Appendix 4.10 Calculations of Operational Noise Levels at Representative Noise Sensitive Receivers (Mitigated Scenario)

Sandy Bay PTW

Treatment Units	No of item	SWL dB(A)	Total SWL dB(A)	Enclosure Reduction dB(A)	Louvers Reduction, dB(A) #	NSR N12		NSR N13		NSR N14		NSR N15		Remark *
						Distance (m)	SPL dB(A)	Distance (m)	SPL dB(A)	Distance (m)	SPL dB(A)	Distance (m)	SPL dB(A)	
New Equipment to be Installed for the Proposed Upgrading Works														
Transfer Pumping Station														
Sewage Pump (1,800 L/s)	2	98	101	20		195	30	85	37	200	30	300	26	2 duty + 1 standby
Fan for Deodourization Unit (12,000 m^3/hr)	2	85	88		20	195	17	85	24	200	17	300	13	2 duty + 1 standby
Air Supply Fan for Motor Hall (23,400 m^3/hr)	1	89	89		20	195	18	85	25	200	18	300	14	1 duty + 1 standby
Extraction Fan for Dry Well (45,000 m3/hr)	1	93	93		20	195	22	85	29	200	22	300	18	1 duty + 1 standby
Air Supply Fan for Dry Well (46,800 m3/hr)	1	93	93		20	195	22	85	29	200	22	300	18	1 duty + 1 standby
Transformer	2	89	92	20		225	20	45	34	160	23	255	19	2 duty
Drop/Riser Shaft														
Ventilation Fan (3,500m^3/hr)	1	83	83			200	32	105	38	215	31	320	28	1 duty
Sub-Total SPL at NSR for New Equipment							**35**		**42**		**35**		**31**	
Existing Equipment to be Retained after Upgrading Works														
Preliminary Treatment Works Complex		90	90			240	37	68	48	165	41	280	36	
Total SPL at NSR (Existing and New Equipment)							**39**		**49**		**42**		**37**	

Notes:
Enclosure Reduction: Reduction of SWL due to the enclosure for the equipment
With reference to EIA Report for Siu Ho Wan Water Treatment Works Extension, a noise reduction of 20 dB(A) would be achieved with acoustic louvers.

* Standby item was not inlcuded in the noise assessment

Appendix 4.10 Calculations of Operational Noise Levels at Representative Noise Sensitive Receivers (Mitigated Scenario)

Sandy Bay PTW

Treatment Units	No of item	SWL dB(A)	Total SWL dB(A)	Enclosure Reduction dB(A)	Louvers Reduction, dB(A) #	NSR N15a		NSR N15b		Remark
						Distance (m)	SPL dB(A)	Distance (m)	SPL dB(A)	
New Equipment to be Installed for the Proposed Upgrading Works										
Transfer Pumping Station										
Sewage Pump (1,800 L/s)	2	98	101	20		64	40	52	42	2 duty + 1 standby
Ventilation Fan for Deodourization Unit (12,000 m^3/hr)	2	85	88		20	64	27	52	29	2 duty + 1 standby
Air Supply Fan for Motor Hall (23,400 m^3/hr)	1	89	89		20	64	28	52	30	1 duty + 1 standby
Extraction Fan for Dry Well (45,000 m3/hr)	1	93	93		20	64	32	52	34	1 duty + 1 standby
Air Supply Fan for Dry Well (46,800 m3/hr)	1	93	93		20	64	32	52	34	1 duty + 1 standby
Transformer	2	89	92	20		20	41	48	33	2 duty
Drop/Riser Shaft										
Ventilation Fan (3,500m^3/hr)	1	83	83			94	39	80	40	1 duty
Sub-Total SPL at NSR for New Equipment							**45**		**45**	
Existing Equipment to be Retained after Upgrading Works										
Preliminary Treatment Works Complex		90	90			72	48	90	46	
Total SPL at NSR (Existing and New Equipment)							**50**		**49**	

Notes:
Enclosure Reduction: Reduction of SWL due to the enclosure for the equipment

* Standby item was not inlcuded in the noise assessment
Exceedance of relevant noise limits

See the attached Figure A4.7 for locations of treatment units

Appendix 4.10 Calculations of Operational Noise Levels at Representative Noise Sensitive Receivers (Mitigated Scenario)

Cyberport PTW

Treatment Units	No of item	SWL dB(A)	Total SWL dB(A)	Enclosure Reduction dB(A)	Louvers Reduction, dB(A) #	NSR N16		NSR N17		NSR N18		Remark *
						Distance (m)	SPL dB(A)	Distance (m)	SPL dB(A)	Distance (m)	SPL dB(A)	
New Equipment to be Installed for the Proposed Upgrading Works												
Transfer Pumping Station												
Sewage Pump (1,680 L/s)	2	98	101	20		260	28	175	31	320	26	2 duty + 1 standby
Fan for Deodourization Unit (11,000 m^3/hr)	2	85	88		20	260	15	175	18	320	13	2 duty + 1 standby
Air Supply Fan for Motor Hall (23,400 m^3/hr)	1	89	89		20	260	16	175	19	320	14	1 duty + 1 standby
Extraction Fan for Dry Well (45,000 m3/hr)	1	93	93		20	260	20	175	23	320	18	1 duty + 1 standby
Air Supply Fan for Dry Well (46,800 m3/hr)	1	93	93		20	260	20	175	23	320	18	1 duty + 1 standby
Transformer	2	91	94	20		260	21	175	24	320	19	2 duty
Drop/Riser Shaft												
Ventilation Fan (2,900m^3/hr)	1	83	83			260	30	160	34	295	29	
Sub-Total SPL at NSR for New Equipment							**33**		**37**		**31**	
Existing Equipment to be Retained after Upgrading Works												
Preliminary Treatment Works Building		101	101			215	49	150	52	350	45	
Total SPL at NSR (Existing and New Equipment)							**49**		**53**		**45**	

Notes:
Enclosure Reduction: Reduction of SWL due to the enclosure for the equipment
With reference to EIA Report for Siu Ho Wan Water Treatment Works Extension, a noise reduction of 20 dB(A) would be achieved with acoustic louvers.

* Standby item was not inlcuded in the noise assessment

Appendix 4.10 Calculations of Operational Noise Levels at Representative Noise Sensitive Rceivers (Mitigated Scenario)

Wah Fu PTW

Treatment Units	No of item	SWL dB(A)	Total SWL dB(A)	Enclosure Reduction dB(A)	Louvers Reduction, dB(A) #	NSR N19		NSR N20		Remark *
						Distance (m)	SPL dB(A)	Distance (m)	SPL dB(A)	
New Equipment to be Installed for the Proposed Upgrading Works										
PTW Building										
Fine Screen (Mechanically-raked)	1	92	92	20		120	25	36	36	1 duty + 1 standby
Washpress	1	80	80	20		120	13	36	24	1 duty + 1 standby
Grit Classifier	1	80	80	20		120	13	36	24	1 duty + 1 standby
Grit Trap Area										
Grit Trap's Equipment @	1	92	92	20		110	26	32	37	1 duty + 1 standby
Deodourization Unit										
Ventilation Fan (11,000m^3/hr)	2	85	88		20	120	21	36	32	2 duty + 1 standby
Ventilation Fan (900m^3/hr)	1	79	79		20	120	12	36	23	1 duty + 1 standby
Drop Shaft										
Ventilation Fan (1,000m^3/hr)	1	79	79			135	31	43	41	1 duty
Sub-Total SPL at NSR for New Equipment							**34**		**44**	
Existing Equipment to be Retained after Upgrading Works										
No existing equipment will be retained										
Total SPL at NSR (Existing and New Equipment)							**34**		**44**	

Notes:
Enclosure Reduction: Reduction of SWL due to the enclosure for the equipment
With reference to EIA Report for Siu Ho Wan Water Treatment Works Extension, a noise reduction of 20 dB(A) would be achieved with acoustic louvers.

@ Grit trap's equipment will be partially enclosed to avoid line of sight between the noise source and the receiver. A reduction of 20 dB(A) is assumed in accordance with "Good Practices on Pumping System Noise Control"
* Standby item was not inlcuded in the noise assessment