Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario

Construction Plant Inventory

Site Clearance

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110	
Dump Truck	CNP067	1	117	30%	0		112
					Total	110	112
					Max SWL	112	

Box Culvert

Excavation and Concreting

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110				
Concrete Lorry Mixer	CNP044	1	109	50%	0		106			
Vibratory Poker	CNP170	1	113	70%	0		111			
Bar Bender / Cutter	CNP021	1	90	70%	0		88			
Dump Truck	CNP067	1	117	30%	0					112
Silent Piling Machine	Other EIA Ref	1	100	70%	0			98		
Breaker, excavator mounted (hydraulic)	CNP028	1	122	70%	0				120	
					Total	110	113	98	120	112
					Max SWL	120				

Backfilling and Road Restatement

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110			
Dump Truck	CNP067	1	117	30%	0				112
Concrete Lorry Mixer	CNP044	1	109	50%	0		106		
Vibratory Poker	CNP170	1	113	70%	0		111		
Vibratory Roller	CNP186	1	108	50%	0			105	
					Total	110	113	105	112
					Max SWL	113			

Pumping Station Construction

Excavation

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110
Dump Truck	CNP067	1	117	30%	0	112
Power Rammer	CNP169	1	108	70%	0	106
Breaker, excavator mounted (hydraulic)	CNP028	1	122	70%	0	120
					Total	122

Construction of Pumping Station

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)
Concrete Lorry Mixer	CNP044	1	109	50%	0	106
Vibratory Poker	CNP170	1	113	70%	0	111
Bar Bender / Cutter	CNP021	1	90	70%	0	88
Air Compressor	CNP003	1	104	50%	0	101
Submersible Pump	CNP283	2	85	100%	0	88
					Total	113

Backfilling

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110
Dump Truck	CNP067	1	117	30%	0	112
					Total	114

Pipe Laying at Wai Ha (Conventional Method)

Excavation

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110		
Dump Truck	CNP067	1	117	30%	0	112		
Power Rammer	CNP169	1	108	70%	0		106	
Breaker, excavator mounted (hydraulic)	CNP028	1	122	70%	0			120
					Total	114	106	120
					Max SWL	120		

Laying Pipe

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110	
Concrete Lorry Mixer	CNP044	1	109	50%	0		106
Vibratory Poker	CNP170	1	113	70%	0		111
					Total	110	113
					Max SWL	113	

Backfilling

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110		
Dump Truck	CNP067	1	117	30%	0			112
Concrete Lorry Mixer	CNP044	1	109	50%	0		106	
Vibratory Poker	CNP170	1	113	70%	0		111	
					Total	110	113	112
					Max SWL	113		

Pipe Laying at Ting Kok Road

Excavation

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110		
Dump Truck	CNP067	1	117	30%	0	112		
Power Rammer	CNP169	1	108	70%	0		106	
Breaker, excavator mounted (hydraulic)	CNP028	1	122	70%	0			120
					Total	114	106	120
					Max SWL	120		

Laying Pipe

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110
Concrete Lorry Mixer	CNP044	1	109	50%	0	106
Vibratory Poker	CNP170	1	113	70%	0	111
					Total	115

Backfilling

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0	110
Dump Truck	CNP067	1	117	30%	0	112
Concrete Lorry Mixer	CNP044	1	109	50%	0	106
Vibratory Poker	CNP170	1	113	70%	0	111
					Total	116

Mechanical Gate Installation

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No.of Items	SWL/Item dB(A)	On-time %	Barrier dB	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)	Total SWL dB(A)
Excavator / Loader	CNP081	1	112	70%	0			110	
Dump Truck	CNP067	1	117	30%	0		112		
Concrete Lorry Mixer	CNP044	1	109	50%	0		106		
Power Rammer	CNP169	1	108	70%	0	106			
Breaker, excavator mounted (hydraulic)	CNP028	1	122	70%	0				120
Vibratory Poker	CNP170	1	113	70%	0			111	
					Total	106	113	114	120
					Max SWL	120			

Other EIA Ref:

Application of Variation of Environmental Permit Conditins for "Prince Edward Station Pedestrian Subway Extension and Entrance Modification Works" projec

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario

Predicted Construction Noise Levels

NSR - SW1

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	22	80	0-3	80	80	80																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	>300	--	4-9				--	--	--	--	--	--																					
Backfilling, Road Restatement (Ch 0 - 350)	113	>300	--	10-12										--	--	--																		
Excavation, Concreting (Ch 350 - 700)	120	>300	--	13-18													--	--	--	--	--	--												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	>300	--	19-21																			--	--	--									
Excavation, Concreting (Ch 700 - 1013)	120	223	68	22-27																						68	68	68	68	68	68			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	223	61	28-30																												61	61	61
Pumping Station																																		
Excavation	122	275	68	4-7				68	68	68	68																							
Constrcution of Pumping Station	113	275	59	8-19								59	59	59	59	59	59	59	59	59	59	59	59											
Backfilling	114	275	60	20-22																				60	60	60								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	113	>300	--	8-10								--	--	--																				
Backfilling	113	>300	--	11-14											--	--	--	--																
Pipe Laying along Ting Kok Road																																		
Excavation	120	58	80	4-7				80	80	80	80																							
Laying pipe	115	58	75	8-10								75	75	75																				
Backfilling	116	58	76	11-14											76	76	76	76																
Installation of Mechanical Gate	120	22	88	15-20															88	88	88	88	88	88										
Overall Noise Level					**80**	**80**	**80**	**80**	**80**	**80**	**80**	75	75	75	**76**	**76**	**76**	**76**	**88**	**88**	**88**	**88**	**88**	**88**	60	69	68	68	68	68	68	61	61	61

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW2

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	105	67	0-3	67	67	67																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	>300	--	4-9				--	--	--	--	--	--																					
Backfilling, Road Restatement (Ch 0 - 350)	113	>300	--	10-12										--	--	--																		
Excavation, Concreting (Ch 350 - 700)	120	170	70	13-18													70	70	70	70	70	70												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	170	63	19-21																			63	63	63									
Excavation, Concreting (Ch 700 - 1013)	120	138	72	22-27																						72	72	72	72	72	72			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	138	65	28-30																												65	65	65
Pumping Station																																		
Excavation	122	105	77	4-7				77	77	77	77																							
Constrcution of Pumping Station	113	105	68	8-19								68	68	68	68	68	68	68	68	68	68	68	68											
Backfilling	114	105	69	20-22																				69	69	69								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	113	>300	--	8-10								--	--	--																				
Backfilling	113	>300	--	11-14											--	--	--	--																
Pipe Laying along Ting Kok Road																																		
Excavation	120	125	73	4-7				73	73	73	73																							
Laying pipe	115	125	68	8-10								68	68	68																				
Backfilling	116	125	69	11-14											69	69	69	69																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					67	67	67	**78**	**78**	**78**	**78**	71	71	71	71	71	74	74	72	72	72	72	69	70	70	74	72	72	72	72	72	65	65	65

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW3

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	53	73	0-3	73	73	73																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	>300	--	4-9				--	--	--	--	--	--																					
Backfilling, Road Restatement (Ch 0 - 350)	113	>300	--	10-12										--	--	--																		
Excavation, Concreting (Ch 350 - 700)	120	58	80	13-18													80	80	80	80	80	80												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	58	73	19-21																			73	73	73									
Excavation, Concreting (Ch 700 - 1013)	120	53	81	22-27																						81	81	81	81	81	81			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	53	74	28-30																												74	74	74
Pumping Station																																		
Excavation	122	215	70	4-7				70	70	70	70																							
Constrcution of Pumping Station	113	215	61	8-19								61	61	61	61	61	61	61	61	61	61	61	61											
Backfilling	114	215	62	20-22																				62	62	62								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	270	66	4-7				66	66	66	66																							
Laying pipe	113	270	59	8-10								59	59	59																				
Backfilling	113	270	59	11-14											59	59	59	59																
Pipe Laying along Ting Kok Road																																		
Excavation	120	225	68	4-7				68	68	68	68																							
Laying pipe	115	225	63	8-10								63	63	63																				
Backfilling	116	225	64	11-14											64	64	64	64																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					73	73	73	73	73	73	73	66	66	66	67	67	80	80	80	80	80	80	73	73	73	81	81	81	81	81	81	74	74	74

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW4

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	35	76	0-3	76	76	76																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	>300	--	4-9				--	--	--	--	--	--																					
Backfilling, Road Restatement (Ch 0 - 350)	113	>300	--	10-12										--	--	--																		
Excavation, Concreting (Ch 350 - 700)	120	35	84	13-18													84	84	84	84	84	84												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	35	77	19-21																			77	77	77									
Excavation, Concreting (Ch 700 - 1013)	120	55	80	22-27																						80	80	80	80	80	80			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	55	73	28-30																												73	73	73
Pumping Station																																		
Excavation	122	260	69	4-7				69	69	69	69																							
Constrcution of Pumping Station	113	260	60	8-19								60	60	60	60	60	60	60	60	60	60	60	60											
Backfilling	114	260	61	20-22																				61	61	61								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	238	67	4-7				67	67	67	67																							
Laying pipe	113	238	60	8-10								60	60	60																				
Backfilling	113	238	60	11-14											60	60	60	60																
Pipe Laying along Ting Kok Road																																		
Excavation	120	275	66	4-7				66	66	66	66																							
Laying pipe	115	275	61	8-10								61	61	61																				
Backfilling	116	275	62	11-14											62	62	62	62																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					**76**	**76**	**76**	72	72	72	72	65	65	65	66	66	**84**	**84**	**84**	**84**	**84**	**84**	**77**	**77**	**77**	**80**	**80**	**80**	**80**	**80**	**80**	73	73	73

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW5

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	20	81	0-3	81	81	81																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	238	67	4-9				67	67	67	67	67	67																					
Backfilling, Road Restatement (Ch 0 - 350)	113	238	60	10-12										60	60	60																		
Excavation, Concreting (Ch 350 - 700)	120	20	89	13-18													89	89	89	89	89	89												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	20	82	19-21																			82	82	82									
Excavation, Concreting (Ch 700 - 1013)	120	138	72	22-27																						72	72	72	72	72	72			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	138	65	28-30																												65	65	65
Pumping Station																																		
Excavation	122	>300	--	4-7				--	--	--	--																							
Constrcution of Pumping Station	113	>300	--	8-19								--	--	--	--	--	--	--	--	--	--	--	--											
Backfilling	114	>300	--	20-22																				--	--	--								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	138	72	4-7				72	72	72	72																							
Laying pipe	113	138	65	8-10								65	65	65																				
Backfilling	113	138	65	11-14											65	65	65	65																
Pipe Laying along Ting Kok Road																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	115	>300	--	8-10								--	--	--																				
Backfilling	116	>300	--	11-14											--	--	--	--																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					**81**	**81**	**81**	73	73	73	73	69	69	66	66	66	**89**	**89**	**89**	**89**	**89**	**89**	**82**	**82**	**82**	72	72	72	72	72	72	65	65	65

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW6

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	20	81	0-3	81	81	81																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	158	71	4-9				71	71	71	71	71	71																					
Backfilling, Road Restatement (Ch 0 - 350)	113	158	64	10-12										64	64	64																		
Excavation, Concreting (Ch 350 - 700)	120	20	89	13-18													89	89	89	89	89	89												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	20	82	19-21																			82	82	82									
Excavation, Concreting (Ch 700 - 1013)	120	200	69	22-27																						69	69	69	69	69	69			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	200	62	28-30																												62	62	62
Pumping Station																																		
Excavation	122	>300	--	4-7				--	--	--	--																							
Constrcution of Pumping Station	113	>300	--	8-19								--	--	--	--	--	--	--	--	--	--	--	--											
Backfilling	114	>300	--	20-22																				--	--	--								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	65	79	4-7				79	79	79	79																							
Laying pipe	113	65	72	8-10								72	72	72																				
Backfilling	113	65	72	11-14											72	72	72	72																
Pipe Laying along Ting Kok Road																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	115	>300	--	8-10								--	--	--																				
Backfilling	116	>300	--	11-14											--	--	--	--																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					81	81	81	79	79	79	79	74	74	72	72	72	89	89	89	89	89	89	82	82	82	69	69	69	69	69	69	62	62	62

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW7

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	30	77	0-3	77	77	77																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	30	85	4-9				85	85	85	85	85	85																					
Backfilling, Road Restatement (Ch 0 - 350)	113	30	78	10-12										78	78	78																		
Excavation, Concreting (Ch 350 - 700)	120	130	73	13-18													73	73	73	73	73	73												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	130	66	19-21																			66	66	66									
Excavation, Concreting (Ch 700 - 1013)	120	>300	--	22-27																						--	--	--	--	--	--			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	>300	--	28-30																												--	--	--
Pumping Station																																		
Excavation	122	>300	--	4-7				--	--	--	--																							
Constrcution of Pumping Station	113	>300	--	8-19								--	--	--	--	--	--	--	--	--	--	--	--											
Backfilling	114	>300	--	20-22																				--	--	--								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	120	73	4-7				73	73	73	73																							
Laying pipe	113	120	66	8-10								66	66	66																				
Backfilling	113	120	66	11-14											66	66	66	66																
Pipe Laying along Ting Kok Road																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	115	>300	--	8-10								--	--	--																				
Backfilling	116	>300	--	11-14											--	--	--	--																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					77	77	77	86	86	86	86	86	86	79	79	79	74	74	73	73	73	73	66	66	66	--	--	--	--	--	--	--	--	--

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW8

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	130	65	0-3	65	65	65																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	130	73	4-9				73	73	73	73	73	73																					
Backfilling, Road Restatement (Ch 0 - 350)	113	130	66	10-12										66	66	66																		
Excavation, Concreting (Ch 350 - 700)	120	148	72	13-18													72	72	72	72	72	72												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	148	65	19-21																			65	65	65									
Excavation, Concreting (Ch 700 - 1013)	120	>300	--	22-27																						--	--	--	--	--	--			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	>300	--	28-30																												--	--	--
Pumping Station																																		
Excavation	122	>300	--	4-7				--	--	--	--																							
Constrcution of Pumping Station	113	>300	--	8-19								--	--	--	--	--	--	--	--	--	--	--	--											
Backfilling	114	>300	--	20-22																				--	--	--								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	5	101	4-7				101	101	101	101																							
Laying pipe	113	5	94	8-10								94	94	94																				
Backfilling	113	5	94	11-14											94	94	94	94																
Pipe Laying along Ting Kok Road																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	115	>300	--	8-10								--	--	--																				
Backfilling	116	>300	--	11-14											--	--	--	--																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					65	65	65	101	101	101	101	94	94	94	94	94	94	94	72	72	72	72	65	65	65	--	--	--	--	--	--	--	--	--

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW9

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	135	64	0-3	64	64	64																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	135	72	4-9				72	72	72	72	72	72																					
Backfilling, Road Restatement (Ch 0 - 350)	113	135	65	10-12										65	65	65																		
Excavation, Concreting (Ch 350 - 700)	120	185	70	13-18													70	70	70	70	70	70												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	185	63	19-21																			63	63	63									
Excavation, Concreting (Ch 700 - 1013)	120	>300	--	22-27																						--	--	--	--	--	--			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	>300	--	28-30																												--	--	--
Pumping Station																																		
Excavation	122	>300	--	4-7				--	--	--	--																							
Constrcution of Pumping Station	113	>300	--	8-19								--	--	--	--	--	--	--	--	--	--	--	--											
Backfilling	114	>300	--	20-22																				--	--	--								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	3	105	4-7				105	105	105	105																							
Laying pipe	113	3	98	8-10								98	98	98																				
Backfilling	113	3	98	11-14											98	98	98	98																
Pipe Laying along Ting Kok Road																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	115	>300	--	8-10								--	--	--																				
Backfilling	116	>300	--	11-14											--	--	--	--																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					64	64	64	**105**	**105**	**105**	**105**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	70	70	70	70	63	63	63	--	--	--	--	--	--	--	--	--

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SW10

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	9	88	0-3	88	88	88																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	9	96	4-9				96	96	96	96	96	96																					
Backfilling, Road Restatement (Ch 0 - 350)	113	9	89	10-12										89	89	89																		
Excavation, Concreting (Ch 350 - 700)	120	288	66	13-18													66	66	66	66	66	66												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	288	59	19-21																			59	59	59									
Excavation, Concreting (Ch 700 - 1013)	120	>300	--	22-27																						--	--	--	--	--	--			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	>300	--	28-30																												--	--	--
Pumping Station																																		
Excavation	122	>300	--	4-7				--	--	--	--																							
Constrcution of Pumping Station	113	>300	--	8-19								--	--	--	--	--	--	--	--	--	--	--	--											
Backfilling	114	>300	--	20-22																				--	--	--								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	138	72	4-7				72	72	72	72																							
Laying pipe	113	138	65	8-10								65	65	65																				
Backfilling	113	138	65	11-14											65	65	65	65																
Pipe Laying along Ting Kok Road																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	115	>300	--	8-10								--	--	--																				
Backfilling	116	>300	--	11-14											--	--	--	--																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					88	88	88	96	96	96	96	96	96	89	89	89	69	69	66	66	66	66	59	59	59	--	--	--	--	--	--	--	--	--

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SWA1

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	13	85	0-3	85	85	85																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	298	66	4-9				66	66	66	66	66	66																					
Backfilling, Road Restatement (Ch 0 - 350)	113	298	59	10-12										59	59	59																		
Excavation, Concreting (Ch 350 - 700)	120	13	93	13-18													93	93	93	93	93	93												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	13	86	19-21																			86	86	86									
Excavation, Concreting (Ch 700 - 1013)	120	43	82	22-27																						82	82	82	82	82	82			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	43	75	28-30																												75	75	75
Pumping Station																																		
Excavation	122	275	68	4-7				68	68	68	68																							
Constrcution of Pumping Station	113	275	59	8-19								59	59	59	59	59	59	59	59	59	59	59	59											
Backfilling	114	275	60	20-22																				60	60	60								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	200	69	4-7				69	69	69	69																							
Laying pipe	113	200	62	8-10								62	62	62																				
Backfilling	113	200	62	11-14											62	62	62	62																
Pipe Laying along Ting Kok Road																																		
Excavation	120	288	66	4-7				66	66	66	66																							
Laying pipe	115	288	61	8-10								61	61	61																				
Backfilling	116	288	62	11-14											62	62	62	62																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					**85**	**85**	**85**	73	73	73	73	69	69	66	67	67	**93**	**93**	**93**	**93**	**93**	**93**	**86**	**86**	**86**	**82**	**82**	**82**	**82**	**82**	**82**	75	75	75

Appendix 3.1
Calculation of Construction Noise - Unmitigated Scenario
NSR - SWA2

Construction Task	SWL	Dist	SPL	Durations (from mth to mth)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Site Clearance	112	15	83	0-3	83	83	83																											
Box culvert																																		
Excavation, Concreting (Ch 0 - 350)	120	15	91	4-9				91	91	91	91	91	91																					
Backfilling, Road Restatement (Ch 0 - 350)	113	15	84	10-12										84	84	84																		
Excavation, Concreting (Ch 350 - 700)	120	100	75	13-18													75	75	75	75	75	75												
Backfilling, Road Reinstatement (Ch 350 - 700)	113	100	68	19-21																			68	68	68									
Excavation, Concreting (Ch 700 - 1013)	120	>300	--	22-27																						--	--	--	--	--	--			
Backfilling, Road Reinstatement (Ch 700 - 1013)	113	>300	--	28-30																												--	--	--
Pumping Station																																		
Excavation	122	>300	--	4-7				--	--	--	--																							
Constrcution of Pumping Station	113	>300	--	8-19								--	--	--	--	--	--	--	--	--	--	--	--											
Backfilling	114	>300	--	20-22																				--	--	--								
Pipe Laying at Wai Ha (Conventional Method)																																		
Excavation	120	110	74	4-7				74	74	74	74																							
Laying pipe	113	110	67	8-10								67	67	67																				
Backfilling	113	110	67	11-14											67	67	67	67																
Pipe Laying along Ting Kok Road																																		
Excavation	120	>300	--	4-7				--	--	--	--																							
Laying pipe	115	>300	--	8-10								--	--	--																				
Backfilling	116	>300	--	11-14											--	--	--	--																
Installation of Mechanical Gate	120	>300	--	15-20															--	--	--	--	--	--										
Overall Noise Level					83	83	83	91	91	91	91	91	91	84	84	84	76	76	75	75	75	75	68	68	68	--	--	--	--	--	--	--	--	--