Permit number: EPR/DP3333TA **Operator:** RWE Generation UK plc

Installation: Pembroke Power Station **Form number:** Water 1 (10/11/11)

Quarterly reporting of sampling and analysis of emissions to water (other than sewer) for the period Q4 2022

Emission Point	Pollutant/ measure	Emission Limit Value	Reference Period	Result [1]		Test Method [2]	Sample Date and Time [3]	Uncertainty [4]
W1	Flow	40 m^3/sec	Maximum	Month 1	40 m^3/s	Flow Meter	CW system operational 99% of time. Meters available 100% of period.	+/- 8%
				Month 2	40 m^3/s			
				Month 3	40 m^3/s			
	Temperature	30.4°C	Absolute maximum	Month 1	26.0°C	Standard Thermocouple	CW system operational 99% of time. Instruments available 100% of period.	+/- 0.3°C
				Month 2	25.0°C			
				Month 3	19.9°C			
		7.6°C above intake temperature	Daily average [5]	Month 1	7.6°C	Standard Thermocouple	CW system operational 99% of time. Instruments available 99.9% of period.	+/- 0.3°C
				Month 2	7.5°C			
				Month 3	7.6°C			
	Total residual oxidant (as chlorine)	50µg/l	Daily average [6]	Month 1	0.01	DPD Colormetric	CW system operational 99% of time. Instruments available 97% of period.	+/ - 20µg/l
				Month 2	0.014			
				Month 3	0.018			
W1 (continued)	pH	6-9 (inclusive)	-	Month 1	7.2 to 8.0	BS60682.50:1995	CW system operational 99% of time. Instruments available 99.9% of period.	+/ - 0.01
				Month 2	6.8 to 8.0			
				Month 3	7.6 to 8.0			
W1 (a)	Flow	7.48 l/s	Annual average [7]	3.49 l/s		Flow Meter	Annual Average	+/- 8%
	Ammonia	0.297 mg/l		0.205 mg/l		BS 6068:2.11	Annual Average	+/- 20%
	NItrate	12.1 mg/l		3.8 mg/l		BS EN ISO 13395:1996	Annual Average	+/- 20%
	Calcium	59.0 mg/l		29.1 mg/l		BS EN ISO 11885	Annual Average	+/- 20%
	Phosphate	0.460 mg/l		0.019 mg/l			Annual Average	+/- 20%

Emission Point	Pollutant/ measure	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Time [3]	Uncertainty [4]
	Iron	2.17 mg/l		0.34 mg/l		Annual Average	+/- 20%
	Aluminium	13000 µg/l		85 µg/l		Annual Average	+/- 20%
	Antimony	6.65 µg/l		0.80 µg/l		Annual Average	+/- 20%
	Chromium	4.47 µg/l		0.57 µg/l		Annual Average	+/- 20%
	Copper	22.1 µg/l		2.7 µg/l		Annual Average	+/- 20%
	Lead	45.9 µg/l		0.3 µg/l		Annual Average	+/- 20%
	Manganese	151 µg/l		64 µg/l		Annual Average	+/- 20%
	Nickel	11.9 µg/l		2.5 µg/l		Annual Average	+/- 20%
	Selenium	6.84 µg/l		0.43 µg/l		Annual Average	+/- 30%
	Zinc	67.0 µg/l		31.4 µg/l		Annual Average	+/- 20%
	Arsenic	4.37 µg/l		0.67 µg/l	BS EN ISO 11969	Annual Average	+/- 20%
	Cadmium	0.700 µg/l		0.035 µg/l		Annual Average	+/- 20%
	Chloride	121 mg/l		47 mg/l	BS EN ISO 15682:2001	Annual Average	+/- 20%
	Mercury	0.370 µg/l		0.013 µg/l	BS EN ISO 17852:2008	Annual Average	+/- 24%
W1 (b)	Flow	16.8 l/s	Annual average [7]	3.6 l/s	Flow Meter	Annual Average	+/- 8%
	Ammonia	0.776 mg/l		0.431 mg/l	BS 6068:2.11	Annual Average	+/- 20%
	Aluminium	10.0 µg/l		11.1 µg/l [9]	BS EN ISO 11885	Annual Average	+/- 20%
	Mercury	0.0100 µg/l		0.0129 µg/l [9]	BS EN ISO 17852:2008	Annual Average	+/- 24%
	Nickel	1.00 µg/		6.29 µg/l [9]	BS EN ISO 11885	Annual Average	+/- 20%
	Iron	5.50 mg/l		0.47 mg/l	BS EN ISO 11885	Annual Average	+/- 20%
	Silicate	3.00 mg/l		0.15 mg/l		Annual Average	+/- 20%
	Sodium & potassium	3.00 mg/l		3.33 mg/l [9]		Annual Average	+/- 20%
W1 (c)	Flow	23m^3/day	Quarterly Average	2 m^3/day	Flow Meter	Quarterly Average	+/- 8%
	Ammoniacal nitrogen	20mg/l	Quarterly Average	0.2 mg/l	BS6068:2.1	Quarterly Average	+/- 20%

Emission Point	Pollutant/ measure	Emission Limit Value	Reference Period	Result [1]		Test Method [2]	Sample Date and Time [3]	Uncertainty [4]
	Biochemical oxygen demand	20mg/l	Quarterly Average	3mg/l		BS EN 1899-1	Quarterly Average	+/- 20%
	Suspended solids	30mg/l	Quarterly Average	10mg/l		BS EN 872	Quarterly Average	+/- 20%
W2	Oil & Grease	No visible oil	Daily [8]	Month 1	Absent	Visual Inspection	Daily	Not Applicable
				Month 2	Absent		Daily	
				Month 3	Absent		Daily	

1 Where monthly reporting is specified, the result reported should be the highest value obtained in each calendar month of the quarter against the relevant reference period. Where the emission limit value is expressed as a range, the result reported should be the 'minimum – maximum' measured values.

2 Where an internationally recognised standard test method is used the reference number must be provided. Where another method that has been formally agreed with NRW is used, then the appropriate identifier should be given. In other cases the principal technique should be stated, e.g. gas chromatography.

3 For non-continuous measurements the date and time of the sample that produced the result should be given. For continuous measurements the percentage of the process operating time covered by the result should be given.

4 The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

5 The highest daily average should be reported for each month.

6 Based on the mean of all valid samples obtained each day (taken at regular intervals), with a minimum of 20 valid samples to be taken each day). The highest daily average should be reported for each week.

7 Annual average is an annual calendar reporting requirement to be reported only in December returns.

8 The result should be reported as 'Present' or 'Absent' for each month of the quarter.

9 On the 4th May 2012 the EA agreed to allow concentrations above the limits within Table S3.2 provided that the combined mass release from W1a and W1b does not exceed that allowed by the permit. During 2022 the actual combined mass release of Aluminium from W1a and W1b was 11kg against a permitted combined mass release of 3072kg from W1a and W1b. During 2022 the actual combined mass release of Nickel from W1a and W1b was 1.0kg against a permitted combined mass release of 3.3kg from W1a and W1b. During 2022 the actual combined mass release of Mercury from W1a and W1b was 0.003kg against a permitted combined mass release of 0.09kg from W1a and W1b. During 2022 the actual mass release of sodium and potassium from W1b was 382kg against a permitted mass release of 1589kg.The combined mass releases are therefore significantly below the mass allowed by the Station's environmental permit.

Signed on behalf of RWE Generation UK plc, by: T. Wann **Date of return:** 27/01/2023