

**Guangdong-Hong Kong-Macao
Pearl River Delta
Regional Air Quality Monitoring Network**

April to June 2016

**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, it has been reporting PRD Regional Air Quality Index (RAQI) to the public on a daily basis. Starting from 2006, a half-yearly and an annual air quality monitoring reports were published every year. The network was enhanced and expanded in September 2014 and the network was renamed “Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network” (the “Network”) accordingly.

With the enhancement of the Network, the update of the national ambient air quality standards and the increase of reporting frequency of monitoring results, we have been reporting real time monitoring data of the Network on an hourly basis to replace the daily RAQI through a new internet platform and publish a quarterly air quality monitoring report to replace the previous half-yearly report and continue the publishing of annual air quality monitoring reports starting from 2014. The quarterly report is mainly a brief statistical summary of the monitoring results of the regional air quality in a quarter while the annual report, in addition to the reporting of the relevant data, will provide a more detailed analysis and comparison of the condition of air quality in the year. Since the fourth quarterly report in 2014, statistical results of carbon monoxide (CO) and fine suspended particulates (PM_{2.5} or FSP) have been added to the report in addition to those of respirable suspended particulates (PM₁₀ or RSP), sulphur dioxide (SO₂), nitrogen dioxide (NO₂), and ozone (O₃).

This report, “Statistical Summary of the 2016 Second Quarter Monitoring Results of PRD Regional Air Quality Monitoring Network”, is the tenth one published in the form of a quarterly report and is the seventh one reporting the statistical summaries of the six pollutants (i.e. PM₁₀, SO₂, NO₂, O₃, CO and PM_{2.5}) in the Network.

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 Guangdong Provincial Environmental Monitoring Centre (GDEMC) and the Environmental Protection Department of the Hong Kong Special Administrative Region (HKEPD) from 2003 to 2005. The network came into operation on 30 November 2005.

In view of the growing needs of air pollution control and economic development of the region, the environmental protection departments of Guangdong and Hong Kong have worked in collaboration with the environmental protection cum meteorological authority of Macao to enhance the network by extending the coverage of monitoring area to the 3 places, i.e. Guangdong, Hong Kong and Macao, in September 2014. The enhancement included the increase of number of monitoring station from 16 to 23 to further improve the spatial distribution; and the addition of two more monitoring parameters, i.e. carbon monoxide (CO) and fine suspended particulates (PM_{2.5}), to enrich the air quality monitoring information. The network was accordingly renamed “Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network” (the “Network”). The GDEMC, HKEPD, Environmental Protection Bureau of Macao SARG and Meteorological and Geophysical Bureau of Macao SARG have jointly established the "Quality Management Committee of Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network" to undertake quality management and dissemination of information for the Network.

The Network comprises 23 automatic air quality monitoring stations (see Figure 2.1) across the PRD region. Ten of these stations are operated by the Environmental Monitoring Centres of the individual cities in Guangdong while eight regional stations are operated by the GDEMC. The four stations located in Hong Kong are managed by the HKEPD and the remaining one in Macao is operated by Meteorological and Geophysical Bureau of Macao SARG.

All stations are installed with equipment to measure the ambient concentrations of PM₁₀, PM_{2.5}, SO₂, NO₂, O₃ and CO.

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



Figure 2.1 : Spatial Distribution of Monitoring Stations in the Network

Remark: For the boundary of the administrative division of the Macao Special Administrative Region, according to the Decree n.º665 of the State Council of the People’s Republic of China, “the map of the administrative division of the Macao Special Administrative Region” was approved at the 116th Executive Meeting of the State Council on 16 December 2015.

3. Operation of the Network

The operation of the Network was generally smooth in the second quarter of 2016. The average hourly data capture rate of all monitoring stations in the Network was 95.4%.

4. Statistical Analysis of Pollutant Concentrations

Table 4.1a to Table 4.6b list the statistical summaries of monitoring results of the ambient concentrations of the six air pollutants (SO₂, NO₂, O₃, CO, PM₁₀ and PM_{2.5}) during the reporting period from April to June 2016.

Table 4.1a : The monthly maxima and minima of hourly averages of SO₂

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	1	38	1	34	3	119
Modiesha (Guangzhou)	4	50	3	42	3	27
Wanqingsha (Guangzhou)	12	98	2	67	6	68
Tianhu (Guangzhou)	5	43	3	28	6	36
Zhudong (Guangzhou)	6	51	5	61	5	46
Liyuan (Shenzhen)	2	28	3	20	4	24
Jinjuzui (Foshan)	7	73	7	64	4	52
Huijingcheng (Foshan)	10	48	4	70	0	40
Tangjia (Zhuhai)	1	37	1	23	1	23
Donghu (Jiangmen)	9	49	10	50	1	33
Duanfen (Jiangmen)	2	28	2	24	2	18
Huaguoshan (Jiangmen)	14	134	11	83	11	64
Chengzhong (Zhaoqing)	6	246	1	334	1	424
Xiapu (Huizhou)	2	26	3	26	3	39
Xijiao (Huizhou)	0	25	6	26	6	35
Jinguowan (Huizhou)	7	19	6	18	6	40
Zimaling (Zhongshan)	4	36	4	43	1	17
Nanchengyuanling (Dongguan)	2	36	2	61	3	33
Tap Mun (Hong Kong)	7	42	7	20	6	26
Tsuen Wan (Hong Kong)	6	85	6	57	7	43
Yuen Long (Hong Kong)	6	38	6	29	6	51
Tung Chung (Hong Kong)	7	44	8	32	9	32
Taipa Grande (Macao)	0	46	0	37	0	82

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.1b : The monthly maxima and minima of daily averages of SO₂

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	4	23	3	18	7	14
Modiesha (Guangzhou)	6	30	3	16	3	12
Wanqingsha (Guangzhou)	14	37	7	25	6	22
Tianhu (Guangzhou)	6	24	6	17	8	18
Zhudong (Guangzhou)	10	28	8	25	5	19
Liyuan (Shenzhen)	5	14	5	12	6	11
Jinjuzui (Foshan)	10	29	7	19	5	21
Huijingcheng (Foshan)	13	31	7	32	3	17
Tangjia (Zhuhai)	4	12	3	11	3	8
Donghu (Jiangmen)	12	24	12	28	3	17
Duanfen (Jiangmen)	2	13	2	12	2	6
Huaguoshan (Jiangmen)	18	44	13	42	11	28
Chengzhong (Zhaoqing)	12	66	5	69	6	40
Xiapu (Huizhou)	3	11	4	10	3	13
Xijiao (Huizhou)	6	14	6	9	7	16
Jinguowan (Huizhou)	8	12	7	10	7	12
Zimaling (Zhongshan)	6	22	5	19	5	9
Nanchengyuanling (Dongguan)	5	16	4	22	5	14
Tap Mun (Hong Kong)	7	19	7	12	7	11
Tsuen Wan (Hong Kong)	7	39	7	25	9	20
Yuen Long (Hong Kong)	6	19	6	18	7	16
Tung Chung (Hong Kong)	8	14	9	16	10	15
Taipa Grande (Macao)	0	15	0	8	0	9

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.1c : The monthly averages of SO₂

Monitoring Station	April 2016	May 2016	June 2016
Luhu (Guangzhou)	17	8	10
Modiesha (Guangzhou)	16	8	5
Wanqingsha (Guangzhou)	24	16	13
Tianhu (Guangzhou)	10	10	12
Zhudong (Guangzhou)	18	15	12
Liyuan (Shenzhen)	7	7	7
Jinjuzui (Foshan)	16	13	11
Huijingcheng (Foshan)	20	18	8
Tangjia (Zhuhai)	6	6	5
Donghu (Jiangmen)	15	16	10
Duanfen (Jiangmen)	4	6	4
Huaguoshan (Jiangmen)	29	26	18
Chengzhong (Zhaoqing)	40	26	22
Xiapu (Huizhou)	6	6	6
Xijiao (Huizhou)	8	7	8
Jinguowan (Huizhou)	9	8	8
Zimaling (Zhongshan)	12	9	7
Nanchengyuanling (Dongguan)	8	8	9
Tap Mun (Hong Kong)	9	9	8
Tsuen Wan (Hong Kong)	14	12	13
Yuen Long (Hong Kong)	9	9	11
Tung Chung (Hong Kong)	10	11	11
Taiapa Grande (Macao)	4	3	2

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.2a : The monthly maxima and minima of hourly averages of NO₂

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	11	163	7	202	2	132
Modiesha (Guangzhou)	22	152	13	112	12	135
Wanqingsha (Guangzhou)	7	127	3	118	1	98
Tianhu (Guangzhou)	1	58	0	32	1	42
Zhudong (Guangzhou)	0	120	0	81	6	83
Liyuan (Shenzhen)	5	108	5	80	7	84
Jinjuzui (Foshan)	8	106	3	92	3	86
Huijingcheng (Foshan)	10	158	6	146	0	112
Tangjia (Zhuhai)	4	100	3	87	4	77
Donghu (Jiangmen)	5	81	5	67	4	84
Duanfen (Jiangmen)	0	59	0	46	0	24
Huaguoshan (Jiangmen)	1	106	1	95	2	62
Chengzhong (Zhaoqing)	1	120	1	94	1	86
Xiapu (Huizhou)	7	83	6	57	6	64
Xijiao (Huizhou)	1	51	0	54	3	52
Jinguowan (Huizhou)	5	49	2	32	1	44
Zimaling (Zhongshan)	1	82	1	76	1	62
Nanchengyuanling (Dongguan)	1	107	1	98	4	91
Tap Mun (Hong Kong)	1	63	0	50	0	55
Tsuen Wan (Hong Kong)	13	210	11	192	8	113
Yuen Long (Hong Kong)	7	130	5	98	2	87
Tung Chung (Hong Kong)	1	153	1	101	2	87
Taipa Grande (Macao)	0	109	2	98	2	84

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.2b : The monthly maxima and minima of daily averages of NO₂

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	30	108	23	70	19	55
Modiesha (Guangzhou)	39	94	27	70	28	78
Wanqingsha (Guangzhou)	15	70	14	64	10	49
Tianhu (Guangzhou)	4	37	2	16	3	18
Zhudong (Guangzhou)	11	89	19	55	17	42
Liyuan (Shenzhen)	19	69	16	47	13	52
Jinjuzui (Foshan)	18	64	14	54	13	50
Huijingcheng (Foshan)	34	93	27	72	19	64
Tangjia (Zhuhai)	16	53	10	39	9	31
Donghu (Jiangmen)	9	45	10	37	8	30
Duanfen (Jiangmen)	2	29	1	27	0	12
Huaguoshan (Jiangmen)	9	67	8	54	6	34
Chengzhong (Zhaoqing)	13	96	8	51	6	40
Xiapu (Huizhou)	19	55	15	34	14	36
Xijiao (Huizhou)	4	30	6	16	5	23
Jinguowan (Huizhou)	11	30	5	17	6	24
Zimaling (Zhongshan)	5	42	3	29	4	32
Nanchengyuanling (Dongguan)	17	64	13	45	14	58
Tap Mun (Hong Kong)	5	30	4	18	2	16
Tsuen Wan (Hong Kong)	46	118	38	95	34	70
Yuen Long (Hong Kong)	23	76	21	55	19	59
Tung Chung (Hong Kong)	7	70	6	53	6	48
Taipa Grande (Macao)	16	54	7	44	7	52

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.2c : The monthly averages of NO₂

Monitoring Station	April 2016	May 2016	June 2016
Luhu (Guangzhou)	58	46	35
Modiesha (Guangzhou)	64	47	47
Wanqingsha (Guangzhou)	47	35	25
Tianhu (Guangzhou)	12	9	10
Zhudong (Guangzhou)	44	33	28
Liyuan (Shenzhen)	35	24	30
Jinjuzui (Foshan)	41	29	25
Huijingcheng (Foshan)	59	46	37
Tangjia (Zhuhai)	30	22	18
Donghu (Jiangmen)	23	22	16
Duanfen (Jiangmen)	12	9	4
Huaguoshan (Jiangmen)	28	23	20
Chengzhong (Zhaoqing)	35	26	25
Xiapu (Huizhou)	30	22	25
Xijiao (Huizhou)	14	10	14
Jinguowan (Huizhou)	16	10	13*
Zimaling (Zhongshan)	23	15	13
Nanchengyuanling (Dongguan)	37	24	34
Tap Mun (Hong Kong)	12	8	7
Tsuen Wan (Hong Kong)	73	57	52
Yuen Long (Hong Kong)	47	35	34
Tung Chung (Hong Kong)	34	27	23
Taipa Grande (Macao)	35	23	18

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

* The hourly data capture rate of the pollutant is below 85%.

Table 4.3a : The monthly maxima and minima of hourly averages of O₃

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	1	132	1	170	1	241
Modiesha (Guangzhou)	3	208	2	252	2	265
Wanqingsha (Guangzhou)	7	184	2	374	8	232
Tianhu (Guangzhou)	2	204	2	235	9	256
Zhudong (Guangzhou)	3	218	3	292	1	286
Liyuan (Shenzhen)	6	252	1	235	9	108
Jinjuzui (Foshan)	4	203	4	320	4	246
Huijingcheng (Foshan)	2	93	1	263	3	263
Tangjia (Zhuhai)	19	144	17	147	9	84
Donghu (Jiangmen)	1	222	1	284	1	211
Duanfen (Jiangmen)	3	249	15	268	2	170
Huaguoshan (Jiangmen)	0	107	0	152	2	174
Chengzhong (Zhaoqing)	2	160	2	281	2	235
Xiapu (Huizhou)	1	182	1	191	1	221
Xijiao (Huizhou)	3	195	2	112	1	121
Jinguowan (Huizhou)	4	165	5	256	6	206
Zimaling (Zhongshan)	5	239	5	281	2	152
Nanchengyuanling (Dongguan)	2	171	2	289	2	212
Tap Mun (Hong Kong)	3	190	3	213	5	127
Tsuen Wan (Hong Kong)	1	163	1	217	2	102
Yuen Long (Hong Kong)	1	252	1	249	2	87
Tung Chung (Hong Kong)	14	211	14	217	2	74
Taipa Grande (Macao)	0	191	0	297	0	142

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.3b : The monthly maxima and minima of daily maximum 8-hour averages of O₃

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	2	82	14	135	3	175
Modiesha (Guangzhou)	5	152	24	215	12	202
Wanqingsha (Guangzhou)	10	156	45	294	32	159
Tianhu (Guangzhou)	47	154	61	206	75	213
Zhudong (Guangzhou)	10	118	36	243	37	246
Liyuan (Shenzhen)	33	154	37	168	39	90
Jinjuzui (Foshan)	7	162	50	264	19	197
Huijingcheng (Foshan)	4	80	22	224	14	195
Tangjia (Zhuhai)	38	111	44	114	39	59
Donghu (Jiangmen)	8	179	17	243	21	160
Duanfen (Jiangmen)	42	210	45	221	33	122
Huaguoshan (Jiangmen)	6	86	28	129	18	145
Chengzhong (Zhaoqing)	13	121	23	224	33	172
Xiapu (Huizhou)	23	134	55	167	31	169
Xijiao (Huizhou)	21	137	24	97	17	88
Jinguowan (Huizhou)	42	135	60	154	53	153
Zimaling (Zhongshan)	32	188	48	225	36	101
Nanchengyuanling (Dongguan)	11	141	56	270	25	170
Tap Mun (Hong Kong)	33	186	43	198	41	93
Tsuen Wan (Hong Kong)	3	144	12	144	14	50
Yuen Long (Hong Kong)	12	134	21	158	21	69
Tung Chung (Hong Kong)	24	150	38	158	36	65
Taipa Grande (Macao)	1	144	27	227	23	57

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.3c : The monthly averages of O₃

Monitoring Station	April 2016	May 2016	June 2016
Luhu (Guangzhou)	16	30	40
Modiesha (Guangzhou)	30	50	40
Wanqingsha (Guangzhou)	40	63	48
Tianhu (Guangzhou)	69	83	80
Zhudong (Guangzhou)	36	63	62
Liyuan (Shenzhen)	52	64	45
Jinjuzui (Foshan)	40	66	45
Huijingcheng (Foshan)	15	52	42
Tangjia (Zhuhai)	54	54	39
Donghu (Jiangmen)	32	57	42
Duanfen (Jiangmen)	65	76	45
Huaguoshan (Jiangmen)	26	36	31
Chengzhong (Zhaoqing)	41	65	52
Xiapu (Huizhou)	54	68	47
Xijiao (Huizhou)	47	34	29
Jinguowan (Huizhou)	62	73	63
Zimaling (Zhongshan)	50	64	44
Nanchengyuanling (Dongguan)	38	70	48
Tap Mun (Hong Kong)	69	81	47
Tsuen Wan (Hong Kong)	26	40	18
Yuen Long (Hong Kong)	33	47	29
Tung Chung (Hong Kong)	51	65	35
Taipa Grande (Macao)	39	56	29

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

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

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	0.4	1.9	0.4	1.6	0.3	1.7
Modiesha (Guangzhou)	0.0	1.5	0.0	1.1	0.0	1.6
Wanqingsha (Guangzhou)	0.1	2.0	0.2	1.3	0.0	1.3
Tianhu (Guangzhou)	0.1	1.4	0.0	1.2	0.3	1.3
Zhudong (Guangzhou)	0.5	1.6	0.3	1.2	0.3	1.4
Liyuan (Shenzhen)	0.1	1.5	0.4	1.3	0.0	1.1
Jinjuzui (Foshan)	0.2	1.5	0.6	1.6	0.5	1.6
Huijingcheng (Foshan)	0.3	2.1	0.0	1.7	0.0	1.6
Tangjia (Zhuhai)	0.4	1.9	0.3	1.2	0.0	0.8
Donghu (Jiangmen)	0.3	2.2	0.3	2.8	0.3	1.9
Duanfen (Jiangmen)	0.3	1.4	0.1	1.2	0.3	1.2
Huaguoshan (Jiangmen)	0.3	1.9	0.1	1.5	0.3	1.3
Chengzhong (Zhaoqing)	0.5	2.5	0.4	2.0	0.2	1.8
Xiapu (Huizhou)	0.5	1.5	0.5	2.3	0.1	2.0
Xijiao (Huizhou)	0.0	1.4	0.3	1.7	0.2	0.9
Jinguowan (Huizhou)	0.3	1.8	0.1	1.1	0.4	1.4
Zimaling (Zhongshan)	0.3	2.1	0.3	1.4	0.2	3.3
Nanchengyuanling (Dongguan)	0.1	1.7	0.2	1.0	0.4	1.9
Tap Mun (Hong Kong)	0.3	1.0	0.5	1.1	0.5	1.0
Tsuen Wan (Hong Kong)	0.7	2.0	0.6	1.4	0.7	1.3
Yuen Long (Hong Kong)	0.4	1.4	0.5	1.2	0.1	1.0
Tung Chung (Hong Kong)	0.4	1.6	0.4	2.3	0.4	1.5
Taipa Grande (Macao)	0.4	1.1	0.4	1.0	0.4	0.8

Remark : All concentration units are in milligrams per cubic metre (mg/m³).

Table 4.4b : The monthly maxima and minima of daily averages of CO

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	0.6	1.4	0.5	1.2	0.4	1.4
Modiesha (Guangzhou)	0.1	1.2	0.0	0.8	0.5	1.3
Wanqingsha (Guangzhou)	0.2	1.9	0.3	1.1	0.2	1.1
Tianhu (Guangzhou)	0.2	1.0	0.1	0.7	0.4	0.8
Zhudong (Guangzhou)	0.6	1.3	0.4	1.0	0.4	0.8
Liyuan (Shenzhen)	0.2	1.1	0.6	1.1	0.3	0.9
Jinjuzui (Foshan)	0.3	1.2	0.6	1.1	0.6	1.1
Huijingcheng (Foshan)	0.6	1.4	0.1	1.1	0.0	0.7
Tangjia (Zhuhai)	0.4	0.9	0.4	0.9	0.3	0.6
Donghu (Jiangmen)	0.5	1.3	0.5	1.4	0.5	1.3
Duanfen (Jiangmen)	0.3	0.8	0.1	0.9	0.4	0.6
Huaguoshan (Jiangmen)	0.6	1.4	0.5	1.2	0.4	1.0
Chengzhong (Zhaoqing)	0.6	2.0	0.6	1.4	0.5	1.3
Xiapu (Huizhou)	0.6	1.1	0.6	1.1	0.6	1.0
Xijiao (Huizhou)	0.0	1.0	0.4	1.1	0.4	0.5
Jinguowan (Huizhou)	0.3	0.8	0.2	0.9	0.4	1.2
Zimaling (Zhongshan)	0.4	1.3	0.4	1.2	0.3	0.9
Nanchengyuanling (Dongguan)	0.3	1.4	0.3	0.8	0.5	1.1
Tap Mun (Hong Kong)	0.3	0.9	0.5	1.0	0.5	0.9
Tsuen Wan (Hong Kong)	0.8	1.5	0.8	1.2	0.8	0.9
Yuen Long (Hong Kong)	0.6	1.0	0.5	1.0	0.2	0.8
Tung Chung (Hong Kong)	0.6	1.3	0.4	1.0	0.4	0.8
Taipa Grande (Macao)	0.5	0.9	0.4	0.8	0.4	0.6

Remark : All concentration units are in milligrams per cubic metre (mg/m³).

Table 4.4c : The monthly averages of CO

Monitoring Station	April 2016	May 2016	June 2016
Luhu (Guangzhou)	0.9	0.8	0.7
Modiesha (Guangzhou)	0.6	0.4	1.1
Wanqingsha (Guangzhou)	0.7	0.7	0.6
Tianhu (Guangzhou)	0.6	0.4	0.6
Zhudong (Guangzhou)	0.8	0.7	0.6
Liyuan (Shenzhen)	0.6	0.8	0.5
Jinjuzui (Foshan)	0.7	0.9	0.8
Huijingcheng (Foshan)	0.9	0.6	0.3
Tangjia (Zhuhai)	0.6	0.6	0.5
Donghu (Jiangmen)	0.8	0.9	0.8
Duanfen (Jiangmen)	0.5	0.5	0.5
Huaguoshan (Jiangmen)	0.9	0.8	0.8
Chengzhong (Zhaoqing)	1.0	0.9	0.8
Xiapu (Huizhou)	0.8	0.8	0.8
Xijiao (Huizhou)	0.5	0.8	0.5
Jinguowan (Huizhou)	0.6	0.5	0.8
Zimaling (Zhongshan)	0.8	0.8	0.6
Nanchengyuanling (Dongguan)	0.7	0.5	0.7
Tap Mun (Hong Kong)	0.6	0.7	0.6
Tsuen Wan (Hong Kong)	1.1	1.0	0.8
Yuen Long (Hong Kong)	0.8	0.7	0.6
Tung Chung (Hong Kong)	0.9	0.6	0.5
Taiapa Grande (Macao)	0.6	0.6	0.5

Remark : All concentration units are in milligrams per cubic metre (mg/m³).

Table 4.5a : The monthly maxima and minima of daily averages of PM₁₀

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	20	120	23	87	25	52
Modiesha (Guangzhou)	24	116	25	100	28	57
Wanqingsha (Guangzhou)	24	99	14	85	15	45
Tianhu (Guangzhou)	10	129	16	73	12	52
Zhudong (Guangzhou)	21	149	24	86	19	66
Liyuan (Shenzhen)	17	67	21	58	13	33
Jinjuzui (Foshan)	28	96	20	92	21	50
Huijingcheng (Foshan)	29	96	21	91	21	62
Tangjia (Zhuhai)	19	70	12	53	8	32
Donghu (Jiangmen)	23	94	15	108	21	64
Duanfen (Jiangmen)	17	69	12	61	11	29
Huaguoshan (Jiangmen)	24	88	13	104	15	55
Chengzhong (Zhaoqing)	28	143	24	109	22	86
Xiapu (Huizhou)	18	93	16	61	15	49
Xijiao (Huizhou)	16	126	10	57	16	45
Jinguowan (Huizhou)	14	104	37	94	19	67
Zimaling (Zhongshan)	21	72	19	74	12	33
Nanchengyuanling (Dongguan)	23	90	21	102	24	57
Tap Mun (Hong Kong)	13	62	14	47	9	27
Tsuen Wan (Hong Kong)	17	63	16	54	11	29
Yuen Long (Hong Kong)	20	67	14	45	11	27
Tung Chung (Hong Kong)	15	56	11	49	6	24
Taipa Grande (Macao)	19	91	19	73	9	29

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

Table 4.5b : The monthly averages of PM₁₀

Monitoring Station	April 2016	May 2016	June 2016
Luhu (Guangzhou)	52	49	37
Modiesha (Guangzhou)	58	54	41
Wanqingsha (Guangzhou)	47	45*	28
Tianhu (Guangzhou)	39	39*	25
Zhudong (Guangzhou)	54	48	38
Liyuan (Shenzhen)	33	33	21*
Jinjuzui (Foshan)	48	46	33
Huijingcheng (Foshan)	53	47	35
Tangjia (Zhuhai)	32	31	18
Donghu (Jiangmen)	51	45	36
Duanfen (Jiangmen)	34	34	19
Huaguoshan (Jiangmen)	46	45	28*
Chengzhong (Zhaoqing)	63	57	42
Xiapu (Huizhou)	42	40	32
Xijiao (Huizhou)	42	36	30
Jinguowan (Huizhou)	45	53	37*
Zimaling (Zhongshan)	37	35	20
Nanchengyuanling (Dongguan)	49	47	35
Tap Mun (Hong Kong)	27	25	17
Tsuen Wan (Hong Kong)	32	27	18
Yuen Long (Hong Kong)	32	28	18
Tung Chung (Hong Kong)	25	23	13
Taipa Grande (Macao)	38	40	19

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

*The hourly data capture rate of the pollutant is below 85%.

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

Monitoring Station	April 2016		May 2016		June 2016	
	Min	Max	Min	Max	Min	Max
Luhu (Guangzhou)	17	112	16	57	14	50
Modiesha (Guangzhou)	9	46	11	48	11	39
Wanqingsha (Guangzhou)	12	55	8	54	8	27
Tianhu (Guangzhou)	7	83	5	54	5	40
Zhudong (Guangzhou)	13	94	14	60	14	50
Liyuan (Shenzhen)	12	48	7	41	6	18
Jinjuzui (Foshan)	17	67	11	62	11	39
Huijingcheng (Foshan)	18	69	14	51	12	40
Tangjia (Zhuhai)	12	47	5	39	6	17
Donghu (Jiangmen)	13	69	8	68	8	55
Duanfen (Jiangmen)	4	41	4	40	3	18
Huaguoshan (Jiangmen)	14	57	7	67	8	42
Chengzhong (Zhaoqing)	20	101	15	73	13	61
Xiapu (Huizhou)	9	75	8	34	7	21
Xijiao (Huizhou)	11	92	8	45	9	30
Jinguowan (Huizhou)	1	61	6	40	7	21
Zimaling (Zhongshan)	15	62	9	63	5	20
Nanchengyuanling (Dongguan)	17	65	14	70	12	36
Tap Mun (Hong Kong)	9	44	6	34	4	14
Tsuen Wan (Hong Kong)	10	45	6	40	8	16
Yuen Long (Hong Kong)	9	45	2	29	2	13
Tung Chung (Hong Kong)	8	38	5	39	2	15
Taipa Grande (Macao)	7	56	9	52	2	11

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

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

Monitoring Station	April 2016	May 2016	June 2016
Luhu (Guangzhou)	41	32	24
Modiesha (Guangzhou)	29*	27	20
Wanqingsha (Guangzhou)	27	26	15
Tianhu (Guangzhou)	26	24	15
Zhudong (Guangzhou)	36	32	26
Liyuan (Shenzhen)	23	20	12
Jinjuzui (Foshan)	33	28	20
Huijingcheng (Foshan)	36	29	21
Tangjia (Zhuhai)	22	20	10
Donghu (Jiangmen)	35	29	18
Duanfen (Jiangmen)	19	18	7
Huaguoshan (Jiangmen)	31	28	18
Chengzhong (Zhaoqing)	43	34	28
Xiapu (Huizhou)	26	22	14
Xijiao (Huizhou)	30	26	19
Jinguowan (Huizhou)	22	22	14
Zimaling (Zhongshan)	29	24	11
Nanchengyuanling (Dongguan)	34	30	22
Tap Mun (Hong Kong)	19	16	8
Tsuen Wan (Hong Kong)	23	17	11
Yuen Long (Hong Kong)	20	15	6
Tung Chung (Hong Kong)	16	16	8
Taipa Grande (Macao)	22	25	6

Remark : All concentration units are in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

*The hourly data capture rate of the pollutant 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 (Big yard, No. 11 Luhu Park)	City	30m	9m	1993
Modiesha (Guangzhou)	Modiesha Street, Haizhu District	City	95m	45m	Dec 2011
Wanqingsha (Guangzhou)	HKUST Fok Ying Tung Research Institute, Nansha	Mixed educational/commercial and residential/industrial	54m	28m	Oct 2004
Tianhu (Guangzhou)	Tianhu Park, Conghua	Background : rural	251m	13m	Oct 2004
Zhudong (Guangzhou)	Zhudong Village Committee, Chini Town, Huadu District	Rural	19m	10m	Dec 2011
Liyuan (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	Mixed educational/commercial and residential/industrial	13m	13m	Jan 2010
Donghu (Jiangmen)	Donghu Park, Jiangmen	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. 17, Qintian Road, Zhaoqing	Urban: mixed residential/commercial	21m	16m	Jun 2001
Xiapu (Huizhou)	No. 4 Xiabuhengjiang Road No. 3, Huicheng District	Urban: commercial	49m	20m	Dec 1999
Xijiao (Huizhou)	Xijiao Village Committee, Boluo County	Rural	39m	12m	Dec 2011
Jinguowan (Huizhou)	Jinguowan Ecological Farm, Huizhou	Residential	77m	8m	Oct 2004

Monitoring Stations	Address	Area Type	Sampling Height (Above P.D.)	Above Ground	Date Commenced Operation
Zimaling (Zhongshan)	Zimaling Park, Zhongshan	Mixed residential/commercial	45 m	7m	Aug 2002
Nanchengyuanling (Dongguan)	Nanchengyuanling Community, Dongguan	Mixed residential/commercial/industrial	33 m	18m	Sep 2010
Tap Mun (Hong Kong)	Tap Mun Police Station	Background: rural	26m	11m	Apr 1998
Tsuen Wan (Hong Kong)	60 Tai Ho Road, Tsuen Wan	Urban: mixed residential/commercial/industrial	21m	17m	Aug 1988
Yuen Long (Hong Kong)	Yuen Long District Office, 269 Castle Peak Road, Yuen Long	New Town: residential	31m	25m	Jul 1995
Tung Chung (Hong Kong)	6 Fu Tung Street, Tung Chung	New Town: residential	34.5m	27.5m	Apr 1999
Taipa Grande (Macao)	Rampa do Observatorio, Taipa Grande	Rural	120m	10m	Mar 1999

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