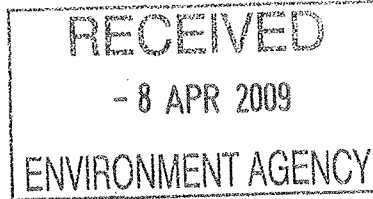


Recovering Energy from Waste

7th April 2009

Neil Gallagher
ENVIRONMENT AGENCY
PPC Compliance Officer
Central Area South
Sentinel House
Lichfield



Dear Neil,

COVENTRY & SOLIHULL WASTE DISPOSAL COMPANY Ltd. WASTE TO ENERGY PLANT: - PERMIT No NP3739PD

Please find enclosed revised versions of the following 2008 reports:
PI1 for all four quarters
WU1 for the year
Annual Performance Report for the year.

The revisions all relate to measures *per tonne of waste*, as I have found an error in the total waste data originally sent this earlier year, and this has affected some other associated measures.

I trust the above meets with your requirements, if you should require any further information please do not hesitate to contact me.

Yours sincerely,

1685

Mick Schilling
Safety Health and Environment Advisor
DDI: 024 7650 7428

PUBLIC REGISTER DOCUMENT			
	✓ OR N/A	INITIALS	DATE
FINANCE CHECKLIST	<input checked="" type="checkbox"/>	NCGT	14/4/09
...	<input type="checkbox"/>		
APPROVED FOR PUBLIC REGISTER		NCGT	14/4/09
SENT TO PUBLIC REGISTER			

Permit Reference Number : NP3739PD

Operator : CSWDC Ltd

Installation : Coventry EFW Facility

Form Number : PI1 (dated 04/10/2005)

Reporting of Performance Indicators for the period 1st October 2008 to 31st December 2008.

Quarterly Production/Treatment		
Total Municipal Waste Incinerated	49408	tonnes
Total Separately collected fractions Incinerated		tonnes
Electrical energy generated and exported	19640453	KWhrs
Electrical energy generated and used on installation	5398020	KWhrs
Other energy produced by the installation	0	KWhrs

Environmental Performance Indicators

Parameter	Quarterly Average	Units
Electrical energy imported	4.84	Kwh/tonne
Supplementary Gas	9.23	Ft ³ /tonne
Mass of bottom ash produced	197	Kg/tonne
Mass of APC residues produced	30.36	Kg/tonne
Mass of carbon used	0.187	Kg/tonne
Mass of lime used	11.814	Kg/tonne
Water consumption	1.903	M ³ /tonne
Effluent release to sewer	0.418	M ³ /tonne

Trends in Environmental Performance		
Year	Parameter	

Operator's comments :
 Environmental performance indicators are per tonne of waste incinerated

Signed M. Schiller
 (authorised to sign as representative of Operator)

Date 7/4/2009

Permit Reference Number : NP3739PD

Operator : CSWDC Ltd

Installation : Coventry EFW Facility

Form Number : PI1 (dated 04/10/2005)

Reporting of Performance Indicators for the period1st July 2008...to.....30th September 2008.

Quarterly Production/Treatment		
Total Municipal Waste Incinerated	62888	tonnes
Total Separately collected fractions Incinerated		tonnes
Electrical energy generated and exported	24916563	KWhrs
Electrical energy generated and used on installation	6117530	KWhrs
Other energy produced by the installation	0	KWhrs

Environmental Performance Indicators

Parameter	Quarterly Average	Units
Electrical energy imported	3.01	KWhrs/tonne
Supplementary Gas	7.34	Ft ³ /tonne
Mass of bottom ash produced	195.8	Kg/tonne
Mass of APC residues produced	30.03	Kg/tonne
Mass of carbon used	0.158	Kg/tonne
Mass of lime used	11.22	Kg/tonne
Water consumption	1.397	M ³ /tonne
Effluent release to sewer	0.44	M ³ /tonne

Trends in Environmental Performance		
Year	Parameter	

Operator's comments :
 Environmental performance indicators are per tonne of waste incinerated

Signed M. Scholby
 (authorised to sign as representative of Operator)

Date 7/14/2009

Permit Reference Number : NP3739PD

Operator : CSWDC Ltd

Installation : Coventry EFW Facility

Form Number : PI1 (dated 04/10/2005)

Reporting of Performance Indicators for the period1st January 2008...to.....31st March 2008.

Quarterly Production/Treatment		
Total Municipal Waste Incinerated	64629	tonnes
Total Separately collected fractions Incinerated	0	tonnes
Electrical energy generated and exported	24083932	KWhrs
Electrical energy generated and used on installation	6351440	KWhrs
Other energy produced by the installation	10023	KWhrs

Environmental Performance Indicators

Parameter	Quarterly Average	Units
Electrical energy imported	3.61	KWhrs
Supplementary Gas	9.6	Ft ³ /tonne
Mass of bottom ash produced	1193	Kg/tonne
Mass of APC residues produced	33.35	Kg/tonne
Mass of carbon used	0.173	Kg/tonne
Mass of lime used	10.08	Kg/tonne
Water consumption	1.56	M ³ /tonne
Effluent release to sewer	0.395	M ³ /tonne

Trends in Environmental Performance		
Year	Parameter	

Operator's comments :
 Environmental performance indicators are per tonne of waste incinerated

Signed M Salsbery
 (authorised to sign as representative of Operator)

Date 7/4/2009

Permit Reference Number : NP3739PD

Operator : CSWDC Ltd

Installation : Coventry EFW Facility

Form Number : PI1 (dated 04/10/2005)

Reporting of Performance Indicators for the period1st April 2008...to.....30th June 2008.

Quarterly Production/Treatment		
Total Municipal Waste Incinerated	61951	tonnes
Total Separately collected fractions Incinerated	0	tonnes
Electrical energy generated and exported	25048838	KWhrs
Electrical energy generated and used on installation	6051470	KWhrs
Other energy produced by the installation	2251	KWhrs

Environmental Performance Indicators

Parameter	Quarterly Average	Units
Electrical energy imported	1.156	KWhrs/tonne
Supplementary Gas	8.33	Ft ³ /tonne
Mass of bottom ash produced	197.9	Kg/tonne
Mass of APC residues produced	34.21	Kg/tonne
Mass of carbon used	0.143	Kg/tonne
Mass of lime used	12.87	Kg/tonne
Water consumption	1.81	M ³ /tonne
Effluent release to sewer	0.32	M ³ /tonne

Trends in Environmental Performance		
Year	Parameter	

Operator's comments :
 Environmental performance indicators are per tonne of waste incinerated

Signed M. Schilling
 (authorised to sign as representative of Operator)

Date 7/4/2009

Permit Reference Number : NP3739PD

Operator : CSWDC Ltd

Installation : Coventry EFW Facility

Form Number : WU1 (dated 04/10/2005)

Reporting of Water Usage for the year 2008

Water Source	Usage (m ³)	Specific Usage (m ³ /t)
Mains water	120135	0.49
Site borehole		
River abstraction	303173	1.25
TOTAL WATER USAGE	423308	1.74

Trends in Water Usage			
Year	Parameter	Total Water usage	Water per unit output
	Named Water source		
2005	Main and River	386449	1.8
2006	Main and River	353773	1.7
2007	Main and River	417278	1.8

Operator's comments :
Site borehole is being drilled at the time of the report
Improvements to the blowdown system have provided the reduction on water used per unit output

Signed M. Schilling
(authorised to sign as representative of Operator)

Date 7/4/2009



Recovering Energy from Waste

Annual Performance Report

The Coventry and Solihull Waste Disposal Company Waste to Energy Plant Permit No NP3739PD Year 2008

Introduction

The Waste to Energy plant, which is located at Bar Road in Coventry, disposes of Municipal Household waste arising in Coventry and neighbouring Solihull. Small amounts of municipal household waste, arising from other nearby local authorities is also disposed of at the plant.

The plant is operated by The Coventry and Solihull Waste Disposal Company Ltd.

For further information on the report, or for copies of the report the contact the following representatives of the operator;

R.Scawin	Environment and Performance Manager
Telephone Number	024 7650 7400

Plant Description

The main activity at the installation is to incinerate municipal waste and to recover energy, in the form of steam, heat, and electricity, for export to the local grid and factories.

A limited amount of hazardous waste, containing less than 1% halogenated organic substances (as chlorine), is also burned with the municipal waste.

The installation includes waste receipt and storage, waste heat boilers, abatement of the exhaust gas, on-site storage of residues and all systems for controlling and monitoring incinerator operation.

The plant design is capable of processing approximately 315,000 tonnes of waste per annum/36 tonnes per hour in three combustion streams. The heat produced was until recently used to generate 17.7MW of electricity and 16MWt heat energy to a local industrial site, but this has unfortunately closed. CSWDC are currently seeking an alternative customer for this source of energy.

The material is loaded into each of the furnaces via feed hoppers from a reception hall, where the waste vehicles deposit their loads into the storage bunkers. After entering the combustion chamber via the refuse feed ram the

material is allowed to fall onto the grate in a controlled manner. The moving grate mechanisms are used to agitate the waste as it progresses down to the ash discharge.

As the waste moves along, primary air is introduced from beneath the grate enabling the waste to go through a series of drying and burning areas. Re-circulated flue gas is introduced from above the grate for combustion control. Auxiliary gas fired burners are located in the combustion chamber both to heat it up on start up and to maintain the final gas temperature.

The hot gases are maintained at a minimum temperature of 850°C for 2 seconds in the combustion chamber before passing to the boiler, economiser and abatement plant.

Each furnace is equipped with a 3-bank water tube boiler raising steam at 17 bar and 208°C. Economisers are fitted down stream of each boiler unit to pre-heat the incoming feed water.

Each incinerator line is provided with its own gas cleaning and monitoring equipment. Gas cleaning comprises Flue Gas Recirculation (FGR) and Ecotubes followed by activated carbon injection, then dry scrubbing with hydrated lime. The gasses pass through bag filters to remove particulates prior to discharge to atmosphere via a single 92m stack.

Emissions from the stack are continuously monitored for particulates, carbon monoxide (CO), sulphur dioxide (SO₂), hydrogen chloride (HCl), oxygen (O₂), nitrogen oxides (NO_x) and volatile organic compounds (VOC).

There is no discharge of process liquids to controlled waters. Uncontaminated surface and roof waters are discharged to the surface water sewer system. All process waste waters are discharged to foul sewer and these are treated at Finham STW.

Bottom ash from the incinerator grate is quenched with water and then conveyed to a concrete storage bunker prior to removal for disposal in a landfill. The ferrous fraction from the bottom ash is removed by magnetic separation and stored in a bunker prior to removal for recycling for steel making.

Air pollution control residues from the bag filters are collected continuously and stored in an enclosed silo prior to removal for reuse in a waste treatment facility to neutralise acids.

Summary of plant operation

The plant consists of three separate incinerator lines that incinerate up to 12 tonnes of waste per hour.

There are two electrical generating sets on the plant which utilise the energy released from the waste incineration process. The generating sets are designated as G1 and G2. G1 has a capacity of 12.9MW and G2 a capacity of 4.8 MW. The process energy requirements are taken from the electricity generated and the surplus is exported to the community via the local grid.

The plant also has the capacity to export heat, in the form of high pressure hot water, to a local factory.

During 2008 the plant processed 241733 tonnes of municipal waste.

The following table categorises the types and permitted maximum amounts of wastes incinerated.

EWC Code	Description	Amount
19 12 01	paper and cardboard (confidential waste separately collected)	
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	≈5%
20 01 01	paper and cardboard	≈ 5%
20 01 08	biodegradable kitchen waste	≈1%
20 02 01	biodegradable waste	≈1%
20 03 01	mixed municipal waste	≈ 90%
20 03 02	waste from markets	
20 03 07	bulky waste	
20 03 99	municipal waste not otherwise specified	
13 07 01*	fuel oil and diesel	<1%
13 08 99*	wastes not otherwise specified	
15 02 02*	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	
16 07 08*	waste containing oil	
19 12 10	Combustible waste (refuse derived fuel)	
19 01 99	Wastes not otherwise specified	≈0.1%

During 2008 the plant operated for the following hours on each incinerator line.

Incinerator line	Operating hours	Actual availability	Percent	Planned Percent availability
1	7534	86%		91.78
2	6482	74%		91.78
3	7709	88%		91.78

During 2008 there were planned outages for the following reasons.

Water washes on a quarterly basis on all three units.

Planned maintenance on units 1,2 and 3.

Other periods which were not accounted for by the planned availability to actual availability figures were primarily due to boiler tube failures and grate failures.

The following table describes the type, amount and destination/treatment of residues produced by the process

Residue description	Quantity produced (tonnes)	Destination/treatment
Incinerator Bottom Ash	46889	Landfill
Air pollution Control residue	7611	Sorbant treatment with final landfill
Incinerated metal	7959	Recycled

The total energy generated by the plant in 2008 was:

Total electricity generated	116963MWh
Total electricity consumed on site	23918MWh
Total electricity to community	93388MWh
Total heat supply to local factory	12274MWh

The electricity exported to the community is equivalent for the average lighting needs of 15000 to 20000 houses.

Summary of plant emissions

The Continuous Emission Monitoring System (CEMS) continuously monitors the emissions to air of the following pollutants on each unit:

- Oxides of Nitrogen
- Carbon Monoxide
- Volatile organic Compounds
- Particulates
- Sulphur Dioxide
- Hydrogen Chloride

The CEMS continuously monitor the Dry and Wet Oxygen content of the gasses for each unit to correct the data to normalised conditions. It also continuously monitors the gas flow rates for each unit to calculate mass release.

An attached appendix shows monthly average concentrations for each pollutant on each unit.

The emissions to air from the process remained compliant with the PPC Permit Emission Limit Values for half hourly averages for all notifiable pollutants, except as described in the section "Summary of plant compliance" which follows this section.

Graphs of the monthly average concentration for emissions of all notifiable pollutants on the three incinerators are shown at the end of this document in Appendix 3.

The Monthly average for Oxides of Nitrogen for all three units were below the Daily Emission Limit Value set down in the PPC permit of 200 mg/m³ although they are consistently close to the ELV throughout the year. We are considering urea or ammonia injection in order to assist us in reducing the levels of this pollutant.

Levels of Carbon Monoxide produced averaged 25% of the Emission Limit Values for all units and Particulates, Carbon Monoxide, Hydrochlorides, and Sulphur dioxide have also indicated stable levels throughout the year.

Hydrocarbon results again demonstrate very low monthly averages.

A summary table of the mass emissions for 2008 is shown in Appendix 1

The mass emission results for heavy metals, cadmium, mercury, dioxins and hydrocarbons are extrapolated from the periodic monitoring carried out in September 2008. These results remain compliant and do not indicate any significant deviation on previous results.

Periodic sampling has been carried out 4 times during 2008 by an external sampling house. All the results sample were below the Environmental Permit Emission Limit Values. Where applicable the results were comparable with the data generated by the Continuous Emissions Monitoring equipment.

Periodic measurements are taken of the pollutants measured continuously and also the following on each unit.

Heavy Metals
 Mercury
 Cadmium & thallium
 Hydrogen Fluorides
 Dioxins
 PCB.s

Summary of plant compliance

During 2008 there have were 7 incidents of abnormal operation amounting to a total of 9.5 hours.

Abnormal operations

Date	Unit	Parameter	Reason
01/04	3	Dust	Baghouse opened for inspection causing carry over of dust
18/04	3	SO2	Blockage in sorbant line
01/06	3	NOx	CEM's failure
17/06	2	Dust	Probe removed for cleaning caused spike
26/06	3	All parameters	CEM's failure
16/07	3	CO	Percussion cleaning
24/07	3	CO	Ecotubes out of service

There were seven unauthorised releases to air under the Company's PPC Permit Emission Limit values.

21/04/08: The ELV for Carbon Monoxide was exceeded on line three

06/05/08: The ELV for Carbon Monoxide was exceeded on line three

08/06/08: The ELV for Carbon Monoxide was exceeded on line three

06/08/08: The ELV for Carbon Monoxide was exceeded on line two

06/08/08: The ELV for Hydrocarbons was exceeded on line two

10/12/08: The ELV for Carbon Monoxide was exceeded on line two

16/12/08: The ELV for Carbon Monoxide was exceeded on line two

The above breaches of the permit conditions were formally reported to the Environment Agency as required under the Environmental Permit.

There have been 10 complaints relating to Environmental performance of the plant.

There were 4 noise complaints which related to contractor activity or short duration percussive cleaning activities. Explanations were given to the complainants who were satisfied with our response.

There were 5 complaints of odour from the process. All were difficult to substantiate given the subjective nature of an individual's sense of smell. Controls have been tightened regarding the closure of the tipping hall doors and the checking of the de-odourising sprays has been added to the contract cleaners' periodic checks to ensure they are operating correctly.

Summary of plant improvements

During 2008 as part of our PPC Permit improvement programme we completed the following improvements:

- New emission analysers were installed
- Fire suppression system installed in CEM's housing
- Fire suppression system in the FD fan house
- New website showing monthly average emission data
- Improved boiler blowdown control
- Improved ash/metal separation

Summary of information made available

The Company has a Website (<http://www.cswdc.co.uk>) where the public can access information about the Company and its processes.

An information brochure, which includes a process flow diagram, can be obtained upon request to the Company's office.

Information on emission releases to air may be obtained from the public registers which are held at the following addresses

Coventry City Council
Environmental Services dept
Broadgate House
Broadgate
Coventry