Castle Wase Services Ltd
Cardiff Treatment Centre
Old Clipper road
Cardiff Docks
Cardiff
CF10 4LX

Your Ref: LP3439HM

Date: 26/01/2022

Mr Geraint Harris,

Annual Report for 2021 for Castle Waste Services Ltd, Cardiff Treatment Centre, Old Clipper road, Cardiff Docks, Cardiff, CF10 4LX

Please find enclosed our report and associated results for 2021 in accordance with condition 4.2 of Environmental Permit LP3439HM.

Should you have any queries or wish to discuss the matter further, please do not hesitate to contact the undersigned.

Yours faithfully,
for Castle Waste Services Ltd

D Humphriss
Technical Director

Enc.

Castle Environmental 2021 Site Report – Cardiff – PC 4.2.2a

This report is produced to provide an overview of the sites performance over the previous 12 months. The statutory reporting forms detailing annual performance are appended to this document for ease of reference. Performance is compared against previous years within this report.

The waste side of the business continues to serve a number of local and national customers. The construction side of the site, which utilises washed fines aggregate has continued to supply local customers.

The average number of staff employed across both businesses in 2021 was 24, (10 staff working on the waste facility).

The ongoing COVID-19 situation has impacted the site in 2021. The site saw reduced availability of virgin cement over the May-July period. This resulted in the site not operating a night-shift over the period. All staff remained employed over this period

Input waste volumes were significantly reduced in 2021, even when compared to 2020 with an approximate 20% reduction in volume. This was predominantly linked to the performance of one waste producer.

A variation to the site permit was issued in 2021. The variation was undertaken in order to align the site permit with the requirements of the Waste Treatment Bref. There are a number of Improvement Conditions that require close out in 2022.

Performance

Reported primary electricity consumption has decreased significantly (25%) when compared to 2020. When this is factored against hours worked this remains broadly comparable to 2020, this is considered to be due to less night-time operation over the year combined with reduced waste inputs. The number of hours worked increased in 2021 despite there been no significant change in employee number. This is due to the use of the furlough scheme in 2020.

Reported primary energy from gas oil consumption is broadly similar to the previous year, although the volume consumed is higher. This is considered to be due to an erroneous conversion the previous year. Due to increased hours worked, there is a per unit increase.

The total quantity of waste removed from the site in 2021 was 4544 Tonnes which is 16% below the 2020 quantity. This is due to the reduction in waste inputs to the site, in particular some wastes that were managed by the site transfer station.

Water consumption for 2021 is estimated to be 4477.7m^3. This valve has been attained using the same assumptions as previous years. It represents a decrease from the previous year (5646m^3). The decrease is effectively due to the reduced operation of the construction business. When expressed per unit of hours worked it represents an increase in the previous year consumption.

Improvements

The site management systems have been subject to annual internal and external audits with no issues identified. Further to that the group management system has been accredited to ISO45001.

The desludging operations of the various tanks within the treatment process have continued to be effective in maintaining the effectiveness of the process.

Raw material consumption has returned to low values after an increase in 2020. This has been achieved by utilising wastes in place of raw materials such as hydrated lime. In addition, liquid effluents continue to be used as a replacement for water when making up alkaline slurries.

There have been significant improvement works undertaken at the site in 2021. These have included the erection of a new steel portal frame building used to house a replacement filterpress. These works have allowed the removal of the older filterpresses which were part of the legacy infrastructure of the site. As part of this scope of works, additional legacy infrastructure including storage tanks and powder silos have also been removed. Legacy electrical installations have also been removed.

The introduction of the new filterpress has delivered process efficiency gains and produces a higher quality filtercake with a lower moisture content. The management of the filtercake residues is also significantly improved, which the treated solids being deposited directly into a skip. This reduces double handling as was previously the case, and makes a significant improvement to housekeeping.

Continuous Improvements

Improvements will continue in 2022. The old filterpress building has now been emptied of all non-functional equipment. In 2022 it will be resurfaced to provide a new undercover store for containerised wastes. This will reduce container storage in other areas of the site and reduce double handling of containers when transferring between different areas of the site. Improvements to the drainage arrangements in these areas will also be delivered as part of this project. A project to improve surface water harvesting will also be undergoing concept design with commencement in 2022/23.

Appendix Reporting forms:

Sewer1 / 24/01/2022 (Quarter 4 2021)

WaterUsage1 / 25/01/2022 (Annual data 2021)

Energy1 / 25/01/2022 (Annual data 2021)

Performance1 / 25/01/2022 (Annual data 2021)

Permit Number: EPR/LP3439HM Operator: Castle Waste Services Limited

Facility: Roath Dock Transfer Station Form Number: Sewer1 / 24/01/2022

Reporting of emissions to sewer for the period from to 01/10/2021 – 31/12/2021

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
S1	Effluent Flow m3/day	No limit set	24-hour flow proportional sample	192.60	BS EN 135006	05/11/2021	
S1	Zinc, as Zn mg/l	No limit set	daily average from composite sample taken over 24 hours	0.3	BS 6068-2.29:1987, ISO 8288-1986	07/10/2021	
S1	Copper, as Cu mg/l	No limit set	daily average from composite sample taken over 24 hours	0.1	BS 6068-2.29:1987 ISO 8288-1986	07/10/2021	
S1	Lead, as Pb mg/l	No limit set	daily average from composite sample taken over 24 hours	0.5	BS 6068-2.29:1987 ISO 8288-1986	07/10/2021	
S1	Chromium, as Cr mg/l	No limit set	daily average from composite sample taken over 24 hours	0.1	BS EN 1233:1997, BS 6068-2.38:1997	07/10/2021	
S1	Nickel, as Ni mg/l	No limit set	daily average from composite sample taken over 24 hours	0.1	BS 6068-2.29:1987 ISO 8288-1986	07/10/2021	

The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed: Matthew Skinner Date: 24/01/2022
(Authorised to sign as representative of Operator)

Permit Number: EPR/LP3439HM

Operator: Castle Waste Services Limited

Facility: Roath Dock Transfer Station

Form Number: WaterUsage1 / 25/01/2022

Reporting of Water Usage for the year 2021

Water Source	Usage (m^3/year)	Specific Usage (m^3/unit output)
Mains water	4477.7	1,118.65 / 100,000 hours worked
Site borehole	0	
River abstraction	0	
TOTAL WATER USAGE	4477.7	1,118.65 / 100,000 hours worked

Operator's comments :

Water consumption is estimated based on batch recipes and process records.

Signed …D Humphriss….. Date…25/01/2022…..
(authorised to sign as representative of Operator)

Permit Number: EPR/LP3439HM Operator: Castle Waste Services Limited

Facility: Roath Dock Transfer Station Form Number: Energy1 25/01/2022

Reporting of Energy Usage for the year 2021

Energy Source	Energy Usage Quantity	Primary Energy (MWh)	Specific Usage **(MWh/unit output)**
Electricity	453,053 kWh	1,087.33 MWh	271.65 MWh
Natural Gas	0	0	0
Gas Oil	11,123 Litres	107.63 MWh	26.89
Recovered Fuel Oil			
TOTAL		1,194.96	298.54

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments :

As of 2010 the density of Fuel/Gas oil is stated to be 0.832kg/l.
IEA/OECD states that 1 Tonne Oil Equivalent (TOE) is equal to 11.63 MWh

Signed …D Humphriss... Date…25/01/2022...
(Authorised to sign as representative of Operator)

Permit Number: EPR/LP3439HM Operator: Castle Waste Services Limited

Facility: Roath Dock Transfer Station Form Number: Performance1 **25/01/2022**

Reporting of other performance indicators for the period 01/01/2021 to 31/12/2021

Parameter	Units
Water Usage	4477.7 cubic metres
Energy Usage	1,194.96 MWh (primary energy)
Total Raw Materials Used	0 Tonnes
Waste disposal and/or recovery	5324.6 Tonnes

Operator's comments:

Signed …D Humphriss……. Date…25/01/2021……..
(Authorised to sign as representative of Operator)