



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	0.76 gs ⁻¹
CO	0.03 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	0.004 gs ⁻¹
Ammonia	0.0004 gs ⁻¹
Exhaust gas velocity	9.5 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 Aug 25	Under Maintenance		9.5
2 Aug 25	900	1196	
3 Aug 25	898	1203	
4 Aug 25	898	1178	
5 Aug 25	899	1181	
6 Aug 25	899	1181	
7 Aug 25	899	1188	
8 Aug 25	896	1197	
9 Aug 25	897	1196	
10 Aug 25	903	1200	
11 Aug 25	901	1191	
12 Aug 25	899	1199	
13 Aug 25	907	1198	
14 Aug 25	902	1197	
15 Aug 25	901	1196	
16 Aug 25	899	1187	
17 Aug 25	900	1193	
18 Aug 25	897	1186	
19 Aug 25	Under Maintenance		
20 Aug 25	903	1192	
21 Aug 25	902	1190	
23 Aug 25	897	1183	
24 Aug 25	900	1185	
25 Aug 25	902	1187	
26 Aug 25	900	1177	
27 Aug 25	Under Maintenance		
28 Aug 25	902	1181	
29 Aug 25	897	1174	
30 Aug 25	901	1181	
31 Aug 25	903	1184	
Average	900	1189	-
Min	890	1174	-
Max	907	1203	-

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	<0.02 gs ⁻¹
CO	0.02 gs ⁻¹
SO ₂	<0.01 gs ⁻¹
Benzene	<1.26 x 10 ⁻⁴ gs ⁻¹
Vinyl chloride	<1.01 x 10 ⁻⁴ gs ⁻¹
Non-Methane Organic Carbons	0.003 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 Aug 25	878	1128	8.9	In Operation
2 Aug 25	890	1142		In Operation
3 Aug 25	874	1120		In Operation
4 Aug 25	873	1124		In Operation
5 Aug 25	874	1118		In Operation
6 Aug 25	879	1123		In Operation
7 Aug 25	876	1122		In Operation
8 Aug 25	889	1138		In Operation
9 Aug 25	862	1105		In Operation
10 Aug 25	883	1135		In Operation
11 Aug 25	867	1121		In Operation
12 Aug 25	890	1147		In Operation
13 Aug 25	889	1138		In Operation
14 Aug 25	865	1114		In Operation
15 Aug 25	860	1108		In Operation
16 Aug 25	877	1130		In Operation
17 Aug 25	860	1110		In Operation
18 Aug 25	876	1120		In Operation
19 Aug 25	866	1113		In Operation
20 Aug 25	870	1118		In Operation
21 Aug 25	883	1127		In Operation
22 Aug 25	872	1122		In Operation
23 Aug 25	877	1132		In Operation
24 Aug 25	877	1134		In Operation
25 Aug 25	886	1142		In Operation
26 Aug 25	882	1126		In Operation
27 Aug 25	881	1134		In Operation
28 Aug 25	885	1136		In Operation
29 Aug 25	887	1142		In Operation
30 Aug 25	884	1138		In Operation
31 Aug 25	870	1123		In Operation
Average	877	1127	-	
Min	860	1105	-	
Max	890	1147	-	

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) (a)	Operation Status
Flare 2 – F602				
1 Aug 25	897	1155	8.9	In Operation
2 Aug 25	888	1142		In Operation
3 Aug 25	912	1157		In Operation
4 Aug 25	880	1133		In Operation
5 Aug 25	880	1137		In Operation
6 Aug 25	909	1164		In Operation
7 Aug 25	888	1136		In Operation
8 Aug 25	889	1143		In Operation
9 Aug 25	881	1129		In Operation
10 Aug 25	898	1151		In Operation
11 Aug 25	885	1131		In Operation
12 Aug 25	902	1150		In Operation
13 Aug 25	897	1148		In Operation
14 Aug 25	892	1137		In Operation
15 Aug 25	880	1128		In Operation
16 Aug 25	885	1133		In Operation
17 Aug 25	913	1169		In Operation
18 Aug 25	912	1157		In Operation
19 Aug 25	900	1158		In Operation
20 Aug 25	920	1177		In Operation
21 Aug 25	904	1161		In Operation
22 Aug 25	883	1134		In Operation
23 Aug 25	920	1176		In Operation
24 Aug 25	918	1174		In Operation
25 Aug 25	897	1147		In Operation
26 Aug 25	894	1139		In Operation
27 Aug 25	907	1161		In Operation
28 Aug 25	917	1171		In Operation
29 Aug 25	901	1157		In Operation
30 Aug 25	888	1145		In Operation
31 Aug 25	909	1164		In Operation
Average	898	1151	-	
Min	880	1128	-	
Max	920	1177	-	

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	0.056 gs ⁻¹
CO	0.362 gs ⁻¹
SO ₂	<0.001 gs ⁻¹
Benzene	3.5 x 10 ⁻⁵ gs ⁻¹
Vinyl chloride	<8.2 x 10 ⁻⁶ gs ⁻¹
Non-Methane Organic Carbons	0.003 gs ⁻¹
Exhaust gas velocity	6.4 ms ⁻¹

TABLE D7.6 LANDFILL GAS GENERATOR STACK CONTINUOUS MONITORING RESULTS

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) ^(a)	Operation Status
ENGA			
1 Aug 25	878	6.4	In Operation
2 Aug 25	874		In Operation
3 Aug 25	-		Under Maintenance
4 Aug 25	-		Under Maintenance
5 Aug 25	-		Under Maintenance
6 Aug 25	-		Under Maintenance
7 Aug 25	-		Under Maintenance
8 Aug 25	869		In Operation
9 Aug 25	867		In Operation
10 Aug 25	-		Under Maintenance
11 Aug 25	869		In Operation
12 Aug 25	872		In Operation
13 Aug 25	847		In Operation
14 Aug 25	838		In Operation
15 Aug 25	850		In Operation
16 Aug 25	850		In Operation
17 Aug 25	843		In Operation
18 Aug 25	847		In Operation
19 Aug 25	843		In Operation
20 Aug 25	843		In Operation
21 Aug 25	843		In Operation
22 Aug 25	843		In Operation
23 Aug 25	848		In Operation
24 Aug 25	861		In Operation
25 Aug 25	849		In Operation
26 Aug 25	874		In Operation
27 Aug 25	847		In Operation
28 Aug 25	847		In Operation
29 Aug 25	846		In Operation
30 Aug 25	845		In Operation
31 Aug 25	858		In Operation
Average	854	-	
Min	838	-	
Max	878	-	

Date	Exhaust Temperature (K)	Exhaust Gas Velocity (ms ⁻¹) ^(a)	Operation Status
ENGB			
1 Aug 25	880	6.4	In Operation
2 Aug 25	879		In Operation
3 Aug 25	878		In Operation
4 Aug 25	877		In Operation
5 Aug 25	876		In Operation
6 Aug 25	877		In Operation
7 Aug 25	878		In Operation
8 Aug 25	878		In Operation
9 Aug 25	878		In Operation
10 Aug 25	866		In Operation
11 Aug 25	878		In Operation
12 Aug 25	877		In Operation
13 Aug 25	844		In Operation
14 Aug 25	837		In Operation
15 Aug 25	845		In Operation
16 Aug 25	846		In Operation
17 Aug 25	840		In Operation
18 Aug 25	843		In Operation
19 Aug 25	840		In Operation
20 Aug 25	839		In Operation
21 Aug 25	840		In Operation
22 Aug 25	839		In Operation
23 Aug 25	842		In Operation
24 Aug 25	863		In Operation
25 Aug 25	844		In Operation
26 Aug 25	856		In Operation
27 Aug 25	843		In Operation
28 Aug 25	844		In Operation
29 Aug 25	844		In Operation
30 Aug 25	842		In Operation
31 Aug 25	869		In Operation
Average	858	-	
Min	837	-	
Max	880	-	

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.