

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Holmen Iggesund Paperboard Limited
Workington Paperboard Mill
Siddick
Workington
Cumbria
CA14 1JX

Variation application number

EPR/BJ7590IB/V006

Permit number

EPR/BJ7590IB

Workington Paperboard Mill

Permit number EPR/BJ7590IB

Introductory note

This introductory note does not form a part of the notice

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. Only the variations specified in schedule 1 are subject to a right of appeal.

Purpose of this variation

This variation is to extend the previously granted time limited derogation for BAT 40 and BAT 50 of the BAT Conclusions for the Production of Pulp, Paper and Board and their associated BATAEL's for the emissions to water to a non-time limited derogation of BAT 40 and BAT 50.

The non-time limited derogation for the BATAEL's (BAT40 and BAT50) is for TSS, COD and P and is based on the technical characteristics of the mill. These limits are to be extended from 31/12/2021 to the 31/12/2024, the higher limits to apply thereafter until the next BREF cycle.

For TSS the proposal includes the construction of a new primary treatment. For a reduction in COD the proposal includes installation of an Anaerobic Digestion plant to pre-treat the COD rich pulpmill effluent stream. Construction will be 2023 and operational 2024. For a reduction in Phosphorus this is based on the technical characteristics of the process, combined with the local environmental conditions.

Brief description of process

The site is located in the village of Siddick, just north of Workington on the A596 road to Maryport.

The main purpose of the activity at the installation is the manufacture of paperboard.

The papermill has a capacity of around 240,000 tonnes per year of folding boxboard for the packaging and graphics industries. Folding boxboard is a paperboard product in which the two outer plies are made from bleached chemical pulp and the middle plies are made from bleached or unbleached mechanical pulp.

The permit covers all stages of the paperboard manufacturing process from raw materials storage and handling, the pulp mill, the paper mill, surface coating, conversion to finished reels and sheets, warehousing prior to despatch and the effluent treatment plant. Electricity and steam are generated by the biomass Combined Heat and Power (CHP) plant.

The fibre source for the installation is either wood from the UK or imported bleached chemical pulp.

Paperboard Process Stages

The Wood yard

Timber in cut lengths enters the mill by road. Logs are de-barked in a dry rotary drum process, and the bark is taken away from the site to be reprocessed for use in horticulture or as a fuel for the biomass CHP. The de-barked logs are conveyed to a chipper that is a rapidly rotating disk with knife blades, and the chips are stock piled for use in the pulp mill. Some chips are purchased from sawmills. Chipper fines are taken away from site and used for animal bedding or in other suitable recovery routes.

The Pulp mill

All wood chips are washed and conveyed to a pulp mill consisting of one primary refiner. The refiner uses plates to break the chips into fibre bundles. The refined fibres are thickened on disc filters and then bleached with hydrogen peroxide. The pulp is screened and cleaned and stored for use on the board machine. Water used in the pulp mill is recycled from the board machine.

Stock Preparation

Bales of chemical pulp are purchased from approved sources and stored in a warehouse. The bales are fed to a hydropulper which uses recycled water from the board machine, to form a slurry of about 4% concentration.

Both the chemical pulp and mechanical pulp are refined by passing through further rotating metal plates to fibrillate the fibres and make them easier to bond together. The mechanical pulp is also mixed with 'broke' which is uncontaminated recycled board from various parts of the mill.

The Board Machines

There is one board machine, which has an output of up to 45 tonnes per hour. The board machine produces board in five plies. The two outer plies are of bleached chemical pulp and the three inner plies are of mechanical pulp with broke.

The first layer (liner) is formed on a Fourdrinier forming section, where water is initially drained leaving a wet web. The three middle plies are formed directly on to the liner by a series of Inverform units. Finally the upper layer (backs) is formed separately on a second Fourdrinier and brought down to meet the other plies. The web is removed from the wet end wire and transferred to a fabric which then passes through the press section in the next stage of water removal. The sheet is then dried in a controlled manner through a series of steam heated drying cylinders. There is one large cylinder, the Machine Glazing Cylinder that imparts a glaze to one surface of the board. The board is surface sized.

Further drying on cylinders follows and the board passes to the in-line coating section. Coating involves the addition of coating colour, which contains mineral pigments together with a synthetic binder to improve printability.

Finishing

The parent board reel is slit into reels, which are either film wrapped for despatch to customers, or are cut into sheets for packing and despatch.

Effluent Treatment Plant

The primary treatment plant will be based on gravity settlement and sludge dewatering. A new control system will be employed which smooths the variation in mill flow and the flow to the new clarifier. This form of flow balancing will utilise the existing capacity in the pumphouse surge well. In addition, a suitably-sized storage tank will be included in the scheme which can effectively be used to divert the untreated effluent flow when needed and also support the balancing strategy as mentioned.

The secondary treatment plant will be anaerobic digestion applied to the COD-rich pulpmill stream only.

Some of the site surface waters are collected and passed through an interceptor before discharge to Siddick Pond, a Site of Special Scientific Interest (SSSI) adjacent to the site.

Biomass CHP Plant (LCP 186)

The LCP reference was changed from LCP 438 to LCP 186 by variation EPR/BJ7590IB/V003.

The Biomass Combined Heat and Power (CHP) plant consists of a bubbling fluidised bed boiler (BFB) to provide steam and a single steam turbine to provide electricity. The BFB is rated at 150MW thermal input and abatement is provided by Selective Non-Catalytic Reduction (SNCR) and an electrostatic precipitator and discharges to emission point A2. The boiler is fuelled by clean biomass, virgin timber products or clean recovered wood which is excluded from the requirements of Chapter IV of the Industrial Emissions Directive (IED).

The Biomass CHP is subject to Chapter III of the IED.

Other operations include fuel receipt, storage and processing, a water demineralisation plant to provide boiler water, cooling towers and waste storage.

Emissions to air from the Biomass CHP are oxides of nitrogen, sulphur dioxide, carbon monoxide, particulates and ammonia.

Emissions to water include boiler blow-down and neutralised water from the water demineralisation plant.

Boilers (LCP 187)

The LCP reference was changed from LCP 440 to LCP 187 by variation EPR/BJ7590IB/V003.

The boilers comprise two natural gas fired 35MW thermal input boilers which discharge to a common windshield providing an aggregated net rated thermal input of 70MW. The boilers discharge to emission points A3 and A4. The boilers are subject to Chapter III of the IED.

Concurrent operation of the biomass CHP plant and two gas fired boilers is authorised, in which case, power generation is optimised and supplied into the National Grid.

The site operates an Environmental Management System which is certified to ISO 14001 and ISO 50001.

There is one Special Area of Conservation (SAC), two SSSIs and five non statutory habitat sites within 10 km of the site.

The permit covers all stages of the paperboard manufacturing process from raw materials storage and handling, the pulp mill, the paper mill, surface coating, conversion to finished reels and sheets, warehousing prior to despatch and the effluent treatment plant. Electricity and steam are generated by the biomass Combined Heat and Power (CHP) plant. The final effluent is discharged, under the strict conditions of the permit to the Solway receiving waters via a dedicated outfall pipe. The end of the pipe is submerged but lies close to the shoreline under low water tidal conditions.

The activities fall under the following IED Schedule 1 listed activity description:

- Section 1.1 Part A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.
- Section 5.4 Part A(1)(a)(i) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.
- Section 5.4 Part A(1)(a)(ii) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day by physio-chemical treatment.
- Section 6.1 Part A(1)(a) Producing, in industrial plant, pulp from timber or other fibrous materials.
- Section 6.1 Part A(1)(b) Producing, in industrial plant, paper and board where the plant has a production capacity of more than 20 tonnes per day.

The facility is located at national grid reference NY0034031172.

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

Status log of the permit		
Description	Date	Comments
Application received EPR/BJ7590IB/A001	Duly made 24/02/2001	Application for pulp mill and board mills.
Additional information received	20/01/2002 & 23/03/2002	Confirmation of site boundary.
Permit determined EPR/BJ7590IB	25/03/2002	
Variation Application EPR/BJ7590IB/V002	Duly made 24/02/2011	Application for Biomass CHP plant.
Additional information received	08/11/2011 & 19/12/2011	
Variation determined EPR/BJ7590IB/V002	07/08/2012	Varied and consolidated permit issued in modern condition format.
Regulation 60 Notice sent to	31/10/2014	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to

Status log of the permit		
Description	Date	Comments
the Operator		vary the permit. under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.
Regulation 60 Notice response	25/03/2015	Response received from the Operator.
Variation determined EPR/BJ7590IB/V003	30/12/2015	Varied permit issued. Variation effective from 01/01/16.
Application received EPR/BJ7590IB/V004	Duly made 16/05/2016	To allow the concurrent operation of the biomass CHP plant and two gas fired boilers.
Additional information received	17/06/2016	Maintenance of boilers.
Variation determined EPR/BJ7590IB/V004	10/08/2016	Varied permit issued.
Regulation 60 Notice dated 21/11/14 (Notice requiring information for statutory review of permit)	Response Received 30/03/2015	Technical standards detailed in response to the information notice. Information to demonstrate that relevant BAT conclusions are met for the production of pulp, paper and board as detailed in document reference L284. Derogation request BAT conclusions 40 and 50.
Additional information received	29/07/2015	Response to request for further information (RFI) dated 22/06/15.
Additional information received	27/05/2016	Information relating to Derogation.
DRAFT DECISION EPR/BJ7590IB/V005	07/10/2016	Statutory review of permit - BAT Conclusions published 30 September 2014. Varied and consolidated permit.
FINAL DECISION EPR/BJ7590IB/V005 (Billing ref: EP3135DL)	21/11/2016	Statutory review of permit - BAT Conclusions published 30 September 2014. Varied and consolidated permit issued.
Variation Application EPR/BJ7590IB/V006	Duly made 13/04/2021	Application to vary – derogation for emissions to water for COD, TSS and P.
Variation determined and consolidation issued EPR/BJ7590IB/V006	09/09/2022	Varied and consolidated permit issued to Iggesund Paperboard (Workington) Limited. The registered legal name at Companies House has changed from Iggesund Paperboard (Workington) Ltd to Holmen Iggesund Paperboard Ltd, with effect from 1st December 2021.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

Permit number

EPR/BJ7590IB

Issued to

Holmen Iggesund Paperboard Limited (“the operator”)

whose registered office is

Iggesund Paperboard

Siddick

Workington

Cumbria

CA14 1JX

company registration number **00075035**

to operate a regulated facility at

Workington Paperboard Mill

Siddick

Workington

Cumbria

CA14 1JX

to the extent set out in the schedules.

The notice shall take effect from 09/09/2022.

Name	Date
Louise Hann	09/09/2022

Authorised on behalf of the Environment Agency

Schedule 1 – conditions to be deleted

The following conditions are deleted as a result of the application made by the operator.

Condition 1.2.2 deleted, superseded by Large Combustion Plant (LCP) template.

Condition 2.3.5 deleted as no longer permitted.

Schedule 2 – conditions to be amended

The following conditions are amended as a result of the application made by the operator.

Condition 1.2.1 and 1.2.2 (previously 1.2.3) updated by LCP template.

Condition 2.3.2 updated date to referenced document.

Condition 4.2.2 (c) the performance parameters set out in schedule 4 tables S4.3A and S4.3B using the forms specified in table S4.4 of that schedule.

Table S1.1 Activities AR1 MG combustion burner units, boardmachine coater dryers and an emergency diesel generator all previously omitted in error, now added.

Table S1.2 Operating Techniques – updated with application documents and Notices.

Table S1.3 Improvement Conditions - IP1 to IP7 annotated to confirm status.

Table S1.5 Minimum Start-up Load and Minimum Shutdown load - updated due to completion of IP1 and IP2.

Table S3.1 Point source emissions to air - amended to include reference to LCP187 which is plant fired on natural gas or a combination of biogas and natural gas. Additional locations for point sources emissions to air added for the AD plant and biogas flare. (Activity AR2). Added in emission points A5 and A6.

Table S3.2 Point Source emissions to water (other than sewer) – limits amended for TSS and COD for W1 and the notes section has been updated.

Table S3.3 Annual Limits – updated as a result of derogation.

Table S3.4 Process Monitoring – anaerobic digestion process monitoring requirements (Activity AR2) added.

Schedule 4 Reporting - updated to include AD plant (Activity AR2) and biogas flare.

Schedule 6 Interpretation - updated to latest LCP template.

Schedule 3 – conditions to be added

The following conditions are added as a result of the application made by the operator.

Condition 2.1.2 added for Activity AR2 Anaerobic Digestion.

Condition 3.2.4 added for Activity AR2 Anaerobic Digestion.

Section 3.6 Monitoring for Large Combustion Plant – section added, this replaces and updates Section 3.6 Monitoring for the purposes of the Industrial Emissions Directive Chapter III from the permit.

Section 3.7 Pests - new section added for pest control. (Activity AR2).

Condition 4.2.2 (c) corrected table references.

Condition 4.2.2 (d) New standard condition added for Large Combustion Sector.

Table S1.1 Activities (AR2) - Anaerobic Digestion Plant Section 5.4 Part A(1)(a)(i) added. Subsequent references thereafter amended.

Table S1.1 DAA's - emergency flare operation added for AD plant biogas flare.

Table S1.3 Improvement conditions – IP8 to IP11 added.

Table S1.4 Pre-operational measures POM2 to POM5 added.

Schedule 4 – amended plan

None

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/BJ7590IB

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BJ7590IB/V006 authorising,

Holmen Iggesund Paperboard Limited (“the operator”),

whose registered office is

Iggesund Paperboard

Siddick

Workington

Cumbria

CA14 1JX

company registration number **00075035**

to operate an installation at

Workington Paperboard Mill

Siddick

Workington

Cumbria

CA14 1JX

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

Name	Date
Louise Hann	09/09/2022

Authorised on behalf of the Environment Agency

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.

1.2 Energy efficiency

- 1.2.1 The operator shall:
- (a) take appropriate measures to ensure that 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.
- 1.2.2 The operator shall review the viability of Combined Heat and Power (CHP) implementation at least every 4 years, or in response to any of the following factors, whichever comes sooner:
- (a) new plans for significant developments within 15 km of the installation;
 - (b) changes to the Local Plan;
 - (c) changes to the BEIS UK CHP Development Map or similar; and
 - (d) new financial or fiscal incentives for CHP.

The results shall be reported to the Agency within 2 months of each review, including where there has been no change to the original assessment in respect of the above factors.

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 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 the Environment Agency.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP186 and LCP187. The activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” dated May 2021 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency 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 the Environment Agency.
- 2.3.4 In the case of emergencies direct discharges to emission point W1 may be made from the surge well. The circumstances for direct discharges shall be as defined in the Environmental Management System. Any direct discharge will be notifiable under condition 4.3.1. During the period of direct discharge the emission limits specified for emission point W1 in Table S3.2 shall not apply.
- 2.3.5 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP186 and LCP187. The end of the start-up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.
- 2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP186. The following conditions apply where there is a malfunction or breakdown of any abatement equipment:
- Unless otherwise agreed in writing by the Environment Agency:
- (i) if a return to normal operations is not achieved within 24 hours, the operator shall reduce or close down operations, or shall operate the activities using low polluting fuels;
 - (ii) the cumulative duration of breakdown in any 12-month period shall not exceed 120 hours; and
 - (iii) the cumulative duration of malfunction in any 12-month period shall not exceed 120 hours.
- 2.3.8 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2; and
 - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.9 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.
- 2.3.10 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.
- 2.3.11 Bottom ash and APC residues shall not be mixed.

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 the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

- 2.5.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

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, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.

- 3.1.3 The emission values from emission point A2 listed in schedule 3 table S3.1, measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Tables S3.1 emission limit values.
- 3.1.4 Total annual emissions from the emission point(s) set out in schedule 3 tables S3.1, 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.
- 3.1.5 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, 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 the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency 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 the Environment Agency.
- 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.
- 3.2.4 For the following activity referenced in schedule 1, table S1.1 AR2, the operator shall implement a leak detection and repair (LDAR) programme to detect and mitigate the release of volatile organic compounds, including methane from diffuse sources.

3.3 Odour

- 3.3.1 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 the Environment Agency, 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.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency 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 the Environment Agency.

3.4 Noise and vibration

- 3.4.1 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 the Environment Agency, 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.
- 3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency 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 the Environment Agency.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in tables S3.1 and S3.2; and
 - (b) process monitoring specified in table S3.4.
- 3.5.2 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.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 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 and S 3.2 unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring for Large Combustion Plant

- 3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive and the Large Combustion Plant Best Available Techniques Conclusions.
- 3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:
 - (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
 - (b) implement the approved proposals.
- 3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in table(s) S3.1 the validated hourly, daily, monthly and yearly averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
 - (b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
 - (c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
 - (d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
 - (e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period. Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and
 - (f) any day, in which more than three hourly average values are invalid shall be invalidated.

3.7 Pests

- 3.7.1 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.
- 3.7.2 The operator shall:
- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution from pests;
 - (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

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 the Environment Agency, 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 the Environment Agency.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) 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; and
 - (c) the performance parameters set out in schedule 4 tables S4.3A and S4.3B using the forms specified in table S4.4 of that schedule; and
 - (d) where condition 2.3.7 applies, the cumulative duration of breakdown and cumulative duration of malfunction in any 12 month period.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, 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 the Environment Agency, 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 10 days of the notification of abatement equipment malfunction or breakdown (condition 2.3.7) the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).
- 4.2.6 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency 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, if during that quarter the total amount accepted exceeds 100 tonnes of non-hazardous waste or 10 tonnes of hazardous waste.

4.3 Notifications

- 4.3.1 In the event:
- (a) 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 the Environment Agency,
 - (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) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
 - (c) 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.
 - (d) of any malfunction or breakdown of abatement equipment relating to condition 2.3.7, the operator shall notify the Environment Agency within 48 hours unless notification has already been made under (a) to (c) above.
- 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 the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency 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) the Environment Agency 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 The Environment Agency 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, the Environment Agency 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.

4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

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

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 1.1 Part A(1)(a) Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP186: one 156.7 MWth bubbling fluidised bed (BFB) biomass fired boiler. LCP187: two 37.6 MWth natural gas / biogas fired boilers. One MG hood combustion unit with two supplementary natural gas fired burners rated at: Wet End Hood Burner –1.744 MWth Dry End Hood Burner –1.125 MWth. Three boardmachine coater dryers rated at 1.25 MWth, 1.5 MWth and 1.5 MWth. Emergency diesel generator rated at 0.6 MWth. Maximum combined total thermal input of 239.62 MWth).	Combustion plant including air supply, boilers, power plant, facilities for treatment of exhaust gases, stacks and systems for controlling combustion.
AR2	Section 5.4 Part A(1)(a)(i) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.	Secondary biological treatment of pulp mill effluent.	From receipt of waste water from Pulp Mill process to despatch to primary effluent treatment plant and discharge of effluent to Irish Sea via release point W1. Anaerobic digestion of waste followed by primary settlement, including associated storage, collection, treatment and dispatch of biogas from the anaerobic digestion process to biogas combustion. Waste types suitable for acceptance are limited to the effluent from activity references AR4 and AR5 in this table.
AR3	Section 5.4 Part A(1)(a)(ii) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day by physio-chemical treatment (D9)	Treatment of effluent from pulp and paperboard production, combustion plant, water treatment and surface water drainage.	From receipt of waste water from process to despatch to primary effluent treatment plant and discharge of effluent to Irish Sea via release point W1

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
		Primary treatment of paper mill effluent.	
AR4	Section 6.1 Part A(1)(a) Producing, in industrial plant, pulp from timber or other fibrous materials.	Production of mechanical pulp in a pulp mill	From receipt of raw logs to transfer of mechanical pulp to stock preparation. Includes debarking, chipping, refining and bleaching of mechanical pulp.
AR5	Section 6.1 Part A(1)(b) Producing, in industrial plant, paper and board where the plant has a production capacity of more than 20 tonnes per day.	Production of paperboard on a single machine	From stock preparation to despatch of finished product storage including re-pulping of chemical pulp.
Directly Associated Activity			
AR6	Electrical Power Station	Generation of electricity using a single steam turbine	From transfer of heat to steam turbine, generation of electricity, exported to grid and its use on site.
AR7	Fuel handling and storage	Fuel receipt, storage and processing prior to use in biomass boiler	Receipt of fuel feedstock, storage, processing (chipping, crushing, screening) and transfer to biomass boiler.
AR8	Water treatment plant	Treatment of raw water supply in a sand filtration plant for use in pulp and paperboard production and biomass CHP plant	From receipt of incoming water on site to transfer to treated water storage tank.
AR9	Water demineralisation plant	Treatment of boiler makeup water	Treatment of boiler feed water by filtration and ion exchange, including regeneration and condensate polishing plant.
AR10	Emergency flare operation	D10: Incineration on land	Undertaken in relation to activity reference AR2 in this table. From the receipt of bio-gas produced at the on-site anaerobic digestion process to incineration with the release of combustion gases. Use of auxiliary flare required during periods of breakdown or maintenance.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to question 2.3 in section 2.3 of the application	24/02/2001
Response to Schedule 4 Part 1 Notice	Response to questions 15 - 24	20/01/2002
Variation EPR/BJ7590IB/V002	Response to Part C3, section 3 of the variation application	24/02/2011
Receipt of the additional information to the variation application EPR/BJ7590IB/V002	Response to question 1a (process overview), 2d & 2e (fuel receipt/acceptance), 2f (fuel processing), 4a & 4b (combustion control), 4c (SNCR optimisation), 6a (monitoring) 7b, (standby plant monitoring), 8a (water treatment plant), 11a (ash storage), 14b (fugitive emission control) in the further information request dated 23/08/11	08/11/2011 &19/12/2011
Response to regulation 60(1) Notice – request for information dated 31/10/2014	Compliance route(s) and operating techniques identified in response to questions: 2 - compliance route 4 - configuration 5 - net rated thermal input 6 - start-up and shut-down 8 - choice of fuel (no standby fuel)	Received 25/03/2015
Application variation EPR/BJ7590IB/V006	Application forms C2 and C3 and referenced supporting information	Duly made 16/05/2016
Receipt of the additional information to the variation application EPR/BJ7590IB/V004	Email response from the operator dated 17/06/16 relating to maintenance of boilers.	17/06/2016
Receipt of information to the regulation 60(1) Notice. requested by letter dated 21/11/2014	Technical standards detailed in response to BAT conclusions of the notice provided under Regulation 60 of Environmental Permitting Regulations. 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	30/03/2015
Receipt of additional information to the regulation 60(1) Notice: request for further information requested by letter dated 22/06/2015	Technical standards detailed in response to BAT conclusions of the notice provided under Regulation 60 of Environmental Permitting Regulations. 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	29/07/2015

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	Application document(s) provided in response to section 3a – technical standards , Part B3 (B4 etc.) of the application form	08/12/2020
Response to Schedule 5 Notice dated 24/08/2021	Response to all questions 1 to 7 regarding BAT 14 and additional information including; <ul style="list-style-type: none"> • Workington Outfall Modelling Rev. 4.0 including CORMIX Model Files; • Site Layout Plan reference A21KW12-SK001 showing Primary Treatment and AD Plant Option dated 07/10/2021; • Primary Treatment Plan and AD Layout reference A21KW12-SK002 dated 07/10/2021; • Proposed Waste Effluent Treatment Plant - Geotechnical Summary dated 13/06/2018; • Sludge Handling Building Arrangement Plan reference A21KW12-SK003 dated 07/10/2021; • Effluent Pump House Showing buffer storage tank position option 1 reference A21KW12-SK004 dated 07/10/2021 	13/10/2021
Response to Schedule 5 Notice No. 2 dated 13/12/2021	Response to all questions 1 to 7 regarding the derogation for Nitrogen and Phosphate and additional information.	14/01/2022

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IP1	<p>The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP186 and LCP 187. The net rated thermal input is the ‘as built’ value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised).</p> <p>Evidence to support this figure, in order of preference, shall be in the form of:-</p> <ul style="list-style-type: none"> - Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), - Performance test results after a significant modification (quoting the specified standards or test codes), - Manufacturer’s contractual guarantee value, - Published reference data, e.g., Gas Turbine World Performance Specifications (published annually); - Design data, e.g., nameplate rating of a boiler or design documentation for a burner system; - Operational efficiency data as verified and used for heat accountancy purposes, - Data provided as part of Due Diligence during acquisition. 	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	*Performance test results shall be used if these are available. .	
IP2	<p>The operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the “minimum start up load” and “minimum shut-down load”, for each unit within the LCP as required by the Implementing Decision 2012/249/EU in terms of:</p> <ul style="list-style-type: none"> - The output load (i.e. electricity, heat or power generated) (MW); and, - This output load as a percentage of the rated thermal output of the combustion plant (%). <p>And / Or</p> <ul style="list-style-type: none"> - At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU. 	Completed
IP3	<p>The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the BAT conclusion AELs where a derogation has been applied for and granted. The report shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> - Current performance against the BAT conclusion AELs. - Methodology for reaching the AELs. - Associated targets / timelines for reaching compliance by 31/12/21 for emissions of Chemical Oxygen Demand (COD) and Total Suspended Solids (TSS) at W1 as defined in table S3.2 of this permit – time limited derogation. - Any alterations to the initial plan – for progress reports. <p>The report shall address BAT conclusions 40 and 50.</p> <p>The operator shall submit reports on progress with the approved compliance plan on a six-monthly frequency specified by this condition.</p>	Superseded by this variation
IP4	<p>The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the ‘Narrative’ BAT where BAT is currently not achieved, but will be achieved before 31 December 2021. The report shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> - Methodology for achieving BAT. - Associated targets / timelines for reaching compliance by 31 December 2021 - Any alterations to the initial plan <p>The report shall address BAT conclusions 5, 14 and 16.</p> <p>The operator shall submit reports on progress with the approved compliance plan on a six-monthly frequency specified by this condition.</p>	Superseded by this variation

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IP5	<p>The operator shall submit for approval a report that investigates and reviews the emissions of cadmium from the on-site effluent treatment plant to the receiving water body. The investigation shall include the following:</p> <ul style="list-style-type: none"> - A minimum of twelve months intensive sampling at a minimum monthly frequency commencing after commissioning of the upgraded effluent treatment plant. - The Limit of Detection or Minimum Reporting Value shall be agreed with the Environment Agency prior to commencement. - A review of abstracted water quality and potential sources from raw material inputs and process chemistry. - An impact assessment shall be carried out in accordance with the methodology in the Environment Agency H1 screening tool and using the results from the sampling programme. The outcome of this exercise shall determine whether detailed modelling of the discharge is required. - If required, detailed modelling shall be carried out to fully assess the impact. 	Superseded by this variation
IP6	<p>The operator shall submit for approval by the Environment Agency a report that investigates the impact of the temperature as a result of the discharge from the on-site effluent treatment plant to the receiving water body. The investigation shall assess the extent and the potential impact at the edge of and beyond the mixing zone against the Water Framework Directive (WFD) proposed or current temperature standards for tidal waters available at the time.</p> <p>The results of the shoreline survey as specified in table S3.2 shall be reviewed to establish if additional modelling and/or monitoring is required.</p> <p>The report shall also consider the opportunities for reducing the residual temperature of the discharge by evaluating all options for heat recovery throughout the pulping and paper making operations on site, having tracked the changing temperature profile throughout the period.</p>	Superseded by this variation
IP7	The operator shall install an auto-sampler for the collection of flow proportional samples at emission point W1 as defined in table S3.2 of this permit.	Completed
IP8	At least 6 weeks after commissioning of the Anaerobic Digestion (AD) plant (Activity AR2) the operator shall review the site's sampling arrangements due to any constructional changes, such as pipework and changes to pumping arrangements that may have an impact on the sampling methodology and provide an MCERTs accreditation 'certificate of site conformity' for the W1 emission point.	4 months after commissioning
IP9	At least 10 weeks after commissioning of the AD plant (Activity AR2) the Operator shall submit a written report to the Environment Agency on the commissioning of the AD plant (Activity AR2). The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	6 months after commissioning

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	The Operator shall submit the report to the Environment Agency, for approval, summarising the findings along with any proposed improvements if required.	
IP10	<p>The operator shall submit for approval by the Environment Agency a report that investigates the inputs to the effluent treatment plant and the options to reduce and minimise pollutants at source. The report shall also include a review of the emissions from the on-site effluent treatment plant to the receiving water body. The investigations shall include but not limited to the following:</p> <ul style="list-style-type: none"> - Current performance, with the emission limits values (ELV's) or annual limits as specified in Table S3.3 of this permit. - A methodology for continuous improvement and assessment to highlight opportunities for reducing emissions from the on-site effluent treatment plant to the receiving water body. - A plan and programme of works for further effluent mapping work to check the understanding on the process, effluents and water use are still current and to identify further opportunities for reducing flow, TSS, COD, P and N in the discharge by evaluating the pulping and paper making operations on site, having tracked the changing profiles throughout the process. - Opportunities and techniques for reducing the residual temperature of the discharge by evaluating all options for heat recovery throughout the pulping and paper making operations on site, having tracked the changing temperature profile throughout the period. - Opportunities and techniques for reducing freshwater use, wastewater flow at the point of discharge and the pollution load of the discharge by evaluating all options for minimising freshwater use throughout the pulping and paper making operations on site. - Following commissioning of the ETP and AD plant review emission data and evaluate the suitability of the ELV's for COD and TSS for W1 as detailed in Table S3.2 of this permit, provide justification for retaining any headroom and explore opportunities for improvement. <p>A mechanism shall also be included within the site EMS procedures to determine further opportunities for improvement. The Operator shall submit the report to the Environment Agency, for approval, summarising the findings along with any proposed improvements and a timescale for its implementation.</p>	12 months after commissioning of the ETP and AD Plant
IP11	<p>The operator shall develop and submit for approval by the Environment Agency a gas utilisation plan to report and assess current performance and compliance against the emission limits for boilers LCP 187 when fired on both natural gas and combined natural gas/ biogas. The gas utilisation plan shall include but not limited to an assessment on gas volume and composition.</p> <p>The report should include any additional monitoring undertaken and set out the results and conclusions of the assessment including where necessary proposals for improvements to meet the ELV requirements.</p> <p>If the assessment identifies that compliance with the emission limits is problematic, the Operator shall propose alternative mixed gas emission limits for approval by the Environment Agency, for example representative multi-fuel emission limits that complies</p>	12 months after commissioning of the ETP and AD Plant

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	<p>with the requirements of Article 40 of the Industrial Emissions Directive.</p> <p>Any changes to the ELV's will require a variation to the permit and any proposed change to the current limits must be supported using an appropriate air dispersion model using our H1 guidance or equivalent methodology. The Operator shall notify the Environment Agency of the intention to vary within 12 months after commissioning of the ETP and submit an application for a variation to the Environment Agency within 15 months after commissioning of the ETP.</p>	

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
POM1	<p>The operator shall provide a written demonstration that burning of the effluent filter cake will produce sufficient calorific value to be considered as a waste recovery operation rather than a waste disposal operation.</p> <p>The operator shall not burn any effluent filter cake until written acceptance has been provided by the Environment Agency.</p>
POM2	<p>The operator shall submit a report that reviews the final design of the AD plant (Activity AR2) to demonstrate that the design meets the requirements of BAT (best available techniques) as described in the BAT Reference Document for Waste Treatment (the BREF) and BAT conclusions dated 10/08/2018.</p> <p>The report should identify and confirm how the process control and the monitoring requirements for the AD plant (Activity AR2) detailed in table S3.4 will be implemented.</p> <p>No waste or effluent shall be accepted at the AD plant (Activity AR2) unless the Environment Agency has given prior written permission under this condition.</p>
POM3	<p>At least 10 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of the AD plant (Activity AR2), the operator shall provide a written commissioning plan (including timescales for completion) for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the measures to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved by the Environment Agency.</p> <p>No waste or effluent shall be accepted at the AD plant (Activity AR2) unless the Environment Agency has given prior written permission under this condition.</p>

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
POM4	<p>At least 2 weeks (or any other date as agreed with the Environment Agency) prior to the commencement of commissioning of the AD plant (Activity AR2), the operator shall submit an odour management plan to the Environment Agency for written approval. The plan shall take into account the appropriate measures for odour control specified in section 7.6.5 of the Environment Agency Draft Technical Guidance for Anaerobic Digestion (Reference LIT 8737, November 2013). The plan shall also include all the required information as specified in the Environment Agency Horizontal Guidance H4 - Odour Management.</p> <p>No waste or effluent shall be accepted at the AD plant (Activity AR2) unless the Environment Agency has given prior written permission under this condition.</p>
POM5	<p>At least 2 weeks (or any other date as agreed with the Environment Agency) prior to commissioning of the AD plant, the operator shall confirm in writing that the site Environmental Management System (EMS) has been updated to include the AD plant (Activity AR2) and any changes to equipment or any necessary updates to staff training and that the requirements of permit condition 1.1.1 have been satisfied.</p>

Table S1.5 Minimum Start-up Load and Minimum Shutdown load		
Emission Point and Unit Reference	Minimum start up load	Minimum shut-down load
A2 LCP186	<ul style="list-style-type: none"> • Bed temperature >650°C <p>AND</p> <ul style="list-style-type: none"> • Steam pressure >90bar <p>OR</p> <ul style="list-style-type: none"> • Boiler steam load >16kg/second <p>OR</p> <ul style="list-style-type: none"> • Start-up vent is closed 	<ul style="list-style-type: none"> • Solid fuel supply to boiler is stopped <p>OR</p> <ul style="list-style-type: none"> • Boiler steam load <16kg/second
A3 and A4 LCP 187	<ul style="list-style-type: none"> • Boiler pressure reaches 8 bar(g); and <p>OR</p> <ul style="list-style-type: none"> • 52 minutes from beginning of start of sequence 	<ul style="list-style-type: none"> • Boiler pressure <8 bar(g)

Schedule 2 – Waste types, raw materials and fuels

Raw materials and fuel description	Specification
Biomass	Trees, branches and bark derived from forestry works, woodland management, tree surgery and similar operations excluding clippings and trimmings consisting primarily of foliage.
Virgin timber products	Wood off-cuts, shavings, sawdust and chippings from virgin timber processing or manufacture of timber products from virgin timber
Clean recovered products	Clean recovered wood excluded from the Waste Incineration Directive by virtue of Article 2 (2) (a) (iv) and in accordance with the specification(s) in the contract with the approved supplier(s).

Maximum quantity	-
Waste code	Description
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing
02 01	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 07	wastes from forestry
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard
03 01	wastes from wood processing and the production of panels and furniture
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	wastes from pulp, paper and cardboard production and processing
03 03 01	waste bark and wood
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation (filter cake from onsite effluent treatment plant only)
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 07	wood other than that mentioned in 19 12 06

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on site plan in schedule 7]	Total Volatile Organic Compounds (expressed as Carbon)	Andritz Refiner	-	-	-	-
LCP186 BFB Plant						
A2 [Point A2 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP186 BFB Plant Stack	200 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP186 BFB Plant Stack	200 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP186 BFB Plant Stack	400 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Carbon Monoxide	LCP186 BFB Plant Stack	200 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Carbon Monoxide	LCP186 BFB Plant Stack	200 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Carbon Monoxide	LCP186 BFB Plant Stack	400 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A2 [Point A2 on site plan in schedule 7]	Sulphur Dioxide	LCP186 BFB Plant Stack	200 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Sulphur Dioxide	LCP186 BFB Plant Stack	200 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Sulphur Dioxide	LCP186 BFB Plant Stack	400 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Dust	LCP186 BFB Plant Stack	20 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Dust	LCP186 BFB Plant Stack	20 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Dust	LCP186 BFB Plant Stack	40 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Ammonia	LCP186 BFB Plant Stack	5 mg/m ³	Average value over monitoring period	Quarterly	TGN M22
A2 [Point A2 on site plan in schedule 7]	Oxygen	LCP186 BFB Plant Stack	-	-	Continuous As appropriate to reference	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A2 [Point A2 on site plan in schedule 7]	Water Vapour	LCP186 BFB Plant Stack	-	-	Continuous As appropriate to reference	BS EN 14181
A2 [Point A2 on site plan in schedule 7]	Stack gas temperature	LCP186 BFB Plant Stack	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 [Point A2 on site plan in schedule 7]	Stack gas pressure	LCP186 BFB Plant Stack	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 [Point A2 on site plan in schedule 7]	-	LCP186 BFB Plant Stack	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
LCP187 Boilers No.1 & No.2						
A3 & A4 [Point A3 & A4 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP 187 Boiler 1 & Boiler 2 Stack, Plant fired on natural gas or a combination of biogas and natural gas	100mg/m ³	-	At least every 6 months	BS EN 14792
A3 & A4 [Point A3 & A4 on site plan in schedule 7]	Sulphur Dioxide	LCP 187 Boiler 1 & Boiler 2 Stack Plant fired on natural gas or a combination of biogas and natural gas	35 mg/m ³	-	At least every 6 months	Concentration by calculation, or as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A3 & A4 [Point A3 & A4 on site plan in schedule 7]	Carbon Monoxide	LCP 187 Boiler 1 & Boiler 2 Stack Plant fired on natural gas or a combination of biogas and natural gas	20mg/m ³	-	At least every 6 months	BS EN 15058
A3 & A4 [Point A3 & A4 on site plan in schedule 7]	Dust	LCP 187 Boiler 1 & Boiler 2 Stack Plant fired on natural gas or a combination of biogas and natural gas	5mg/m ³	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A3 & A4 [Point A3 & A4 on site plan in schedule 7]	Oxygen	LCP 187 Boiler 1 & Boiler 2 Stack Plant fired on natural gas or a combination of biogas and natural gas	-	-	Periodic As appropriate to reference	BS EN 14789
A3 & A4 [Point A3 & A4 on site plan in schedule 7]	Water Vapour	LCP 187 Boiler 1 & Boiler 2 Stack Plant fired on natural gas or a combination of biogas and natural gas	-	-	Periodic As appropriate to reference	BS EN 14790

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A3 & A4 [Point A3 & A4 on site plan in schedule 7]	-	LCP 187 Boiler 1 & Boiler 2 Stack Plant fired on natural gas or a combination of biogas and natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A5 Location Point subject to POM2	Biogas emergency flare [1]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³	Hourly average	Annual	BS EN 14792
		Carbon monoxide	50 mg/m ³	Hourly average	Annual	BS EN 15058
		Total VOCs	10 mg/m ³	Hourly average	Annual	BS EN 12619:2013
A6 Location Point subject to POM2	No Parameters Set	Biogas pressure relief valves	No limit set		Record of operating hours	
<p>Note [1]: Following commissioning, monitoring to be undertaken in the event the emergency flare has been operational for more than 10 per cent of a year (876 hours). If triggered a review of the operational techniques for the AD plant shall be carried out to assess how the utilisation of the emergency flare can be reduced.</p>						

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 emission point to Irish Sea at NGR NX 995 317 The sample point shall be at NGR NY 002 212	Total suspended solids	Effluent Treatment plant	750 mg/l 525 mg/l from 01/01/2024 Note 3	24-hour flow proportional sample	Daily Note 6	BS EN 872
			70 Te/week 49 Te/week from 01/01/2024 Note 2, Note 3			
	Chemical Oxygen Demand (COD)	Effluent Treatment plant	2,250 mg/l 1,575 mg/l from 01/01/2025 Note 3	24-hour flow proportional sample	Daily Note 6	BS ISO 15705 Note 2
			280 Te/week 196 Te/week from 01/01/2025 Note 2, Note 3			
	Biochemical oxygen demand (BOD ₅)	Effluent Treatment plant	No limit set	24-hour flow proportional sample	Weekly (once a week) Note 5	BS EN 1899-1
	Total nitrogen	Effluent Treatment plant	No limit set	24-hour flow proportional sample	Weekly (once a week) Notes 5 and 6	BS EN 12260
Total phosphorus	Effluent Treatment plant	No limit set	24-hour flow proportional sample	Weekly (once a week) Notes 5 and 6	BS EN ISO 15681- 1 Or BS EN ISO 15681- 2	

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
	EDTA, DTPA	Effluent Treatment plant	No limit set	24-hour flow proportional sample	Monthly	EDTA, DTPA BS EN ISO 16588 or alternative method to be agreed in writing with the Environment Agency
	Temperature	Effluent Treatment plant	No limit set	Instantaneous	Continuous	Standard temperature sensor
	Maximum Daily Flow	Effluent Treatment plant	No limit set	24 hours	Daily	MCERTS self-monitoring of effluent flow scheme
	Mean Daily Flow		No limit set	24 hours	Daily	
	Cadmium and its compounds, expressed as cadmium (Total Cd)	Effluent Treatment plant	2.5 µg/l	24-hour flow proportional sample	Monthly	BS EN ISO 15586
	Metals Total and Dissolved (Zn, Cu, Cd, Pb, Ni, Hg)	Effluent Treatment plant	No limit set	Spot sample	twice a year	BS EN ISO 15586 BS EN ISO 17852 for Hg only
	Hazardous Pollutants Screen ^{Note 1}	Effluent Treatment plant	No limit set	Spot sample	Twice a year	GC/MS analysis to be carried out by UKAS accredited laboratory
W1 Shoreline	To be agreed in writing with the Environment Agency	W1	No limit set	Periodic survey at frequency to be agreed with the Environment Agency	To be agreed with the Environment Agency ^{Note 4}	Survey shall be undertaken by persons or organisations with suitable experience as agreed in writing with the Environment Agency

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W2 emission point to Siddick Point at NGR NY 0009 3072	Chemical Oxygen Demand (COD)	Surface water drainage from yard areas	350 mg/l	Spot sample	Daily (Monday to Friday) subject to flow over the weir	BS ISO 15705 Note 2
	pH	Surface water drainage from yard areas	5 – 9.5	Instantaneous	Continuous	BS EN ISO 10523
	Visible oil and grease	Surface water drainage from yard areas	No trace present	Instantaneous (spot sample)	Daily (Monday to Friday) subject to flow over the weir	Visual inspection with records kept for inspection
	Cadmium and its compounds, expressed as cadmium (Total Cd)	Surface water drainage from yard areas	2.5 µg/l	Spot sample	Monthly	BS EN ISO 15586
	Metals Total and Dissolved (Zn, Cu, Cd, Pb, Ni, Hg)	Surface water drainage from yard areas	No limit set	Spot sample	Twice a year	BS EN ISO 15586 BS EN ISO 17852 for Hg only
W3 emission point to French Drain between NGR NY 0024 3123 and NY 0038 3148	No parameters set	Surface water drainage from yard areas	No limit set	-	-	-
<p>Note 1: Hazardous pollutants screen substances are: Chlorpyrifos, Cypermethrin, Endosulphan (A & B), 4- nonylphenols & Nonylphenol ethoxylates, PCP, TBT.</p> <p>Note 2: Each week period shall commence at 00:00 hours on Sunday and finish at 23.59 hours on Saturday.</p> <p>Note 3: Limit reduction of 30% due to installation of new ETP / AD for COD and TSS.</p> <p>Note 4: The results of the shoreline assessment shall be used to review the limits in place.</p> <p>Note 5: Weekly samples should be collected by following a randomised sampling program as far as is practicable.</p> <p>Note 6: If internal rapid test methods are used, they must be cross referenced by external tests to EN or ISO standards monthly.</p>						

Table S3.3 Annual limits				
Limit (including unit) kg/T				
Substance	Medium	Until 31/12/2023	Until 31/12/2024	From 01/01/2025
Chemical Oxygen Demand (COD)	Water ^{Note 1}	45	40	26
Total suspended solids (TSS)	Water ^{Note 1}	7.5	2.8	2.8
Total nitrogen	Water ^{Note 1}	0.16	0.16	0.16
Total phosphorus	Water ^{Note 1}	0.022	0.022	0.022
<p>Note 1: For integrated or multi product mills where the BAT AEL range has been calculated according to a mixing rule based on their share of the discharge, based on information supplied by the Operator, the Operator must notify the Environment Agency if the product/ raw material mix changes by more than 10% in any direction.</p>				

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Bubbling Fluidised Bed – Combustion Chamber	Temperature	Continuous	As agreed in writing with the Agency	-
Bubbling Fluidised Bed – Combustion Chamber	Exhaust gas temperature	Continuous	As agreed in writing with the Agency	-
Bubbling Fluidised Bed – Combustion Chamber	Exhaust gas pressure	Continuous	As agreed in writing with the Agency	-
Bubbling Fluidised Bed – Combustion Chamber	Exhaust gas water content	Continuous	BS EN 15627-3	-
Bubbling Fluidised Bed – Combustion Chamber	Exhaust gas oxygen content	Continuous	BS EN 15627-3	-
Bubbling Fluidised Bed – Combustion Chamber	Exhaust gas flow rate	Continuous	BS EN 15627-3	-
Bottom Ash	Loss on Ignition (LOI) or Total Organic Carbon (TOC)	Monthly for first year of operation and quarterly thereafter	Ash sampling protocol to be agreed in writing with the Agency	-
Raw water inlet	Hazardous Pollutants screen ^{Note 1}	Twice per annum as per discharge monitoring	GCMS analysis at UKAS accredited laboratory	Spot sample
Note 1: Hazardous pollutants screen substances are: Chlorpyrifos, Cypermethrin, Endosulphan (A & B), 4- nonylphenols & Nonylphenol ethoxylates, PCP, TBT.				

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Anaerobic Digestion Process Monitoring Requirements (activity AR2 in table S1.1 of this permit)				
Digester feed (digestion process)	pH	As described in site operating techniques	As described in site operating techniques	Process monitoring to be recorded using a SCADA system where relevant.
	Alkalinity			
	Temperature			
	Hydraulic loading rate			
	Organic loading rate			
	Volatile fatty acids concentration			
	Ammonia			
	Liquid /foam level			
Biogas in digester	Flow	Continuous	In accordance with EU weights and measures Regulations	Process monitoring to be recorded using a SCADA system where relevant. Gas monitors to be calibrated every 6 months or in accordance with the manufacturer's recommendations.
	Methane	Continuous	None specified	
	CO ₂	Continuous	None specified	
	O ₂	Continuous	None specified	
	Hydrogen sulphide	Daily	None specified	
	Pressure	Continuous	None specified	
Digestate batch	Volatile fatty acids concentration	One sample at the end of each batch (hydraulic retention time) cycle.	As described in site operating techniques	--
	Ammonia			
Digester(s) and storage tank(s)	Integrity checks	Weekly	Visual assessment	In accordance with design specification and tank integrity checks.
Digester(s)	Agitation /mixing	Continuous	Systems controls	Records maintained in daily operational records.

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Tank capacity and sediment assessment	Once every 5 years from date of commission or otherwise advised by a suitable qualified / certified third party tank inspector	Non-destructive pressure testing integrity assessment every 5 years or as specified by manufacturers technical specification.	In accordance with design specification and tank integrity checks.
Waste reception building or area; Digester(s) and storage tank(s)	Odour	Daily	Olfactory monitoring	Odour detection at the site boundary.
Diffuse emissions from all sources identified in the Leak Detection and Repair (LDAR) programme	VOCs including methane	Every 6 months or otherwise agreed in accordance with the LDAR programme	BS EN 15446 In accordance with the LDAR programme	Monitoring points as specified in a DSEAR risk assessment and LDAR programme. Limit as agreed with the Environment Agency as a percentage of the overall gas production.
Meteorological conditions	Wind speed, air temperature, wind direction	Continuous	Method as specified in management system	Conditions to be recorded in operational diary and records. Equipment shall be calibrated on a 4 monthly basis, in accordance with manufacturer's recommendations or as agreed in writing by the Environment Agency.
Emergency flare	Operating hours	Continuous	Recorded duration and frequency. Recording using a SCADA system or	Date, time and duration of use of auxiliary flare shall be recorded.

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
	Quantity of gas sent to emergency flare		similar system	Quantity can be estimated from gas flow composition, heat content, ratio of assistance, velocity, purge gas flow rate, pollutant emissions.
Pressure relief valves and vacuum systems	Gas pressure	Continuous	Recording using a SCADA system	Continuous gas pressure shall be monitored.
	Re-seating	Weekly inspection	Visual	Operator must ensure that valves are re-seated after release in accordance with the manufacturer's design.
	Inspection, maintenance, calibration, repair and validation	Following foaming or overtopping or at 3 yearly intervals whichever is sooner	Written scheme of examination in accordance with condition 1.1.1	After a foaming event or sticking, build-up of debris, obstructions or damage, operator must ensure that pressure relief valve function remains within designed gas pressure in accordance with the manufacturer's design by suitably trained and qualified personnel.
	Inspection, calibration and validation report	In accordance with design and construction specifications or after over topping or foaming event	Written scheme of examination in accordance with condition 1.1.1	Operator must ensure that valves are re-seated after release, after a foaming event or sticking, build-up of debris, obstructions or damage. Operator must ensure that PRV function remains within designed operation gas pressure in accordance with the manufacturer's design by suitably trained/qualified personnel. Inspection, calibration and validation report. In accordance with industry Approved Code of Practice
Storage tanks	Volume	Daily	Visual or flow meter	Records of volume must be maintained.

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
			measurement	
Odour Abatement	To be agreed in writing with the Environment Agency following completion of POM2			

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen	A2	Every 3 months	1 January, 1 April, 1 July, 1 October
	A3, A4	Every 6 months	1 January, 1 July
Carbon Monoxide	A2	Every 3 months	1 January, 1 April, 1 July, 1 October
	A3, A4	Every 6 months	1 January, 1 July
Sulphur dioxide	A2	Every 3 months	1 January, 1 April, 1 July, 1 October
	A3, A4	Every 6 months	1 January, 1 July
Dust	A2	Every 3 months	1 January, 1 April, 1 July, 1 October
	A3, A4	Every 6 months	1 January, 1 July
Ammonia	A2	Every 3 months	1 January, 1 April, 1 July, 1 October
Emissions to air from emergency flare as required by condition 3.5.1 Oxides of Nitrogen, Carbon Monoxide, Total VOCs	A5	Every 12 months	1 January
Emissions to air from biogas pressure relief valves Record of operating hours	A6	Every 12 months	1 January
Emissions to Water Parameters as required by condition 3.5.1	W1, W2	Every 3 months	1 January, 1 April, 1 July, 1 October
		Every 6 months	1 January, 1 July
Exhaust gas temperature, pressure, water content, oxygen content and flow rate. Parameters as required by condition 3.5.1	A2	As requested by Environment Agency Note 1	1 January
Combustion chamber temperature Parameters as required by condition 3.5.1	A2	As requested by Environment Agency Note 1	1 January
Loss on Ignition Parameters as required by condition 3.5.1	Bottom Ash	Annually	1 January
Note 1: These parameters would not normally be required to be reported but would be available for inspection on site only where there is an operational need should a report be required.			

Table S4.2 Annual production	
Parameter	Units
Power generated from Biomass CHP Plant	GWHrs
Whole digestate	tonnes

Table S4.3A Chapter III Performance parameters for reporting to DEFRA and other Performance parameters		
Parameter	Frequency of assessment	Units
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	tJ
Total Emissions to Air of NO _x for each LCP	Annually	T
Total Emissions to Air of SO ₂ for each LCP	Annually	T
Total Emissions to Air of dust for each LCP	Annually	T
Operating Hours for each LCP (Load Factor)	Annually	hr
Total effluent filter cake used in BFB boiler	Annually	T
Total ammonia sulphate used	Annually	T
Total bottom ash sent for disposal	Annually	T
Total bottom ash sent for recovery	Annually	T
Total APC residues sent for disposal	Annually	T
Total APC residues sent for recovery	Annually	T

Table S4.3B Performance parameters for Boardmill			
Parameter Note 1	Frequency of assessment	Units	Units
Water inputs to the Mill ^{Note 1}	Annually	Tonnes	m ³ /t
Water used in manufacturing ^{note 1}	Annually	Tonnes	m ³ /t
Other inputs of water/moisture ^{Note 1}	Annually	tonnes	m ³ /t
Water outputs ^{Note 1}	Annually	tonnes	m ³ /t
Waste/raw material inputs ^{Note 1}	Annually	tonnes	
Waste/raw material outputs ^{Note 1}	Annually	tonnes	
Net total annual production ^{Note 1}	Annually	tonnes	
Note 1: All to be monitored and reported in accordance with associated guidance note issued with the permit.			

Table S4.4 Reporting forms				
Media/ parameter	Reporting format	Starting Point	Agency recipient	Date of form
LCP	Form IED AR1 - AR1 – SO2, NOx and dust mass emission and energy	01/01/16	National & Area Office	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National & Area Office	31/12/15
Air	Form IED CON 1 – continuous monitoring.	01/01/16	Area Office	31/12/15
LCP	Form IED BD1 – Cumulative annual rolling malfunction and breakdown hours	01/01/16	Area Office	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
Air	Form IED PM1 - discontinuous monitoring and load.	01/01/16	Area Office	31/12/15
Air	Form IED PM2 - discontinuous monitoring and load.	01/01/16	Area Office	31/12/15
Air (Biogas flare)	Form Air 1 or other form as agreed in writing by the Environment Agency	25/08/22	Area Office	09/09/2022
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	2016
Other performance indicators including Anaerobic Digestion performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	2016
Bottom Ash	Form Ash 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15
Biomass CHP performance indicators	Form performance 2 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15
Process Monitoring Anaerobic Digestion (Activity AR2)	Form Process 1 or other form as agreed in writing by the Environment Agency	25/08/22	Area Office	09/09/2022

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	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
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) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
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.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Part C Malfunction or Breakdown of LCP abatement equipment

Permit Number	
Name of operator	
Location of Facility	
LCP Number	
Malfunction or breakdown	
Date of malfunction or breakdown	

(a) Notification requirements for any malfunction and breakdown of abatement equipment as defined by the Industrial Emission Directive*.	
To be notified within 48 hours of abatement equipment malfunction and breakdown	
Time at which malfunction or breakdown commenced	
Time at which malfunction or breakdown ceased	
Duration of the breakdown event in hours and minutes	
Reasons for malfunction or breakdown	
Where the abatement plant has failed, give the hourly average concentration of all measured pollutants.	
Cumulative breakdown operation in current year (at end of present event)	
Cumulative malfunction operation in current year (at end of present event)	
Name**	
Post	
Signature **	
Date	

* See section 3.6 and Appendix E of ESI Compliance Protocol for guidance

** authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

“ADt” means Air Dried Tonnes (of pulp) expressed as 90% dryness. ADt for paper should be reported at “normal” or average moisture content for the production over the course of any one year, noted but not corrected.

“Air Quality Risk Assessment” has the meaning given in Annex D of IED Compliance Protocol for Utility Boilers and Gas Turbines.

“APC residues” means air pollution control residues.

“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 the Environment Agency 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.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“Best available techniques” means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole:

(a) ‘techniques’ includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;

(b) ‘available techniques’ means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator;

(c) ‘best’ means most effective in achieving a high general level of protection of the environment as a whole.

“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 grate or transported by the grate.

“breakdown” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

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

“CEN” means Comité Européen de Normalisation.

“CHP” means Combined Heat and Power.

“disposal” means any of the operations provided for in Annex I to the Waste Framework Directive.

“emissions to land” includes emissions to groundwater.

“energy efficiency” the annual net plant energy efficiency means the value calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 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 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.

“Hazardous property” has the meaning in Annex III of the Waste Framework Directive.

“Hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input excludes individual combustion plants with a rated thermal input below 15MW.

“low polluting fuels” means biomass or coal with an average as-received sulphur content of less than 0.4% by mass as described in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

Metals monitoring as follows: Zn (Zinc), Cu (Copper), Cd (Cadmium), Pb (Lead), Ni (Nickel), Hg (Mercury).

“malfunction” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“List of Wastes” means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste.

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

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

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

“ncv” means net calorific value.

Net production is as follows:

- 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 tonnes after the tissue machine before any rewinding processes and excluding any core.
- (iv) For market pulp mills: tonnage after packing (pulp at 90 % dryness, i.e. 'air dry' - AD).

(v) For integrated pulp mills: net pulp production refers to the tonnage after packing (pulp at 90 % dryness, i.e. AD) plus the pulp transferred to the paper mill (pulp calculated at 90 % dryness, i.e. air dry). For the net paper production of the integrated mill refer to (i).

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

Pests” means Birds, Vermin and Insects.

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

“SI” means site inspector.

“standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

Total nitrogen (Tot-N). Total nitrogen (Tot-N) given as N, The sum of organic nitrogen, free ammonia and ammonium (NH₄⁺-N), nitrites (NO₂⁻-N) and nitrates (NO₃⁻-N).

Total phosphorus (Tot-P). Total phosphorus (Tot-P) given as P, includes dissolved phosphorus plus any insoluble phosphorus carried over into the effluent in the form of precipitates or within microbes.

“recovery” means any of the operations provided for in Annex II to the Waste Framework Directive.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes 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, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

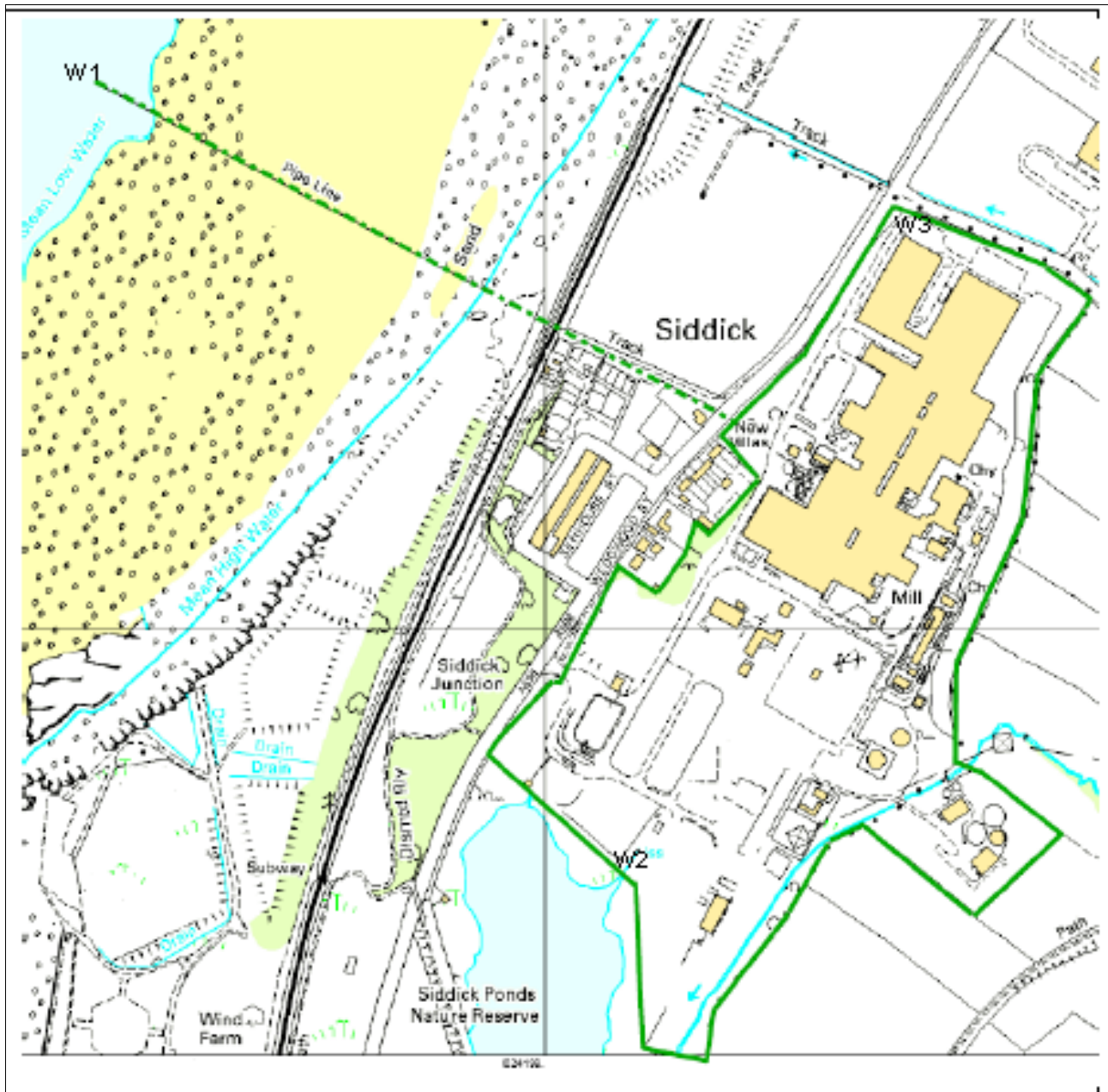
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

- 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
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- 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.

“year” means calendar year ending 31 December.

Schedule 7 – Site plan



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END OF PERMIT

Annex to conditions – Derogation under Industrial Emissions Directive

Derogation under Article 15(4) of Industrial Emissions Directive

DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

Operating Techniques

We have considered the Operator's proposed techniques and its comparison against other relevant techniques as described in the BAT Conclusions in the Commission Implementing Decision 2014/687/EU for the Paper and Pulp sector, published 30 September 2014. Our full reasoning is given in our decision document that accompanies the permit determination.

The non-time limited derogation from BAT Conclusions 40 and 50 is based on the technical characteristics of the site and covers the relevant BAT AEL's for Chemical Oxygen Demand (COD), Total Suspended Solids (TSS) and Phosphorous (P). These existing limits are to be extended from 31/12/2021 to the 31/12/2024, the derogated limits to apply thereafter until the next BREF cycle.

Key to this derogation is BATc 14. This specifies that both primary (physico-chemical) and secondary (biological) treatments will be used. The revised timescale for implementation is also based on the technical characteristics of the mill, extends the time from 31/12/2021 to the 31/12/2024.

We are satisfied that the Operator has demonstrated that the cost of complying with the BAT AEL's is disproportionate to the value of damage to the environment. We are also satisfied that the Operator has demonstrated that the assessment of derogation impacts shows they are not likely to be significant. Evidence from the shoreline surveys and the CORMIX modelling supports the conclusion that there will not be a significant environmental impact from the derogation proposal.

The operator's preferred option for secondary treatment is anaerobic digestion and to replace the current primary treatment. This will enable the operator to reduce the amount of TSS and COD discharged in the effluent to the Solway Firth. The operator requires further time to complete these changes and has proposed interim BATAEL's in a phased reduction aligned to the constructional phases of the primary and secondary treatment and to revisit the BATAEL's at the next BREF cycle.

We have therefore set the following requirements:

1. That all work to comply with the applicable BAT AEL's for the site are completed by the 31 December 2024.
2. That the annual limits for COD, TSS and P have been set in Table S3.3 in a phased reduction aligned to the constructional phases of the primary and secondary treatment.