

Appendix 4Q

Sample Calculations of the TSP Results of ASRs

APPENDIX 4Q SAMPLE CALCULATIONS OF THE TSP RESULTS OF ASRS

1-hour average cumulative TSP concentration

As discussed in **Section 4.7.3.2**, the hourly meteorological data is used for the FDM modelling to simulate the construction dust dispersion from the emissions of the construction areas at the ASRs. Therefore, 8760 results of 1-hour average TSP concentration due to the construction emissions can be obtained for each ASRs by the FDM modelling. Then the calculated background concentration of TSP ($73 \mu\text{g}/\text{m}^3$) presented in **Table 4.8** would be added to each 1-hour average TSP concentration. Therefore, 8760 results of 1-hour average cumulative TSP concentration could be obtained.

1-hour average cumulative TSP concentration

= 1-hour average TSP concentration of Trunk Road T2 + 1-hour average TSP concentration of Concurrent Project + Background of TSP

Then the maximum value among the results of each ASR is obtained and presented in **Section 4**.

24-hour average cumulative TSP concentration

After the 8760 results of 1-hour average cumulative TSP concentration obtained, 365 results of 24-hour average cumulative TSP concentration can be obtained by averaging every 24 results of the 8760 1-hour average cumulative TSP concentration. For example of KTD3,

Hour	1-hour average TSP concentration of Trunk Road T2 in $\mu\text{g}/\text{m}^3$	1-hour average TSP concentration of Concurrent Projects in $\mu\text{g}/\text{m}^3$	1-hour average cumulative TSP concentration in $\mu\text{g}/\text{m}^3$
1	11.430	0.000	84.430
2	14.399	0.000	87.399
3	16.567	0.000	89.567
4	82.34	0.138	155.452
5	13.66	0.000	86.660
6	8.564	0.000	81.564
7	8.945	0.000	81.945
8	7.031	0.000	80.031
9	15.651	0.144	88.795
10	11.109	0.019	84.128
11	10.203	0.018	83.221
12	6.723	0.029	79.752
13	4.489	0.006	77.495
14	5.598	0.024	78.622
15	11.716	0.107	84.823
16	10.908	0.019	83.927
17	4.834	0.000	77.834
18	11.971	0.000	84.971
19	20.733	0.008	93.741

20	7.77	0.001	80.771
21	7.627	0.001	80.628
22	6.875	0.001	79.876
23	6.552	0.001	79.553
24	8.734	0.016	81.750
Average			86.122

As shown in the above table, the result of 24-hour average cumulative TSP concentration for Day 1 could be obtained. Similarly, the rest of the results of 24-hour average cumulative TSP concentration could be obtained for each ASR. Then the maximum value among the results of each ASR is obtained and presented in **Section 4**.

Annual average cumulative TSP concentration

After the 8760 results of 1-hour average cumulative TSP concentration obtained, the result of annual average cumulative TSP concentration of each ASR is calculated by averaging the 8760 results of 1-hour average TSP concentration.