

Appendix 3.10 Modelling Results the Scenario of 1500 m³/day Dredging at Source C only with Concurrent Projects

Table A3.10a Predicted Suspended Solids Elevations at Gazetted Beaches, Marine Ecology, and Fisheries Sensitive Receivers

Sensitive Receivers	Assessment Point	Maximum SS Elevation (Dry Season)		Maximum SS Elevation (Wet Season)	
		Depth averaged SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)	Depth averaged SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)
Gazetted Beaches					
Tung Wan, Ma Wan	B1	0.8	3.2	0.4	2.5
Approach	B2	0.8	3.2	0.8	2.5
Ting Kau	B3	0.6	3.2	0.6	2.5
Lido	B4	0.5	3.2	1.2	2.5
Casam	B5	1.6	3.2	1.2	2.5
Hoi Mei Wan	B6	1.7	3.2	1.3	2.5
Gemini	B7	1.8	3.2	1.3	2.5
Angler's	B8	1.8	3.2	1.2	2.5
Lo So Shing	B9	<0.1	2.8	<0.1	1.9
Hung Shing Yeh	B10	<0.1	2.8	<0.1	1.9
Corals					
Pak Kok	CR1	0.3	2.2	0.2	3
Shek Kok Tsui	CR2	0.3	2.2	<0.1	3
Luk Chau	CR3	0.1	1.8	<0.1	1.6
Wong Chuk Kok	CR4	0.1	1.8	<0.1	1.6
Ap Lei Chau	CR5	0.1	1.8	<0.1	1.6
Sandy Bay	CR6	0.2	2.2	0.2	3
Green Island	CR7	0.5	2.2	0.2	3
Kau Yi Chau	CR8	0.4	2.6	0.8	4.4
Kau Yi Chau	CR9	0.4	2.6	1.8	4.4
Kau Yi Chau	CR10	0.4	2.6	1.0	4.4
Siu Kau Yi Chau	CR11	0.5	2.6	1.4	4.4
Siu Kau Yi Chau	CR12	0.5	2.6	1.5	4.4
Siu Kau Yi Chau	CR13	0.4	2.6	1.0	4.4
Peng Chau	CR14	0.3	2.6	0.8	4.4
Peng Chau	CR15	<0.1	2.6	<0.1	4.4
Peng Chau	CR16	0.3	2.6	0.7	4.4
Peng Chau	CR17	0.3	2.6	1.2	4.4
Peng Chau	CR18	<0.1	2.6	0.2	4.4
Fish Culture Zone					
Ma Wan	F1	2.6	3.2	2.0	2.5
Lo Tik Wan	F2	0.2	1.8	0.1	1.6

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Sensitive Receivers	Assessment Point	Maximum SS Elevation (Dry Season)		Maximum SS Elevation (Wet Season)	
		Depth averaged		Depth averaged	
		SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)	SS Elevation (mgL ⁻¹)	SS Criteria (mgL ⁻¹)
Sok Kwu Wan	F3	<0.1	1.8	<0.1	1.6
Cheung Sha Wan	F4	<0.1	2.6	<0.1	4.4

- Value in **Bold** indicates exceedance of relevant criteria

Table A3.10b Predicted Suspended Solids Concentrations at Cooling and Sea Water Intakes

Sensitive Receivers	Assessment Point	Maximum ⁽¹⁾ SS Criterion (mgL ⁻¹)	Maximum ⁽¹⁾ SS concentration in surface layer (mgL ⁻¹)	
			Dry Season	Wet Season
Cooling Water Intakes				
Tsuen Wan	C1	-	11.6	10.8
MTRC Tsing Yi Station	C2	-	11.8	10.9
MTRC Kowloon Station	C3	-	7.5	6.8
China H.K. City	C4	-	7.3	6.8
Sha Wan Drive	C5	-	5.6	5.6
Queen Mary Hospital	C6	-	5.6	5.6
Wah Fu Estate	C7	-	5.6	5.6
Kwai Chung Hospital	*EMSD1	<180	11.3	10.6
WSD Flushing Water Intake				
Tsing Yi	WSD1	<10	11.8	11.0
Kennedy Town	WSD2	<10	7.4	6.9
Sheung Wan	WSD3	<10	8.3	7.0
Central Water Front	WSD4	<10	8.4	7.3
Ap Lei Chau	WSD5	<10	5.0	3.9
Kowloon South	WSD6	<10	7.4	6.8
Cheung Sha Wan	WSD7	<10	7.2	6.8
Tsuen Wan	WSD8	<10	11.6	10.7
Near Hong Kong Garden	WSD9	<10	11.1	5.3
Lamma Power Station	WSD10	<10	8.1	4.1
Kwai Chung Hospital	*EMSD1	<10	11.3	10.6

Sensitive Receivers	Assessment Point	Maximum ⁽¹⁾ SS Criterion (mgL ⁻¹)	Maximum ⁽¹⁾ depth averaged SS concentration (mgL ⁻¹)	
			Dry Season	Wet Season
Cooling Water Intakes				
Tsuen Wan	C1	-	12.6	16.2
MTRC Tsing Yi Station	C2	-	12.7	16.1
MTRC Kowloon Station	C3	-	8.9	9.6
China H.K. City	C4	-	8.6	9.3
Sha Wan Drive	C5	-	7.5	9.7
Queen Mary Hospital	C6	-	7.4	10.1
Wah Fu Estate	C7	-	7.4	9.9
Kwai Chung Hospital	*EMSD1	<180	12.2	15.7

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Sensitive Receivers	Maximum ⁽¹⁾ depth averaged SS concentration (mgL ⁻¹)			
	Assessment Point	SS Criterion (mgL ⁻¹)	Dry Season	Wet Season
WSD Flushing Water Intake				
Tsing Yi	WSD1	<10	12.8	16.2
Kennedy Town	WSD2	<10	8.8	9.4
Sheung Wan	WSD3	<10	9.8	9.8
Central Water Front	WSD4	<10	9.9	10.5
Ap Lei Chau	WSD5	<10	6.1	5.2
Kowloon South	WSD6	<10	8.8	9.5
Cheung Sha Wan	WSD7	<10	8.5	9.2
Tsuen Wan	WSD8	<10	12.6	16.3
Near Hong Kong Garden	WSD9	<10	12.1	9.6
Lamma Power Station	WSD10	<10	9.4	6.2
Kwai Chung Hospital	*EMSD1	<10	12.2	15.7

Values in **Bold** indicate exceedance of relevant criteria.

(1) Absolute value of SS includes the ambient SS level presented in Table 3.10 plus the SS elevations predicted.

* Note that the EMSD Code of Practice requires <180mgL⁻¹ at cooling water intakes. As Kwai Chung Hospital is a WSR for both cooling water and salt water flushing intakes, the more conservative criterion has been applied, i.e. <10mgL⁻¹, as required for WSD's salt water flushing water intakes.

Table A3.10c Predicted Dissolved Oxygen Concentrations

Sensitive Receivers	Assessment Point	Minimum Depth-averaged DO level (mgL ⁻¹)			Minimum Bottom DO level (mgL ⁻¹)		
		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
Dry Season							
Gazetted Beaches							
Tung Wan, Ma Wan	B1	0.003	5.5	5.50	0.003	5.7	5.70
Approach	B2	0.003	5.5	5.50	0.003	5.7	5.70
Ting Kau	B3	0.002	5.5	5.50	0.002	5.7	5.70
Lido	B4	0.002	5.5	5.50	0.003	5.7	5.70
Casam	B5	0.006	5.5	5.49	0.006	5.7	5.69
Hoi Mei Wan	B6	0.006	5.5	5.49	0.006	5.7	5.69
Gemini	B7	0.006	5.5	5.49	0.006	5.7	5.69
Angler's	B8	0.006	5.5	5.49	0.007	5.7	5.69
Lo So Shing	B9	0.000	6.1	6.10	0.000	6.3	6.30
Hung Shing Yeh	B10	0.000	6.1	6.10	0.000	6.3	6.30
Corals							
Pak Kok	CR1	0.001	5.9	5.90	0.001	6.0	6.00
Shek Kok Tsui	CR2	0.001	5.9	5.90	0.001	6.0	6.00
Luk Chau	CR3	0.000	6.2	6.20	0.001	6.2	6.20
Wong Chuk Kok	CR4	0.000	6.2	6.20	0.000	6.2	6.20
Ap Lei Chau	CR5	0.000	6.2	6.20	0.001	6.2	6.20
Sandy Bay	CR6	0.001	5.9	5.90	0.001	6.0	6.00
Green Island	CR7	0.002	5.9	5.90	0.002	6.0	6.00

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Sensitive Receivers	Assessment Point	Minimum Depth-averaged DO level (mgL ⁻¹)			Minimum Bottom DO level (mgL ⁻¹)		
		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
Kau Yi Chau	CR8	0.002	6.0	6.00	0.002	6.1	6.10
Kau Yi Chau	CR9	0.002	6.0	6.00	0.002	6.1	6.10
Kau Yi Chau	CR10	0.001	6.0	6.00	0.002	6.1	6.10
Siu Kau Yi Chau	CR11	0.002	6.0	6.00	0.002	6.1	6.10
Siu Kau Yi Chau	CR12	0.002	6.0	6.00	0.002	6.1	6.10
Siu Kau Yi Chau	CR13	0.001	6.0	6.00	0.002	6.1	6.10
Peng Chau	CR14	0.001	6.0	6.00	0.001	6.1	6.10
Peng Chau	CR15	0.000	6.0	6.00	0.000	6.1	6.10
Peng Chau	CR16	0.001	6.0	6.00	0.001	6.1	6.10
Peng Chau	CR17	0.001	6.0	6.00	0.001	6.1	6.10
Peng Chau	CR18	0.000	6.0	6.00	0.000	6.1	6.10
Fish Culture Zone							
Ma Wan	F1	0.009	5.5	5.49	0.010	5.7	5.69
Lo Tik Wan	F2	0.000	6.2	6.20	0.000	6.2	6.20
Sok Kwu Wan	F3	0.000	6.2	6.20	0.000	6.2	6.20
Cheung Sha Wan	F4	0.000	6.0	6.00	0.000	6.1	6.10
Cooling Water Intakes							
Tsuen Wan	C1	0.002	5.3	5.30	0.002	5.4	5.40
MTRC Tsing Yi Station	C2	0.002	5.3	5.30	0.002	5.4	5.40
MTRC Kowloon Station	C3	0.001	5.0	5.00	0.002	5.0	5.00
China H.K. City	C4	0.000	5.0	5.00	0.001	5.0	5.00
Sha Wan Drive	C5	0.001	5.9	5.90	0.001	6.0	6.00
Queen Mary Hospital	C6	0.001	5.9	5.90	0.001	6.0	6.00
Wah Fu Estate	C7	0.000	5.9	5.90	0.000	6.0	6.00
Kwai Chung Hospital	EMSD1	0.000	5.3	5.30	0.000	5.4	5.40
WSD Flushing Water Intake							
Tsing Yi	WSD1	0.002	5.3	5.30	0.003	5.4	5.40
Kennedy Town	WSD2	0.001	5.0	5.00	0.001	5.0	5.00
Sheung Wan	WSD3	0.005	5.0	5.00	0.005	5.0	4.99
Central Water Front	WSD4	0.005	5.0	4.99	0.006	5.0	4.99
Ap Lei Chau	WSD5	0.000	6.2	6.20	0.000	6.2	6.20
Kowloon South	WSD6	0.001	5.0	5.00	0.002	5.0	5.00
Cheung Sha Wan	WSD7	0.000	5.0	5.00	0.000	5.0	5.00
Tsuen Wan	WSD8	0.002	5.3	5.30	0.002	5.4	5.40
Near Hong Kong Garden	WSD9	0.006	5.5	5.49	0.011	5.7	5.69
Lamma Power Station	WSD10	0.000	6.1	6.10	0.000	6.3	6.30
Kwai Chung Hospital	EMSD1	0.000	5.3	5.30	0.000	5.4	5.40

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		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
Wet Season							
Gazetted Beaches							
Tung Wan, Ma Wan	B1	0.001	3.6	3.60	0.002	2.7	2.7
Approach	B2	0.003	3.6	3.60	0.005	2.7	2.7
Ting Kau	B3	0.002	3.6	3.60	0.003	2.7	2.7
Lido	B4	0.005	3.6	3.60	0.008	2.7	2.7
Casam	B5	0.005	3.6	3.60	0.005	2.7	2.7
Hoi Mei Wan	B6	0.005	3.6	3.60	0.006	2.7	2.7
Gemini	B7	0.005	3.6	3.60	0.006	2.7	2.7
Angler's	B8	0.004	3.6	3.60	0.006	2.7	2.7
Lo So Shing	B9	0.000	5.3	5.30	0.000	3.3	3.3
Hung Shing Yeh	B10	0.000	5.3	5.30	0.000	3.3	3.3
Corals							
Pak Kok	CR1	0.001	3.9	3.90	0.001	2.5	2.5
Shek Kok Tsui	CR2	0.000	3.9	3.90	0.001	2.5	2.5
Luk Chau	CR3	0.000	3.7	3.70	0.000	2.7	2.7
Wong Chuk Kok	CR4	0.000	3.7	3.70	0.000	2.7	2.7
Ap Lei Chau	CR5	0.000	3.7	3.70	0.000	2.7	2.7
Sandy Bay	CR6	0.001	3.9	3.90	0.001	2.5	2.5
Green Island	CR7	0.001	3.9	3.90	0.001	2.5	2.5
Kau Yi Chau	CR8	0.003	4.4	4.40	0.006	4.1	4.1
Kau Yi Chau	CR9	0.007	4.4	4.39	0.012	4.1	4.1
Kau Yi Chau	CR10	0.004	4.4	4.40	0.007	4.1	4.1
Siu Kau Yi Chau	CR11	0.005	4.4	4.40	0.013	4.1	4.1
Siu Kau Yi Chau	CR12	0.005	4.4	4.39	0.017	4.1	4.1
Siu Kau Yi Chau	CR13	0.004	4.4	4.40	0.006	4.1	4.1
Peng Chau	CR14	0.003	4.4	4.40	0.003	4.1	4.1
Peng Chau	CR15	0.000	4.4	4.40	0.000	4.1	4.1
Peng Chau	CR16	0.003	4.4	4.40	0.004	4.1	4.1
Peng Chau	CR17	0.004	4.4	4.40	0.010	4.1	4.1
Peng Chau	CR18	0.001	4.4	4.40	0.002	4.1	4.1
Fish Culture Zone							
Ma Wan	F1	0.007	3.6	3.59	0.009	2.7	2.7
Lo Tik Wan	F2	0.000	3.7	3.70	0.000	2.7	2.7
Sok Kwu Wan	F3	0.000	3.7	3.70	0.000	2.7	2.7
Cheung Sha Wan	F4	0.000	4.4	4.40	0.000	4.1	4.1
Cooling Water Intakes							
Tsuen Wan	C1	0.003	3.9	3.90	0.004	3.3	3.3
MTRC Tsing Yi Station	C2	0.002	3.9	3.90	0.002	3.3	3.3
MTRC Kowloon Station	C3	0.001	3.6	3.60	0.004	2.6	2.6

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		Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)	Max DO depletion (mgL ⁻¹)	Background DO (mgL ⁻¹)	Resultant DO (mgL ⁻¹)
China H.K. City	C4	0.000	3.6	3.60	0.001	2.6	2.6
Sha Wan Drive	C5	0.000	3.9	3.90	0.001	2.5	2.5
Queen Mary Hospital	C6	0.001	3.9	3.90	0.001	2.5	2.5
Wah Fu Estate	C7	0.000	3.9	3.90	0.000	2.5	2.5
Kwai Chung Hospital	EMSD1	0.001	3.9	3.90	0.001	3.3	3.3
WSD Flushing Water Intake							
Tsing Yi	WSD1	0.002	3.9	3.90	0.002	3.3	3.3
Kennedy Town	WSD2	0.001	3.6	3.60	0.001	2.6	2.6
Sheung Wan	WSD3	0.002	3.6	3.60	0.004	2.6	2.6
Central Water Front	WSD4	0.005	3.6	3.60	0.006	2.6	2.6
Ap Lei Chau	WSD5	0.000	3.7	3.70	0.000	2.7	2.7
Kowloon South	WSD6	0.001	3.6	3.60	0.003	2.6	2.6
Cheung Sha Wan	WSD7	0.000	3.6	3.60	0.000	2.6	2.6
Tsuen Wan	WSD8	0.003	3.9	3.90	0.004	3.3	3.3
Near Hong Kong Garden	WSD9	0.005	3.6	3.60	0.006	2.7	2.7
Lamma Power Station	WSD10	0.000	5.3	5.30	0.000	3.3	3.3
Kwai Chung Hospital	EMSD1	0.001	3.9	3.90	0.001	3.3	3.3

- Value in **Bold** indicates exceedance of relevant criteria.

- DO concentrations include the ambient levels presented in Table 3.11 plus the DO depletions predicted.

Table A3.10d: Predicted Total Inorganic Nitrogen Concentrations

Sensitive Receivers	Assessment Point	Maximum TIN concentration (mgL ⁻¹)	
		Dry Season	Wet Season
Gazetted Beaches			
Tung Wan, Ma Wan	B1	0.2903	0.3701
Approach	B2	0.2902	0.3702
Ting Kau	B3	0.2902	0.3702
Lido	B4	0.2902	0.3704
Casam	B5	0.2905	0.3704
Hoi Mei Wan	B6	0.2905	0.3704
Gemini	B7	0.2905	0.3704
Angler's	B8	0.2905	0.3704
Lo So Shing	B9	0.1100	0.3300
Hung Shing Yeh	B10	0.1100	0.3300
Corals			
Pak Kok	CR1	0.1701	0.5302

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Sensitive Receivers	Assessment Point	Maximum TIN concentration (mgL ⁻¹)	
		Dry Season	Wet Season
Shek Kok Tsui	CR2	0.1701	0.5302
Luk Chau	CR3	0.1400	0.4401
Wong Chuk Kok	CR4	0.1400	0.4400
Ap Lei Chau	CR5	0.1400	0.2199
Sandy Bay	CR6	0.1701	0.2201
Green Island	CR7	0.1702	0.2200
Kau Yi Chau	CR8	0.2501	0.2201
Kau Yi Chau	CR9	0.2501	0.2199
Kau Yi Chau	CR10	0.2501	0.2100
Siu Kau Yi Chau	CR11	0.2501	0.2100
Siu Kau Yi Chau	CR12	0.2501	0.2100
Siu Kau Yi Chau	CR13	0.2501	0.2201
Peng Chau	CR14	0.2501	0.2201
Peng Chau	CR15	0.2500	0.5003
Peng Chau	CR16	0.2501	0.5006
Peng Chau	CR17	0.2501	0.5003
Peng Chau	CR18	0.2500	0.5004
Fish Culture Zone			
Ma Wan	F1	0.2908	0.3706
Lo Tik Wan	F2	0.1400	0.2100
Sok Kwu Wan	F3	0.1400	0.2100
Cheung Sha Wan	F4	0.2500	0.5000
Cooling Water Intakes			
Tsuen Wan	C1	0.3502	0.5302
MTRC Tsing Yi Station	C2	0.3502	0.5302
MTRC Kowloon Station	C3	0.3201	0.4401
China H.K. City	C4	0.3200	0.4400
Sha Wan Drive	C5	0.1701	0.2199
Queen Mary Hospital	C6	0.1700	0.2201
Wah Fu Estate	C7	0.1700	0.2200
Kwai Chung Hospital	EMSD1	0.3500	0.5301
WSD Flushing Water Intake			
Tsing Yi	WSD1	0.3502	0.5302
Kennedy Town	WSD2	0.3201	0.4400
Sheung Wan	WSD3	0.3204	0.4402
Central Water Front	WSD4	0.3204	0.4404
Ap Lei Chau	WSD5	0.1400	0.2100
Kowloon South	WSD6	0.3201	0.4401
Cheung Sha Wan	WSD7	0.3200	0.4400
Tsuen Wan	WSD8	0.3501	0.5302

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Sensitive Receivers	Assessment Point	Maximum TIN concentration (mgL ⁻¹)	
		Dry Season	Wet Season
Near Hong Kong Garden	WSD9	0.2905	0.3704
Lamma Power Station	WSD10	0.1100	0.3300
Kwai Chung Hospital	EMSD1	0.3500	0.5301

- Value in **Bold** indicates exceedance of relevant criteria.
- TIN concentrations include the ambient levels presented in Table 3.11 plus the TIN elevations predicted.