

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 <sub>2</sub>	0.86 gs <sup>-1</sup>
CO	<0.01 gs <sup>-1</sup>
SO <sub>2</sub>	<0.02 gs <sup>-1</sup>
Non-Methane Organic Carbon	0.0055 gs <sup>-1</sup>
Benzene	<3 x 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<2 x 10 <sup>-5</sup> gs <sup>-1</sup>
Ammonia	0.232 gs <sup>-1</sup>
Exhaust gas velocity	9.3 ms <sup>-1</sup>

**Table D7.2 Thermal Oxidiser Stack Continuous Monitoring Results**

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) <sup>(a)</sup>
1 Aug 22	924	1181	
2 Aug 22	933	1229	
3 Aug 22	928	1227	
4 Aug 22	930	1230	
5 Aug 22	926	1227	
6 Aug 22	929	1228	
7 Aug 22	926	1227	
8 Aug 22	917	1224	
9 Aug 22	880	1230	
10 Aug 22	924	1231	
11 Aug 22	923	1227	
12 Aug 22	923	1225	
13 Aug 22	920	1226	
14 Aug 22	921	1229	
15 Aug 22	928	1234	
16 Aug 22	925	1233	9.3
17 Aug 22	921	1232	
18 Aug 22	927	1231	
19 Aug 22	927	1232	
20 Aug 22	928	1233	
21 Aug 22	924	1234	
22 Aug 22	924	1239	
23 Aug 22	921	1235	
24 Aug 22	924	1236	
25 Aug 22	928	1236	
26 Aug 22	926	1237	
27 Aug 22	929	1241	
28 Aug 22	921	1237	
29 Aug 22	921	1239	
30 Aug 22	920	1238	
31 Aug 22	926	1241	
<b>Average</b>	923	1231	-
<b>Min</b>	880	1181	-
<b>Max</b>	933	1241	-

**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 <sub>2</sub>	<0.02 gs <sup>-1</sup>
CO	0.83 gs <sup>-1</sup>
SO <sub>2</sub>	0.12 gs <sup>-1</sup>
Non-Methane Organic Carbon	<0.002 gs <sup>-1</sup>
Benzene	<2.5 x 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<2.0 x 10 <sup>-5</sup> gs <sup>-1</sup>
Exhaust gas velocity	8.9 ms <sup>-1</sup>

**Table D7.4 Landfill Gas Flare Stack Continuous Monitoring Results**

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status
<b>Flare 1 - F601</b>				
1 Aug 22	874	1139		In Operation
2 Aug 22	858	1129		In Operation
3 Aug 22	841	1096		In Operation
4 Aug 22	828	1040		In Operation
5 Aug 22	943	1203		In Operation
6 Aug 22	897	1163		In Operation
7 Aug 22	920	1183		In Operation
8 Aug 22	920	1153		In Operation
9 Aug 22	863	1123		In Operation
10 Aug 22	865	1093		In Operation
11 Aug 22	848	1023		In Operation
12 Aug 22	899	1141		In Operation
13 Aug 22	940	1203		In Operation
14 Aug 22	910	1001		In Operation
15 Aug 22	875	1043		In Operation
16 Aug 22	930	1083	8.9	In Operation
17 Aug 22	913	1170		In Operation
18 Aug 22	826	1073		In Operation
19 Aug 22	872	1118		In Operation
20 Aug 22	880	1023		In Operation
21 Aug 22	865	1095		In Operation
22 Aug 22	864	1013		In Operation
23 Aug 22	950	1150		In Operation
24 Aug 22	966	1248		In Operation
25 Aug 22	873	993		In Operation
26 Aug 22	910	1163		In Operation
27 Aug 22	860	1123		In Operation
28 Aug 22	863	1028		In Operation
29 Aug 22	920	1133		In Operation
30 Aug 22	930	1183		In Operation
31 Aug 22	884	1073		In Operation
<b>Average</b>	890	1110	-	
<b>Min</b>	826	993	-	
<b>Max</b>	966	1248	-	
<b>Flare 2 - F602</b>				
1 Aug 22	855	1093		In Operation
2 Aug 22	870	1063	8.9	In Operation
3 Aug 22	860	1073		In Operation
4 Aug 22	840	1053		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status
5 Aug 22	840	1053		In Operation
6 Aug 22	840	1043		In Operation
7 Aug 22	825	1033		In Operation
8 Aug 22	890	1053		In Operation
9 Aug 22	880	1053		In Operation
10 Aug 22	835	1043		In Operation
11 Aug 22	860	1084		In Operation
12 Aug 22	830	1033		In Operation
13 Aug 22	826	1023		In Operation
14 Aug 22	860	1073		In Operation
15 Aug 22	870	1093		In Operation
16 Aug 22	850	1043		In Operation
17 Aug 22	820	1063		In Operation
18 Aug 22	830	1073		In Operation
19 Aug 22	830	1063		In Operation
20 Aug 22	820	1053		In Operation
21 Aug 22	870	1083		In Operation
22 Aug 22	820	1053		In Operation
23 Aug 22	890	1103		In Operation
24 Aug 22	890	1093		In Operation
25 Aug 22	850	1065		In Operation
26 Aug 22	820	1023		In Operation
27 Aug 22	820	1083		In Operation
28 Aug 22	830	1053		In Operation
29 Aug 22	820	1043		In Operation
30 Aug 22	840	1063		In Operation
31 Aug 22	850	1073		In Operation
<b>Average</b>	846	1061	-	
<b>Min</b>	820	1023	-	
<b>Max</b>	890	1103	-	

**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 <sub>2</sub>	0.04 gs <sup>-1</sup>
CO	0.622 gs <sup>-1</sup>
SO <sub>2</sub>	0.015 gs <sup>-1</sup>
Non-Methane Organic Carbon	0.0012 gs <sup>-1</sup>
Benzene	<8.7 x 10 <sup>-5</sup> gs <sup>-1</sup>
Vinyl chloride	<2.1 x 10 <sup>-6</sup> gs <sup>-1</sup>
Exhaust gas velocity	9.3 ms <sup>-1</sup>

**Table D7.6 Landfill Gas Generator Stack Continuous Monitoring Results**

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status (Landfill Gas Generator in Operation)
1 Aug 22	859		In Operation (ENGA)
2 Aug 22	857		In Operation (ENGA)
3 Aug 22	862		In Operation (ENGA)
4 Aug 22	858		In Operation (ENGA)
5 Aug 22	860		In Operation (ENGA)
6 Aug 22	863		In Operation (ENGA)
7 Aug 22	861		In Operation (ENGA)
8 Aug 22	859		In Operation (ENGA)
9 Aug 22	858		In Operation (ENGA)
10 Aug 22	857		In Operation (ENGA)
11 Aug 22	858		In Operation (ENGA)
12 Aug 22	856		In Operation (ENGA)
13 Aug 22	860		In Operation (ENGA)
14 Aug 22	858		In Operation (ENGA)
15 Aug 22	858		In Operation (ENGA)
16 Aug 22	862	9.3	In Operation (ENGA)
17 Aug 22	860		In Operation (ENGA)
18 Aug 22	859		In Operation (ENGA)
19 Aug 22	859		In Operation (ENGA)
20 Aug 22	865		In Operation (ENGA)
21 Aug 22	865		In Operation (ENGA)
22 Aug 22	865		In Operation (ENGA)
23 Aug 22	864		In Operation (ENGA)
24 Aug 22	863		In Operation (ENGA)
25 Aug 22	866		In Operation (ENGA)
26 Aug 22	865		In Operation (ENGA)
27 Aug 22	865		In Operation (ENGA)
28 Aug 22	864		In Operation (ENGA)
29 Aug 22	868		In Operation (ENGA)
30 Aug 22	865		In Operation (ENGA)
31 Aug 22	862		In Operation (ENGA)
<b>Average</b>	861	-	
<b>Min</b>	856	-	
<b>Max</b>	868	-	
1 Aug 22	859		In Operation (ENGB)
2 Aug 22	857		In Operation (ENGB)
3 Aug 22	860		In Operation (ENGB)
4 Aug 22	861		In Operation (ENGB)
5 Aug 22	855		In Operation (ENGB)
6 Aug 22	860		In Operation (ENGB)
7 Aug 22	861		In Operation (ENGB)
8 Aug 22	858		In Operation (ENGB)

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms <sup>-1</sup> ) (a)	Operation Status (Landfill Gas Generator in Operation)
9 Aug 22	861		In Operation (ENGB)
10 Aug 22	859		In Operation (ENGB)
11 Aug 22	855		In Operation (ENGB)
12 Aug 22	857	9.3	In Operation (ENGB)
13 Aug 22	857		In Operation (ENGB)
14 Aug 22	858		In Operation (ENGB)
15 Aug 22	858		In Operation (ENGB)
16 Aug 22	858		In Operation (ENGB)
17 Aug 22	857		In Operation (ENGB)
18 Aug 22	856		In Operation (ENGB)
19 Aug 22	855		In Operation (ENGB)
20 Aug 22	863		In Operation (ENGB)
21 Aug 22	864		In Operation (ENGB)
22 Aug 22	862		In Operation (ENGB)
23 Aug 22	864		In Operation (ENGB)
24 Aug 22	861		In Operation (ENGB)
25 Aug 22	865		In Operation (ENGB)
26 Aug 22	864		In Operation (ENGB)
27 Aug 22	863		In Operation (ENGB)
28 Aug 22	861		In Operation (ENGB)
29 Aug 22	864		In Operation (ENGB)
30 Aug 22	863		In Operation (ENGB)
31 Aug 22	866		In Operation (ENGB)
<b>Average</b>	860	-	
<b>Min</b>	855	-	
<b>Max</b>	866	-	

**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.