

Appendix 4.4

**Detail Calculation of  
Construction Noise  
Assessment**

**Phase 1 Development**

Description	PME	Unit	TM Identification	SWL/unit	Sub-total SWL	
Site Clearance	Excavator	4	CNP 081	112	118	
	Mower	1	CNP 056	112	112	
	Lorry	4	CNP 141	112	118	
	Crane truck	1	CNP 048	112	112	
Excavation & Site formation - installation of soil nail - excavation works on slopes - drainage works	Excavator	4	CNP 081	112	118	
	Compactor	4	CNP 050	105	111	
	Bulldozer	4	CNP 030	115	121	
	Generator, silenced	5	CNP 102	100	107	
	Crane truck	1	CNP 048	112	112	
	Dump truck	4	CNP 067	117	123	
	Mower	1	CNP 056	112	112	
	Lorry	2	CNP 141	112	115	
Installation of liner, leachate & LFG collection system	Water pump	4	CNP 282	103	109	
	Excavator	1	CNP 081	112	112	
	Compactor	1	CNP 050	105	105	
	Generator, silenced	1	CNP 102	100	100	
Installation of liner, leachate & LFG collection system	Wheel loader	1	CNP 081	112	112	
	Sweeper	1	CNP 188	107	107	
	Roller	1	CNP 186	108	108	
	Crane truck	1	CNP 048	112	112	
	Dump truck	1	CNP 067	117	117	
	Lorry	20	CNP 141	112	125	
	<b>Total SWL for Phase 1 Construction</b>					<b>130</b>

**Phase 2 Development**

Description	PME	Unit	TM Identification	SWL/unit	Sub-total SWL	
Site Clearance	Excavator	2	CNP 081	112	115	
	Mower	1	CNP 056	112	112	
	Lorry	2	CNP 141	112	115	
	Crane truck	1	CNP 048	112	112	
Excavation & Site formation - installation of soil nail - excavation works on slopes - drainage works	Excavator	3	CNP 081	112	117	
	Compactor	3	CNP 050	105	110	
	Bulldozer	4	CNP 030	115	121	
	Generator, silenced	5	CNP 102	100	107	
	Crane truck	1	CNP 048	112	112	
	Dump truck	4	CNP 067	117	123	
	Mower	1	CNP 056	112	112	
	Lorry	2	CNP 141	112	115	
Installation of liner, leachate & LFG collection system	Water pump	4	CNP 282	103	109	
	Excavator	1	CNP 081	112	112	
	Compactor	1	CNP 050	105	105	
	Generator, silenced	6	CNP 102	100	108	
Installation of liner, leachate & LFG collection system	Wheel loader	1	CNP 081	112	112	
	Sweeper	1	CNP 188	107	107	
	Roller	1	CNP 186	108	108	
	Crane truck	1	CNP 048	112	112	
	Dump truck	1	CNP 067	117	117	
	Lorry	20	CNP 141	112	125	
	<b>Total SWL for Phase 2 Construction</b>					<b>130</b>

**Phase 3 Development**

Description	PME	Unit	TM Identification	SWL/unit	Sub-total SWL	
Site Clearance	Excavator	2	CNP 081	112	115	
	Mower	1	CNP 056	112	112	
	Lorry	2	CNP 141	112	115	
	Crane truck	1	CNP 048	112	112	
Excavation & Site formation - installation of soil nail - excavation works on slopes - drainage works	Excavator	3	CNP 081	112	117	
	Compactor	3	CNP 050	105	110	
	Bulldozer	4	CNP 030	115	121	
	Generator, silenced	5	CNP 102	100	107	
	Crane truck	1	CNP 048	112	112	
	Dump truck	4	CNP 067	117	123	
	Mower	1	CNP 056	112	112	
	Lorry	2	CNP 141	112	115	
Installation of liner, leachate & LFG collection system	Water pump	4	CNP 282	103	109	
	Excavator	1	CNP 081	112	112	
	Compactor	1	CNP 050	105	105	
	Generator, silenced	6	CNP 102	100	108	
Installation of liner, leachate & LFG collection system	Wheel loader	1	CNP 081	112	112	
	Sweeper	1	CNP 188	107	107	
	Roller	1	CNP 186	108	108	
	Crane truck	1	CNP 048	112	112	
	Dump truck	1	CNP 067	117	117	
	Lorry	20	CNP 141	112	125	
	<b>Total SWL for Phase 3 Construction</b>					<b>130</b>

**Restoration & Aftercare Period**

Description	PME	Unit	TM Identification	SWL/unit	Sub-total SWL
Installation of Final Capping	Excavator	4	CNP 081	112	118
	Compactor	4	CNP 050	105	111
	Generator, silenced	6	CNP 102	100	108
	Wheel loader	2	CNP 081	112	115
	Sweeper	2	CNP 188	107	110
	Roller	2	CNP 186	108	111
	Crane truck	2	CNP 048	112	115
	Dump truck	2	CNP 067	117	120
	Lorry	10	CNP 141	112	122
	Planting & Landscaping	Excavator	4	CNP 081	112
Compactor		4	CNP 050	105	111
Generator, silenced		6	CNP 102	100	108
Crane truck		2	CNP 048	112	115
<b>Total SWL for Aftercare Period</b>					<b>127</b>

**Construction of Leachate Treatment Plant**

Description	PME	Unit	TM Identification	SWL/unit	Sub-total SWL
Leachate Treatment Plant	Mobile crane	2	CNP 048	112	115
	Excavator	2	CNP 081	112	115
	Air compressor	2	CNP 002	102	105
	Generator, silenced	2	CNP 102	100	103
<b>Total SWL of construction of leachate treatment plant</b>					<b>118</b>

**Project: North-east New (Territories (NENT) Landfill Extension Environmental Impact Assessment**  
**Title: Calculation Construction Noise Level, Leq(30min)**

Distance between notional source positions and NSRs, m

Description	Worksite	SWL	NSR									
			SR1	SR2	SR3	SR4	SR5	SR6	SR7	SR8	SR9	SR10
Phase 1	1	130	566	1115	1081	1439	1267	1515	2024	1589	1175	996
Phase 2	2	130	895	1039	1039	1411	1229	2106	2632	2187	1142	1626
	3	130	913	1230	957	1243	1047	2226	2743	2304	1258	1721
	4	130	1111	1504	1194	1315	1226	2212	2770	2309	1070	1785
Phase 3	5	130	828	1404	1373	1715	1547	1308	1867	1404	904	1066
	6	130	665	1296	1451	2004	1749	1336	1843	1404	1226	865
Restoration & Aftercare	7	127	647	1186	1088	1344	1219	1315	1853	1403	904	888
Leachate Treatment Plant	8	118	386	1011	1346	1972	1687	1408	1766	1417	1656	653

SWL is base on worksheet of calculation of SWL

Distance correction, dB(A)

Description	Worksite	SWL	NSR									
			SR1	SR2	SR3	SR4	SR5	SR6	SR7	SR8	SR9	SR10
Phase 1	1	130	-63	-69	-69	-71	-70	-72	-74	-72	-69	-68
Phase 2	2	130	-67	-69	-68	-71	-70	-74	-76	-75	-69	-72
	3	130	-67	-70	-68	-70	-68	-75	-77	-75	-70	-73
	4	130	-69	-72	-70	-70	-70	-77	-77	-75	-69	-73
Phase 3	5	130	-66	-71	-71	-73	-72	-70	-73	-71	-67	-69
	6	130	-64	-70	-71	-74	-73	-71	-73	-71	-70	-67
Restoration & Aftercare	7	127	-64	-69	-69	-71	-70	-70	-73	-71	-67	-67
Leachate Treatment Plant	8	118	-60	-68	-71	-74	-73	-71	-73	-71	-72	-64

Distance correction = - 20 log r - 8 based on hemi-spherical radiation, where r = distance,

Screening by natural topography

Description	Worksite	SWL	NSR									
			SR1	SR2	SR3	SR4	SR5	SR6	SR7	SR8	SR9	SR10
Phase 1	1	130	-10	-10	-10	-10	-10	-10	-10	-10	0	-10
Phase 2	2	130	-10	-10	-10	0	-10	-10	0	-10	0	0
	3	130	-10	-10	-10	0	-10	-10	0	-10	0	0
	4	130	-10	-10	-10	-10	-10	-10	0	-10	0	0
Phase 3	5	130	-10	-10	-10	-10	-10	-10	0	-10	0	0
	6	130	0	-10	-10	-10	-10	-10	0	-10	0	0
Restoration & Aftercare	7	127	-5	-5	-10	-5	-5	-10	-5	-10	-5	-5
Leachate Treatment Plant	8	118	0	-10	-10	-10	-10	-10	-10	-10	-10	0

10dB(A) reduction for total screening from natural topography, 5dB(A) reduction for partial screening from the hill slope.

Total Sound pressure level calculation, Leq (dB(A))

Description	Worksite	SWL	NSR									
			SR1	SR2	SR3	SR4	SR5	SR6	SR7	SR8	SR9	SR10
Phase 1	1	130	60	54	54	52	53	51	49	51	64	55
Phase 2	2	130	56	54	55	62	53	49	57	48	64	61
	3	130	56	53	55	63	55	48	56	48	63	60
	4	130	54	51	53	53	53	48	56	48	64	60
Phase 3	5	130	57	52	52	50	51	53	60	52	66	64
	6	130	69	53	52	49	50	52	60	52	63	66
Restoration & Aftercare	7	127	61	56	51	54	55	50	52	49	58	58
Leachate Treatment Plant	8	118	61	43	40	37	38	40	38	40	39	57

Total Sound Pressure Level (SPL) = Total SWL + Distance Correction + Screening by natural topography + 3 dB facade correction.

Maximum Corrected Noise Level

Construction Activity	NSR									
	SR1	SR2	SR3	SR4	SR5	SR6	SR7	SR8	SR9	SR10
Phase 1 + Phase 2 + Leachate Treatment Plant	64	57	58	63	57	53	57	53	67	63
Phase 2 (either worksite 2, 3 or 4 will operate)	56	54	55	63	55	49	57	48	64	61
Phase 3 (either worksite 5 or 6 will operate)	69	53	52	50	51	53	60	52	66	66
Restoration & Aftercare	61	56	51	54	55	50	52	49	58	58
<b>Max CNL</b>	<b>69</b>	<b>57</b>	<b>58</b>	<b>63</b>	<b>57</b>	<b>53</b>	<b>60</b>	<b>53</b>	<b>67</b>	<b>66</b>

The construction of Phase 1, Phase 2 & Leachate Treatment Plant will overlap.