

Viridor

Transforming waste™

**The Environmental Permitting (England
and Wales) Regulations 2010**

**Permit: EPR/LP3030XA
Cardiff Energy Recovery Facility**

**Environmental Monitoring Report
Q1 2023**

1 January – 31 March 2023

Prepared by:
Viridor Trident Park Limited
Cardiff ERF
Trident Park
Glass Avenue
Cardiff
CF24 5EN



Quality Assurance

This report has been prepared with all reasonable skill, care and diligence. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

Report Details

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Report Generated By

Name:	Gwyn Jones
Position:	EHS Manager – Cardiff ERF

1. Introduction

Cardiff Energy Recovery Facility is located immediately north of Cardiff Docks. The facility has an annual throughput of up to 425,000 tonnes per year of residual municipal and C&I waste and has the capability of exporting approximately 33.5 MW of electrical power from the process.

In accordance with the requirements of Permit EPR/LP3030XA issued by Natural Resources Wales to Viridor Trident Park Limited (VTPL) on 21 December 2022, VTPL is required to submit an Environmental Monitoring Report on a quarterly basis.

This report summarises the environmental data collected at the site during the Q1 of 2023 (JFM 2023).

The report will cover the following areas of environmental monitoring:

- Section 2 – Point Source Emissions to Air
- Section 3 – Point Source Emissions to Water
- Section 4 – Residue Quality Monitoring Requirements

2. Point Source Emissions to Air

2.1. Introduction

Permit Condition 3.6.1(a) and Tables S3.1 and S3.1(a) require VTPL to undertake performance monitoring of the point source emissions to air arising at sample points A1 and A2 on a continuous and periodic basis.

A summary of the continuous point source emissions to air monitoring data at sample point A1 and A2, for the period, is included as Table 1.

The measurement frequency for periodic point source emissions to air monitoring data at sample point A1 and A2 is on a bi-annual basis, after 12 months of operation.

2.2 Commentary on Data

The concentrations recorded were obtained by running a quarterly continuous emissions report on CDAS software report.

Line 1 was in operation for 2,128.5 hours
As this quarter had 90 days (90 days x 24 hours = 2160 hours)
Line 1 was in operation 98.5%

Line 2 was in operation for 2,007 hours (92.9%).

This installation generated 79,135 MWh of electricity during the period.

2.3 Schedule Notices Issued

Only one Schedule 5 notification has been submitted to NRW during the period, the details are below.

11 January 2023
From 19:00h to 19:30h
Line 1
VOC recorded value was 85.81mg/m³

Table 1: Emissions to Air from A1 and A2 (CEMS) taken from A1- Cbiss reports.

See attached PDF Data Sheets as agreed with NRW

Releases to Air from Incinerators – Continuous Monitoring – Air 2						
Parameter	Limit	Reference Period	A1		A2	
			Max	Avg	Max	Avg
Oxides of nitrogen	200 mg/m ³	Daily mean				
	400 mg/m ³	½ hourly mean				
Particulate Matter	10 mg/m ³	Daily mean				
	30 mg/m ³	½ hourly mean				
Total Organic Carbon (TOC)	10 mg/m ³	Daily mean				
	20 mg/m ³	½ hourly mean				
Hydrogen chloride	10 mg/m ³	Daily mean				
	60 mg/m ³	½ hourly mean				
Sulphur dioxide	50 mg/m ³	Daily mean				
	200 mg/m ³	½ hourly mean				
Carbon monoxide	50 mg/m ³	Daily mean				
	100 mg/m ³	½ hourly mean*				

* Note. ½ hourly monitoring for CO is no longer required in the latest version of the permit

** Note. CEMS data figures are adjusted for the method uncertainty

*** Corrective factor determined by NPL during latest QAL 2 (inputted into CDAS on 22 February 2021).

Table 2: Emissions to Air from A1 and A2 Periodic

Results of 6-monthly emissions testing was submitted within the last report.

Results for the next emissions testing visit shall be submitted within the next quarterly report.

3. Point Source Emissions to Water

3.1. Introduction

Permit Condition 3.6.1(a) and Table S3.2 requires Viridor to ensure sample point W1 is free of oil, grease and visible solids.

3.2 Commentary on Data

During the quarter monitoring point W1 has remained free of oil and grease.

3.3 Schedule Notices Issued

No Permit limit exceedances were recorded during the review period for emissions to water.

4. Residue Quality Monitoring Requirements

4.1. Introduction

Permit Condition 3.6.1(c) and Table S3.5 require Viridor to undertake residue quality monitoring at quarterly intervals following the first year of operation. This applies for both bottom ash and air pollution control residues.

4.2 Commentary on Data

Incinerator Bottom Ash

Figures shown in Table 3 detail the quarterly analysis undertaken in line with the criteria laid out in the ESA protocol.

Air Pollution Control Residues

Figures shown in Table 3 detail the analysis undertaken during the quarter.

Table 3: Residue Quality

Residue quality					
Parameter	Limit	Normal Operation			
		Bottom ash		APC Residues	
		Line 1	Line 2	Line 1	Line 2
		Received at lab 9_1_2023 Reported to Viridor 11_1_2023	Received at lab 9_1_2023 Reported to Viridor 11_1_2023		
Total Organic Carbon	3%	2.1%	1.0%		
		Composite			
		Received at lab 18_1_2023 Reported to Viridor 8_2_2023		Received at lab 13_1_2023 Metals reported to Viridor 18_1_2023 D, F + PCBs reported to Viridor 24_1_2023	Received at lab 13_1_2023 Metals reported to Viridor 18_1_2023 D, F + PCBs reported to Viridor 24_1_2023
Antimony (mg/kg)	---	362		1113	871
Cadmium (mg/kg)	---	23.9		233	227
Thallium (mg/kg)	---	<0.1		0.9	0.8
Mercury (mg/kg)	---	<0.5		5.97	4.27

Lead (mg/kg)	---	517.8	1243	1300
Chromium (mg/kg)	---	<0.2	56.0	33.2
Copper (mg/kg)	---	2305.1	667	570
Manganese (mg/kg)	---	1640	522	440
Nickel (mg/kg)	---	95.6	19.0	11.6
Arsenic (mg/kg)	---	36.5	68.0	61.6
Cobalt (mg/kg)	---	79.3	7.3	6.9
Vanadium (mg/kg)	---	51.1	12.5	<10
Zinc (mg/kg)	---	4189.3	14120	14400
Dioxins / Furans (WHO 2005 TEQ) (ng/kg)	---	Dioxins = 2.3562 Furans = 3.78443	Dioxins = 366.615 Furans = 566.724	Dioxins = 123.612 Furans = 204.639
PCB (WHO 2005 TEQ) (ng/kg)	---	0.55538	67.9946	2.85992