

## **Permit with introductory note**

The Environmental Permitting (England & Wales) Regulations 2010

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UPM-Kymmene UK Ltd

Shotton Paper Mill  
Weighbridge Road  
Shotton  
Deeside  
Flintshire  
CH5 2LL

Permit number  
EPR/BT4885IT

# Shotton Paper Mill

## Permit number EPR/BT4885IT

### Introductory note

#### **This introductory note does not form a part of the permit**

The main features of the permit are as follows.

The installation is located adjacent to the Dee Estuary in Shotton, Flintshire. The whole of the Dee Estuary is designated a Site of Special Scientific Interest (SSSI), and has also been listed as a Ramsar Site, Special Protection Area (SPA) and a Special Area of Conservation (SAC).

The principle activity at the installation is Section 6.1 Part (A)1, specifically the production of newsprint from recycled fibre. The installation also includes two gas/oil fired boilers, an Industrial Emissions Directive Chapter IV compliant boiler and an Effluent Treatment Plant to treat liquid effluent. In addition there are two waste operations, a Dry Materials Recovery Facility (MRF) with a capacity to sort 300,000 tonnes per year of dry co-mingled recyclates, and a waste wood treatment activity.

The boilers stacks are the principle emissions points to air and liquid effluent is treated on site before being discharged to the Dee Estuary, via the White Sands Gutter on the outgoing tide.

Raw material for papermaking is recovered paper either delivered directly, or obtained from the on-site MRF. This is stored in a large warehouse on site before being fed into the recycled fibre plant for de-inking and fibre preparation. Newsprint is produced on two paper machines, each with a capacity of over 200,000 tonnes per year, then rolled and cut to size, then wrapped and stored in the despatch warehouse.

The Industrial Emissions Directive Chapter IV compliant boiler (Boiler 7) is the main source of steam and electrical energy. Dewatered sludge from the de-inking plant and the effluent plant is burnt, along with support fuel consisting of forestry residues, waste derived fuel and waste wood. The resulting ash streams are re-used where possible or sent for disposal.

Back up steam is provided by two boilers (Boiler 3 and Boiler 6) which run on gas with fuel oil back up.

Process effluent is treated on site using a large activated sludge lagoon, clarification and final settlement in holding lagoons.

The waste wood treatment operation allows shredded wood to be exported from site for sale.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

**Status log of the permit**

<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application BT4885	Duly Made 11/10/02	
Permit determined BT4885	07/02/03	
Application for variation	Received 31/07/03	Discontinue use of TMP plant, and expansion of RCF plant
Variation BV4916	Determined 05/11/03	
Application for variation	Received 29/04/05	Removal of permission to burn waste that would lead to application of WID
Variation JP3030LM	Issued 16/12/05	
Application for variation	Received 12/07/06	Partial commissioning of No.7 boiler (WID)
Variation WP3031LR	Issued 17/07/06	
Application for variation	Received 28/11/05	No.7 boiler and break from Gaz de France
Variation PP3936SQ	Issued 11/08/06	
Variation notice NP3739XM issued	Issued 17/12/07	Application of NERP emission limits
Application for variation	Received 29/12/09	Addition of waste wood fuel
Variation EA/EPR/BT4885IT/V006	Issued 12/05/10	(billing ref. JP3131XD)
Application for Partial Surrender	Duly Made 24/02/10	Removal of area of land from installation
Partial Surrender Notice EPR/BT4885IT/S007 issued	19/05/10	(billing ref. NP3531KR)
Application for variation	Duly Made 10/05/10	MRRF and new fuels for boiler no.7
Variation EA/EPR/BT4885IT/V008	Issued 01/11/10	(billing ref. NP3231KZ)
Application for variation	Duly Made 28/05/10	Increase in final effluent temperature limit
Variation EA/EPR/BT4885IT/V009	Issued 17/12/10	(billing ref. HP3534TM)
Environment Agency Paper and Pulp Sector Review 2011	Issued 15/06/12	Varied and consolidated permit issued in modern condition format. (billing ref. QP3530FE)
Variation determined EPR/BT4885IT/V010		
Agency variation determined EPR/BT4885IT/V011	25/03/13	Agency variation to implement the changes introduced by IED (billing ref. MP3331ZU)
Application for Variation	Duly made 20/11/14	Addition of a wood recycling facility
Variation EPR/BT4885IT/V012	Issued 26/05/15	

**Status log of the permit**

<b>Description</b>	<b>Date</b>	<b>Comments</b>
Regulation 60(1) Notice dated 19/11/14	Response received 30/03/15	Information to demonstrate that relevant BAT conclusions are met for the production of pulp, paper and board as detailed in EU document reference L284
Request for Additional information to support Regulation 60(1) response	16/10/15	
Response to request for additional information received	01/12/15	Clarification on techniques employed in respect of the BAT 17 conclusion on emissions of noise
Natural Resources Wales variation EPR/BT4885IT/V013 (Variation and Consolidation)	Issued 31/03/16	Varied and consolidated permit

End of introductory note

# Permit

The Environmental Permitting (England and Wales) Regulations 2010

**Permit number**  
**EPR/BT4885IT**

This is the consolidated permit referred to in the variation and consolidation notice for application **EPR/BT4885IT/V013** authorising,

**UPM-Kymmene UK Limited** (“the operator”),

whose registered office is


**1 Meadowhead Road**  
**Irvine**  
**Ayrshire**  
**Scotland**  
**KA11 5AT**

company registration number **SC102969**

to operate an installation at

**Shotton Paper Mill**  
**Weighbridge Road**  
**Shotton**  
**Deeside**  
**Flintshire**  
**CH5 2LL**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
	<b>31/03/2016</b>

Eirian Macdonald

Authorised on behalf of Natural Resources Wales

# Conditions

## 1 Management

### 1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.1.4 The operator shall comply with the requirements of an approved competence scheme.

### 1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is recovered with a high level of energy efficiency and energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

## **1.4 Avoidance, recovery and disposal of wastes produced by the activities**

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
  - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
  - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).
- 2.1.2 For the following activities referenced under schedule 1 table S1.1 (A5 and A6) waste authorised by this permit shall be clearly distinguished from any other waste on the site.

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.2 If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

Conditions 2.3.4 to 2.3.10 apply only to the incineration activity, (Activity A3 in schedule 1, table S1.1)

- 2.3.4 Waste shall not be charged, or shall cease to be charged, if:
- (a) the combustion chamber temperature is below, or falls below, 850°C; or
  - (b) any continuous emission limit value in schedule 3 table S3.1(c) is exceeded; or
  - (c) any continuous emission limit value in schedule 3 table S3.1(b) is exceeded, other than under “abnormal operating conditions” ; or
  - (d) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1(b) are unavailable other than under “abnormal operating conditions”.
- 2.3.5 The operator shall have at least one auxiliary burner in each line at start up or shut down or whenever the operating temperature falls below that specified in condition 2.3.4, as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.4 is maintained in the combustion chamber, such burner(s) may be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.
- 2.3.6 The operator shall record the beginning and end of each period of “abnormal operation”.
- 2.3.7 During a period of “abnormal operation”, the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.
- 2.3.8 Where, during “abnormal operation”, any of the following situations arise, waste shall cease to be charged until normal operation can be restored:
- (a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1(b) due to disturbances or failures of the abatement systems, or continuous emission monitor(s) or continuous effluent monitoring device(s) are out of service, as the case may be, for a total of 4 hours uninterrupted duration;
  - (b) the cumulative duration of “abnormal operation” periods over 1 calendar year has reached 60 hours;
  - (c) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1(c) due to disturbances or failures of the abatement systems;
  - (d) Continuous emissions monitors or alternative techniques to demonstrate compliance with the emission limit values for particulates, TOC and / or CO in schedule 3 table S3.1(c), as detailed in the application or as agreed in writing with Natural Resources Wales, are unavailable.
- 2.3.9 The operator shall interpret the end of the period of “abnormal operation” as the earliest of the following:
- (a) when the failed equipment is repaired and brought back into normal operation;
  - (b) when the operator initiates a shut-down of the waste combustion activity, as described in the application or as agreed in writing with Natural Resources Wales;
  - (c) when a period of four hours has elapsed from the start of the “abnormal operation”;
  - (d) when, in any calendar year, an aggregated period of 60 hours “abnormal operation” has been reached.
- 2.3.10 Bottom ash and APC residues shall not be mixed.



- 2.3.11 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 tables S2.2, S2.3, S2.4 and S2.5; and
  - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.12 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.13 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.
- 2.3.14 Trials to burn alternative fuels to those described in table S2.2 can only be undertaken with the written agreement of Natural Resources Wales.
- 2.3.15 Subject to the outcome of the burning trials in condition S2.3.14, the use of alternative fuels as a substitution to those fuels described in table S2.2 can only be undertaken with the written agreement of Natural Resources Wales, which will include the maximum throughput, the fuel composition and the maximum duration of the fuel use.

## **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by Natural Resources Wales.
- 2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the operator shall notify Natural Resources Wales within 14 days of completion of each improvement.

# **3 Emissions and monitoring**

## **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1(a), S3.1(b) and S3.2. except in "abnormal operation", when there shall be no point source emissions to water, air or land except from sources and emission points listed in schedule 3 tables S3.1(c) and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Total annual emissions from the emission points set out in schedule 3 tables S3.1(a), S3.1(b), S3.1(c), S3.2 and S3.3 of a substance listed in schedule 3 table S3.4 shall not exceed the relevant limit in table S3.4.

- 3.1.4 Waste produced shall as a minimum, be sampled and analysed in accordance with schedule 3 table S3.6. Additional samples shall be taken and tested and appropriate action taken, whenever:
- a) disposal or recovery routes change; or
  - b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.
- 3.1.5 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil to the protocol agreed with Natural Resources Wales under Improvement Condition 6, unless such monitoring is based on a systematic appraisal of the risk of contamination.

## **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

## **3.3 Monitoring**

- 3.3.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1(a), S3.1(b) and S3.1(c), S3.2 and S3.3;
  - (b) process monitoring specified in table S3.5;
  - (c) residue quality in table S3.6.
- 3.3.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

- 3.3.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by Natural Resources Wales. For the following activities referenced in schedule 1, table S1.1 (A3) Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1(b). The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.
- 3.3.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1(a), S3.1(b), S3.1(c) S3.2, S3.3 unless otherwise agreed in writing by Natural Resources Wales.
- 3.3.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1(b) and s3.1(c); the Continuous Emission Monitors shall be used such that;
- (a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages:
 

• Carbon monoxide	10%
• Sulphur dioxide	20%
• Oxides of nitrogen (NO & NO <sub>2</sub> expressed as NO <sub>2</sub> )	20%
• Particulate matter	30%
• Total organic carbon (TOC)	30%
• Hydrogen chloride	40%
  - (b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.3.5(a);
  - (c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour period. The number of half-hourly averages so validated shall not exceed 5 per day;
  - (d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;
  - (e) no more than ten daily average values per year shall be determined not to be valid.

### **3.4 Odour**

3.4.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.4.2 The operator shall:

- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

### **3.5 Noise and vibration**

3.5.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.5.2 The operator shall:

- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

### **3.6 Pests**

3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.

3.6.2 The operator shall:

- (a) if notified by Natural Resources Wales, submit to Natural Resources Wales for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;
- (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by Natural resources Wales

## 4 Information

### 4.1 Records

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by Natural Resources Wales, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
  - (i) off-site environmental effects; and
  - (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by Natural Resources Wales.

### 4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.

4.2.2 For the following activities referenced in schedule 1, table S1.1 (A1 to A6.) A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2;
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule; and
- (d) the functioning and monitoring of the incineration plant in a format agreed with Natural Resources Wales. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to Natural Resources Wales, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 Within 1 month of the end of each quarter, the operator shall submit to Natural Resources Wales using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

### 4.3 Notifications

- 4.3.1 (a) In the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
- (i) inform Natural Resources Wales,
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
  - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) in the event of a breach of any permit condition the operator must immediately—
- (i) inform Natural Resources Wales, and
  - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.

4.3.4 Natural Resources Wales shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) Natural Resources Wales shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 Natural Resources Wales shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, Natural Resources Wales shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

## **4.4 Interpretation**

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

# Schedule 1 - Operations

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
A1	S6.1 A1 (b)-Producing in an industrial plant, paper and board where the plant has a production capacity of more than 20 tonnes per day.	Newsprint manufacture from recycled fibre in two paper machines each with a capacity >200,000 tonnes per annum.	Receipt of waste paper fibre recovery manufacture of newsprint to dispatch of finished product.
A2	Section 1.1 Part (A)1(a)- Burning any fuel in an appliance with a rated thermal input of 50MW or more	One 38MW gas / LFO fuelled boiler and one 45 MW gas/LFO fuelled boiler.	Combustion of fuel to release of exhaust gases to atmosphere.
A3	Section 5.1 Part A (1)(b) The incineration of non-hazardous waste in an incineration or co-incineration plant in a facility with a capacity exceeding 3 tonnes per hour.	Fluidised bed incinerator, 85MW thermal input burning 57 tonnes per hour of waste fuels	Incineration and steam generation, plus receipt, storage and preparation of waste materials-limited to the waste materials, descriptions and quantities identified in table S2.2.
A4	Section 5.4 Part A (1)(a)(i) Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by biological treatment.	Activated sludge treatment of all liquid effluent from the papermaking activity.	Effluent flow from paper machines, effluent treatment, associated sludge handling and treatment lagoons and discharge system.
<b>Directly Associated Activity</b>			
Directly Associated Activity Release to controlled waters.	Discharge of site drainage from the installation.		Collection in effluent lagoon for pumped discharge via White Sands Gutter.
	<b>Description of activities for waste operations</b>	<b>Limits of activities</b>	
A5	Materials recycling facility (not subject to standard rules as >75kte).  (Recovery Operations: R3, R4,R5 and R13)	From receipt of non-hazardous wastes and raw materials to transfer of separated wastes to further treatment and recovery activities; dispatch of residual wastes.	
A6	Wood recycling facility  (Recovery Operations: R3, R4, R5 and R13)	From receipt of permitted wood wastes through treatment to production of final treated waste wood and storage.	



**Table S1.2 Operating techniques**

<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to question 2.3 given in the Application section 2.3; excluding Tables 2.3.1, 2.3.3, 2.3.8, 2.3.9, 2.3.10, 2.3.12, 2.3.13.	11/10/02
Response to Sch 4 Notice	Item 4, 9, 10,11, 12, 13, 14, 15, 16, 17, 18, 19, 20	11/10/02
Application for variation BV4916	Application for variation dated 25/07/03 excluding references to the burning of de-inking sludge (deinking sludge cake) and effluent treatment plant sludge (primary sludge cake) in boiler 2.	31/07/03
Response to request for information	Response dated 23/09/03	23/09/03
Application for variation JP3030LM	Application for variation dated 22/04/05.	29/04/05
Application for Variation WP3031LR	Application for Variation dated 12/07/06	12/07/06
Application for variation PP3936SQ	Application for variation dated 24/11/05	28/11/05
Response to request for information	Response dated 26/05/06	26/05/06
Application for variation EA/EPR/BT4885IT/V006	Application for variation dated December 2009	29/12/09
Application for variation EA/EPR/BT4885IT/V008	Application for variation dated 10/05/10– Annex 1 (Fuels Testing Protocol), Annex 1 (Waste Acceptance Procedures) and Annex 2 (Accident Management Plan). Documents referenced in response to 6f.- the location of waste storage areas. Technical Description – Dry Materials Recycling Facility and Annex 3 (MRF Risk Assessment)	10/05/10
Application for variation EA/EPR/BT4885IT/V009	Application for variation dated 27/5/2010	28/02/2010
Response to request for information	Response dated 28/03/2012	28/03/2010
Abnormal operation monitoring techniques	Response dated 8 April 2012 on abnormal operation monitoring techniques	
Application for variation EPR/BT4885IT/V012	Application for variation dated 20/11/14	20/11/2014
Response to Regulation 60 (1) Notice request for information dated 19/11/14	Technical standards detailed in response to notice Best available techniques as described in BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for production of pulp, paper and board	30/03/15
Response to request for additional information dated 16/10/15	Response dated 01/12/15 on techniques to meet requirements of BAT conclusion no.17	01/12/15

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
1	The Operator shall submit a written report for the subsequent approval of the Environment Agency that summarises a review of the provision of MCERTS accreditation for the continuous water monitoring equipment, personnel and organisations employed for the emissions monitoring programme in condition 3.5.1. The report shall also propose a timetable for achieving this standard for any elements that are not MCERTS certified.	Completed
2	The Operator shall submit a written report detailing a review of the current monitoring methods for discharges to surface water. The review shall consider both in-house and external monitoring against the standards set out in Environment Agency technical guidance note 'M18 – Monitoring of Discharges to Water and Sewer', and identify where these standards are met, justify deviations or submit proposals for improvements. The report shall propose a timetable for completion of improvements for any elements that are not MCERTS certified. Once approved by the Environment Agency any improvements identified by the review will be implemented to the agreed timescale.	Completed
3	<p>The operator shall develop and implement a sampling plan for waste residues from the incineration plant in accordance with the Agency's Guidelines for Ash Sampling and Analysis (Version 6). The plan shall detail how samples of residues are collected and analysed to:</p> <ul style="list-style-type: none"><li>(a) Classify the wastes under the European Waste Catalogue;</li><li>(b) Assess the hazardous properties to identify whether they are subject to the Hazardous Waste Regulations (in accordance with WM2-The Interpretation of the definition and classification of Hazardous Waste);</li><li>(c) Assess the pollution potential of the residues to demonstrate it is within acceptable limits for the Paper Sludge Ash Quality Protocol;</li><li>(d) Meet the residue quality assessments required under Table 3.6;</li><li>(e) Provide sufficient data to ensure and residues land filled meet the relevant Landfill Waste acceptance assessment.</li></ul> <p>A copy of the plan shall be submitted to the Environment Agency.</p>	Completed
4	The Operator shall submit the assessment of the hazardous properties of Air Pollution Control residues to the Environment Agency	Completed

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
5	<p>If storing Priority Hazardous Substances on site, the Operator must carry out the following assessments with reference to the Environment Agency's guidance "How to carry out a risk assessment if you're applying for a bespoke permit that includes discharging hazardous pollutants to surface water":</p> <ul style="list-style-type: none"> <li>Phase 1 Part A screening tests for mercury, cadmium, nickel, lead, benzene, polyaromatic hydrocarbons and any other relevant substances. Phase 1 Part B screening tests for mercury, cadmium, polyaromatic hydrocarbons and any other relevant priority hazardous substances.</li> <li>For any substance which is not screened out by the Phase 1 Part A or Part B screening tests the Operator will also need to carry out Phase 2 modelling, as described in "How to carry out a risk assessment if you're applying for a bespoke permit that includes discharging hazardous pollutants to surface water":</li> </ul> <p>The Operator must provide Natural Resources Wales with the results of the emissions monitoring, the results from the screening tests and the results from any Phase 2 modelling. The Operator may use the Environment Agency's H1 electronic screening tool to present the emissions data and to carry out the Phase 1 screening tests.</p> <p>Note: With regard to the Phase 1 Part A screening - a full list of relevant substances is provided in the Environment Agency guidance "How to carry out a risk assessment if you're applying for a bespoke permit that includes discharging hazardous pollutants to surface water" under the section entitled "Screening test: priority hazardous pollutants". The Operator must review the list and carry out the screening for any substances, in addition to those specified above, that may be present in the installations discharges to surface water. With regard to the Phase 1 Part B screening for priority hazardous pollutants, the section entitled "Screening test: priority hazardous pollutants" provides a full list of relevant priority hazardous substances and their associated annual significant loads.</p>	30 Sept 2016
6	<p>The Operator shall submit the written protocol referenced in condition 3.1.5 for the monitoring of soil and groundwater for approval by Natural Resources Wales. The protocol shall demonstrate how the Operator will meet the requirements of Articles 14(1) (b), 14(1) (e) and 16(2) of the IED. The procedure shall be implemented in accordance with the written approval from Natural Resources Wales.</p>	30 Sept 2016
7	<p>The Operator shall submit a report on the baseline conditions of soil and groundwater at the installation. The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already provided in the application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED.</p>	31 March 2017

## Schedule 2 - Waste types, raw materials and fuels

**Table S2.1 Raw materials and fuels**

Raw materials and fuel description	Specification
-	-

**Table S2.2 Permitted waste types and quantities for combustion in the WID incinerator**

Maximum quantity:	<ol style="list-style-type: none"> <li>1. Paper mill sludge - maximum throughput of 350,000t/yr</li> <li>2. Biomass (forest residues, round wood logs and sawmill residuals) - maximum throughput of 270,000t/yr</li> <li>3. Waste wood - maximum throughput of up to 60% of biomass substitution.</li> <li>4. For fuel mixes that contain materials other than those described in points 1, 2 and 3, the fuel composition, maximum throughput and duration of the fuel substitution must be confirmed in writing by Natural Resources Wales prior to burning trials or substitution as a fuel.</li> </ol>
Waste Code	Description
02 01 07	Biomass: Forest residues, round wood logs and sawmill residuals.
03 03 05	Paper Mill Sludge: Mixed waste sludge from de-inking process and effluent treatment. rejects from recovered paper slushing process
17 02 01	Waste wood: Waste wood from construction and demolition
15 01 03	Waste wood: Wooden packaging
19 12 07	Waste wood: Waste wood from the mechanical treatment of waste.
19 12 10	Combustible waste (refuse derived fuel) <sup>1</sup>
20 01 38	Waste wood: Municipal Waste wood not containing dangerous substances.
03 01 01	Waste wood: Waste bark from wood processing and the production of panels and furniture
03 01 05	Waste wood: Sawdust, shavings, cuttings wood from wood processing and the production of panels and furniture
03 03 01	Waste wood: Waste bark and wood from pulp, paper and cardboard production.
19 05 01	Waste wood: Organic rejects from compost screening process.

<sup>1</sup> Subject to meeting the requirements of conditions 2.3.14 and 2.3.15

**Table S2.3 Permitted waste types and quantities for sorting in the Dry Materials Recycling Facility**

Maximum quantity:	Annual throughput of 300,000 tonnes per annum. Up to 42 tonnes per hour with 25% glass and 32 tonnes without glass.
Waste Code	Description
03 03 08	Wastes from sorting of paper and cardboard destined for recycling
15 01 06	Mixed packaging
19 12 01	Paper and cardboard
19 12 12	Other wastes (including mixtures of other materials) from the mechanical treatment of wastes other than those mentioned in 19 12 11
20 03 01	Mixed municipal waste (in the form of co-mingled waste)
20 03 02	Waste from markets (in the form of co-mingled waste)

**Table S2.4 Permitted waste types and quantities for the production of newsprint**

<b>Waste code</b>	<b>Description</b>
20 01 01	Paper and Cardboard – Municipal Waste
15 01 01	Paper and Cardboard Packaging
19 12 12	Other wastes (including mixtures of other materials from the mechanical treatment of wastes other than those mentioned in 19 12 11
19 12 01	Paper and Cardboard

**Table S2.5 Permitted waste types and quantities for the Wood Recycling Facility**

<b>Waste Code</b>	<b>Description</b>
<b>Maximum Quantity</b> The total quantity of waste accepted at the wood recycling facility shall not exceed 270,000 tonnes per year.	
02 01 07	Waste from forestry
03 01 01	Waste bark and cork from wood processing
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03 01	waste bark and wood
15 01 03	Wooden packaging
17 02 01	Waste wood from construction and demolition
19 12 07	Waste wood from mechanical treatment of waste
20 01 38	Wood (separately collected fraction of municipal waste)

# Schedule 3 (a)– Emissions and monitoring

## Emissions until 29 09 2018

<b>Table S3.1 (a) Point source emissions to air</b>						
<b>Emission point ref. &amp; locations shown on site plan Sch 7 in this permit</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)<sup>1</sup></b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1	No parameters set	PM1 Hood Exhaust	No limit set	-	-	-
A2	No parameters set	PM1 Vacuum Pump Exhaust	No limit set	-	-	-
A9	No parameters set	RCF1 Pulper Vent	No limit set	-	-	-
A10	No parameters set	PM2 Hood Exhaust	No limit set	-	-	-
A11	No parameters set	PM2 Vacuum Pump Exhaust	No limit set	-	-	-
A12	No parameters set	RCF2 Pulper Vent	No limit set	-	-	-
A15	Oxides of Nitrogen (as NO <sub>2</sub> )	Boiler 3 Stack	150 mg/m <sup>3</sup>	Average of three results taken on one day	Annual	BS EN 14792
A18	Oxides of Nitrogen (as NO <sub>2</sub> )	Boiler 6 Stack	150 mg/m <sup>3</sup>	Average of three results taken on one day	Annual	BS EN 14792
A19	No parameters set	RCF3 Pulper Vent	No limit set	-	-	-

<b>Table S3.1 (b) Point source emissions to air – emission limits and monitoring requirements Boiler 7 stack</b>					
<b>Emission point ref. &amp; locations shown on site plan, Sch 7 in this permit</b>	<b>Parameter</b>	<b>Limit (including unit)<sup>1</sup></b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A20	Particulate matter	30 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181

**Table S3.1 (b) Point source emissions to air – emission limits and monitoring requirements Boiler 7 stack**

Emission point ref. & locations shown on site plan, Sch 7 in this permit	Parameter	Limit (including unit) <sup>1</sup>	Reference period	Monitoring frequency	Monitoring standard or method
A20	Particulate matter	10 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Total Organic Carbon (TOC)	20 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Total Organic Carbon (TOC)	10 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Hydrogen chloride	60 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Hydrogen chloride	10 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Hydrogen fluoride	2 mg/m <sup>3</sup>	Periodic over minimum 1-hour period	6 monthly	BS EN 15267-3 BS EN 14181
A20	Carbon monoxide	100 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Carbon monoxide	50 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Sulphur dioxide	200 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Sulphur dioxide	50 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	400 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	200 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Cadmium & thallium and their compounds (total) <sup>2</sup>	0.05 mg/m <sup>3</sup>	Periodic over minimum 30 minute, maximum 8 hour period	6 monthly	BS EN 14385
A20	Mercury and its compounds <sup>2</sup>	0.05 mg/m <sup>3</sup>	Periodic over minimum 30 minute, maximum 8 hour period	6 monthly	BS EN 13211
A20	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total) <sup>2</sup>	0.5 mg/m <sup>3</sup>	Periodic over minimum 30 minute, maximum 8 hour period	6 monthly	BS EN 14385
A20	Ammonia (NH <sub>3</sub> )	No Limit Set	Half hour average and daily average if CEMs installed or periodic over minimum 1 hour period	Continuous	BS EN 14181
A20	Nitrous oxide (N <sub>2</sub> O)	No Limit Set	Period over minimum 1 hour period	6 monthly	BS EN ISO 21258

**Table S3.1 (b) Point source emissions to air – emission limits and monitoring requirements Boiler 7 stack**

<b>Emission point ref. &amp; locations shown on site plan, Sch 7 in this permit</b>	<b>Parameter</b>	<b>Limit (including unit)<sup>1</sup></b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A20	Dioxins / furans (I-TEQ)	0.1 ng/m <sup>3</sup>	Period over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin-like PCBs (WHO-TEQ Humans/ mammals)	No Limit Set	Period over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin-like PCBs (WHO-TEQ Fish)	0.1 ng/m <sup>3</sup>	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin-like PCBs (WHO-TEQ Birds)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in schedule 6.	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	Procedure shall use BS ISO 11338-1 and BS-ISO 11338-2
A20	Dioxin/ furans (WHO-TEQ Humans/ Mammals)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin/ Furans (WHO-TEQ Fish)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxins/ furans (WHO-TEQ Birds)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948

Note 1: See Schedule 6 for reference conditions

Note 2: Metals include gaseous, vapour and solid phases as well as their compounds (expressed as the metal or the sum of the metals as specified). Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V mean antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel and vanadium respectively.



**Table S3.1(c) Point source emissions to air during abnormal operation of incineration plant – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit) <sup>1</sup>	Reference period	Monitoring frequency	Monitoring standard or method
A20	Particulate matter	Boiler 7 Stack	150 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 13284-2 during abatement plant failure or during failure of the continuous emission monitor
A20	Total Organic Carbon (TOC)	Boiler 7 Stack	20 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 12619 during abatement plant failure or during failure of the continuous emission monitor
A20	Carbon monoxide	Boiler 7 Stack	100 mg/m <sup>3</sup>	½-hr average	Continuous measurement	ISO 12039 during abatement plant failure or during failure of the continuous emission monitor

Note 1: See Schedule 6 for reference conditions

**Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements**

Emission point ref. & Location shown on site plan, Sch 7 of this point	Parameter	Source	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method <sup>5</sup>
W1	Biological Oxygen Demand (measured after 5 days at 20°C) with nitrification suppressed by the addition of allylthiourea)	Treated effluent from the Effluent Treatment Plant	25mg/l	Spot sample	Weekly	ISO 5815:1989
W1	Chemical Oxygen Demand	Treated effluent from the Effluent Treatment Plant	None set	Spot sample	Daily	In-house
W1	Suspended Solids	Treated effluent from the Effluent Treatment Plant	60 mg/l	Spot sample	Weekly	BS EN 872:2005
W1	pH max	Treated effluent from the Effluent Treatment Plant	9 pH	Instantaneous	Continuous	MCERTS
W1	pH min	Treated effluent from the Effluent Treatment Plant	6 pH	Instantaneous	Continuous	MCERTS
W1	Ammoniacal Nitrogen	Treated effluent from the Effluent Treatment Plant	4 mg/l	Spot sample	Daily	Method in accordance with M18
W1	Temperature degrees Celsius	Treated effluent from the Effluent Treatment Plant	25° Celsius <sup>4</sup>	Instantaneous	Continuous	Standard temperature sensor

**Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements**

<b>Emission point ref. &amp; Location shown on site plan, Sch 7 of this point</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method<sup>5</sup></b>
W1	Maximum instantaneous Flow rate	Treated effluent from the Effluent Treatment Plant	800 l/s	Instantaneous	Continuous <sup>1</sup>	MCERTS self-monitoring of effluent flow scheme
W1	Maximum Daily Flow	Treated effluent from the Effluent Treatment Plant	22,000 m <sup>3</sup> /day	24 hours period beginning 00.01	Daily <sup>2</sup>	MCERTS self-monitoring of effluent flow scheme
W1	Maximum Tidal Flow	Treated effluent from the Effluent Treatment Plant	11,000 m <sup>3</sup> /tide	Instantaneous	Daily <sup>3</sup>	MCERTS self-monitoring of effluent flow scheme
W1	Total Phosphorus	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	weekly	Method in accordance with M18
W1	Total Nitrogen	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	Weekly	Method in accordance with M18
W1	Metals Fe, Mn, Zn, As, Cu, Cr, Ni, Pb, Cd, Hg	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	Quarterly	Method in accordance with M18
W1	Water Framework Directive relevant priority hazardous substances screen	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	Annually	GC/MS analysis to be carried out by UKAS accredited laboratory
W2	No parameter set	Site drainage from main car park	No limit set	-	-	-
W3	No parameter set	Site drainage from northern half of main production area	No limit set	-	-	-
W4	No parameter set	Site drainage from HGV carpark and interior of the northern section of the finished paper warehouse	No limit set	-	-	-
W5	No parameter set	Site drainage from the roundwood storage area	No limit set	-	-	-
W6	No parameter set	Site drainage from south end of waste paper storage warehouse	No limit set	-	-	-

Note 1 – Flows of the discharge shall be measured at the outlet NGR SJ 30057 71141.

Note 2 – Maximum daily flow calculated from continuous monitoring of instantaneous flow

Note 3 – Maximum tidal flow calculated from continuous monitoring of instantaneous flow during a tidal discharge

Note 4- The maximum discharge temperature of the treated effluent from the Effluent Treatment Plant can be raised temporarily to 28°C subject to the following criteria:

- The air temperature data for Hawarden Airport Met Office Station indicates an average temperature exceeding 20°C for the six hours preceding effluent discharge.
- The temporary temperature derogation only applies between the 1<sup>st</sup> May and the last day of October.

Note 5 – Where in-house analysis is used for compliance assessment purposes, a duplicate sample shall be sent for external analysis (UKAS/ ISO 17025) at a six monthly frequency.

<b>Table S3.3 Point source emissions to effluent treatment– emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
E1	Volumetric Flow	Boiler 7 effluent and treated scrubber water	300m <sup>3</sup> /day	24 hour period beginning 00.01	Continuous	BS3680
E1	pH	Boiler 7 effluent and treated scrubber water	-	Instantaneous	Continuous	BS 1647-2:1984
E1	pH	Boiler 7 effluent and treated scrubber water	-	Instantaneous	Continuous	BS 1647-2:1984
E1	Total suspended solids as defined by Directive 91/271/EEC	Boiler 7 effluent and treated scrubber water	30mg/l	95% of all measured values of periodic or flow proportional samples taken over one year. <sup>1</sup>	Daily	BS EN 872
E1	Total suspended solids as defined by Directive 91/271/EEC	Boiler 7 effluent and treated scrubber water	45mg/l	100% of all measured values of periodic or flow proportional sample. <sup>1</sup>	Daily	BS EN 872
E1	Mercury and its compounds, expressed as mercury (Total Hg)	Boiler 7 effluent and treated scrubber water	0.03 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS EN 13506
E1	Cadmium and its compounds, expressed as cadmium (Total Cd)	Boiler 7 effluent and treated scrubber water	0.05 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.89
E1	Thallium and its compounds, expressed as thallium (Total Tl)	Boiler 7 effluent and treated scrubber water	0.05 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.89
E1	Arsenic and its compounds, expressed as arsenic (Total As)	Boiler 7 effluent and treated scrubber water	0.15 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60

<b>Table S3.3 Point source emissions to effluent treatment– emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
E1	Lead and its compounds, expressed as lead (Total Pb)	Boiler 7 effluent and treated scrubber water	0.2 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Chromium and its compounds, expressed as chromium (Total Cr)	Boiler 7 effluent and treated scrubber water	0.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Copper and its compounds, expressed as copper (Total Cu)	Boiler 7 effluent and treated scrubber water	0.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Nickel and its compounds, expressed as nickel (Total Ni)	Boiler 7 effluent and treated scrubber water	0.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Zinc and its compounds, expressed as Zinc (Total Zn)	Boiler 7 effluent and treated scrubber water	1.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Dioxins/ furans (I-TEQ)	Boiler 7 effluent and treated scrubber water	0.3 ng/l	24-hour flow proportional sample <sup>3</sup>	6 monthly.	USEPA Method 1613

Note 1: Total suspended solids limits apply as 24hr flow proportional sample.

Note 2: Only 1 sample per year OR 5% of annual samples (where more than 20 samples are taken) may exceed the limits stated above.

<b>Table S3.4 Annual limits</b>		
<b>Substance</b>	<b>Medium</b>	<b>Limit (including unit)</b>
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**Table S3.5 Process monitoring requirements**

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
A15, A18	Oxygen	During periodic monitoring in table 3.1	MCERTS
	Temperature		
	Pressure		
A20	temperature	continuous	BS EN 14181
A20	pressure	continuous	BS EN 14181
A20	oxygen content	continuous	BS EN 14181
A20	water vapour content	continuous	BS EN 14181
Close to the Combustion Chamber inner wall	Temperature (°C)	Continuous	Traceable to National Standards

**Table S3.6 Residue quality**

Emission point reference or source or description of point of measurement	Parameter	Limit	Monitoring frequency	Monitoring standard or method
Bottom Ash	LOI.	<5%	Quarterly	Sampling and analysis as TGN M4
Bottom Ash	Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No limit	Quarterly	Sampling and analysis as TGN M4
Bottom Ash	Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No limit	Before use of a new disposal or recycling route	Sampling and analysis as TGN M4
APC Residues	Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No limit	Quarterly	Sampling and analysis as TGN M4
APC Residues	Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No limit	Before use of a new disposal or recycling route or when a new waste fuel is introduced	Sampling and analysis as TGN M4

# Schedule 3 (b)– Emissions and monitoring

## Emissions from 30 09 2018

<b>Table S3.1 (a) Point source emissions to air</b>						
<b>Emission point ref. &amp; locations shown on site plan Sch 7 in this permit</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)<sup>1</sup></b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1	No parameters set	PM1 Hood Exhaust	No limit set	-	-	-
A2	No parameters set	PM1 Vacuum Pump Exhaust	No limit set	-	-	-
A9	No parameters set	RCF1 Pulper Vent	No limit set	-	-	-
A10	No parameters set	PM2 Hood Exhaust	No limit set	-	-	-
A11	No parameters set	PM2 Vacuum Pump Exhaust	No limit set	-	-	-
A12	No parameters set	RCF2 Pulper Vent	No limit set	-	-	-
A15	Oxides of Nitrogen (as NO <sub>2</sub> )	Boiler 3 Stack	150 mg/m <sup>3</sup>	Average of three results taken on one day	Annual	BS EN 14792
A18	Oxides of Nitrogen (as NO <sub>2</sub> )	Boiler 6 Stack	150 mg/m <sup>3</sup>	Average of three results taken on one day	Annual	BS EN 14792
A19	No parameters set	RCF3 Pulper Vent	No limit set	-	-	-

<b>Table S3.1 (b) Point source emissions to air – emission limits and monitoring requirements Boiler 7 stack</b>					
<b>Emission point ref. &amp; locations shown on site plan, Sch 7 in this permit</b>	<b>Parameter</b>	<b>Limit (including unit)<sup>1</sup></b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A20	Particulate matter	30 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181

**Table S3.1 (b) Point source emissions to air – emission limits and monitoring requirements Boiler 7 stack**

Emission point ref. & locations shown on site plan, Sch 7 in this permit	Parameter	Limit (including unit) <sup>1</sup>	Reference period	Monitoring frequency	Monitoring standard or method
A20	Particulate matter	10 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Total Organic Carbon (TOC)	20 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Total Organic Carbon (TOC)	10 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Hydrogen chloride	60 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Hydrogen chloride	10 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Hydrogen fluoride	2 mg/m <sup>3</sup>	Periodic over minimum 1-hour period	6 monthly	BS EN 15267-3 BS EN 14181
A20	Carbon monoxide	100 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Carbon monoxide	50 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Sulphur dioxide	200 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Sulphur dioxide	50 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	400 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	200 mg/m <sup>3</sup>	Daily average	Continuous measurement	BS EN 15267-3 BS EN 14181
A20	Cadmium & Thallium and their compounds (total) <sup>2</sup>	0.05 mg/m <sup>3</sup>	Periodic over minimum 30 minute, maximum 8 hour period	6 monthly	BS EN 14385
A20	Mercury and its compounds <sup>2</sup>	0.05 mg/m <sup>3</sup>	Periodic over minimum 30 minute, maximum 8 hour period	6 monthly	BS EN 13211
A20	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total) <sup>2</sup>	0.5 mg/m <sup>3</sup>	Periodic over minimum 30 minute, maximum 8 hour period	6 monthly	BS EN 14385
A20	Ammonia (NH <sub>3</sub> )	No Limit Set	Half hour average and daily average if CEMs installed or periodic over minimum 1 hour period	Continuous	BS EN 14181
A20	Nitrous oxide (N <sub>2</sub> O)	No Limit Set	Period over minimum 1 hour period	6 monthly	BS EN ISO 21258

**Table S3.1 (b) Point source emissions to air – emission limits and monitoring requirements Boiler 7 stack**

<b>Emission point ref. &amp; locations shown on site plan, Sch 7 in this permit</b>	<b>Parameter</b>	<b>Limit (including unit)<sup>1</sup></b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A20	Dioxins / furans (I-TEQ)	0.1 ng/m <sup>3</sup>	Period over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin-like PCBs (WHO-TEQ Humans/ mammals)	No Limit Set	Period over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin-like PCBs (WHO-TEQ Fish)	0.1 ng/m <sup>3</sup>	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin-like PCBs (WHO-TEQ Birds)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in schedule 6.	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	Procedure shall use BS ISO 11338-1 and BS-ISO 11338-2
A20	Dioxin/ furans (WHO-TEQ Humans/ Mammals)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxin/ Furans (WHO-TEQ Fish)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948
A20	Dioxins/ furans (WHO-TEQ Birds)	No Limit Set	Periodic over minimum 6 hours, maximum 8 hour period	6 monthly	BS EN 1948

Note 1: See Schedule 6 for reference conditions

Note 2: Metals include gaseous, vapour and solid phases as well as their compounds (expressed as the metal or the sum of the metals as specified). Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V mean antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel and vanadium respectively.



**Table S3.1(c) Point source emissions to air during abnormal operation of incineration plant – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit) <sup>1</sup>	Reference period	Monitoring frequency	Monitoring standard or method
A20	Particulate matter	Boiler 7 Stack	150 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 13284-2 during abatement plant failure or during failure of the continuous emission monitor
A20	Total Organic Carbon (TOC)	Boiler 7 Stack	20 mg/m <sup>3</sup>	½-hr average	Continuous measurement	BS EN 12619 during abatement plant failure or during failure of the continuous emission monitor
A20	Carbon monoxide	Boiler 7 Stack	100 mg/m <sup>3</sup>	½-hr average	Continuous measurement	ISO 12039 during abatement plant failure or during failure of the continuous emission monitor

Note 1: See Schedule 6 for reference conditions

**Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements**

Emission point ref. & Location shown on site plan, Sch 7 of this point	Parameter	Source	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method <sup>5</sup>
W1	Biological Oxygen Demand (measured after 5 days at 20°C) with nitrification suppressed by the addition of allylthiourea)	Treated effluent from the Effluent Treatment Plant	25mg/l	Spot sample	Weekly	ISO 5815:1989
W1	Chemical Oxygen Demand	Treated effluent from the Effluent Treatment Plant	None set	Spot sample	Daily	In-house
W1	Suspended Solids	Treated effluent from the Effluent Treatment Plant	60 mg/l	Spot sample	Daily	BS EN 872:2005
W1	pH max	Treated effluent from the Effluent Treatment Plant	9 pH	Instantaneous	Continuous	MCERTS
W1	pH min	Treated effluent from the Effluent Treatment Plant	6 pH	Instantaneous	Continuous	MCERTS
W1	Ammoniacal Nitrogen	Treated effluent from the Effluent Treatment Plant	4 mg/l	Spot sample	Daily	Method in accordance with M18
W1	Temperature degrees Celsius	Treated effluent from the Effluent Treatment Plant	25° Celsius <sup>4</sup>	Instantaneous	Continuous	Standard temperature sensor

**Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements**

<b>Emission point ref. &amp; Location shown on site plan, Sch 7 of this point</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method<sup>5</sup></b>
W1	Maximum instantaneous Flow rate	Treated effluent from the Effluent Treatment Plant	800 l/s	Instantaneous	Continuous <sup>1</sup>	MCERTS self-monitoring of effluent flow scheme
W1	Maximum Daily Flow	Treated effluent from the Effluent Treatment Plant	22,000 m <sup>3</sup> /day	24 hours period beginning 00.01	Daily <sup>2</sup>	MCERTS self-monitoring of effluent flow scheme
W1	Maximum Tidal Flow	Treated effluent from the Effluent Treatment Plant	11,000 m <sup>3</sup> /tide	Instantaneous	Daily <sup>3</sup>	MCERTS self-monitoring of effluent flow scheme
W1	Total Phosphorus	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	weekly	Method in accordance with M18
W1	Total Nitrogen	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	Weekly	Method in accordance with M18
W1	Metals Fe, Mn, Zn, As, Cu, Cr, Ni, Pb, Cd, Hg	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	Quarterly	Method in accordance with M18
W1	Water Framework Directive relevant priority hazardous substances screen.	Treated effluent from the Effluent Treatment Plant	No limit set	Spot sample	Annually	GC/MS analysis to be carried out by UKAS accredited laboratory
W2	No parameter set	Site drainage from main car park	No limit set	-	-	-
W3	No parameter set	Site drainage from northern half of main production area	No limit set	-	-	-
W4	No parameter set	Site drainage from HGV carpark and interior of the northern section of the finished paper warehouse	No limit set	-	-	-
W5	No parameter set	Site drainage from the roundwood storage area	No limit set	-	-	-
W6	No parameter set	Site drainage from south end of waste paper storage warehouse	No limit set	-	-	-

Note 1 – Flows of the discharge shall be measured at the outlet NGR SJ 30057 71141.

Note 2 – Maximum daily flow calculated from continuous monitoring of instantaneous flow

Note 3 – Maximum tidal flow calculated from continuous monitoring of instantaneous flow during a tidal discharge

Note 4- The maximum discharge temperature of the treated effluent from the Effluent Treatment Plant can be raised temporarily to 28°C subject to the following criteria:

- The air temperature data for Hawarden Airport Met Office Station indicates an average temperature exceeding 20°C for the six hours preceding effluent discharge.
- The temporary temperature derogation only applies between the 1<sup>st</sup> May and the last day of October.

Note 5 – Where in-house analysis is used for compliance assessment purposes, a duplicate sample shall be sent for external analysis (UKAS/ ISO 17025) at a six monthly frequency.

<b>Table S3.3 Point source emissions to effluent treatment– emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
E1	Volumetric Flow	Boiler 7 effluent and treated scrubber water	300m <sup>3</sup> /day	24 hour period beginning 00.01	Continuous	BS3680
E1	pH	Boiler 7 effluent and treated scrubber water	-	Instantaneous	Continuous	BS 1647-2:1984
E1	pH	Boiler 7 effluent and treated scrubber water	-	Instantaneous	Continuous	BS 1647-2:1984
E1	Total suspended solids as defined by Directive 91/271/EEC	Boiler 7 effluent and treated scrubber water	30mg/l	95% of all measured values of periodic or flow proportional samples taken over one year. <sup>1</sup>	Daily	BS EN 872
E1	Total suspended solids as defined by Directive 91/271/EEC	Boiler 7 effluent and treated scrubber water	45mg/l	100% of all measured values of periodic or flow proportional sample. <sup>1</sup>	Daily	BS EN 872
E1	Mercury and its compounds, expressed as mercury (Total Hg)	Boiler 7 effluent and treated scrubber water	0.03 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS EN 13506
E1	Cadmium and its compounds, expressed as cadmium (Total Cd)	Boiler 7 effluent and treated scrubber water	0.05 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.89
E1	Thallium and its compounds, expressed as thallium (Total TI)	Boiler 7 effluent and treated scrubber water	0.05 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.89

<b>Table S3.3 Point source emissions to effluent treatment– emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
E1	Arsenic and its compounds, expressed as arsenic (Total As)	Boiler 7 effluent and treated scrubber water	0.15 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Lead and its compounds, expressed as lead (Total Pb)	Boiler 7 effluent and treated scrubber water	0.2 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Chromium and its compounds, expressed as chromium (Total Cr)	Boiler 7 effluent and treated scrubber water	0.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Copper and its compounds, expressed as copper (Total Cu)	Boiler 7 effluent and treated scrubber water	0.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Nickel and its compounds, expressed as nickel (Total Ni)	Boiler 7 effluent and treated scrubber water	0.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Zinc and its compounds, expressed as Zinc (Total Zn)	Boiler 7 effluent and treated scrubber water	1.5 mg/l	24-hour flow proportional sample <sup>2</sup>	Monthly	BS 6068-2.60
E1	Dioxins/ furans (I-TEQ)	Boiler 7 effluent and treated scrubber water	0.3 ng/l	24-hour flow proportional sample <sup>3</sup>	Bi-annual.	USEPA Method 1613

Note 1: Total suspended solids limits apply as 24hr flow proportional sample.

Note 2: Only 1 sample per year OR 5% of annual samples (where more than 20 samples are taken) may exceed the limits stated above.

<b>Table S3.4 Annual limits</b>		
<b>Substance</b>	<b>Medium</b>	<b>Limit (including unit)</b>
Chemical oxygen Demand (COD)	Water	3 kg/tonne (annual average)
Total Suspended Solids (TSS)	Water	0.3 kg/tonne (annual average)
Total Nitrogen	Water	0.1 kg/tonne (annual average)
Total Phosphorus	Water	0.01 kg/tonne (annual average)

**Table S3.5 Process monitoring requirements**

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
A15, A18	Oxygen	During periodic monitoring in table 3.1	MCERTS
	Temperature		
	Pressure		
A20	temperature	continuous	BS EN 14181
A20	pressure	continuous	BS EN 14181
A20	oxygen content	continuous	BS EN 14181
A20	water vapour content	continuous	BS EN 14181
Close to the Combustion Chamber inner wall	Temperature (°C)	Continuous	Traceable to National Standards

**Table S3.6 Residue quality**

Emission point reference or source or description of point of measurement	Parameter	Limit	Monitoring frequency	Monitoring standard or method
Bottom Ash	LOI.	<5%	Quarterly	Sampling and analysis as TGN M4
Bottom Ash	Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No limit	Quarterly	Sampling and analysis as TGN M4
Bottom Ash	Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No limit	Before use of a new disposal or recycling route	Sampling and analysis as TGN M4
APC Residues	Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No limit	Quarterly	Sampling and analysis as TGN M4
APC Residues	Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No limit	Before use of a new disposal or recycling route or when a new waste fuel is introduced	Sampling and analysis as TGN M4

# Schedule 4 (a) – Reporting

## Reporting until 29 09 2018

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air – continuous monitoring parameters as required by condition 3.3.1	A20	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Emissions to air – periodic monitoring parameters as required by condition 3.3.1	A20	Every 6 months	1 Jan, 1 July
Emissions to air – periodic monitoring parameters as required by condition 3.3.1	A15, A18	Every 12 months	1 Jan
Emissions to water – parameters as required by condition 3.3.1	W1	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Emissions to water – parameters as required by Water Framework Priority Hazardous Substances Screen under condition 3.3.1	W1	Every 12 months	1 Jan
Transfer to effluent plant – parameters as required by condition 3.3.1	E1	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	APC Residues	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	APC Residues	Before use of a new disposal or recycling route, or when a new waste fuel is introduced	
Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	Bottom Ash	Before use of a new disposal or recycling route	
Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	Bottom Ash	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
LOI	Bottom Ash	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Temperature degrees Celsius (when a discharge limit of 28°C is permitted)	W1	Within 14 days of occurrence – using form W2	
Dissolved Oxygen mg/l (when a discharge limit of 28°C is permitted)	W1	Within 14 days of occurrence – using form W2	
Flow m <sup>3</sup> /tide (when a discharge limit of 28°C is permitted)	W1	Within 14 days of occurrence – using form W2	

**Table S4.1 Reporting of monitoring data**

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Functioning and monitoring of the incineration plant as required by condition 4.2.2	n/a	Every 12 months	1 Jan
CEMs Invalidation Log	A20	Every 6 months	1 Jan, 1 July

**Table S4.2: Annual production/treatment**

Parameter	Units
Total Biomass Incinerated	tonnes
Total Sludge Incinerated	tonnes
Total Waste wood Incinerated	tonnes
Total Wastes not otherwise specified on the list Incinerated	tonnes
Thermal energy produced (steam)	MWhrs
Waste heat utilised	MWhrs
Power generation	MWhrs

**Table S4.3 Performance parameters**

Parameter	Frequency of assessment	Units
Incineration plant electricity consumption	Quarterly	MWhrs/ tonne of waste incinerated (dry basis)
Incineration plant natural gas consumption	Quarterly	M <sup>3</sup> / tonne of waste incinerated (dry basis)
Mass of Bottom Ash produced	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Mass of APC residues produced	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Ammonia consumption (incineration plant)	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Water consumption (incineration plant)	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Periods of abnormal operation (incineration plant)	Quarterly	No of occasions and cumulative hours for current calendar year for each line.
NO <sub>x</sub> /T	Quarterly	Tonnes/t <sup>1</sup>
CO <sub>2</sub> /T	Quarterly	Tonnes/t <sup>1</sup>
Total P	Quarterly	Kg/t <sup>1</sup>
Total N	Quarterly	Kg/t <sup>1</sup>
Suspended Solids	Quarterly	Kg/t <sup>1</sup>
BOD	Quarterly	Kg/t <sup>1</sup>

Note 1 – net tonne of paper as defined in Schedule 6

**Table S4.4 Reporting forms**

Media/parameter	Reporting format	Date of form
Air	Form A1 – Periodic monitored emissions from A20	15/06/12
Air	Form A2 – continuously monitored emissions to air for particulates from A20	15/06/12
	Form A3- continuously monitored emissions to air for HCl from A20	15/06/12
	Form A4 – continuously monitored emissions to air for TOC from A20	15/06/12

**Table S4.4 Reporting forms**

<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
	Form A5 – continuously monitored emissions to air for carbon monoxide from A20	15/06/12
	Form A6 – continuously monitored emissions to air for sulphur dioxide from A20	15/06/12
	Form A7 – continuously monitored emissions to air for oxides of nitrogen from A20	15/06/12
	Form A8 – continuously monitored emissions to air for Ammonia from A20	15/06/12
Air	Form A9 – periodic monitoring from A15 & A18	15/06/12
Water	Form W1- Quarterly emissions report	15/06/12
	Form W2- High temperature emissions report	
Transfer to Effluent Plant	Form S1 emissions to sewer from point E1 (transfer to effluent treatment plant)	15/06/12
Residues	Form Residue 1 residue quality reporting form	15/06/12
	Form Residue 2 ash solubility reporting form	15/06/12
Performance indicators Incineration	Form Performance 1	15/06/12
Other performance indicators	Form Performance 2	15/06/12
Resource Efficiency	Form Performance 3	31/03/16



## Schedule 4 (b) – Reporting

### Reporting from 30 09 2018

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air – continuous monitoring parameters as required by condition 3.3.1	A20	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Emissions to air – periodic monitoring parameters as required by condition 3.3.1	A20	Every 6 months	1 Jan, 1 July
Emissions to air – periodic monitoring parameters as required by condition 3.3.1	A15, A18	Every 12 months	1 Jan
Emissions to water – parameters as required by condition 3.3.1	W1	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Emissions to water – parameters as required by Water Framework Priority Hazardous Substances Screen under condition 3.3.1	W1	Every 12 months	1 Jan
Transfer to effluent plant – parameters as required by condition 3.3.1	E1	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	APC Residues	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	APC Residues	Before use of a new disposal or recycling route, or when a new waste fuel is introduced	
Total soluble fraction and metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	Bottom Ash	Before use of a new disposal or recycling route	
Metals (Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	Bottom Ash	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
LOI	Bottom Ash	Every 3 months	1 Jan, 1 Apr, 1 July, 1 Sep
Temperature degrees Celsius (when a discharge limit of 28°C is permitted)	W1	Within 14 days of occurrence – using form W3	
Dissolved Oxygen mg/l (when a discharge limit of 28°C is permitted)	W1	Within 14 days of occurrence – using form W2	
Flow m <sup>3</sup> /tide (when a discharge limit of 28°C is permitted)	W1	Within 14 days of occurrence – using form W3	

**Table S4.1 Reporting of monitoring data**

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Functioning and monitoring of the incineration plant as required by condition 4.2.2	n/a	Every 12 months	1 Jan
CEMs Invalidation Log	A20	Every 6 months	1 Jan, 1 July

**Table S4.2: Annual production/treatment**

Parameter	Units
Total Biomass Incinerated	tonnes
Total Sludge Incinerated	tonnes
Total Waste wood Incinerated	tonnes
Total Wastes not otherwise specified on the list Incinerated	tonnes
Thermal energy produced (steam)	MWhrs
Waste heat utilised	MWhrs
Power generation	MWhrs

**Table S4.3 Performance parameters**

Parameter	Frequency of assessment	Units
Incineration plant electricity consumption	Quarterly	MWhrs/ tonne of waste incinerated (dry basis)
Incineration plant natural gas consumption	Quarterly	M <sup>3</sup> / tonne of waste incinerated (dry basis)
Mass of Bottom Ash produced	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Mass of APC residues produced	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Ammonia consumption (incineration plant)	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Water consumption (incineration plant)	Quarterly	Kgs / tonne of waste incinerated (dry basis)
Periods of abnormal operation (incineration plant)	Quarterly	No of occasions and cumulative hours for current calendar year for each line.
NO <sub>x</sub> /T	Quarterly	Tonnes/t <sup>1</sup>
CO <sub>2</sub> /T	Quarterly	Tonnes/t <sup>1</sup>
Total P	Quarterly	Kg/t <sup>1</sup>
Total N	Quarterly	Kg/t <sup>1</sup>
Suspended Solids	Quarterly	Kg/t <sup>1</sup>
BOD	Quarterly	Kg/t <sup>1</sup>

Note 1 – net tonne of paper as defined in Schedule 6

**Table S4.4 Reporting forms**

Media/parameter	Reporting format	Date of form
Air	Form A1 – Periodic monitored emissions from A20	15/06/12
Air	Form A2 – continuously monitored emissions to air for particulates from A20	15/06/12
	Form A3- continuously monitored emissions to air for HCl from A20	15/06/12
	Form A4 – continuously monitored emissions to air for TOC from A20	15/06/12

**Table S4.4 Reporting forms**

<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
	Form A5 – continuously monitored emissions to air for carbon monoxide from A20	15/06/12
	Form A6 – continuously monitored emissions to air for sulphur dioxide from A20	15/06/12
	Form A7 – continuously monitored emissions to air for oxides of nitrogen from A20	15/06/12
	Form A8 – continuously monitored emissions to air for Ammonia from A20	15/06/12
Air	Form A9 – periodic monitoring from A15 & A18	31/03/16
Water	Form W1- Quarterly emissions report	15/06/12
	Form W2- High temperature emissions report	
Transfer to Effluent Plant	Form S1 emissions to sewer from point E1 (transfer to effluent treatment plant)	15/06/12
Residues	Form Residue 1 residue quality reporting form	15/06/12
	Form Residue 2 ash solubility reporting form	15/06/12
Performance indicators Incineration	Form Performance 1	31/03/16
Other performance indicators	Form Performance 2	31/03/16
Resource Efficiency	Form Performance 3	31/03/16

# Schedule 5 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

## Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment</b>	
<b>To be notified Immediately</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a permit condition</b>	
<b>To be notified immediately</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>


**(c) In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:**

<b>To be notified immediately</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

**Part B - to be submitted as soon as practicable**

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator

## Schedule 6 - Interpretation

*“abatement equipment”* means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

*“abnormal operation”* means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices other than continuous emission monitors for releases to air of particulates, and CO, during which the concentrations in the discharges into air and the purified waste water of the regulated substances may exceed the normal emission limit values.

*“accident”* means an accident that may result in pollution.

*“annually”* means once every year.

*“Annex I”* means Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

*“Annex II”* means Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

*“application”* means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

*“authorised officer”* means any person authorised by Natural Resources Wales under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

*“bi-annual”* means twice per year with at least five months between tests;

*“biomass”* means:

- a) vegetable matter from agriculture and forestry;
- b) vegetable waste from the food processing industry, if the heat generated is recovered;
- c) fibrous vegetable waste from virgin pulp production and from production of paper from pulp, if it is co-incinerated at the place of production and the heat generated is recovered;
- d) cork waste;
- e) wood waste with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating, and which includes in particular such wood waste originating from construction and demolition waste.

*“bottom ash”* means ash falling through the bed of the incinerator.

*“calendar monthly mean”* means the value across a calendar month of all validated hourly means.

*“CEM”* Continuous emission monitor

*“CEN”* means Comité Européen de Normalisation

*“D”* means a disposal operation provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

*“daily average”* for releases of substances to air means the average of valid half-hourly averages over a calendar day during normal operation.

*“dioxin and furans”* means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

*“EP Regulations”* means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 (and subsequent amendments), and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

*“emissions of substances not controlled by emission limits”* means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not

controlled by an emission or background concentration limit..

“*groundwater*” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“*Industrial Emissions Directive*” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“*incineration line*” means all of the incineration equipment related to a common discharge to air location.

“*ISO*” means International Standards Organisation.

“*LOI*” means loss on ignition a technique used to determine the combustible material by heating the ash residue to a high temperature

“*MCERTS*” means the Environment Agency’s Monitoring Certification Scheme.

“*Natural gas*” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

*Net production is*

- (i) For paper mills: the unpacked, saleable production after the last slitter winder, i.e. before converting.
- (ii) For off-line coaters: production after coating.
- (iii) For tissue mills: saleable production after the tissue machine before any rewinding processes and excluding any core.
- (iv) For market pulp mills: production after packing (ADt).
- (v) For integrated mills: Net pulp, production refers to the production after packing (ADt) plus the pulp transferred to the paper mill (pulp calculated at 90 % dryness, i.e. air dry). Net paper production: same as (i)

Calculation for the conversion of mg/m<sup>3</sup> to kg/t can be found in Annex I of the BRef Notes

“*operational hours*” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“*PAH*” means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cyclopenta[c,d]pyrene, Dibenz[ah]anthracene, Dibenz[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene

“*PCB*” means *Polychlorinated Biphenyl*. *Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below.*

“*Pests*” means Birds, Vermin and Insects.

“*quarter*” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“*quarterly*” for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

“*R*” means a recovery operation provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“*shut down*” is any period where the plant is being returned to a non-operational state and there is no waste being burned.

“*start up*” is any period, where the plant has been non-operational, until waste has been fed to the plant in sufficient quantity to initiate steady-state conditions as described in the application

“*TOC*” means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC.

“*Waste code*” means the six digit code referable to a type of waste in accordance with the list of wastes established by Commission Decision 2000/532/EC as amended from time to time (the “List of Wastes Decision”) and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

“year” means calendar year ending 31 December.

“Water Framework Directive Priority Hazardous Substances” are Anthracene, Brominated diphenyl ether, Cadmium, C10-13 Chloroalkanes, Endosulphan, Hexachlorobenzene, Hexachlorobutadiene, Hexachloro-cyclohexane, Mercury and its compounds, Nonylphenol (4-Nonylphenol), Pentachlorobenzene, Polycyclic aromatic Hydrocarbons (PAHs), Tributyltin compounds (Tributyltin-cation)

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content
- (c) in relation to gases from incineration plants other than those burning waste oil, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 11% dry.

For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum.

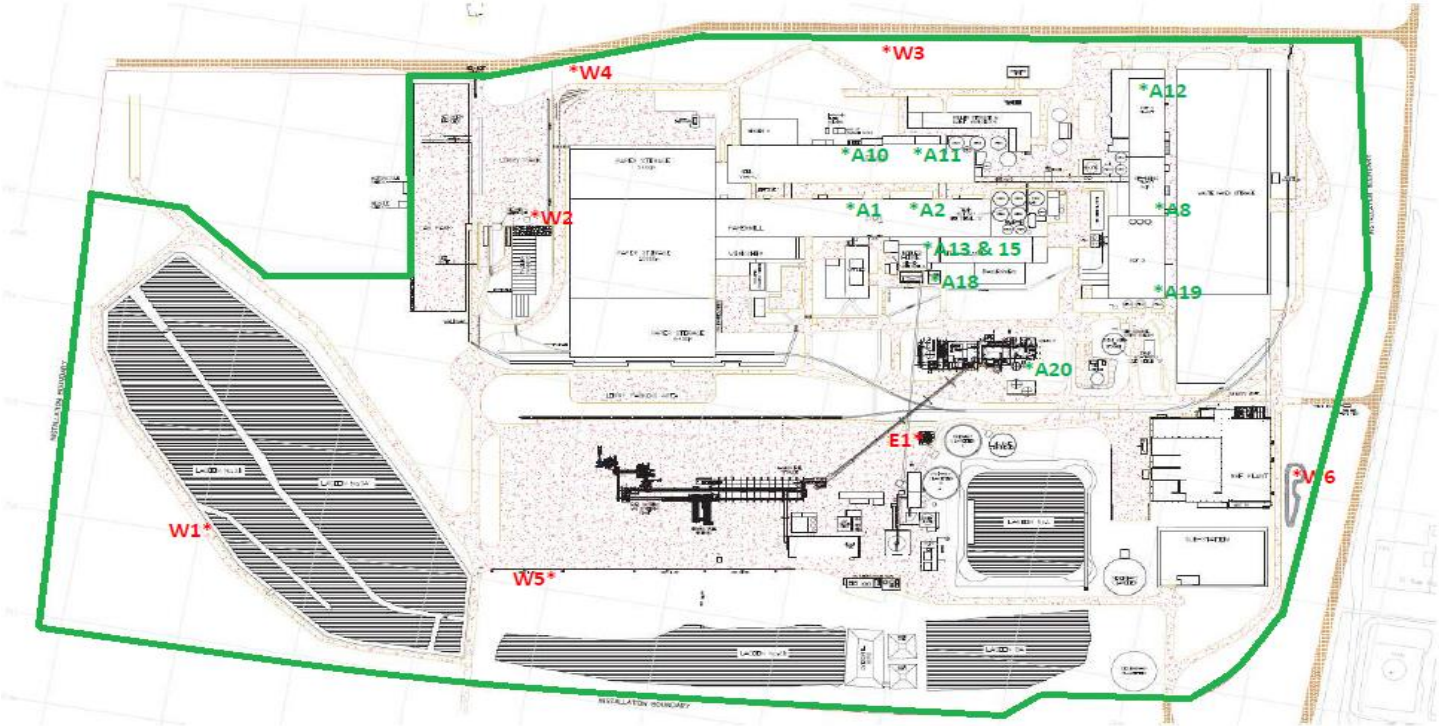
Congener	I-TEF(1990)	WHO-TEF (1997/8)		
		Humans / Mammals	Fish	Birds
<b>Dioxins</b>				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0001	-	-
<b>Furans</b>				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.05	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.5	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8_HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0001	0.0001	0.0001



<b>Congener</b>	<b>WHO-TEF (1997/8)</b>		
	<b>Humans / mammals</b>	<b>Fish</b>	<b>Birds</b>
<b>Non-ortho PCBs</b>			
3,4,4',5-TCB (81)	0.0001	0.0005	0.1
3,3',4,4'-TCB (77)	0.0001	0.0001	0.05
3,3',4,4',5 - PeCB (126)	0.1	0.005	0.1
3,3',4,4',5,5'-HxCB(169)	0.01	0.00005	0.001
<b>Mono-ortho PCBs</b>			
2,3,3',4,4'-PeCB (105)	0.0001	<0.000005	0.0001
2,3,4,4',5-PeCB (114)	0.0005	<0.000005	0.0001
2,3',4,4',5-PeCB (118)	0.0001	<0.000005	0.00001
2',3,4,4',5-PeCB (123)	0.0001	<0.000005	0.00001
2,3,3',4,4',5-HxCB (156)	0.0005	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)	0.0005	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)	0.00001	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)	0.0001	<0.000005	0.00001

# Schedule 7 - Site plan

Schedule 7 – Site Plan



NO.	Emission Point
A1	PM1 Hood Exhaust
A2	PM1 Vac Pump Exhaust
A9	RCF1 Pulper Exhaust
A10	PM2 Hood Exhaust
A11	PM2 Vac Pump Exhaust
A12	RCF2 Pulper Exhaust
A13	Boiler 1 Stack
A15	Boiler 3 Stack
A18	Boiler 6 Stack
A19	RCF3 Pulper Exhaust
A20	Boiler 7 Stack
W1	Final Effluent to River
W2	Site drainage from Main Carpark
W3	Site drainage from Main Production Area (North)
W4	Site drainage from HGV Lorry Park
W5	Site drainage from Woodyard
W6	Site drainage from RCP Warehouse
E1	Boiler 7 Scrubber Bleed

END OF PERMIT

Permit Number: BT4885IT  
 Facility: Shotton Paper Mill

Operator: UPM-Kymmene UK Ltd  
 Form Number: A1

**Reporting of periodically monitored emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY**

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result <sup>[1]</sup>	Test Method	Result Date and Time <sup>[2]</sup>	Uncertainty <sup>[3]</sup>
A20	Hydrogen fluoride	2 mg/m <sup>3</sup>	Periodic over minimum 1-hour period		BS ISO 15713		
A20	Nitrous Oxide (N <sub>2</sub> O)	No limit applies	Periodic over minimum 1-hour period		FTIR		
A20	Cadmium & thallium and their compounds (total)	0.05 mg/m <sup>3</sup>	over minimum 30 minute, maximum 8 hour period		BS EN 14385		
A20	Mercury and its compounds	0.05 mg/m <sup>3</sup>	over minimum 30 minute, maximum 8 hour period		BS EN 13211		
A20	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/m <sup>3</sup>	over minimum 30 minute, maximum 8 hour period		BS EN 14385		
A20	Dioxins / Furans (I-TEQ)	0.1 ng/m <sup>3</sup>	over minimum 6 hour period, maximum 8 hour period		BS EN 1948 Parts 1, 2 and 3		
A20	Dioxin-like PCBs (WHO-TEQ Humans/ mammals) (5)	No limit applies	over minimum 6 hour period, maximum 8 hour period		BS EN 1948 Parts 1, 2 and 3		
A20	Dioxin-like PCBs (WHO-TEQ Fish)	No limit applies	-		BS EN 1948 Parts 1, 2 and 3		
A20	Dioxin-like PCBs (WHO-TEQ Birds) (5)	No limit applies	-		BS EN 1948 Parts 1, 2 and 3		
A20	Dioxin/ furans (WHO-TEQ Humans/ Mammals) (5)	No limit applies	-		BS EN 1948 Parts 1, 2 and 3		
A20	Dioxin/ Furans (WHO-TEQ Fish)	No limit applies	-		BS EN 1948 Parts 1, 2 and 3		

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result <sup>[1]</sup>	Test Method	Result Date and Time <sup>[2]</sup>	Uncertainty <sup>[3]</sup>
A20	Dioxins/ furans (WHO-TEQ Birds)	No limit applies	-		BS EN 1948 Parts 1, 2 and 3		
A20	Poly-cyclic aromatic hydrocarbons (PAHs) Total ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-		BS ISO 11338-1 & BS ISO 11338-2		
A20	Anthanthrene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-		BS ISO 11338-1 & BS ISO 11338-2		
A20	Benzo[a]anthracene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Benzo[b]fluoranthene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Benzo[k]fluoranthene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Benzo[b]naph(2,1-d)thiophene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Benzo[c]phenanthrene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Benzo[ghi]perylene ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Benzo[a]pyrene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Cholanthrene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Chrysene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Cyclopenta[c,d]pyrene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Dibenzo[ah]anthracene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Dibenzo[a,i]pyrene ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Fluoranthene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Indo[1,2,3-cd]pyrene, ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				
A20	Naphthalene ( $\mu\text{g}/\text{m}^3$ )	No limit applies	-				

[1] For dioxins and dioxin-like PCBs, the result are to be reported as a range based on: All congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum

[2] The date and time of the sample that produced the result is given.

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

Signed ..... Date.....  
*(authorised to sign as representative of UPM-Kymmene UK Ltd)*

Permit Number : BT4885IT

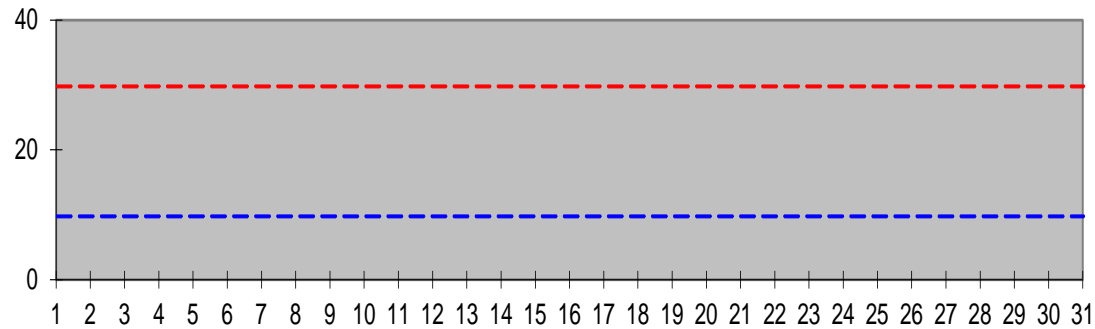
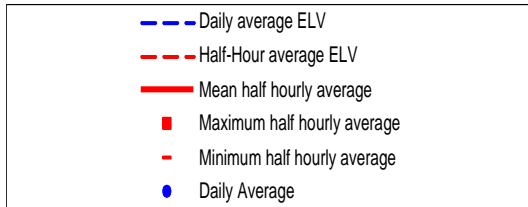
Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : A2

**Reporting of Continuously Monitored Emissions to Air for Particulates for the month of ....., 20\_\_**

**Daily and Half-hourly Average Monitoring Data**



Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Half-hourly average	Half-Hour average ELV		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
	Monthly maximum	0	Maximum half hourly average																														
	Monthly mean	###	Mean half hourly average																														
	Monthly minimum	0	Minimum half hourly average																														
	Total invalid results	0	No. of invalid results																														
	Sum of exceedances	0	No. of exceedances of ELV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Daily average	Daily average ELV		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
	Monthly maximum	0	Daily Average																														
	No. of invalid days	0	Value valid? (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
	Sum of exceedances	0	Value exceeds ELV (Y/N)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		

Signed ..... Date.....  
 (authorised to sign as representative of UPM-Kymmene UK Ltd)

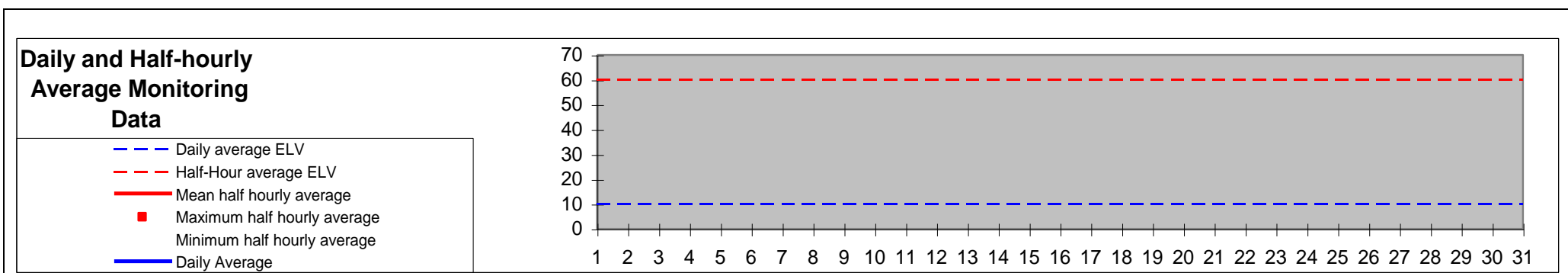
Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : A3

**Reporting of Continuously Monitored Emissions to Air for Hydrogen Chloride for the month of ....., 20\_\_**



Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Half-hourly average	Half-Hour average ELV		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
	Monthly maximum	0																															
	Monthly mean	####																															
	Monthly minimum	0																															
	Total invalid results	0	No. of invalid results																														
Sum of exceedances	0	No. of exceedances of ELV																															
Daily average	Daily average ELV		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	Monthly maximum	0																															
	No. of invalid days	0	Value valid?																														
	Sum of exceedances	0	Value exceeds ELV (Y/N)																														

Signed ..... Date.....  
 (authorised to sign as representative of UPM-Kymmene UK Ltd)

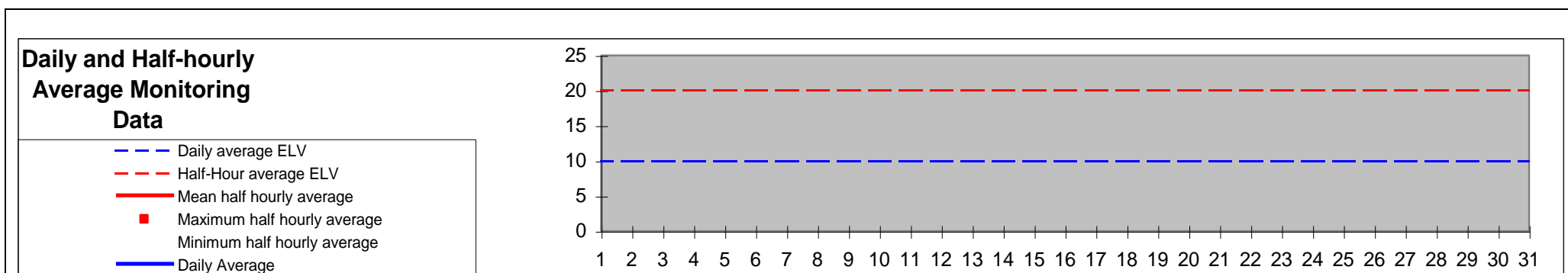
Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility: Shotton Paper Mill

Form Number : A4

**Reporting of Continuously Monitored Emissions to Air for TOC for the month of ....., 20\_\_**



Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Half-hourly average		Half-Hour average ELV	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
	Monthly maximum	0	Maximum half hourly average																														
	Monthly mean	####	Mean half hourly average																														
	Monthly minimum	0	Minimum half hourly average																														
	Total invalid results	0	No. of invalid results																														
Sum of exceedances	0	No. of exceedances of ELV																															
Daily average		Daily average ELV	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	Monthly maximum	0	Daily Average																														
	No. of invalid days	0	Value valid?																														
	Sum of exceedances	0	Value exceeds ELV (Y/N)																														

Signed ..... Date.....  
 (authorised to sign as representative of UPM-Kymmene UK Ltd)

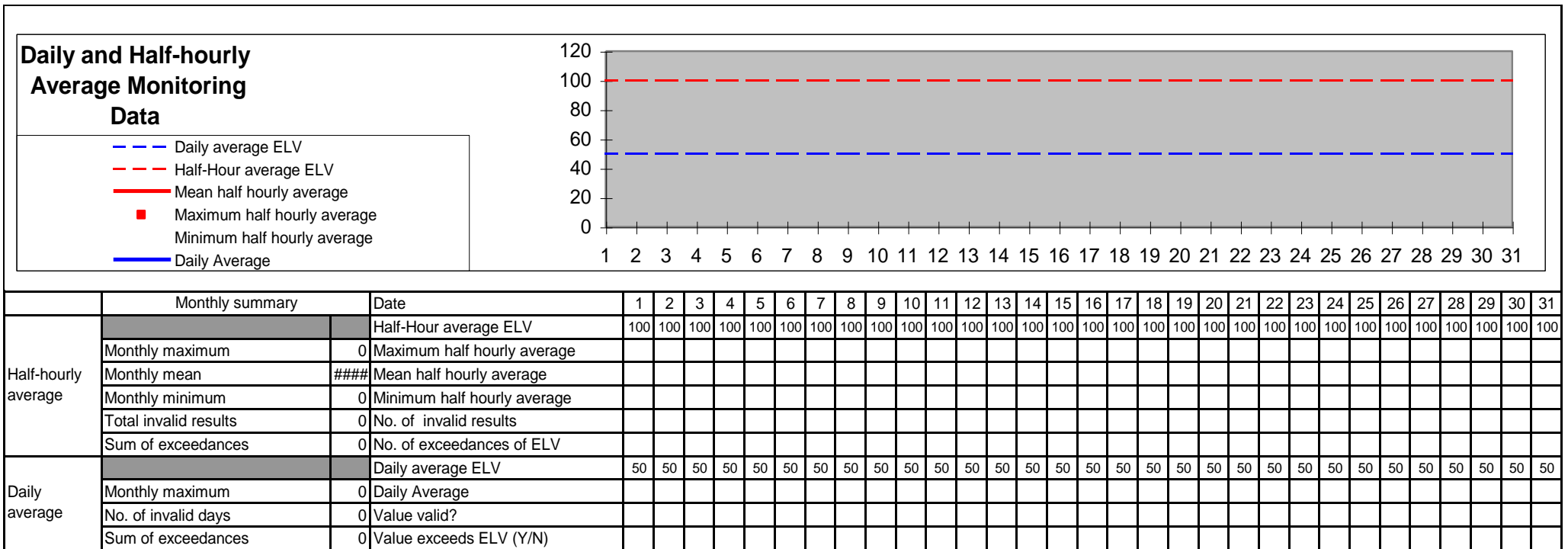
Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : A5

**Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide for the month of....., 20\_\_**



Signed ..... Date.....  
*(authorised to sign as representative of UPM-Kymmene UK Ltd)*



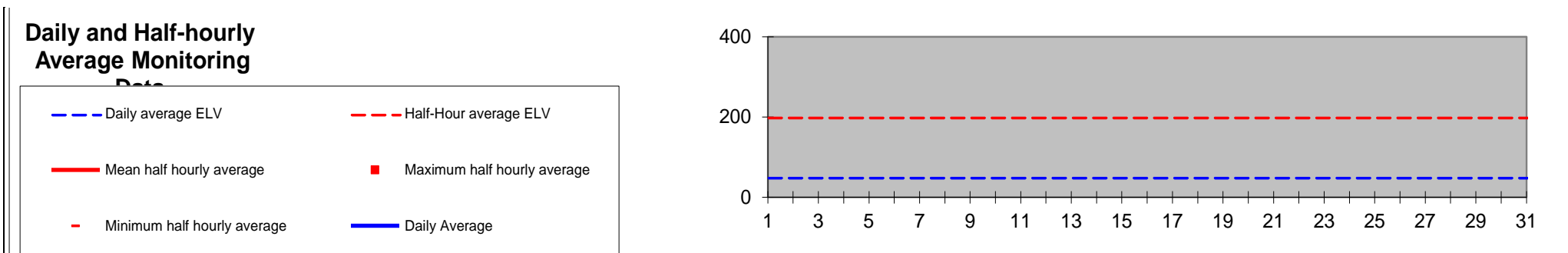
Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : A6

**Reporting of Continuously Monitored Emissions to Air for Sulphur Dioxide for the month of ....., 20\_\_**



Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Half-hourly average	Half-Hour average ELV		200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200		
	Monthly maximum	0																																
	Monthly mean	###																																
	Monthly minimum	0																																
	Total invalid results	0																																
	Sum of exceedances	0																																
Daily average	Daily average ELV		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50		
	Monthly maximum	0																																
	No. of invalid days	0																																
	Sum of exceedances	0																																

Signed ..... Date.....  
 (authorised to sign as representative of UPM-Kymmene UK Ltd)

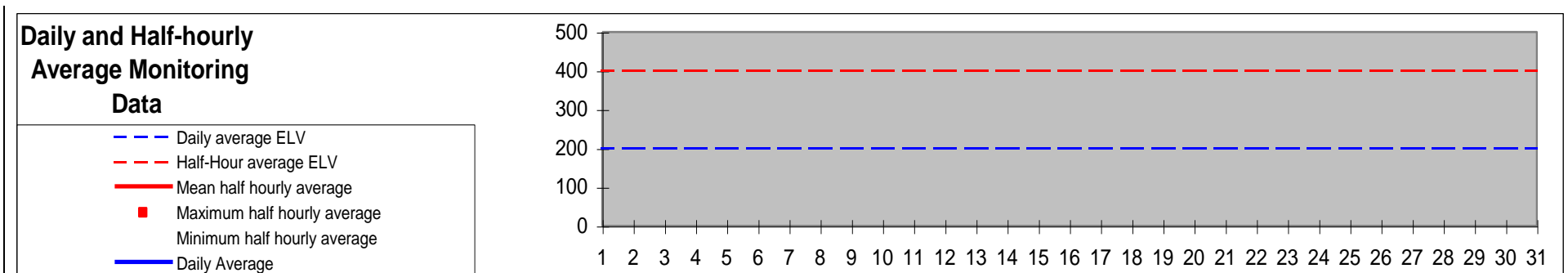
Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : A7

**Reporting of Continuously Monitored Emissions to Air for Oxides of Nitrogen for the month of ....., 20\_\_**



Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Half-hourly average	Half-Hour average ELV		400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	
	Monthly maximum	0																															
	Monthly mean	####																															
	Monthly minimum	0																															
	Total invalid results	0																															
Sum of exceedances	0	No. of exceedances of ELV																															
Daily average	Daily average ELV		200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
	Monthly maximum	0																															
	No. of invalid days	0																															
	Sum of exceedances	0	Value exceeds ELV (Y/N)																														

Signed ..... Date.....  
 (authorised to sign as representative of UPM-Kymmene UK Ltd)

Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : A8

**Reporting of Continuously Monitored Emissions to Air for Ammonia for the month of ....., 20\_\_**

Permit Number: BT4885IT

Operator: UPM-Kymmene UK Ltd

Facility: Shotton Paper Mill

Form Number: A9

Release Point: A15 & A18 (when in used) Time/Date of sampling: .....

**Discontinuous Measurement for Period from 01/01/YYYY to 31/12/YYYY**

<b>Pollutant &amp; release point</b>	<b>ELV (mg/m<sup>3</sup>)</b>	<b>Measured value (mg/m<sup>3</sup>)</b>	<b>Sampling method</b>	<b>Unit load (MW)</b>	<b>Fuel used during sampling period</b>
<b>NOx - A15: Boiler Stack 3</b>	150				
<b>NOx - A18: Boiler Stack 6</b>	150				

Please note: the measured value should be quoted at the appropriate reference conditions for the type of equipment being subject to emissions monitoring – see Schedule 6.

Signed .....  
(Authorised to sign as representative of Operator)

Date.....

Permit Number: BT4885IT

Operator: UPM-Kymmene UK Ltd

Facility: Shotton Paper Mill

Form Number: W1

**Reporting of emissions to water (other than to sewer) for the quarter from DD/MM/YYYY to DD/MM/YYYY**

Emission							
Emission Point	Substance / Parameter	Limit Value	Reference Period	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Uncertainty <sup>[4]</sup>
W1	Biological Oxygen Demand	25mg/l	Weekly		BS EN 1899-1 (1998)		
W1	Total Suspended Solids	60 mg/l	Weekly. For 95% of all measured values of periodic samples taken over one month		BS EN 872		
W1	pH max	9	Instantaneous		BS6068-2.50		
W1	pH min	6	Instantaneous		BS6068-2.50		
W1	Chemical Oxygen Demand	-					
W1	Ammoniacal Nitrogen	4 mg/l	Spot				
W1	Temperature degrees Celsius	25° Celsius	Continuous				
W1	Total Phosphorus mg/l	-	Spot				
W1	Total Nitrogen mg/l		Spot				
W1	Maximum instantaneous Flow rate	800 l/s	24 hour period beginning 00.01				
W1	Maximum Daily Flow	22,000 m <sup>3</sup> /day	Instantaneous				
W1	Maximum Tidal Flow	11,000 m <sup>3</sup> /tide	Instantaneous				
W1	Cd (µg/m <sup>3</sup> )	-					

Emission							
Emission Point	Substance / Parameter	Limit Value	Reference Period	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Uncertainty <sup>[4]</sup>
W1	Hg (µg/m <sup>3</sup> )	-					
W1	Fe (mg/m <sup>3</sup> )	-					
W1	Mn (mg/m <sup>3</sup> )	-					
W1	Zn (mg/m <sup>3</sup> )	-					
W1	As (mg/m <sup>3</sup> )	-					
W1	Cu (mg/m <sup>3</sup> )	-					
W1	Cr (mg/m <sup>3</sup> )	-					
W1	Ni (mg/m <sup>3</sup> )	-					
W1	Pb (mg/m <sup>3</sup> )	-					

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 .....  
(Authorised to sign as representative of Operator)

Date.....

Permit Number: BT4885IT  
 Facility: Shotton Paper Mill

Operator: UPM-Kymmene UK Ltd  
 Form Number: W2

**Reporting of emissions to water (other than to sewer) for the period from DD/MM/YYYY to DD/MM/YYYY**

Emission Point	Substance / Parameter	Emission Limit Value	Result <sup>[1]</sup>				Test Method <sup>[2]</sup>	Sample Dates and Times <sup>[3]</sup>	Uncertainty <sup>[4]</sup>
			Min	Mean	Max	Total			
W1	Temperature degrees Celsius (when a discharge limit of 28°C is permitted)	28°C							
W1	Flow m <sup>3</sup> /tide (when a discharge limit of 28°C is permitted)	11,000 m <sup>3</sup> /tide							
W1	Dissolved Oxygen mg/l (when a discharge limit of 28°C is permitted)	-							

Notes:

- [1] 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.
- [2] 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.
- [3] 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.
- [4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed .....  
 (Authorised to sign as representative of Operator)

Date.....

Permit Reference Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : S1

**Reporting of Emissions to Sewer for the period from .....to .....**

Emission						
Emission Point	Substance / Parameter	Limit Value	Result <sup>[1]</sup>	Test Method	Sample Date and Times <sup>[2]</sup>	Uncertainty <sup>[3]</sup>
E1	Volumetric Flow	300m <sup>3</sup> /day 24 hour period beginning 00:01		BS3680		
E1	pH	6(min) Instantaneous		BS 1647-2:1984		
E1	pH	9(max) Instantaneous		BS 1647-2:1984		
E1	Total suspended solids as defined by Directive 91/271/EEC	30mg/l for 95% of all measured values of periodic or flow proportional samples taken over one year. <sup>1</sup>		BS EN 872		
E1	Total suspended solids as defined by Directive 91/271/EEC	45mg/l periodic sample <sup>1</sup>		BS EN 872		
E1	Mercury and its compounds, expressed as mercury (Hg)	0.03 mg/l 24-hour flow proportional sample		BS EN 1483		
E1	Cadmium and its compounds, expressed as cadmium (Cd)	0.05 mg/l 24-hour flow proportional sample		BS 6068-2.89		
E1	Thallium and its compounds, expressed as thallium (Tl)	0.05 mg/l 24-hour flow proportional sample		BS 6068-2.89		
E1	Arsenic and its compounds, expressed as arsenic (As)	0.15 mg/l 24-hour flow proportional sample		BS 6068-2.60		
E1	Lead and its compounds, expressed as lead (Pb)	0.2 mg/l 24-hour flow proportional sample		BS 6068-2.60		
E1	Chromium and its compounds, expressed as chromium (Cr)	0.5 mg/l 24-hour flow proportional sample		BS 6068-2.60		
E1	Copper and its compounds, expressed as copper (Cu)	0.5 mg/l 24-hour flow proportional sample		BS 6068-2.60		
E1	Nickel and its compounds, expressed as nickel (Ni)	0.5 mg/l 24-hour flow proportional sample		BS 6068-2.60		
E1	Zinc and its compounds, expressed as Zinc (Zn)	1.5 mg/l 24-hour flow proportional sample		BS 6068-2.60		
E1	Dioxins / Furans (I-TEQ)	0.3 ng/l – at least one measurement every six months		BS ISO 18703		

1. The result given is the maximum value obtained during the reporting period, expressed in the same terms as the emission limit value.
2. The date and time of measurements and the percentage of the process operating time covered by the result shall be given.
3. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed ..... Date.....  
*(authorised to sign as representative of UPM-Kymmene UK Ltd)*



Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : Residue 1

**Reporting of residue quality for the period from .....to .....**

Ash Composition (TOC/LOI)		
	LOI (%)	% Carbon (TOC) <sup>w/w</sup>
Bottom Ash	*	*

- At least one of LOI or TOC to be reported.

Ash Composition (Metals, Dioxins, etc.)																
	Cd mg/kg	Tl mg/kg	Hg mg/kg	Pb mg/kg	Cr mg/kg	Cu mg/kg	Mn mg/kg	Ni mg/kg	As mg/kg	Co mg/kg	V mg/kg	Zn Mg/kg	DIOXIN I-TEQ ng/kg	DIOXIN		
														WHO-TEQ ng/kg		
														Humans/ mammals	Birds	Fish
Bottom Ash																
APC Residues																

Signed ..... Date.....  
(authorised to sign as representative of UPM-Kymmene UK Ltd)

Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : Residue 2

**Reporting of Ash Solubility for the period from .....to.....**

<b>Ash solubility (Metals)</b>												
	<b>Cd</b> mg/kg	<b>Tl</b> mg/kg	<b>Hg</b> mg/kg	<b>Pb</b> mg/kg	<b>Cr</b> mg/kg	<b>Cu</b> mg/kg	<b>Mn</b> mg/kg	<b>Ni</b> mg/kg	<b>As</b> mg/kg	<b>Co</b> mg/kg	<b>V</b> mg/kg	<b>Zn</b> mg/kg
Bottom Ash												
APC Residues												

Signed ..... Date.....  
(authorised to sign as representative of UPM-Kymmene UK Ltd)

Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : Performance 1

### Reporting of WID Performance Indicators for the year 20....

Quarterly Performance Parameters (Incineration Plant)		Units	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Mass of bottom ash produced		Kg/tonne of waste incinerated (dry basis)				
Mass of APC residues produced		Kg/tonne of waste incinerated (dry basis)				
Water consumption		m <sup>3</sup> /tonne of waste incinerated (dry basis)				
Ammonia consumption		Kg/tonne of waste incinerated (dry basis)				
Electricity consumption		MWhr/tonne of waste incinerated (dry basis)				
Natural gas consumption		Tonne/tonne of waste incinerated (dry basis)				
Periods of Abnormal Operation		Number of occasions				
		Cumulative hours for current calendar year				

Annual Production/ Treatment		
RCF (De-inking sludge) waste incinerated		
Biomass incinerated		
Waste wood incinerated		
Waste not otherwise specified incinerated		
Thermal energy produced e.g. steam	Gas BoilerPlant	
	Incineration Plant	
Power generated		

Operator's comments :

Signed ..... Date.....  
(authorised to sign as representative of UPM-Kymmene UK Ltd)

Permit Number: BT4885IT  
Facility: Shotton Paper Mill

Operator: UPM-Kymmene UK Ltd  
Form Number: Performance 2

**Reporting of other performance indicators for the period DD/MM/YYYY to DD/MM/YYYY**

Parameter	Units
BOD per net tonne paper produced	Kg/T
Suspended Solids per net tonne paper produced	Kg/T
Total Nitrogen per net tonne paper produced	Kg/T
Total Phosphorus per net tonne paper produced	Kg/T
NO <sub>x</sub> per net tonne paper produced	Tonnes/T
CO <sub>2</sub> per net tonne paper produced	Tonnes/T

Operator's comments :

Signed ..... Date.....  
(Authorised to sign as representative of UPM-Kymmene UK Ltd)

Permit Number : BT4885IT

Operator : UPM-Kymmene UK Ltd

Facility : Shotton Paper Mill

Form Number : Performance 3

**Reporting of other performance indicators for the period 01/01/YYYY to 31/12/YYYY (annually)**

<u>Water Inputs to the Mill</u> <sup>3</sup>			
<b>Surface water (actual not licensed) eg: river water</b>			
<b>Groundwater (actual not licensed) eg: borehole water</b>			
<b>Mains water (only report if used in the paper or pulp manufacturing process)</b>			
<b>Other water (eg; if rainwater harvesting is practised)</b>			
<u>Water used in manufacturing</u> <sup>3</sup>			
<b>Cooling water (once through or hybrid systems)</b>			
<b>Process water</b>			
Other water used in manufacturing			
<u>Other inputs of water/moisture</u>			
Pulp or other fibre or wood at X% moisture content <sup>2</sup>			
Waste paper for recycling at X% moisture content <sup>2</sup>			
<u>Water outputs</u> <sup>3</sup>			
<b>Waste Water discharged to surface waters</b> NB; this figure should be the one used to report water usage per tonne as per BREF benchmarks under BATC No.5 and should exclude site drainage and cooling water			
<b>Waste water discharged to sewer</b>			
Losses to evaporation			
Losses in final product at Y% moisture content <sup>2</sup>			
Losses in major waste stream outputs at Y% moisture content such as sludge <sup>2</sup>			
Losses in major waste stream outputs at X% moisture content such as rejects (EWC 03 03 07) <sup>2</sup>			

<u>Waste/raw material Inputs (other than those reported via quarterly waste returns)</u>		
Pulp		
Starch & main fillers		
Other significant raw material inputs if >1000 tonnes		
<u>Waste/raw material outputs (other than those reported via quarterly waste returns)</u>		
<u>Production (Net annual production reported as total as defined in the BREF BATCs<sup>1</sup>)</u>		

Notes:

1. (i) For paper mills: the unpacked, saleable production after the last slitter winder, i.e. before converting. (ii) For off-line coaters: production after coating. (iii) For tissue mills: saleable production after the tissue machine before any rewinding processes and excluding any core. (iv) For market pulp mills: production after packing (ADt). (v) For integrated mills: Net pulp, production refers to the production after packing (ADt) plus the pulp transferred to the paper mill (pulp calculated at 90 % dryness, i.e. air dry). Net paper production: same as (i)
2. X% & Y% moisture content. Is defined as the average moisture content over the 12 month period. Monitoring frequency and test method (in the absence of any EN standard test method) determined by each mill but to be noted on the return for each input/output.
3. All parameters in **bold text** are required to be reported on, others are optional.

Operator's comments:

Signed ..... Date.....

*(Authorised to sign as representative of UPM-Kymmene UK Ltd)*