

Annex D7

Thermal Oxidizer, Landfill
Gas Flare and Landfill Gas
Generator Stack Emission
Monitoring Results

Table D7.1 Thermal Oxidiser Stack Emission Monitoring Results

Parameters	Monitoring Results
NO ₂	0.11 gs ⁻¹
CO	<0.02 gs ⁻¹
SO ₂	0.06 gs ⁻¹
Benzene	<3 x 10 ⁻⁵ gs ⁻¹
Vinyl chloride	<4 x 10 ⁻⁵ gs ⁻¹
Non-Methane Organic Carbons	0.0048 gs ⁻¹
Ammonia (NH ₃)	0.01 gs ⁻¹
Exhaust gas velocity	11 ms ⁻¹

Table D7.2 Thermal Oxidiser Stack Continuous Monitoring Results

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) ^(a)
1-May-22	937	1201	
2-May-22	926	1193	
3-May-22	948	1215	
4-May-22	Under Maintenance		
5-May-22	Under Maintenance		
6-May-22	Under Maintenance		
7-May-22	936	1205	
8-May-22	935	1205	
9-May-22	928	1197	
10-May-22	Under Maintenance		
11-May-22	935	1201	
12-May-22	940	1205	
13-May-22	935	1194	
14-May-22	943	1202	
15-May-22	949	1199	
16-May-22	927	1188	11
17-May-22	930	1197	
18-May-22	935	1196	
19-May-22	Under Maintenance		
20-May-22	912	1182	
21-May-22	933	1197	
22-May-22	944	1209	
23-May-22	921	1197	
24-May-22	928	1197	
25-May-22	933	1203	
26-May-22	931	1207	
27-May-22	943	1211	
28-May-22	901	1190	
29-May-22	946	1210	
30-May-22	944	1211	
31-May-22	948	1216	
Average	934	1201	-
Min	901	1182	-
Max	949	1216	-

Notes:

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.

Table D7.3 Landfill Gas Flare Stack Emission Monitoring Results

Parameters	Monitoring Results (Flare 2 - F602)
NO ₂	0.01 gs ⁻¹
CO	0.04 gs ⁻¹
SO ₂	0.06 gs ⁻¹
Benzene	<1.8 x 10 ⁻⁵ gs ⁻¹
Vinyl chloride	<1.5 x 10 ⁻⁵ gs ⁻¹
Non-Methane Organic Carbons	<0.0014 gs ⁻¹
Exhaust gas velocity	2.7 ms ⁻¹

Table D7.4 Landfill Gas Flare Stack Continuous Monitoring Results

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status
Flare 1 - F601				
1-May-22	940	983		In Operation
2-May-22	860	953		In Operation
3-May-22	850	973		In Operation
4-May-22	850	953		In Operation
5-May-22	990	1053		In Operation
6-May-22	990	1063		In Operation
7-May-22	980	1023		In Operation
8-May-22	890	983		In Operation
9-May-22	940	983		In Operation
10-May-22	-	-		Standby
11-May-22	-	-		Standby
12-May-22	-	-		Standby
13-May-22	850	983		In Operation
14-May-22	-	-		Standby
15-May-22	-	-		Standby
16-May-22	930	983	2.7	In Operation
17-May-22	880	973		In Operation
18-May-22	847	1063		In Operation
19-May-22	830	1063		In Operation
20-May-22	-	-		Standby
21-May-22	880	1053		In Operation
22-May-22	820	943		In Operation
23-May-22	850	953		In Operation
24-May-22	870	983		In Operation
25-May-22	950	1003		In Operation
26-May-22	880	953		In Operation
27-May-22	860	1073		In Operation
28-May-22	830	953		In Operation
29-May-22	910	1033		In Operation
30-May-22	870	983		In Operation
31-May-22	900	1013		In Operation
Average	890	999	-	
Min	820	943	-	
Max	990	1073	-	
Flare 2 - F602				
1-May-22	875	1093		In Operation
2-May-22	860	1113		In Operation
3-May-22	870	1103	2.7	In Operation
4-May-22	860	1103		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status
5-May-22	870	1113		In Operation
6-May-22	880	1133		In Operation
7-May-22	840	1083		In Operation
8-May-22	840	1083		In Operation
9-May-22	860	1113		In Operation
10-May-22	850	1063		In Operation
11-May-22	850	1053		In Operation
12-May-22	870	1093		In Operation
13-May-22	880	1103		In Operation
14-May-22	870	1083		In Operation
15-May-22	860	1093		In Operation
16-May-22	880	1093		In Operation
17-May-22	840	1063		In Operation
18-May-22	870	1093		In Operation
19-May-22	860	1043		In Operation
20-May-22	880	1123		In Operation
21-May-22	880	1103		In Operation
22-May-22	870	1103		In Operation
23-May-22	890	1123		In Operation
24-May-22	840	1083		In Operation
25-May-22	830	1073		In Operation
26-May-22	850	1083		In Operation
27-May-22	870	1123		In Operation
28-May-22	870	1123		In Operation
29-May-22	850	1103		In Operation
30-May-22	840	1093		In Operation
31-May-22	820	1073		In Operation
Average	860	1094	-	
Min	820	1043	-	
Max	890	1133	-	

Notes:

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.

Table D7.5 Landfill Gas Generator Stack Emission Monitoring Results

Parameters	Monitoring Results
NO ₂	0.01 gs ⁻¹
CO	0.099 gs ⁻¹
SO ₂	0.004 gs ⁻¹
Benzene	<3 x 10 ⁻⁶ gs ⁻¹
Vinyl chloride	<2.4 x 10 ⁻⁶ gs ⁻¹
Non-Methane Organic Carbons	3 x 10 ⁻⁴ gs ⁻¹
Exhaust gas velocity	11.6 ms ⁻¹

Table D7.6 Landfill Gas Generator Stack Continuous Monitoring Results

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status (Landfill Gas Generator in Operation)
1-May-22	848		In Operation (ENGB)
2-May-22	849		In Operation (ENGB)
3-May-22	848		In Operation (ENGB)
4-May-22	849		In Operation (ENGB)
5-May-22	850		In Operation (ENGB)
6-May-22	850		In Operation (ENGB)
7-May-22	850		In Operation (ENGB)
8-May-22	852		In Operation (ENGB)
9-May-22	851		In Operation (ENGB)
10-May-22	857		In Operation (ENGB)
11-May-22	855		In Operation (ENGB)
12-May-22	853		In Operation (ENGB)
13-May-22	854		In Operation (ENGB)
14-May-22	852		In Operation (ENGB)
15-May-22	849		In Operation (ENGB)
16-May-22	847	11.6	In Operation (ENGB)
17-May-22	847		In Operation (ENGB)
18-May-22	845		In Operation (ENGB)
19-May-22	852		In Operation (ENGB)
20-May-22	851		In Operation (ENGB)
21-May-22	851		In Operation (ENGB)
22-May-22	850		In Operation (ENGB)
23-May-22	851		In Operation (ENGB)
24-May-22	851		In Operation (ENGB)
25-May-22	852		In Operation (ENGB)
26-May-22	857		In Operation (ENGB)
27-May-22	-		Under Maintenance
28-May-22	855		In Operation (ENGB)
29-May-22	855		In Operation (ENGB)
30-May-22	854		In Operation (ENGB)
31-May-22	855		In Operation (ENGB)
Average	851	-	
Min	845	-	
Max	857	-	

Notes:

(a) The exhaust gas velocity was calculated based on the cross-section area of the stack and the gas flow and combustion temperature data measured during the stack emission monitoring.