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	0.39 gs^{-1}
CO	<0.01 gs^{-1}
SO_2	<0.01 gs^{-1}
Benzene	<2 x 10^{-5} gs^{-1}
Vinyl chloride	<2 x 10^{-5} gs^{-1}
Exhaust gas velocity	9.0 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-22	930	1202	
2-Jun-22	924	1199	
3-Jun-22	929	1203	
4-Jun-22	936	1206	
5-Jun-22	927	1198	
6-Jun-22	926	1196	
7-Jun-22	929	1195	
8-Jun-22	927	1185	
9-Jun-22	927	1173	
10-Jun-22	924	1157	
11-Jun-22	924	1167	
12-Jun-22	931	1169	
13-Jun-22	925	1165	
14-Jun-22	929	1164	
15-Jun-22	926	1167	9.0
16-Jun-22	930	1169	
17-Jun-22	930	1171	
18-Jun-22	922	1165	
19-Jun-22	925	1168	
20-Jun-22	918	1166	
21-Jun-22	915	1162	
22-Jun-22	927	1168	
23-Jun-22	924	1170	
24-Jun-22	921	1167	
25-Jun-22	920	1170	
26-Jun-22	Under Maintenance		
27-Jun-22	Under Maintenance		
28-Jun-22	Under Maintenance		
29-Jun-22	Under Maintenance		
30-Jun-22	923	1148	
Average	926	1176	-
Min	915	1148	-
Max	936	1206	-

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	0.03 gs^{-1}
CO	0.098 gs^{-1}
SO_2	0.11 gs^{-1}
Benzene	$<3.6 \times 10^{-5}$ gs^{-1}
Vinyl chloride	$<1.6 \times 10^{-5}$ gs^{-1}
Exhaust gas velocity	8.3 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 22	867	993		In Operation
2 Jun 22	940	1083		In Operation
3 Jun 22	920	1083		In Operation
4 Jun 22	890	1023		In Operation
5 Jun 22	880	1033		In Operation
6 Jun 22	940	1033		In Operation
7 Jun 22	822	1013		In Operation
8 Jun 22	880	1053		In Operation
9 Jun 22	930	1123		In Operation
10 Jun 22	870	1053		In Operation
11 Jun 22	890	1143		In Operation
12 Jun 22	970	1033		In Operation
13 Jun 22	870	1013		In Operation
14 Jun 22	-	-		Standby
15 Jun 22	840	1043	8.3	In Operation
16 Jun 22	-	-		Standby
17 Jun 22	940	1083		In Operation
18 Jun 22	-	-		Standby
19 Jun 22	-	-		Standby
20 Jun 22	-	-		Standby
21 Jun 22	-	-		Standby
22 Jun 22	900	1013		In Operation
23 Jun 22	830	983		In Operation
24 Jun 22	900	1003		In Operation
25 Jun 22	860	1063		In Operation
26 Jun 22	842	1073		In Operation
27 Jun 22	850	1043		In Operation
28 Jun 22	900	1023		In Operation
29 Jun 22	886	1024		In Operation
30 Jun 22	878	993		In Operation
Average	887	1043	-	
Min	822	983	-	
Max	970	1143	-	
Flare 2 – F602				
1 Jun 22	860	1103		In Operation
2 Jun 22	830	1093		In Operation
3 Jun 22	850	1093		In Operation
4 Jun 22	880	1093		In Operation
5 Jun 22	880	1103	8.3	In Operation
6 Jun 22	870	1093		In Operation
7 Jun 22	830	1063		In Operation
8 Jun 22	840	1083		In Operation
9 Jun 22	880	1113		In Operation

Date	Gas Combustion Temperature (°C)	Exhaust Temperature (K)	Exhaust Gas Velocity (ms^{-1}) [(a)]	Operation Status
10 Jun 22	840	1073		In Operation
11 Jun 22	880	1103		In Operation
12 Jun 22	840	1073		In Operation
13 Jun 22	880	1103		In Operation
14 Jun 22	880	1073		In Operation
15 Jun 22	870	1043		In Operation
16 Jun 22	870	1073		In Operation
17 Jun 22	870	1053		In Operation
18 Jun 22	870	1073		In Operation
19 Jun 22	860	1073		In Operation
20 Jun 22	880	1093		In Operation
21 Jun 22	880	1083		In Operation
22 Jun 22	860	1093		In Operation
23 Jun 22	880	1093		In Operation
24 Jun 22	880	1103		In Operation
25 Jun 22	840	1093		In Operation
26 Jun 22	860	1123		In Operation
27 Jun 22	870	1123		In Operation
28 Jun 22	930	1183		In Operation
29 Jun 22	877	1118		In Operation
30 Jun 22	860	1103		In Operation
Average	867	1093	-	
Min	830	1043	-	
Max	930	1183	-	

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	0.008 gs^{-1}
CO	0.043 gs^{-1}
SO_2	<0.001 gs^{-1}
Benzene	<4.0 x 10^{-6} gs^{-1}
Vinyl chloride	<2.2 x 10^{-6} gs^{-1}
Exhaust gas velocity	9.7 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)
01-Jun-22	848		In Operation (ENGB)
02-Jun-22	853		In Operation (ENGB)
03-Jun-22	858		In Operation (ENGB)
04-Jun-22	856		In Operation (ENGB)
05-Jun-22	856		In Operation (ENGB)
06-Jun-22	856		In Operation (ENGB)
07-Jun-22	859		In Operation (ENGB)
08-Jun-22	853		In Operation (ENGB)
09-Jun-22	850		In Operation (ENGB)
10-Jun-22	855		In Operation (ENGB)
11-Jun-22	856		In Operation (ENGB)
12-Jun-22	854		In Operation (ENGB)
13-Jun-22	856		In Operation (ENGB)
14-Jun-22	856		In Operation (ENGB)
15-Jun-22	850	9.7	In Operation (ENGB)
16-Jun-22	863		In Operation (ENGA)
17-Jun-22	857		In Operation (ENGA)
18-Jun-22	866		In Operation (ENGA)
19-Jun-22	866		In Operation (ENGA)
20-Jun-22	867		In Operation (ENGB)
21-Jun-22	868		In Operation (ENGB)
22-Jun-22	864		In Operation (ENGB)
23-Jun-22	874		In Operation (ENGB)
24-Jun-22	875		In Operation (ENGB)
25-Jun-22	865		In Operation (ENGB)
26-Jun-22	867		In Operation (ENGB)
27-Jun-22	868		In Operation (ENGA)
28-Jun-22	867		In Operation (ENGA)
29-Jun-22	879		In Operation (ENGA)
30-Jun-22	868		In Operation (ENGA)
Average	861	-	
Min	848	-	
Max	879	-	

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.