
APPENDIX 4.4A

**ASSESSMENT OF WATER QUALITY
IMPACT DUE TO POSSIBLE CHANGE IN
THE HATS TREATMENT FOR 2016**

Appendix 4.4A

Assessment of Water Quality Impact due to Possible Change in the HATS Treatment for 2016

Option 5d of HATS (secondary treatment with nitrification) was assumed in this EIA study for water quality modelling. As the HATS study is still on-going and the level of treatment is still being considered, an additional model run, namely Scenario 3f, has been carried out to address the possible scenario of HATS with chemical enhanced primary treatment (CEPT) with disinfection. Scenario 3f represents normal operation of TPSTW and STSTW in 2016 after Project commission where the effluent flow from TPSTW would reach its full capacity (13,000 m³/day) using an alternate coastline configuration as shown in **Figure 4.6b**. It is assumed that the Project effluent was discharged into the Kai Tak Approach Channel (KTAC) without the SEKD. The HATS loading assumed under Scenario 3f is given in **Table A** below.

Table A Pollution Loading from Stonecutters Sewage Treatment Works under HATS (CEPT with disinfection)

Parameters	Stonecutters
Flow (m ³ per day)	2787291
BOD (g per day)	188978330
SS (g per day)	117066222
Organic Nitrogen (g per day)	27674014
NH ₃ -N (g per day)	49443560
<i>E. coli</i> (no. per day)	5.5746E+14
Copper (g per day)	64609
Total Phosphorus (g per day)	8361873
Ortho-Phosphate (g per day)	5017124
Silicate (g per day)	23970703
Total nitrite and nitrate (g per day)	0

The water quality contour plots for Scenario 3f (using alternative HATS option, CEPT with disinfection) are shown in **Figures 3f1** to **3f10**. **Tables 3f1** and **3f2** summarised the modelling results at identified water sensitive receivers. The results for Scenario 3c (using original HATS loading assumed in the EIA, Option 5d) are also included in the contour plots for comparison. The model set-up of Scenario 3c was exactly the same as that for Scenario 3f but with a different assumed HATS loading. All the results are presented as annual average.

The modelling results indicated the change in HATS loading assumption would change the background pollutant concentration patterns of most of the selected parameters as shown in Figure 3f1 to 3f10. However, it was found that the impact from the Project effluent would be very localized and would be confined within the KTAC and the existing Kwun Tong Typhoon Shelter (KTTS). The water quality impact contributed by the Project effluent was not sensitive to the change in the HATS loading assumption.