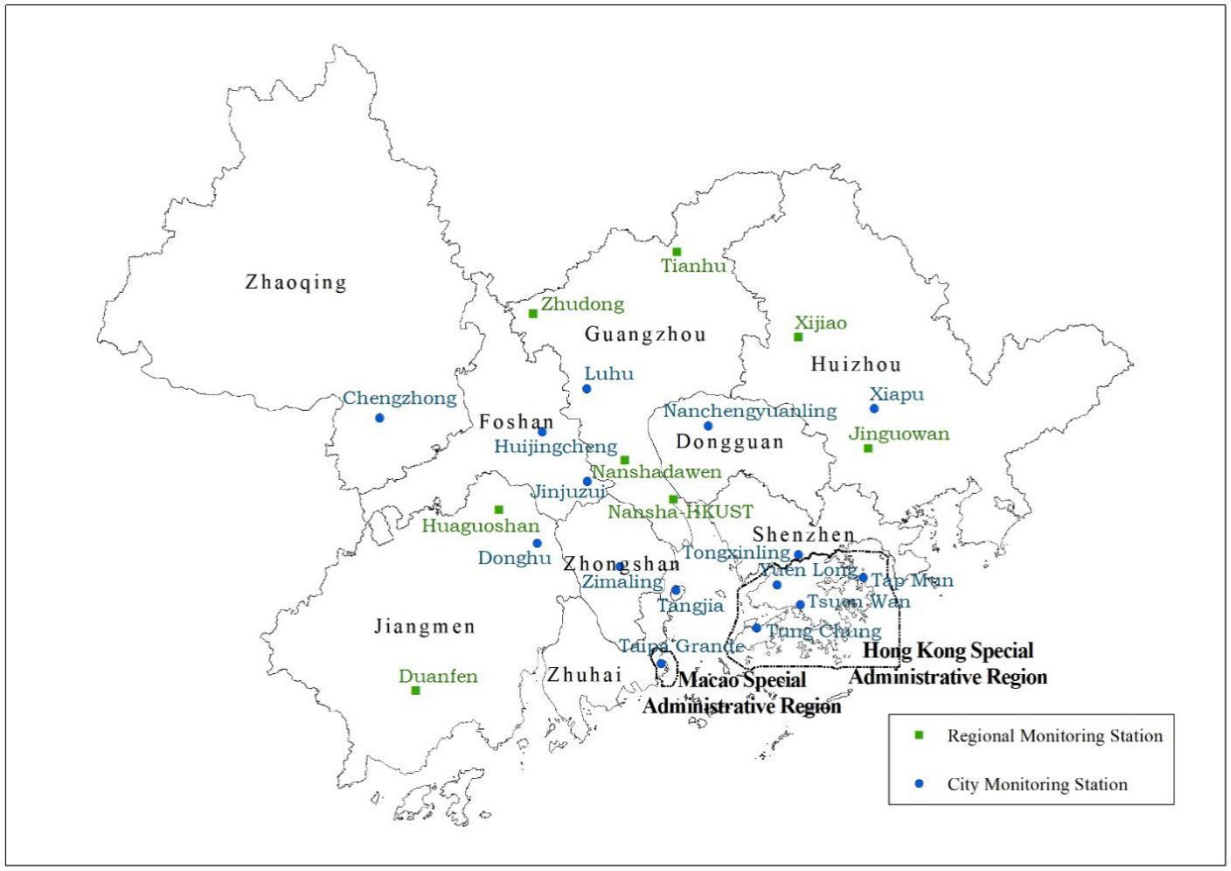

Figure 2.1： Spatial Distribution of Monitoring Stations in the Network[3]

[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 third quarter of 2025. The average data capture rate of hourly air pollutant monitoring data measured at all monitoring stations was 97.6% in the third 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 July to September 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	July 2025		August 2025		September 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	1	11	1	7	2	8
Nanshadawen (Guangzhou)	2	11	2	28	3	16
Nansha-HKUST (Guangzhou)	4	9	4	16	1	11
Tianhu (Guangzhou)	3	11	5	12	5	13
Zhudong (Guangzhou)	1	26	2	14	3	11
Tongxinling (Shenzhen)	5	10	3	8	6	13
Jinjuzui (Foshan)	2	16	2	18	2	10
Huijingcheng (Foshan)	4	25	5	14	6	23
Tangjia (Zhuhai)	2	7	2	7	3	8
Donghu (Jiangmen)	5	12	4	12	1	12
Duanfen (Jiangmen)	8	61	2	16	2	17
Huaguoshan (Jiangmen)	1	14	1	11	3	10
Chengzhong (Zhaoqing)	5	48	5	49	5	32
Xiapu (Huizhou)	3	11	3	36	5	16
Shixia (Huizhou)	1	25	5	24	6	103
Jinguowan (Huizhou)	4	17	5	12	4	13
Zimaling (Zhongshan)	4	11	4	8	5	9
Nanchengyuanling (Dongguan)	3	20	4	17	3	10
Tap Mun (Hong Kong)	0	6	0	5	0	4
Tsuen Wan (Hong Kong)	0	8	0	6	0	10
Yuen Long (Hong Kong)	0	6	0	9	0	6
Tung Chung (Hong Kong)	1	4	0	6	0	4
Taipa Grande (Macao)	4	8	1	9	2	9

[4] All pollutants, except for carbon monoxide, are measured in micrograms per cubic meter (μg/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	July 2025		August 2025		September 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	2	5	1	4	2	5
Nanshadawen (Guangzhou)	2	6	2	6	4	7
Nansha-HKUST (Guangzhou)	5	7	4	7	1	6
Tianhu (Guangzhou)	3	8	5	7	5	9
Zhudong (Guangzhou)	3	11	2	6	4	6
Tongxinling (Shenzhen)	6	9	4	7	6	9
Jinjuzui (Foshan)	3	5	3	5	3	5
Huijingcheng (Foshan)	5	13	5	10	6	11
Tangjia (Zhuhai)	3	5	3	5	4	6
Donghu (Jiangmen)	5	8	5	9	1	8
Duanfen (Jiangmen)	8	11	4	10	2	7
Huaguoshan (Jiangmen)	2	10	2	6	4	7
Chengzhong (Zhaoqing)	8	15	8	17	8	15
Xiapu (Huizhou)	4	6	4	8	6	8
Shixia (Huizhou)	3	11	6	9	7	18
Jinguowan (Huizhou)	5	8	5	7	4	7
Zimaling (Zhongshan)	4	7	4	7	6	7
Nanchengyuanling (Dongguan)	4	9	5	9	4	6
Tap Mun (Hong Kong)	0	2	0	2	1	3
Tsuen Wan (Hong Kong)	1	3	1	3	1	4
Yuen Long (Hong Kong)	0	3	0	3	1	4
Tung Chung (Hong Kong)	1	2	0	2	0	2
Taipa Grande (Macao)	5	6	2	6	2	4

Table 4.1c： The monthly averages of SO_2

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

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

Monitoring Station	July 2025		August 2025		September 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	4	65	7	81	2	72
Nanshadawen (Guangzhou)	2	64	5	86	3	74
Nansha-HKUST (Guangzhou)	1	53	1	89	1	64
Tianhu (Guangzhou)	1	23	1	24	1	38
Zhudong (Guangzhou)	1	34	2	55	1	41
Tongxinling (Shenzhen)	1	51	1	45	1	59
Jinjuzui (Foshan)	2	56	1	62	1	56
Huijingcheng (Foshan)	2	71	6	73	3	78
Tangjia (Zhuhai)	2	67	4	72	5	60
Donghu (Jiangmen)	5	38	5	78	5	48
Duanfen (Jiangmen)	2	17	3	25	2	25
Huaguoshan (Jiangmen)	1	41	3	40	3	43
Chengzhong (Zhaoqing)	4	84	3	74	4	95
Xiapu (Huizhou)	1	37	2	41	1	36
Shixia (Huizhou)	4	41	4	38	3	46
Jinguowan (Huizhou)	2	34	1	26	1	41
Zimaling (Zhongshan)	3	50	5	66	3	58
Nanchengyuanling (Dongguan)	5	62	5	59	3	60
Tap Mun (Hong Kong)	0	42	1	38	0	27
Tsuen Wan (Hong Kong)	0	137	2	86	0	94
Yuen Long (Hong Kong)	2	105	5	95	1	77
Tung Chung (Hong Kong)	2	96	3	70	2	88
Taipa Grande (Macao)	1	47	2	67	1	49

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

Monitoring Station	July 2025		August 2025		September 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	12	38	19	39	5	33
Nanshadawen (Guangzhou)	10	31	14	50	5	38
Nansha-HKUST (Guangzhou)	7	27	12	41	3	28
Tianhu (Guangzhou)	2	11	2	11	2	13
Zhudong (Guangzhou)	6	18	9	24	2	21
Tongxinling (Shenzhen)	4	26	3	22	2	31
Jinjuzui (Foshan)	7	26	7	42	4	29
Huijingcheng (Foshan)	11	35	13	40	6	44
Tangjia (Zhuhai)	7	24	6	34	6	35
Donghu (Jiangmen)	8	21	8	41	7	30
Duanfen (Jiangmen)	4	9	5	12	5	15
Huaguoshan (Jiangmen)	7	19	10	22	5	23
Chengzhong (Zhaoqing)	11	35	12	41	5	37
Xiapu (Huizhou)	3	20	6	17	2	17
Shixia (Huizhou)	6	20	5	17	5	18
Jinguowan (Huizhou)	5	15	3	11	2	17
Zimaling (Zhongshan)	6	21	7	39	4	30
Nanchengyuanling (Dongguan)	11	32	11	37	5	32
Tap Mun (Hong Kong)	2	16	3	13	2	15
Tsuen Wan (Hong Kong)	5	63	14	48	4	45
Yuen Long (Hong Kong)	8	54	12	45	3	46
Tung Chung (Hong Kong)	9	44	8	34	3	47
Taipa Grande (Macao)	4	22	4	37	3	25

Table 4.2c：The monthly averages of NO_2

Monitoring Station	July 2025	August 2025	September 2025
Luhu (Guangzhou)	22	28	23
Nanshadawen (Guangzhou)	22	27	23
Nansha-HKUST (Guangzhou)	16	20	16
Tianhu (Guangzhou)	6	6	6
Zhudong (Guangzhou)	12	15	14
Tongxinling (Shenzhen)	14	12	11
Jinjuzui (Foshan)	16	18	16
Huijingcheng (Foshan)	21	24	24
Tangjia (Zhuhai)	13	13	14
Donghu (Jiangmen)	13	15	16
Duanfen (Jiangmen)	7	7	8
Huaguoshan (Jiangmen)	12	14	15
Chengzhong (Zhaoqing)	22	22	22
Xiapu (Huizhou)	12	11	10
Shixia (Huizhou)	13	11	12
Jinguowan (Huizhou)	11	7	8
Zimaling (Zhongshan)	12	13	13
Nanchengyuanling (Dongguan)	21	21	21
Tap Mun (Hong Kong)	8	7	4
Tsuen Wan (Hong Kong)	39	29	27
Yuen Long (Hong Kong)	34	27	28
Tung Chung (Hong Kong)	23	19	21
Taipa Grande (Macao)	11	12	12

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

Monitoring Station	July 2025		August 2025		September 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	1	223	1	224	1	193
Nanshadawen (Guangzhou)	3	262	3	233	3	241
Nansha-HKUST (Guangzhou)	1	234	1	252	1	234
Tianhu (Guangzhou)	20	177	15	226	13	177
Zhudong (Guangzhou)	2	216	3	228	3	223
Tongxinling (Shenzhen)	1	315	1	158	1	171
Jinjuzui (Foshan)	2	196	2	190	2	194
Huijingcheng (Foshan)	6	265	6	229	6	260
Tangjia (Zhuhai)	2	244	2	270	2	251
Donghu (Jiangmen)	1	249	1	222	1	203
Duanfen (Jiangmen)	2	145	1	141	1	124
Huaguoshan (Jiangmen)	5	202	2	259	3	249
Chengzhong (Zhaoqing)	2	186	2	235	1	172
Xiapu (Huizhou)	5	249	3	188	1	154
Shixia (Huizhou)	1	233	5	226	6	190
Jinguowan (Huizhou)	1	247	1	204	1	163
Zimaling (Zhongshan)	1	227	1	192	1	210
Nanchengyuanling (Dongguan)	1	239	1	227	1	210
Tap Mun (Hong Kong)	9	265	9	165	12	132
Tsuen Wan (Hong Kong)	2	218	2	99	3	105
Yuen Long (Hong Kong)	1	267	0	136	0	165
Tung Chung (Hong Kong)	19	284	13	139	19	199
Taipa Grande (Macao)	7	222	2	220	13	175

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

Monitoring Station	July 2025			August 2025			September 2025		
	Min	Max	90th per	Min	Max	90th per	Min	Max	90th per
Luhu (Guangzhou)	35	182	160	15	174	154	32	172	129
Nanshadawen (Guangzhou)	47	219	181	17	206	161	32	195	135
Nansha-HKUST (Guangzhou)	32	186	165	18	206	147	28	199	127
Tianhu (Guangzhou)	45	170	136	44	200	133	48	171	144
Zhudong (Guangzhou)	38	180	160	28	193	147	37	179	174
Tongxinling (Shenzhen)	31	237	174	28	129	102	31	142	85
Jinjuzui (Foshan)	42	161	145	16	165	137	29	166	117
Huijingcheng (Foshan)	49	234	185	22	202	174	42	230	174
Tangjia (Zhuhai)	42	184	165	39	151	119	41	163	114
Donghu (Jiangmen)	42	191	142	33	162	119	40	169	132
Duanfen (Jiangmen)	43	123	98	29	117	67	32	109	87
Huaguoshan (Jiangmen)	33	170	149	34	203	124	47	189	155
Chengzhong (Zhaoqing)	46	168	143	24	192	141	45	153	119
Xiapu (Huizhou)	32	217	163	29	145	133	33	141	107
Shixia (Huizhou)	50	199	147	37	197	127	40	167	150
Jinguowan (Huizhou)	27	191	150	29	171	118	31	141	91
Zimaling (Zhongshan)	49	180	159	31	153	117	45	173	132
Nanchengyuanling (Dongguan)	51	212	185	22	199	172	35	177	157
Tap Mun (Hong Kong)	41	217	162	47	127	110	50	116	104
Tsuen Wan (Hong Kong)	23	139	130	20	67	58	11	76	65
Yuen Long (Hong Kong)	25	196	146	23	87	67	18	119	69
Tung Chung (Hong Kong)	46	241	162	41	89	76	31	122	86
Taipa Grande (Macao)	37	183	141	41	127	83	47	130	95

Table 4.3c：The monthly averages of O_3

Monitoring Station	July 2025	August 2025	September 2025
Luhu (Guangzhou)	58	42	46
Nanshadawen (Guangzhou)	68	48	48
Nansha-HKUST (Guangzhou)	58	45	44
Tianhu (Guangzhou)	73	65	67
Zhudong (Guangzhou)	65	51	59
Tongxinling (Shenzhen)	61	41	44
Jinjuzui (Foshan)	57	42	44
Huijingcheng (Foshan)	82	58	66
Tangjia (Zhuhai)	61	46	49
Donghu (Jiangmen)	62	43	50
Duanfen (Jiangmen)	48	36	33
Huaguoshan (Jiangmen)	59	47	58
Chengzhong (Zhaoqing)	61	50	49
Xiapu (Huizhou)	68	49	47
Shixia (Huizhou)	58	50	53
Jinguowan (Huizhou)	57	42	39
Zimaling (Zhongshan)	63	46	48
Nanchengyuanling (Dongguan)	70	53	55
Tap Mun (Hong Kong)	65	53	56
Tsuen Wan (Hong Kong)	38	28	30
Yuen Long (Hong Kong)	45	27	32
Tung Chung (Hong Kong)	63	43	45
Taipa Grande (Macao)	63	52	54

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

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

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

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

Table 4.4c：The monthly averages of CO

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

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

Monitoring Station	July 2025		August 2025		September 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	12	49	13	39	8	37
Nanshadawen (Guangzhou)	11	39	11	49	7	37
Nansha-HKUST (Guangzhou)	16	43	14	50	13	40
Tianhu (Guangzhou)	6	37	5	34	4	24
Zhudong (Guangzhou)	10	44	12	44	9	44
Tongxinling (Shenzhen)	10	36	9	31	9	24
Jinjuzui (Foshan)	9	39	8	47	8	33
Huijingcheng (Foshan)	11	45	9	55	6	37
Tangjia (Zhuhai)	4	31	5	33	6	28
Donghu (Jiangmen)	9	35	11	59	9	36
Duanfen (Jiangmen)	11	30	8	34	9	30
Huaguoshan (Jiangmen)	11	46	9	55	7	48
Chengzhong (Zhaoqing)	12	49	10	43	6	41
Xiapu (Huizhou)	8	50	9	33	7	36
Shixia (Huizhou)	8	41	9	43	7	35
Jinguowan (Huizhou)	10	46	11	36	9	38
Zimaling (Zhongshan)	9	34	8	48	9	30
Nanchengyuanling (Dongguan)	9	40	11	39	6	36
Tap Mun (Hong Kong)	7	24	6	19	3	28
Tsuen Wan (Hong Kong)	4	26	4	23	5	15
Yuen Long (Hong Kong)	5	29	5	26	6	27
Tung Chung (Hong Kong)	4	28	3	25	4	21
Taipa Grande (Macao)	5	30	6	34	4	21

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

Monitoring Station	July 2025	August 2025	September 2025
Luhu (Guangzhou)	29	25	22
Nanshadawen (Guangzhou)	28	28	22
Nansha-HKUST (Guangzhou)	30	28	25
Tianhu (Guangzhou)	19	15	14
Zhudong (Guangzhou)	28	26	26
Tongxinling (Shenzhen)	22	17	15
Jinjuzui (Foshan)	25	25	20
Huijingcheng (Foshan)	28	26	23
Tangjia (Zhuhai)	19	15	13
Donghu (Jiangmen)	24	23	21
Duanfen (Jiangmen)	22	18	16
Huaguoshan (Jiangmen)	31	29	29
Chengzhong (Zhaoqing)	27	26	22
Xiapu (Huizhou)	26	21	20
Shixia (Huizhou)	25	23	22
Jinguowan (Huizhou)	29	23	22
Zimaling (Zhongshan)	23	21	17
Nanchengyuanling (Dongguan)	26	23	22
Tap Mun (Hong Kong)	15	13	10
Tsuen Wan (Hong Kong)	15	11	9
Yuen Long (Hong Kong)	17	13	12
Tung Chung (Hong Kong)	15	11	9
Taipa Grande (Macao)	17	14	11

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

Monitoring Station	July 2025		August 2025		September 2025	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	5	32	6	28	4	22
Nanshadawen (Guangzhou)	4	26	7	28	3	22
Nansha-HKUST (Guangzhou)	5	29	5	26	4	20
Tianhu (Guangzhou)	4	19	4	19	5	12
Zhudong (Guangzhou)	6	32	6	31	6	33
Tongxinling (Shenzhen)	3	23	2	19	3	15
Jinjuzui (Foshan)	5	22	4	22	5	14
Huijingcheng (Foshan)	5	24	4	29	2	18
Tangjia (Zhuhai)	2	25	4	19	4	16
Donghu (Jiangmen)	7	25	5	36	5	19
Duanfen (Jiangmen)	6	19	4	20	6	15
Huaguoshan (Jiangmen)	7	36	5	35	4	22
Chengzhong (Zhaoqing)	5	32	6	29	3	22
Xiapu (Huizhou)	5	30	5	20	4	17
Shixia (Huizhou)	4	28	3	29	4	21
Jinguowan (Huizhou)	3	23	3	18	3	16
Zimaling (Zhongshan)	3	23	4	31	3	25
Nanchengyuanling (Dongguan)	4	24	7	22	3	20
Tap Mun (Hong Kong)	2	15	2	11	2	12
Tsuen Wan (Hong Kong)	3	19	3	12	4	14
Yuen Long (Hong Kong)	4	21	4	14	4	16
Tung Chung (Hong Kong)	3	21	3	14	4	14
Taipa Grande (Macao)	2	15	2	13	2	12

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

Monitoring Station	July 2025	August 2025	September 2025
Luhu (Guangzhou)	16	16	12
Nanshadawen (Guangzhou)	18	17	13
Nansha-HKUST (Guangzhou)	14	13	10
Tianhu (Guangzhou)	8	7	6
Zhudong (Guangzhou)	18	14	17
Tongxinling (Shenzhen)	13	8	7
Jinjuzui (Foshan)	13	11	9
Huijingcheng (Foshan)	14	12	10
Tangjia (Zhuhai)	13	9	7
Donghu (Jiangmen)	16	13	11
Duanfen (Jiangmen)	12	10	9*
Huaguoshan (Jiangmen)	19	16	15
Chengzhong (Zhaoqing)	17	16	13
Xiapu (Huizhou)	16	12	10
Shixia (Huizhou)	16	13	12
Jinguowan (Huizhou)	12	8	7
Zimaling (Zhongshan)	14	11	9
Nanchengyuanling (Dongguan)	15	13	12
Tap Mun (Hong Kong)	8	5	5
Tsuen Wan (Hong Kong)	10	7	6
Yuen Long (Hong Kong)	11	8	8
Tung Chung (Hong Kong)	11	7	6
Taipa Grande (Macao)	8	5	4

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

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	Dec 2011
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

[6] Modiesha (Guangzhou) station was relocated to a monitoring station located in.Guangdong Ocean and Fishery High-Tech Park, 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
Xiapu (Huizhou)	No. 4 Xiabuhengjiang Road No. 3, Huicheng District	Urban: commercial	49m	20m	Dec 1999
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 1998
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