

Appendix 3.4

**Odour Emission
Strength and Modelling
Parameters**

Appendix 3-4 : Odour strength applied in the model (Temperature under reasonable worst case condition)

Sampling Location	Measured Odour Source Emission Strength normalised to 0.2m/s (SOER1), OU/m ² -s	Modelled Odour Source Emission Strength at 0.5m/s ground wind speed, Applied in the ISCST3 Model (SOER2), OU/m ² -s [3]
Daily cover overlying tipped waste	2.6 (at 21deg C)	4.11+0.98= 5.09
Tipping – Special-Waste + Sludge [2,3]	$(4+3.8 +4.3+6.2)/4= 4.58$ (at 21deg C)	7.23+0.98= 8.21
Tipping – MSW [1]	2.47 (at 28deg C)	3.91
Tipping – compacted waste	1.3 (at 21deg C)	2.06+0.98= 3.04
Tipping – aggregated (90% of MSW and 10% of Special-Waste + Sludge) [1,2]	-	4.34
Manoeuvring (at tipping area)	0.89 (at 28 deg C)	1.41
Raw Leachate Lagoon – before ASP [4]	17.62	27.86
Leachate Lagoon – after ASP [4]	6.53	10.32
Aeration Lagoon [4]	2.5	3.95
Effluent Lagoon [4]	1.79	2.83

Notes :

[1] 90% of the MSW waste in the total waste composition

[2] 10% of the Special-Waste + Sludge waste in the total composition

[3] Sludge (two vehicle loads per day) will be controlled for disposal during off-peak hour and covered immediately with clean covering soil

[4] Not sensitive to temperature effect

Odour Emission from Tipping Site - 20deg C as reasonable worst case temp with modelled ground speed of 0.5m/s
 (tipping at the northern end - further away from ASH) - EN Colour 1/11

Location	Activity	ASD	Source	Flow	Rate	Height	Wind	Temp	Speed	Time
T11-day	Tipping - segregated (90% of MSW and 10% of Special-Waste + Sludge)	111 AREA	636290.5	644853.0	65.0	4.340000E+00	3.0	20.0	-53	0.0
T12-day	Tipping - segregated (90% of MSW and 10% of Special-Waste + Sludge)	112 AREA	636290.5	644853.0	65.0	4.340000E+00	3.0	20.0	-53	0.0
T13-day	Recompacting (at Tipping Area)	113 AREA	636290.5	644853.0	65.0	1.410000E+00	10.0	40.0	-53	0.0
T14-day	Recompacting (at Tipping Area)	114 AREA	636290.5	644853.0	65.0	1.410000E+00	10.0	40.0	-53	0.0
T11-night	Day cover over/ripping tipped waste	121 AREA	636290.5	644853.0	65.0	5.026000E+00	30.0	40.0	-53	0.0

Location	Activity	ASD	Source	Flow	Rate	Height	Wind	Temp	Speed	Time
SO LOCATION 111 AREA			636290.5	644853.0	65.0	4.340000	3.0	20.0	-53.0	0.0
SO LOCATION 112 AREA			636290.5	644853.0	65.0	4.340000	3.0	20.0	-53.0	0.0
SO LOCATION 113 AREA			636290.5	644853.0	65.0	1.410000	10.0	40.0	-53.0	0.0
SO LOCATION 114 AREA			636290.5	644853.0	65.0	1.410000	10.0	40.0	-53.0	0.0
SO LOCATION 121 AREA			636290.5	644853.0	65.0	5.026000	30.0	40.0	-53.0	0.0

Future Lagoon Odour Emission
in EN Odour Unit

Location	Source	Area	Volume	Emission Rate	Flowrate	Length	Width	Height	SO Location	Area	Volume	Emission Rate	Flowrate	Length	Width	Height
L1 - N (Raw Lagoon)	201 AREA	83550E-01	2.785000E-01	0.125	50	50	0.0	0.0	SO LOCATION 201	83550E-01	2.785000E-01	0.125	50.0	50.0	0.0	0.0
L2 - N (Raw Lagoon)	202 AREA	83550E-01	3.95000E-00	0.125	50	50	0.0	0.0	SO LOCATION 202	83550E-01	3.95000E-00	0.125	50.0	50.0	0.0	0.0
L3 - N (Aeration)	203 AREA	83547E-01	2.83300E-00	0.125	50	50	0.0	0.0	SO LOCATION 203	83547E-01	2.83300E-00	0.125	50.0	50.0	0.0	0.0
L4 - N (Effluent)	204 AREA	83541E-01	2.83300E-00	0.125	50	50	0.0	0.0	SO LOCATION 204	83541E-01	2.83300E-00	0.125	50.0	50.0	0.0	0.0