

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	0.95 gs ⁻¹
CO	<0.01 gs ⁻¹
SO ₂	<0.01 gs ⁻¹
Benzene	<1.0 x 10 ⁻⁴ gs ⁻¹
Vinyl chloride	<1.0 x 10 ⁻⁴ gs ⁻¹
Exhaust gas velocity	8.2 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 Jun 23	862	1270	
2 Jun 23	858	1283	
3 Jun 23	859	1273	
4 Jun 23	853	1268	
5 Jun 23	Under Maintenance		
6 Jun 23	861	1278	
7 Jun 23	864	1275	
8 Jun 23	926	1189	
9 Jun 23	891	1210	
10 Jun 23	925	1212	
11 Jun 23	918	1214	
12 Jun 23	862	1208	
13 Jun 23	938	1221	
14 Jun 23	885	1208	
15 Jun 23	907	1206	
16 Jun 23	904	1198	8.2
17 Jun 23	894	1199	
18 Jun 23	930	1215	
19 Jun 23	930	1191	
20 Jun 23	931	1218	
21 Jun 23	922	1212	
22 Jun 23	934	1215	
23 Jun 23	940	1216	
24 Jun 23	920	1202	
25 Jun 23	912	1202	
26 Jun 23	868	1192	
27 Jun 23	933	1214	
28 Jun 23	916	1193	
29 Jun 23	933	1218	
30 Jun 23	932	1223	
Average	904	1221	-
Min	853	1189	-
Max	940	1283	-

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 1 - F601)
NO ₂	0.02 gs ⁻¹
CO	0.64 gs ⁻¹
SO ₂	<0.06 gs ⁻¹
Benzene	3.30 x 10 ⁻⁴ gs ⁻¹
Vinyl chloride	<1.01 x 10 ⁻⁴ gs ⁻¹
Exhaust gas velocity	8.9 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 Jun 23	868	1017		In Operation
2 Jun 23	870	1038		In Operation
3 Jun 23	884	1053		In Operation
4 Jun 23	860	1053		In Operation
5 Jun 23	880	1033		In Operation
6 Jun 23	890	1033		In Operation
7 Jun 23	890	1043		In Operation
8 Jun 23	820	1043		In Operation
9 Jun 23	890	1053		In Operation
10 Jun 23	890	1083		In Operation
11 Jun 23	900	1073		In Operation
12 Jun 23	850	1063		In Operation
13 Jun 23	880	1053		In Operation
14 Jun 23	890	1003		In Operation
15 Jun 23	850	1083	8.9	In Operation
16 Jun 23	920	1133		In Operation
17 Jun 23	850	1023		In Operation
18 Jun 23	830	1033		In Operation
19 Jun 23	880	1053		In Operation
20 Jun 23	850	1053		In Operation
21 Jun 23	820	1043		In Operation
22 Jun 23	880	1033		In Operation
23 Jun 23	830	1043		In Operation
24 Jun 23	880	1063		In Operation
25 Jun 23	840	1053		In Operation
26 Jun 23	880	1023		In Operation
27 Jun 23	870	1023		In Operation
28 Jun 23	900	1123		In Operation
29 Jun 23	-	-		Under Maintenance
30 Jun 23	-	-		Under Maintenance
Average	869	1051	-	
Min	820	1003	-	
Max	920	1133	-	
Flare 2 - F602				
1 Jun 23	880	1113		In Operation
2 Jun 23	830	1063		In Operation
3 Jun 23	880	1113		In Operation
4 Jun 23	920	1113		In Operation
5 Jun 23	910	1153		In Operation
6 Jun 23	910	1163		In Operation
7 Jun 23	870	1083		In Operation
8 Jun 23	860	1093		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status
9 Jun 23	880	1103		In Operation
10 Jun 23	830	1063		In Operation
11 Jun 23	880	1103		In Operation
12 Jun 23	900	1113		In Operation
13 Jun 23	835	1063		In Operation
14 Jun 23	870	1093		In Operation
15 Jun 23	-	-	8.9	Under Maintenance
16 Jun 23	-	-		Under Maintenance
17 Jun 23	840	1063		In Operation
18 Jun 23	850	1073		In Operation
19 Jun 23	-	-		Under Maintenance
20 Jun 23	-	-		Under Maintenance
21 Jun 23	-	-		Under Maintenance
22 Jun 23	-	-		Under Maintenance
23 Jun 23	-	-		Under Maintenance
24 Jun 23	-	-		Under Maintenance
25 Jun 23	-	-		Under Maintenance
26 Jun 23	-	-		Under Maintenance
27 Jun 23	-	-		Under Maintenance
28 Jun 23	880	1063		In Operation
29 Jun 23	870	1083		In Operation
30 Jun 23	850	1063		In Operation
Average	871	1094	-	
Min	830	1063	-	
Max	920	1163	-	

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	0.034 gs ⁻¹
CO	1.012 gs ⁻¹
SO ₂	0.002 gs ⁻¹
Benzene	6.6 x 10 ⁻⁵ gs ⁻¹
Vinyl chloride	<1.3 x 10 ⁻⁵ gs ⁻¹
Exhaust gas velocity	13.6 ms ⁻¹

(a) The Landfill Gas Generator was under maintenance in the reporting period.

Table D7.6 Landfill Gas Generator Stack Continuous Monitoring Results

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status
ENGA			
1 Jun 23	876		In Operation
2 Jun 23	878		In Operation
3 Jun 23	877		In Operation
4 Jun 23	876		In Operation
5 Jun 23	876		In Operation
6 Jun 23	875		In Operation
7 Jun 23	877		In Operation
8 Jun 23	879		In Operation
9 Jun 23	878		In Operation
10 Jun 23	878		In Operation
11 Jun 23	879		In Operation
12 Jun 23	880		In Operation
13 Jun 23	-		Under Maintenance
14 Jun 23	-		Under Maintenance
15 Jun 23	879	13.6	In Operation
16 Jun 23	876		In Operation
17 Jun 23	877		In Operation
18 Jun 23	876		In Operation
19 Jun 23	855		In Operation
20 Jun 23	850		In Operation
21 Jun 23	847		In Operation
22 Jun 23	845		In Operation
23 Jun 23	847		In Operation
24 Jun 23	846		In Operation
25 Jun 23	847		In Operation
26 Jun 23	847		In Operation
27 Jun 23	847		In Operation
28 Jun 23	848		In Operation
29 Jun 23	847		In Operation
30 Jun 23	848		In Operation
Average	865	-	
Min	845	-	
Max	880	-	
ENGB			
1 Jun 23	-		Under Maintenance
2 Jun 23	-		Under Maintenance
3 Jun 23	-		Under Maintenance
4 Jun 23	-		Under Maintenance
5 Jun 23	-		Under Maintenance
6 Jun 23	-		Under Maintenance
7 Jun 23	-		Under Maintenance

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status
8 Jun 23	-		Under Maintenance
9 Jun 23	-		Under Maintenance
10 Jun 23	-		Under Maintenance
11 Jun 23	-		Under Maintenance
12 Jun 23	-	13.6	Under Maintenance
13 Jun 23	876		In Operation
14 Jun 23	877		In Operation
15 Jun 23	-		Under Maintenance
16 Jun 23	-		Under Maintenance
17 Jun 23	-		Under Maintenance
18 Jun 23	-		Under Maintenance
19 Jun 23	851		In Operation
20 Jun 23	846		In Operation
21 Jun 23	843		In Operation
22 Jun 23	841		In Operation
23 Jun 23	843		In Operation
24 Jun 23	842		In Operation
25 Jun 23	843		In Operation
26 Jun 23	842		In Operation
27 Jun 23	843		In Operation
28 Jun 23	844		In Operation
29 Jun 23	843		In Operation
30 Jun 23	843		In Operation
Average	849	-	
Min	841	-	
Max	877	-	

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.