Project Title: Shuen Wan Golf Course
Project Number: 256383

Concentration of Fungicides and Insecticides in Water Storage Tank

	Application Rate (kg/ha) [1]
Fungicides	
Daconil	8.2
Bayleton	3.0
Insecticides	
Chlorpyrifos	3.0
Fipronil	0.014

Predicted Concentrations in Water Storage Tank

Agrochemicals	Turf Area (ha) [2]	Rainfall Intensity (m) [3]	Volume of Water Storage Tanks (m^3) [4]	Residual Percentage (%) [5]	Runoff Residual Load (kg) [6]	Calculated Concentration in Water Storage Tank (mg/L) [7]	Criteria (mg/L) [8]	Compliance
Fungicides								
Daconil	21.20	0.145	30000	0.00072%	1.249E-03	4.163E-05	4.700E-04	Y
Bayleton	21.20			0.00072%	4.611E-04	1.537E-05	2.010E-02	Y
Insecticides								
Chlorpyrifos	21.20	0.145	30000	0.00072%	4.580E-04	1.527E-05	1.700E-05	Y
Fipronil	21.20			0.00072%	2.137E-06	7.125E-08	6.800E-04	Y

Notes:
[1] The application rates mentioned in the outline of Turfgrass Management Plan in Section 2.7.
[2] According to the outline of Turfgrass Management Plan, the turgrass green, tee, rough and fairway would be separately applied with insecticdie and fungicides. Among them, the largest area is rough which has 21.2 ha.
[3] Rainfall intensity when discharge occurs.
[4] The volume of the water storage tanks.
[5] The residual percentage of pesticides is calculated based on the residual mass in water reservoirs and the application loading using the data from Appendix 6.2 – Annex I of the approved Kau Sai Chau EIA (AEIAR-091/2005).
[6] = [1] x [2] x [5]
[7] = ([6]/[4]) x 1000
[8] The calculation of the criteria is shown in Appendix 6.1.
[9] Some shown figures may have been rounded for easy reference.

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Concentration of Fertilizers in Water Storage Tank

Fertilizers	Application Rate (kg/ha) [1]	Nutrient Loading				Remark
		Total Nitrogen		Total Phosphorus		
		Proportion [2]	Loading (kg/ha) [3]	Proportion [4]	Loading (kg/ha) [5]	
Anderson 18-9-18	54.3	18%	9.8	9%	4.9	Green, Tee
Nitrophoska 12:12:17:2	66.7	12%	8.0	12%	8.0	Fairway
Nitrophoska 12:12:17:2	33.3	12%	4.0	12%	4.0	Rough

Predicted Concentrations in Water Storage Tank

Turf	Turf Area (ha) [6]	Rainfall Intensity (m) [7]	Volume of Water Storage Tanks [8]	Residual Percentage (%) [9]		Runoff Residual Fertilizer Load [10]		Calculated Concentration in Water Storage Tank [11]	
				TIN	TP	TIN (kg)	TP (kg)	TIN (mg/L)	TP (mg/L)
Green, Tee	1.79	0.145	30000	1.6%	0.6%	0.280	0.053	0.108	0.039
Fairway	12.52	0.145		1.6%	0.6%	1.602	0.601		
Rough	21.20	0.145		1.6%	0.6%	1.357	0.509		

Criteria and Compliance

	TIN (mg/L)	TP (mg/L)
Water Quality Monitoring Data of TM3 in 2013-2017 [12]	0.059-0.116	0.025-0.047
Compliance	Y	Y

Notes:
[1] The application rates mentioned in the outline of Turfgrass Management Plan in Section 2.7.
[2] The proportion of total nitrogen in the product label is adopted. As a conservative approach, all nitrogen contents is assumed to be total inorganic nitrogen.
[3] = [1] x [2]
[4] The proportion of total phosphorus in the product label is adopted.
[5] = [1] x [4]
[6] Area of turf with application of agrochemicals.
[7] Rainfall intensity when discharge occurs.
[8] The volume of the water storage tanks.
[9] The residual percentage of fertilizer is obtained based on the nutrient adsorption rate from Appendix 6.2 –Table 10 of the approved Kau Sai Chau EIA (AEIAR-091/2005).
[10] = [3] x [6] x [8]
[11] = ([9]/[7]) x 1000
[12] Annual mean of TIN and TP monitoring data at Water Quality Monitoring station TM3 in Year 2016 is adopted as criteria.
[13] Some shown figures may have been rounded for easy reference.