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**Appendix 3.5**

**Emissions of Chimneys**

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## Chimney Emission Inventory

ID	ID used in KTD EIA	X	Y	HEIGHTAG (m)	TOPDIAMETER (mm)	GTEMP_EXIT (K)	BO_MRATE	GO_MRATE	Velocity (m/s)	Emission Rate (g/s)			
										SO <sub>2</sub>	NO <sub>x</sub>	RSP	FSP
1035	2035	837100	820690	28.7	460.00	339.00	0.00	162.00	6.00	0.0038	0.1080	0.0108	0.0108
1036	2036	837100	820690	28.7	460.00	339.00	0.00	162.00	6.00	0.0038	0.1080	0.0108	0.0108
1037	2037	837110	820810	40.6	440.00	475.00	0.00	162.00	6.00	0.0038	0.1080	0.0108	0.0108
1038	2038	837110	820820	40.6	440.00	475.00	0.00	162.00	6.00	0.0038	0.1080	0.0108	0.0108
1039	2039	837120	820820	40.6	440.00	475.00	0.00	162.00	6.00	0.0038	0.1080	0.0108	0.0108
1040	2040	837120	820820	40.6	440.00	475.00	0.00	162.00	6.00	0.0038	0.1080	0.0108	0.0108
1041	2041	837300	820690	32.0	381.00	330.00	0.00	47.00	6.00	0.0011	0.0313	0.0031	0.0031
1042	2042	837300	820690	32.0	381.00	330.00	0.00	69.00	6.00	0.0016	0.0460	0.0046	0.0046
1043	2043	837390	820690	18.0	203.00	373.00	0.00	32.00	6.00	0.0008	0.0213	0.0021	0.0021
1049	2049	837837	820081	44.5	500.00	450.00	0.00	0.00	20.40	0.0000	0.1667	0.0000	0.0000
1054	2054	837904	820141	34.0	1000.00	473.00	0.00	0.00	5.50	0.0000	0.3472	0.0000	0.0000
1055	2055	837913	820136	34.0	1000.00	473.00	0.00	0.00	5.50	0.0000	0.3472	0.0000	0.0000
1056	2056	837921	820133	34.0	1000.00	473.00	0.00	0.00	5.50	0.0000	0.3472	0.0000	0.0000
1057	2057	837928	820130	34.0	1000.00	473.00	0.00	0.00	5.50	0.0000	0.3472	0.0000	0.0000

### Notes:

(1) BO\_MRATE: Total maximum hourly fuel consumption rating of boiler gas oil in litre/hr

GO\_MRATE: Total maximum hourly fuel consumption rating of light gas oil in litre/hr

(2) Chimney information for ID 2035-2057 is extracted from the approved KTD EIA report.

(3) SO<sub>2</sub> and Fugitive Emission from Chimney ID 2049, 2054-2057 are based on SP License (No. L-8-004(1)) and to be 0.

(4) According to Table 1.3-1 of USEPA AP-42, the emission factor of fuel type "Distillate Oil fired" under "Boilers < 100 Million Byu/hr" are adopted in this assessment. The emission factors of NO<sub>x</sub> and RSP are 20 and 2 lb/10<sup>3</sup> gal. Given max sulphur content of industrial fuel as 0.005%, the emission factors of SO<sub>2</sub> is 142\*0.005 = 0.71 lb/10<sup>3</sup> gal.

(5) Emission Rate of FSP is assumed to be equal to that of RSP as a conservative approach.

(6) Sample Calculation of Emission Rate (for ID1035): SO<sub>2</sub>:  $162 * 0.71 * 0.12 / 3600 = 0.0038$ ; NO<sub>x</sub>:  $162 * 20 * 0.12 / 3600 = 0.108$ ; RSP or FSP:  $162 * 2 * 0.12 / 3600 = 0.0108$ , 0.12 is conversion factor from lb/10<sup>3</sup> gal to kg/10<sup>3</sup>L.

(7) General load factors of 41% during day time and 23% during night time are recommended by EPD and were employed for this assessment. (Comprehensive Feasibility Study for The Revised Scheme of South East Kowloon Development EIA 2001; Planning and Engineering Feasibility Study for Sham Tseng Development EIA 2002; Construction of Cycle Tracks and the associated Supporting Facilities from Sha Po Tsuen to Shek Sheung River 2008)