

# Annual performance report for: FCC Recycling (UK) Limited Greatmoor Energy from Waste Facility

Permit Number: EPR/UP3734HT/V004

Year: 2018

This report is required under the Industrial Emissions Directive's Article 55(2) requirements on reporting and public information on waste incineration plants and co-incineration plants, which require the operator to produce an annual report on the functioning and monitoring of the plant and make it available to the public.

## 1. Introduction

Name and address of plant	Greatmoor Energy from Waste Facility Edgcott Aylesbury Buckinghamshire HP18 0QN
Description of waste input	Residual domestic and commercial & industrial waste.
Operator contact details if members of the public have any questions	<a href="http://www.greatmoor.co.uk/contact-us/">http://www.greatmoor.co.uk/contact-us/</a> or by phone 01296323633

## 2. Plant description

The installation is designed to dispose of residual municipal waste and waste similar in nature to this with a maximum permitted throughput of 345,000 tonnes per year. The waste is weighed when entering the site and incoming waste vehicles discharge into the waste bunker. Overhead grab cranes are used to mix and break up the incoming materials to ensure homogeneity of feed. Non-permitted wastes are removed prior to the waste entering the combustion chamber and removed off site. Waste is loaded from the bunker into the combustion via dedicated feed chutes and airlocks, using the grab cranes. The waste bunker is designed to provide up to seven days of waste storage capacity at the normal rate of throughput.

Air for combustion is drawn from the tipping hall reducing the escape of dust and odours. The reception area is enclosed, with rapid action access doors to manage traffic and louvered panels to control air movements.

Combustion takes place in two stages, with primary combustion undertaken on a moving grate to promote the mixing of burning/unburnt waste. The combustion gas from the primary stage is incinerated in the secondary combustion chamber to reach the specified minimum temperature of 850 degrees centigrade for a minimum of two seconds. The unburnt material remaining on the grate is removed as Incinerator Bottom Ash (IBA).

The heat from combustion is recovered within a waste heat boiler to form high pressure steam, which is used to drive a turbine to generate electricity. A proportion of this site generated electricity is used with the facility itself, but the majority will be exported to the National Grid.

The heat recovery boiler incorporates facilities to minimise dust carry-over and for online cleaning through rapping systems and soot blowers to minimise maintenance impacts. Dust collected from the boilers is discharged with the flue gas cleaning treatment residues.

The air pollution control system involves a process called ‘Selective Non-Catalytic Reduction (SNCR) to control the release of nitrogen oxides (NOx) gases. Acid gases are treated by a semi-dry system using lime injection. Activated Carbon which adsorbs dioxins, furans and gaseous mercury is also injected into the gas stream. The exhaust gases are then filtered through a bag filter, which traps fine particulate matter (dust), including ash from the boiler, reactions products and excess reagents. The bag filter also thereby remove heavy metals that are adsorbed onto the particulate matter. These residues are known collectively as air emissions pollution control (APC) residues. A metering system will deliver the reagents in the right quantity to ensure low emissions, low reagent consumption and low residue levels.

The cleaned gases pass to the atmosphere via the stack. The gases are subject to extractive continuous sampling and monitoring, using the Continuous Emissions Monitoring equipment (CEMS). Feedback of monitoring data allows action to be taken to adjust the process if necessary before emission limits are exceeded.

The principal waste streams the installation produces are IBA, APC residues. Ferrous and non-ferrous metals are contained within the IBA are segregated off site. APC residues are managed as hazardous wastes.

### 3. Summary of Plant Operation

Municipal waste received	218,061.4 tonnes
Commercial and industrial waste received	89,507.43 tonnes
Total waste received	307,569 tonnes
Total plant operational hours	8,198 hours
Total hours of “abnormal operation” (see permit for definition)	None
Total quantity of incinerator bottom ash (IBA) produced	59,159 tonnes
Disposal or recovery route for IBA	Disposal (D1)
Did any batches of IBA test as hazardous? If yes, state quantity	No
Total quantity of air pollution control (APC) residues produced	12,112 tonnes
Disposal or recovery route for APC residues	Disposal (D9)
Total electricity generated for export to the National Grid	209,357 MWh

## 4. Summary of Plant Emissions

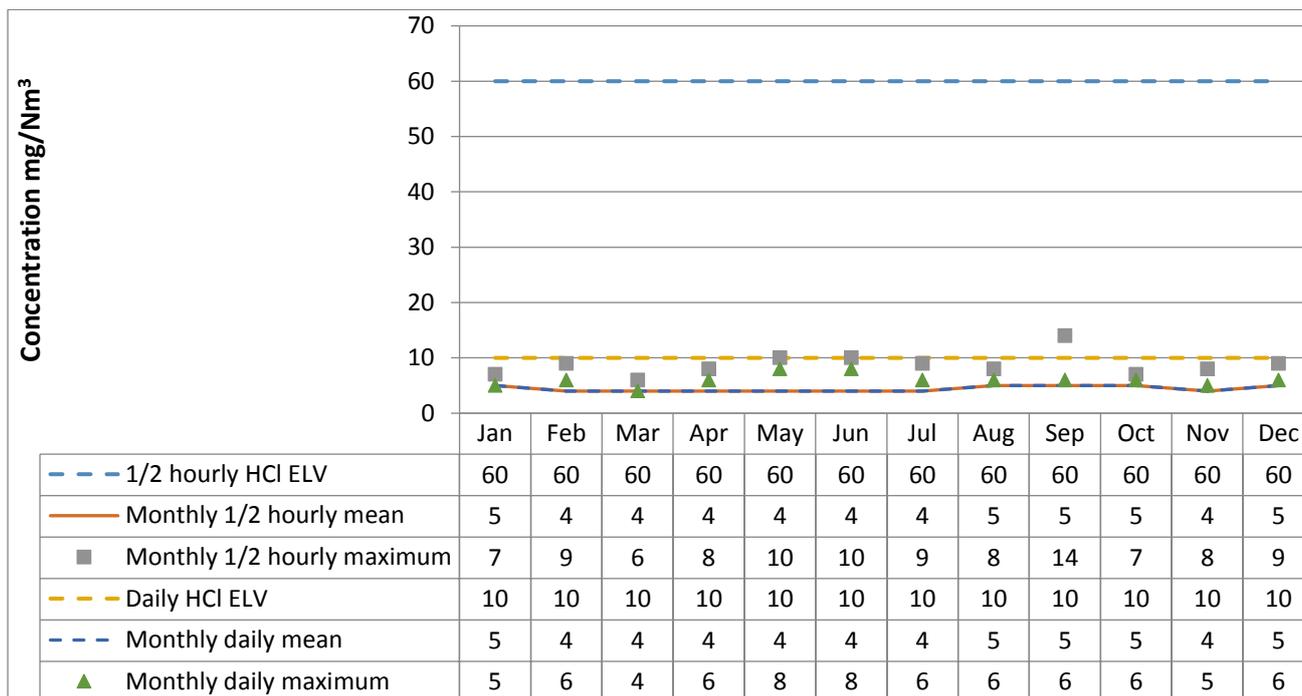
### 4.1 Summary of continuous emissions monitoring results for emissions to air

The following charts show the performance of the plant against its emission limit values (ELVs) for substances that are continuously monitored.

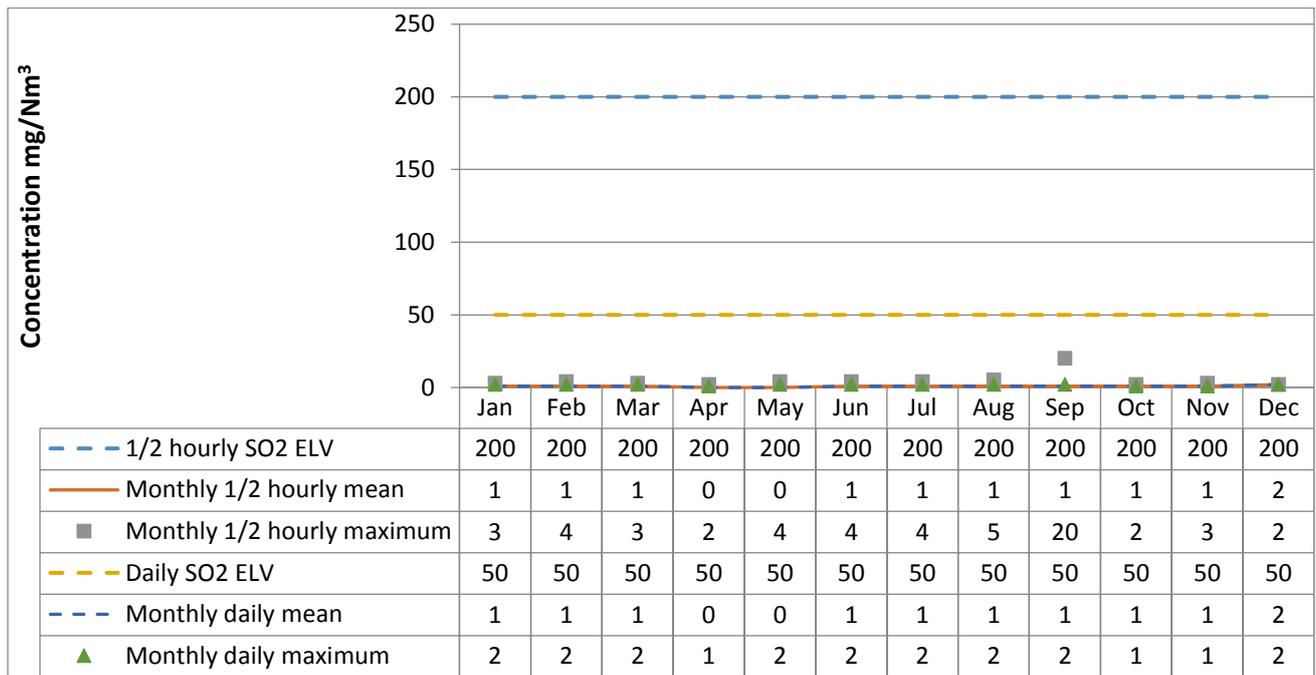


Monthly emissions summary incl half-hou

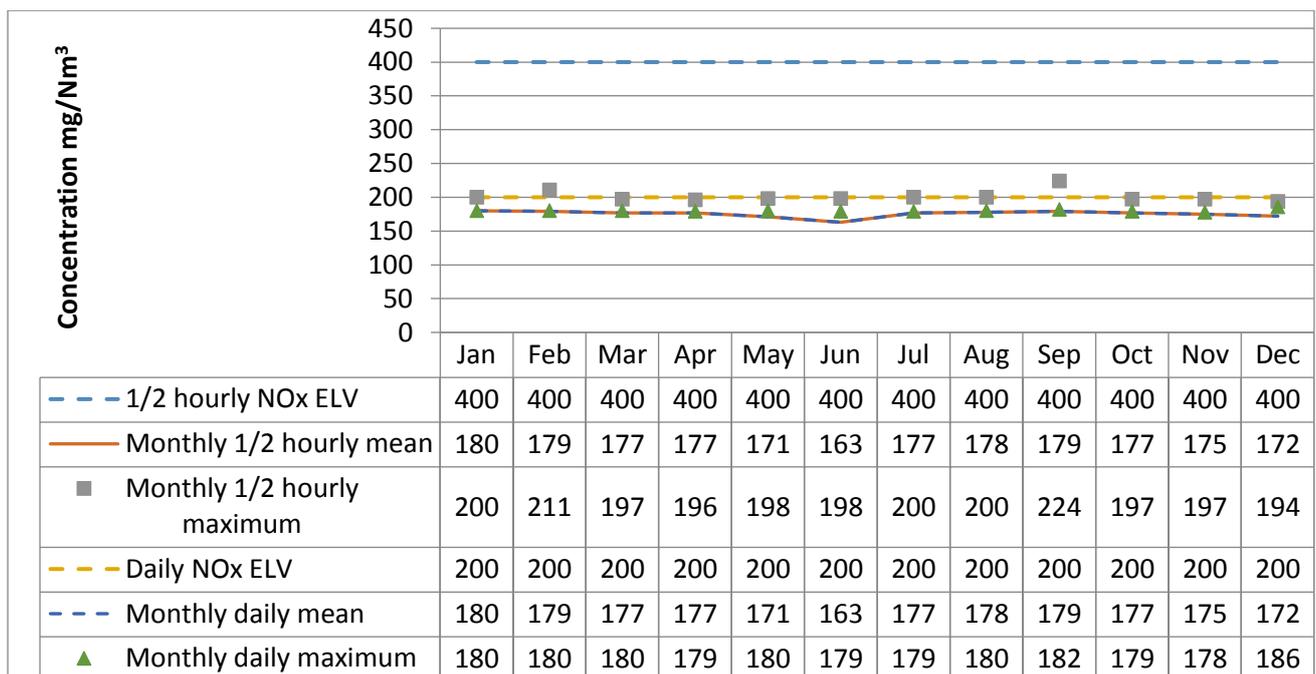
Line 1 - Hydrogen chloride



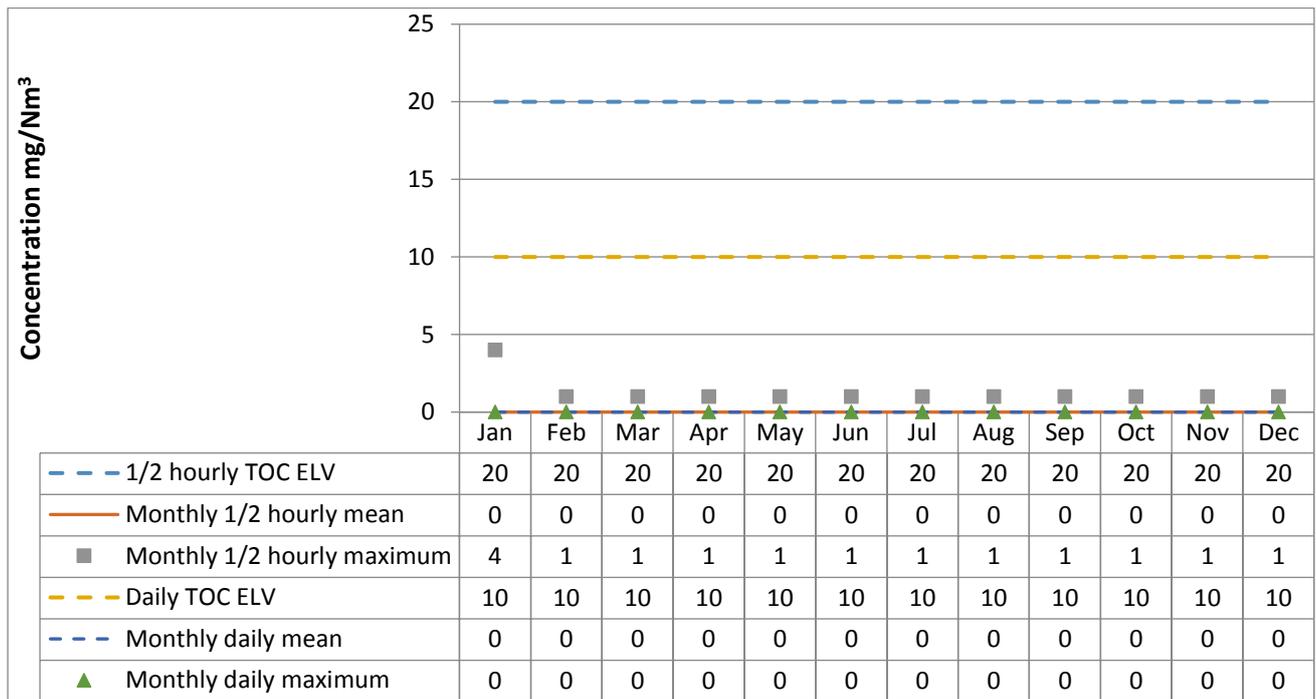
### Line 1 – Sulphur dioxide



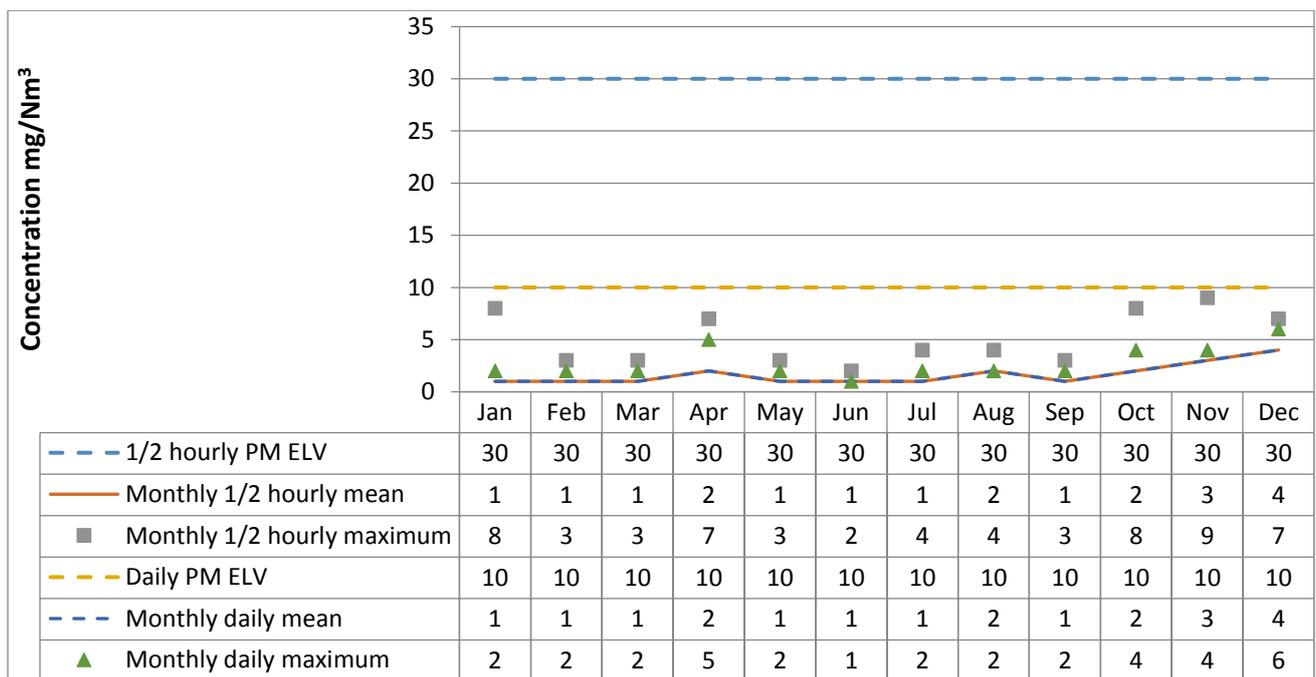
### Line 1 – Oxides of nitrogen



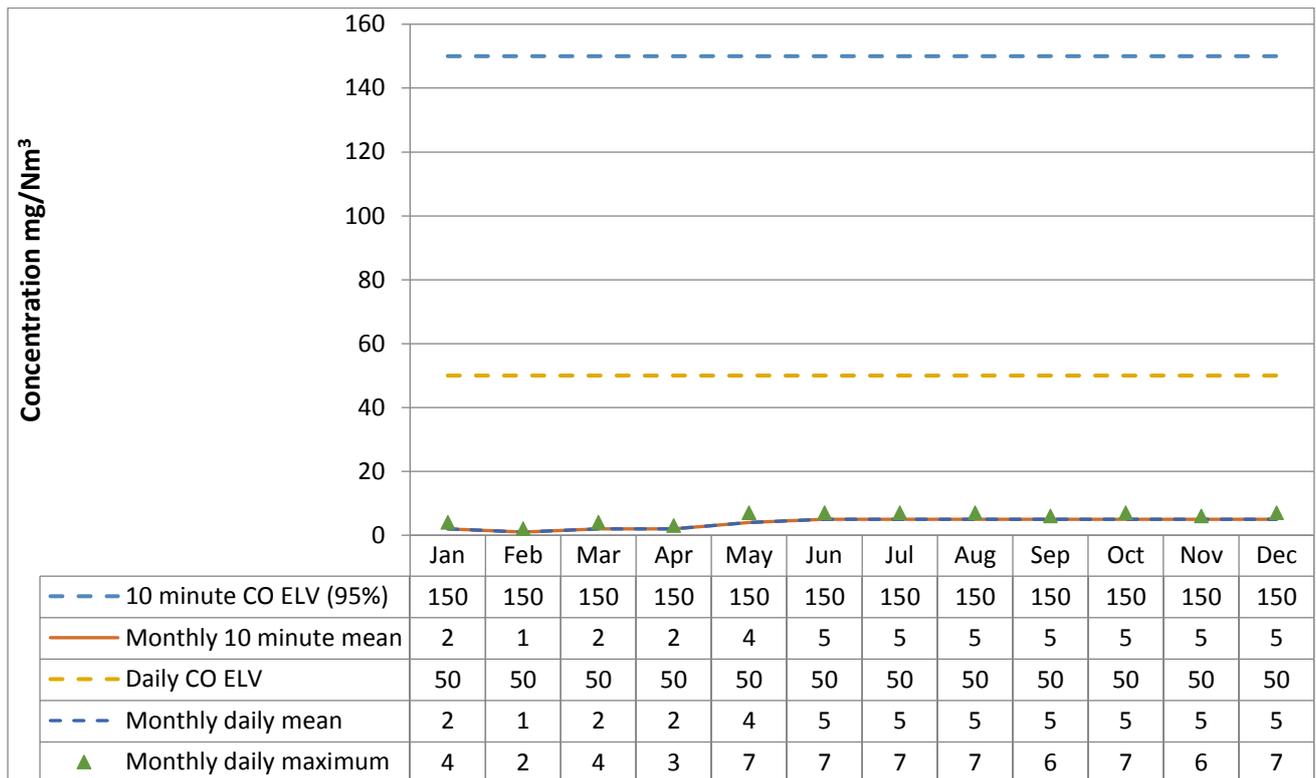
### Line 1 – Total organic carbon



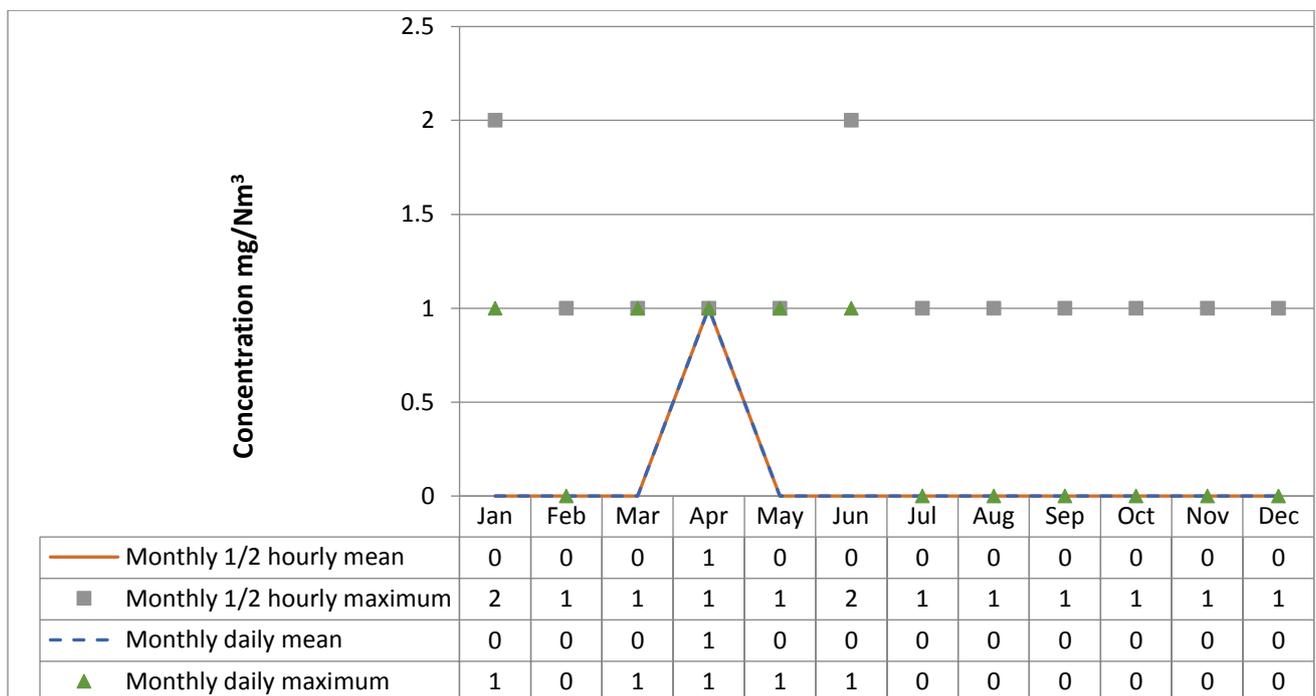
### Line 1 – Particulates



### Line 1 – Carbon monoxide



### Line 1 – Ammonia



NB.

1. Ammonia is monitored without an emission limit value.
2. Results are provided to 1 significant figure

## 4.2 Summary of periodic monitoring results for emissions to air

The table below shows the results of periodically monitored substances.

Substance	Emission limit value	Results	
		01/2018	10/2018
Mercury and its compounds	0.05 mg/m <sup>3</sup>	0.0011 mg/m <sup>3</sup>	0.0012 mg/m <sup>3</sup>
Cadmium & thallium and their compounds (total)	0.05 mg/m <sup>3</sup>	0.0011 mg/m <sup>3</sup>	0.0005 mg/m <sup>3</sup>
Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/m <sup>3</sup>	0.0268 mg/m <sup>3</sup>	0.0569 mg/m <sup>3</sup>
Dioxins and furans (I-TEQ)	0.1 ng/m <sup>3</sup>	0.0069 ng/m <sup>3</sup>	0.01274 ng/m <sup>3</sup>
Hydrogen Fluoride	2 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>	0.17 mg/m <sup>3</sup>

## 4.3 Summary of monitoring results for emissions to water

There are no emissions to water from the process other than clean surface water and from small scale treatment of welfare facilities water.

## 5. Summary of Permit Compliance

### 5.1 Compliance with permit limits for continuously monitored pollutants

The plant met its emission limits as shown in the table below.

Substance	Percentage time compliant during operation	
	Half-hourly limit	Daily limit
Particulates	100%	100%
Oxides of nitrogen	100%	100%
Sulphur dioxide	100%	100%
Carbon monoxide	100% 95% of 10-min averages	100%
Total organic carbon	100 %	100%
Hydrogen chloride	100 %	100%

## 5.2 Summary of any notifications or non-compliances under the permit

Date	Summary of notification or non-compliance	Reason	Measures taken to prevent reoccurrence
	None		

## 5.3 Summary of any complaints received and actions to taken to resolve them.

Date of complaint	Summary of complaint	Reason for complaint including whether substantiated by the operator or the EA	If substantiated, measures to prevent reoccurrence
24/04/2018	Noise complaint	Not substantiated, additional testing work is scheduled when conditions similar to those at the time of complaint re-occur.	N/A at this time.

## 6. Summary of plant improvements

### **Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits.**

2 new improvement conditions were added with the permit variation in 2018 (IC8 and IC9) relating to noise monitoring and soil and groundwater sampling. Initial monitoring for both requirements were undertaken and submitted during 2018, with further monitoring to add to that data to be undertaken in early 2019.

### **Summary of any changes to the plant or operating techniques which required a variation to the permit and a summary of the resulting environmental impact.**

Permit revision was issued in January 2018 to allow for an increase in plant capacity to 345,000 tonnes to account for increased operational hours and annual throughput capabilities.

### **Summary of any other improvements made to the plant or planned to be made and a summary of the resulting environmental benefits.**

Routine maintenance and optimisation to maintain plant compliance and efficiency.

## 7. Details of any public liaison planned for 2019:

<b>Date and time</b>	<b>Description</b>	<b>Location</b>
7 <sup>th</sup> February 2019	Community Liaison meeting	Greatmoor EfW
6 <sup>th</sup> June 2019	Community Liaison meeting	Greatmoor EfW
26 <sup>th</sup> September 2019	Community Liaison meeting	Greatmoor EfW

If you wish to be involved in the public liaison programme, please see <http://www.greatmoor.co.uk/contact-us/> or contact by phone 01296323633