



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	0.69 gs ⁻¹
CO	<0.02 gs ⁻¹
SO ₂	<0.01 gs ⁻¹
Benzene	<2.0 x 10 ⁻⁴ gs ⁻¹
Vinyl chloride	<1.3 x 10 ⁻⁴ gs ⁻¹
Non-Methane Organic Carbons	0.003 gs ⁻¹
Ammonia	0.0013 gs ⁻¹
Exhaust gas velocity	10.8 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 Nov 25	900	1191	10.8
2 Nov 25	903	1194	
3 Nov 25	906	1169	
4 Nov 25	895	1192	
6 Nov 25	901	1195	
7 Nov 25	906	1199	
8 Nov 25	901	1192	
9 Nov 25	897	1192	
10 Nov 25	898	1194	
11 Nov 25	899	1192	
12 Nov 25	901	1182	
13 Nov 25	900	1193	
14 Nov 25	900	1192	
15 Nov 25	899	1193	
16 Nov 25	897	1192	
17 Nov 25	899	1193	
18 Nov 25	904	1180	
19 Nov 25	899	1189	
20 Nov 25	903	1199	
21 Nov 25	901	1193	
22 Nov 25	901	1194	
23 Nov 25	900	1194	
24 Nov 25	898	1195	
25 Nov 25	891	1188	
26 Nov 25	900	1188	
27 Nov 25	900	1191	
28 Nov 25	900	1190	
29 Nov 25	900	1191	
30 Nov 25	896	1189	
Average	900	1191	
Min	891	1169	-
Max	906	1199	-

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
NO ₂	0.03 gs ⁻¹
CO	<0.01 gs ⁻¹
SO ₂	<0.01 gs ⁻¹
Benzene	<1.25 x 10 ⁻⁴ gs ⁻¹
Vinyl chloride	<1.0 x 10 ⁻⁴ gs ⁻¹
Non-Methane Organic Carbons	<0.002 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 Nov 25	901	1052	8.9	In Operation
2 Nov 25	890	1046		In Operation
3 Nov 25	928	1075		In Operation
4 Nov 25	946	1070		In Operation
5 Nov 25	907	1076		In Operation
6 Nov 25	945	1099		In Operation
7 Nov 25	893	1060		In Operation
8 Nov 25	949	1081		In Operation
9 Nov 25	883	1027		In Operation
10 Nov 25	889	1053		In Operation
11 Nov 25	901	1062		In Operation
12 Nov 25	891	1060		In Operation
13 Nov 25	909	1061		In Operation
14 Nov 25	891	1055		In Operation
15 Nov 25	929	1058		In Operation
16 Nov 25	928	1086		In Operation
17 Nov 25	900	1049		In Operation
18 Nov 25	885	1018		In Operation
19 Nov 25	905	1034		In Operation
20 Nov 25	890	1063		In Operation
21 Nov 25	900	1054		In Operation
22 Nov 25	928	1058		In Operation
23 Nov 25	926	1087		In Operation
24 Nov 25	929	1093		In Operation
25 Nov 25	944	1100		In Operation
26 Nov 25	931	1075		In Operation
27 Nov 25	930	1069		In Operation
28 Nov 25	880	1033		In Operation
29 Nov 25	887	1019		In Operation
30 Nov 25	898	1068		In Operation
Average	910	1062	-	
Min	880	1018	-	
Max	949	1100	-	

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status
Flare 2 – F602				
1 Nov 25	948	1109	8.9	In Operation
2 Nov 25	949	1092		In Operation
3 Nov 25	905	1030		In Operation
4 Nov 25	918	1064		In Operation
5 Nov 25	944	1092		In Operation
6 Nov 25	933	1077		In Operation
7 Nov 25	907	1079		In Operation
8 Nov 25	953	1115		In Operation
9 Nov 25	927	1090		In Operation
10 Nov 25	943	1076		In Operation
11 Nov 25	944	1116		In Operation
12 Nov 25	958	1121		In Operation
13 Nov 25	934	1095		In Operation
14 Nov 25	941	1109		In Operation
15 Nov 25	918	1053		In Operation
16 Nov 25	921	1088		In Operation
17 Nov 25	927	1092		In Operation
18 Nov 25	920	1062		In Operation
19 Nov 25	956	1090		In Operation
20 Nov 25	956	1080		In Operation
21 Nov 25	931	1084		In Operation
22 Nov 25	960	1104		In Operation
23 Nov 25	953	1105		In Operation
24 Nov 25	915	1053		In Operation
25 Nov 25	904	1030		In Operation
26 Nov 25	909	1071		In Operation
27 Nov 25	923	1073		In Operation
28 Nov 25	945	1096		In Operation
29 Nov 25	951	1098		In Operation
30 Nov 25	958	1123		In Operation
Average	935	1086	-	
Min	904	1030	-	
Max	960	1123	-	

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	0.043 gs ⁻¹
CO	0.324 gs ⁻¹
SO ₂	<0.001 gs ⁻¹
Benzene	9.9 x 10 ⁻⁵ gs ⁻¹
Vinyl chloride	<9.3 x 10 ⁻⁶ gs ⁻¹
Exhaust gas velocity	8.0 ms ⁻¹

TABLE D7.6 LANDFILL GAS GENERATOR STACK CONTINUOUS MONITORING RESULTS

Date	Gas Combustion Temperature (°C)	Operation Status
ENGA		
1 Nov 25	-	Under Maintenance
2 Nov 25	-	Under Maintenance
3 Nov 25	-	Under Maintenance
4 Nov 25	-	Under Maintenance
5 Nov 25	-	Under Maintenance
6 Nov 25	-	Under Maintenance
7 Nov 25	-	Under Maintenance
8 Nov 25	-	Under Maintenance
9 Nov 25	-	Under Maintenance
10 Nov 25	-	Under Maintenance
11 Nov 25	-	Under Maintenance
12 Nov 25	-	Under Maintenance
13 Nov 25	-	Under Maintenance
14 Nov 25	-	Under Maintenance
15 Nov 25	-	Under Maintenance
16 Nov 25	-	Under Maintenance
17 Nov 25	-	Under Maintenance
18 Nov 25	-	Under Maintenance
19 Nov 25	-	Under Maintenance
20 Nov 25	-	Under Maintenance
21 Nov 25	-	Under Maintenance
22 Nov 25	-	Under Maintenance
23 Nov 25	-	Under Maintenance
24 Nov 25	-	Under Maintenance
25 Nov 25	-	Under Maintenance
26 Nov 25	-	Under Maintenance
27 Nov 25	-	Under Maintenance
28 Nov 25	-	Under Maintenance
29 Nov 25	-	Under Maintenance
30 Nov 25	-	Under Maintenance
Average	-	
Min	-	
Max	-	

Date	Gas Combustion Temperature (°C)	Operation Status
ENGB		
1 Nov 25	866	In Operation
2 Nov 25	853	In Operation
3 Nov 25	867	In Operation
4 Nov 25	861	In Operation
5 Nov 25	860	In Operation
6 Nov 25	869	In Operation
7 Nov 25	871	In Operation
8 Nov 25	871	In Operation
9 Nov 25	868	In Operation
10 Nov 25	864	In Operation
11 Nov 25	864	In Operation
12 Nov 25	861	In Operation
13 Nov 25	866	In Operation
14 Nov 25	863	In Operation
15 Nov 25	870	In Operation
16 Nov 25	854	In Operation
17 Nov 25	866	In Operation
18 Nov 25	857	In Operation
19 Nov 25	862	In Operation
20 Nov 25	856	In Operation
21 Nov 25	861	In Operation
22 Nov 25	866	In Operation
23 Nov 25	865	In Operation
24 Nov 25	861	In Operation
25 Nov 25	855	In Operation
26 Nov 25	865	In Operation
27 Nov 25	856	In Operation
28 Nov 25	854	In Operation
29 Nov 25	857	In Operation
30 Nov 25	856	In Operation
Average	862	
Min	853	
Max	871	