

## Appendix 5.1 – Calculations for Sewage Loads

The sewage discharge from the proposed residential development comprises of flow contribution from residential population, the security staff, club house and the management staff. No restaurants or catering facilities would be provided in the club house or other areas within the proposed development. The accumulative average dry weather flows of proposed development are estimated based on the *Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning* published by EPD and shown in **Table 1**

**Table 1 - Flow Projection for the WSW Development**

|  | Units                  | Resident | Staff | Pool <sup>(2)</sup> | Total |
|--|------------------------|----------|-------|---------------------|-------|
| Design Population                      | head                   | 1200     | 45    | -                   | 1245  |
| Unit Flow Factor <sup>(1)</sup>        | m <sup>3</sup> /head/d | 0.37     | 0.28  | -                   | -     |
| Design Average Dry Weather Flow (ADWF) | m <sup>3</sup> /d      | 444      | 13    | 25                  | 482   |
| Design Peak Flow <sup>(3)</sup>        | m <sup>3</sup> /d      | 2664     | 78    | 25                  | 2767  |
|  | l/s                    | 30.83    | 0.90  | 0.29                | 32.03 |

Note:

(1) The unit flow factors for the resident and staff are extracted from *Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning*. The unit flow factor for commercial activities type J11, community, social & personal services is adopted for estimating the flow generated by the staff.

(2) The sewage flow generated from the pools in clubhouse and individual houses is estimated to be 25m<sup>3</sup>/day. Details for the estimation of sewage flow from pools are presented in **Annex B of Appendix 2.1**.

(3) Peak factor P=6 is adopted for the determination of peak flow as the population is within 1000 – 5000.

For estimating the peak flows of the proposed sewerage system, design peaking factors, including stormwater allowance, as stipulated in Table T-5 of *Guideline for Estimating Sewage Flows (GESF)* is adopted. The estimated peak flow will be adopted for the design of the proposed sewers within the WSW Development. The design peak flow of the WSW Development is 32 l/s.