



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

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

**Environmental Monitoring Report
Q1 2025**

1 January – 31 March 2025

Prepared by:
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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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Position:	Technical Compliance Lead

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 Waste Management Limited (Viridor) on 21 December 2022, Viridor 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 2025 (1 January to 31 March 2025).

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 and Table S3.1 require Viridor 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.

The periodic point source emissions to air results shall be reported in Q2 2025.

2.2 Commentary on Data

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

Availability of waste combustion Line 1 was 2,137 hours

As this quarter had 90 days (90 days x 24 hours = 2160 hours)
Line 1 was in operation 98.9%

Availability of waste combustion Line 2 was 1,998 hours (92.5% availability).

This installation generated 78,887 MWh of electricity during the period.

2.3 Schedule Notices Issued

On 3rd January 2025 a Schedule 5 Notification was submitted to NRW following an error with the FID analyser on line 2, leading to a loss of TOC readings. Permit condition 2.3.8(h) requires us to cease charging waste if the TOC CEMS is unavailable. The line continued to run during this period, falling short of this requirement.

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

See attached PDF Data Sheets as agreed with NRW.

Point Source Emissions to Water

3.1. Introduction

Permit Condition 3.1.1 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 14/1/2025 Reported to Viridor 28/1/2025	Received at lab 14/1/2025 Reported to Viridor 28/1/2025		
Total Organic Carbon	3%	<1%	<1%		
		Composite			
		Received at lab 14/1/2025 Reported to Viridor 28/1/2025		Received at lab 14/1/2025 Metals reported to Viridor 28/1/2025 D, F + PCBs reported to Viridor 21/1/2025	Received at lab 14/1/2025 Metals reported to Viridor 28/1/2025 D, F + PCBs reported to Viridor 21/1/2025
Antimony (mg/kg)	---	429		1159	732
Arsenic (mg/kg)	---	36		88	47
Cadmium (mg/kg)	---	19		246	252
Chromium (mg/kg)	---	119		65	36
Cobalt (mg/kg)	---	132		6.8	4.3
Copper (mg/kg)	---	2293		603	560
Manganese (mg/kg)	---	1566		359	284
Mercury (mg/kg)	---	0.4		3.5	3.8
Nickel (mg/kg)	---	124		30	21
Lead (mg/kg)	---	387		1164	1099
Thallium (mg/kg)	---	0.9		0.5	1
Vanadium (mg/kg)	---	52		11	6.7
Zinc (mg/kg)	---	6231		15091	14410
Dioxins / Furans (WHO 2005 TEQ) (ng/kg)	---	Dioxins = 9.16 Furans = 8.62		Dioxins = 220 Furans = 320	Dioxins = 170 Furans = 175
PCB (WHO 2005 TEQ) (ng/kg)	---	0.966		8.80	27.4