

## **Permit with introductory note**

The Environmental Permitting (England & Wales) Regulations 2016

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**AB InBev UK Limited**

**Magor Brewery  
The Brewery  
Wilcrick  
Magor  
Monmouthshire  
NP26 3RA**

Permit number  
**EPR/BX7282IS**

# Magor Brewery

## Permit number EPR/BX7282IS

### Introductory note

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

The main features of the permit are as follows.

The installation consists of 2 physical sites, the brewery and effluent treatment plant, which are separated by 2 km but connected by an underground pipeline 5 km long. The brewery produces beers well-known brands such as Budweiser, Corona, Stella Artois, Becks and Boddingtons. They package the beer brewed on site, and other beers brought onto site, into cans, kegs and bottles. The raw materials include water (from a natural spring in the area), malt, adjuncts, and hops. The process involves 5 stages, brewing, fermentation, maturation, filtration and packaging.

Under the most current variation a new dedicated keg filling line with the capacity to fill 1600 kegs an hour (equal to 500 khl/ year) and a 'Pick and Pack' area. This kegging line will be added to its existing facility, for the packaging and flash pasteurisation of keg beer, from receipt of beer to despatch of final product.

The spent grains are sold as cattle feed while the effluent is treated in the site's effluent treatment plant. The effluent is discharged into the Severn Estuary and the biogas generated from the effluent treatment plant is used to generate electricity via a Combined Heat and Power plant, this powers the effluent treatment plant, with excess electricity exported to the grid. Excess biogas is flared off. There are two surface water discharges, one from the main brewery site into the Waundeilas Reen and the other from the effluent treatment plant site into the Mill Reen.

The main brewery site has four gas-fired boiler plant with an aggregated net rated thermal input of 20 or more megawatts, but less than 50 megawatts.

The two sites are surrounded by six SSSI and four Natura 2000 sites including the Severn Estuary Ramsar.

The site has an Environmental Management System and there is a climate levy agreement in place.

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

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application BX7282IS/A001	Received 28/10/04	
Response to request for information (Schedule 4)	Request 17/01/05	Response dated 14/02/05

**Status log of the permit**

<b>Description</b>	<b>Date</b>	<b>Comments</b>
Response to request for information	Requests dated: 28/01/05, 28/02/05, 02/03/05, 03/03/05, 22/04/05, 29/04/05, 13/05/05, 20/05/05, 01/06/05	Responses dated: 14/02/05, 22/03/05, 04/03/05, 08/03/05, 25/04/05, 08/05/05, 20/05/05, 24/05/05, 01/06/05, 14/06/05
Variation determined BX7282IS/V002	16/06/06	
Variation Application EPR/BX7282IS/V003	Duly made 18/07/11	
Variation determined EPR/BX7282IS/V003	16/08/11	
Variation Application EPR/BX7282IS/V004	Received 05/03/12	
Variation determined EPR/BX7282IS/V004	Issued 14/03/12	
Agency variation determined EPR/BX7282IS/V005	25/03/13	Agency variation to implement the changes introduced by IED
Variation Application EPR/BX7282IS/V006	Duly Made 16/01/14	To vary carbon monoxide emissions and to vary the installation boundary
Request for further information Schedule 5 Notice dated 06/03/14	Received 04/04/14	
Variation determined	23/09/14	
Regulation 61 Notice sent to the Operator	27/04/20	Issue of a Notice under Regulation 61(1) of the EPR. Natural Resources Wales initiated review and variation to vary the permit following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for Food, Drink and Milk.
Variation Application EPR/BX7282IS/V007	Duly Made 12/10/20	
Regulation 61 Notice response	30/10/20	Response received from the operator.
Variation determined EPR/BX7282IS/V007	23/08/21	Permit issued to AB InBev UK Ltd

**Status log of the permit**

<b>Description</b>	<b>Date</b>	<b>Comments</b>
NRW Initiated Variation determined EPR/BX7282IS/V008	08/03/2022	Varied permit issued to Operator. Natural Resources Wales initiated review and variation to vary the permit following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for the Food, Drink and Milk Industries.
Variation Application EPR/BX7282IS/V009	Duly Made 08/06/2022	Variation to add a new dedicated keg filling line
Variation determined EPR/BX7282IS/V009	27/09/2022	Varied permit issued to AB InBev UK Ltd.

End of introductory note

# Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number  
**EPR/BX7282IS**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BX7282IS/V009 authorising

**AB InBEv UK Limited** (“the operator”),  
whose registered office is

**Bureau  
90 Fetter Lane  
London  
England  
EC4A 1EN**

company registration number **03982132**  
to operate an installation at

**Magor Brewery  
The Brewery  
Wilcrick  
Magor  
Caldicot  
Monmouthshire  
NP26 3RA**

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

Signed

Date

<b>Holly Noble</b>	<b>27/09/2022</b>
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Authorised on behalf of Natural Resources Wales

# Conditions

## 1 Management

### 1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

### 1.2 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.

### 1.3 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 red on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.
- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.3 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.
- 2.3.4 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.

### **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by Natural Resources Wales.

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

## **3 Emissions and monitoring**

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

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Where a substance is specified in schedule 3 table S3.2 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.
- 3.1.4 Total annual emissions from the emission point(s) set out in table schedule 3, S3.2 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.
- 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 Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.3 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 Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:

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

### **3.4 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 Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
  - (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
  - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

### **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
  - (a) point source emissions specified in tables S3.1, S3.2;
  - (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 Natural Resources Wales.
- 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, S3.2 unless otherwise agreed in writing by Natural Resources Wales.

### **3.6 Pests**

- 3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.
- 3.6.2 The operator shall:
  - (a) if notified by Natural Resources Wales, submit to Natural Resources Wales for approval within the period specified, a pest's management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;

- (b) implement the pest's management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales

## **4 Information**

### **4.1 Records**

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

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

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

### **4.2 Reporting**

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

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production / treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

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

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to Natural Resources Wales, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

## 4.3 Notifications

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

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering 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 a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

- 4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) Natural Resources Wales shall be notified at least 14 days before making the change; and
  - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.6 Natural Resources Wales shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.7 Where the operator has entered into a climate change agreement with the Government, Natural Resources Wales shall be notified within one month of:
- (a) a decision by the Secretary of State not to re-certify the agreement;
  - (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
  - (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

## **4.4 Interpretation**

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately” or “without delay” in which case it may be provided by telephone.

# Schedule 1 - Operations

<b>Table S1.1 activities</b>				
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>	
AR1	Section 6.8 A(1)(d)(ii) - Treating and processing materials intended for the production of food products from vegetable raw materials at plant with a finished product production capacity of more than 300 tonnes per day (average value on a quarterly basis).	Brew Line 1 - Milling, mashing, mash filtration, wort boiling, trub separation, filtration, yeast pitching, fermentation, treatment	Receipt of raw materials to packaging.	Maximum capacity limited to the agreed figure provided in response to part (b) of Improvement Condition 19.
AR2		Brew Line 2 - Milling, mashing, mash filtration, wort boiling, trub separation, filtration, yeast pitching, fermentation, treatment	Receipt of raw materials to packaging.	
AR3		Packaging and flash pasteurisation of keg beer	Receipt of beer to despatch of final product.	
AR4		Packaging and tunnel pasteurisation of canned beer - Line 1	Receipt of beer to despatch of final product.	
AR5		Packaging and tunnel pasteurisation of canned beer - Line 2	Receipt of beer to despatch of final product.	
AR6		Packaging and flash pasteurisation of bottled beer – Line 1	Receipt of beer to despatch of final product.	
AR7		Packaging and tunnel or flash pasteurisation of bottled beer – Line 2	Receipt of beer to despatch of final product.	
AR8		Packaging and tunnel pasteurisation of bottled beer – Line 3	Receipt of beer to despatch of final product.	
AR9		Packaging and tunnel pasteurisation of bottled beer – Line 4	Receipt of beer to despatch of final product.	
AR10	Section 1.1 B(a)(i) – Burning any fuel in a boiler with a rated thermal input of 20 or more megawatts, but a rated thermal input of less than 50 megawatts	Natural gas fired steam boilers.	Receipt of fuels to emission of combustion gases. Fossil fuels in boilers limited to natural gas and gas oil with sulphur content less than or equal to 0.1% w/w	
AR11	Section 5.4 A(1)(a)(i) Disposal of non-hazardous waste in facility with a capacity exceeding 50 tonnes per day by biological treatment	Effluent treatment plant serving brewing lines and site	Dedicated effluent plant to the brewery includes surface runoff from the brewery and all process effluent. Final discharge to Severn Estuary.	
<b>Directly Associated Activity</b>				
AR12	Directly associated activity	Disposal of surface water at main brewery site.	From collection to dispatch into Waundeilad Reen.	

**Table S1.1 activities**

<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
AR13	Directly associated activity	Disposal of surface water at the effluent treatment plant site.	From collection to dispatch into Mill Reen.
AR14	Directly associated activity	Cleaning of biogas prior to combustion	Use of condensate pots, hydrogen sulphide scrubbing and gas conditioning plant
AR15	Directly associated activity	Flaring of biogas at the effluent treatment plant site.	From receipt of biogas to emission of combustion gases. Operation of flare if H2S levels are above 1500ppm or if excess biogas is produced.
AR16	Directly associated activity	Combustion of biogas in a gas engine with rated thermal input of <1MW	Receipt of biogas, combustion in gas engine and generation of heat and electricity.
AR17	Directly associated activity	Packaging and flash pasteurisation of keg beer	Receipt of beer to despatch of final product

**Table S1.2: Operating techniques**

<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to questions 2.1 and 2.2 given in pages 8 to 44 of the application.	28/10/04
Further information	Revised plans and location of emission points	14/02/05
Further information	Revised plan and location of water emission point to Severn Estuary	24/05/05
Variation application (EPR/BX7282IS/V003)	Response to question 3 of application form C3 Document WWTPCHP A	18/07/11
Variation Application EPR/BX7282IS/V006	The response to section 3 of part C3 of the application and the accompanying non-technical summaries	27/11/13
Further information	Revised plans	04/04/14
Variation Application EPR/BX7282IS/V007	All responses to questions of Form C2 and Form C3 including all supporting documentation	01/04/20
Response to regulation 61(1) Notice – request for information dated 27/04/20 detailing how the Operator will comply with the BAT conclusions for the Food, Drink and Milk Industries, under Directive 2010/75/EU of the European Parliament and of the Council	All	30/10/20

Variation application EPR/BX7282IS/V009	Assessment of proposed changes to activities at the Facility against the relevant sections of the indicative Best Available Techniques (BAT) relevant to the food and drink manufacture sector, as updated in 2019	15/02/2022
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ENVIRONMENTAL PERMIT VARIATION  
APPLICATION document

- Section 3 Proposed changes
- Section 4 Management system
- Section 5 Waste
- Section 6 Energy Raw material and BAT

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
IP1	The Operator shall submit a written report to the Agency on the feasibility of modifying the horizontal stacks associated with the No. 1 and No.2 CHP leading to emission points A5 and A6 to vertical emission stacks. Details of any improvements with associated timescales shall be approved by the Agency.	01/09/05
IP2	The Operator shall provide a report in writing to the Agency detailing the current monitoring method used to determine effluent at W2, having regard to EN, ISO and BS standards. The monitoring method shall be approved by the Agency.	01/09/05
IP3	The Operator shall submit a written report to the Agency describing the monitoring and reporting methodology and timetable for implementation for the determination of mass concentration of hydrogen sulphide generated from the effluent treatment plant averaged every half hour. This report shall be approved by the Agency.	01/10/05
IP4	The Operator shall review and update where necessary all the bunding on the main brewery site. The bunding is to be in accordance with the Agency Guidance IPPC H7, Version 1, August 2003	01/11/05
IP5	The Operator shall review the drainage of the ETP site's surface water discharge to the Mill Reen and shall install measures to protect the Reen from contamination.	01/11/05
IP6a	The Operator shall submit a written report to be approved by the Agency outlining the monitoring strategy and reporting format for ambient monitoring of sulphur dioxide at the effluent treatment site. The monitoring strategy shall be based on: <ul style="list-style-type: none"> <li>• a minimum of three monitoring locations, one having regard for the local footpath to the east of the effluent treatment plant, one having regard to the Severn Estuary Ramsar to the south of the effluent treatment plant and one being upwind of the prevailing wind direction;</li> <li>• a minimum of 2 months continuous monitoring whilst the flare is fully operational.</li> </ul> In designing the monitoring strategy, the Operator shall have regard for the monitoring guidance notes M8 'Environment Monitoring Strategy - Ambient Aid (published 2000) and M9 'Monitoring Methods for Ambient Aid (Published 2000).	01/11/05
IP6b	The Operator shall submit a written report to the Agency on the results and assessment of the ambient monitoring of sulphur dioxide at the effluent treatment site to the strategy submitted in response to IP6a and approved by the Agency. Where improvements are identified these shall be submitted in the report with a timetable for implementation to be approved by the Agency.	01/11/05

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
IP7	The Operator shall assess the emissions performance and efficiency of No. 1 and No.2 CHP units with reference to the draft 'IPPC Sector Guidance Note - Combustion Activities', March 2005 and the 'Draft Reference Document on Best Available Techniques for Large Combustion Plants', November 2004. A written report shall be submitted to the Agency including the results of any emissions monitoring (to include details of methods used) and an impact assessment of the emissions from No. 1 and No.2 CHP in combination with other combustion plant within the installation. The report shall also include a justification for any significant performance differences between No. 1 and No.2 CHP units. Where air dispersion modelling is proposed, the methodology for assessing the releases from air emission points A5 and A6 shall be approved by the Agency prior to assessment. Any improvements proposed, with a timetable for implementation, shall be approved by the Agency.	01/12/05
IP8	The Operator shall submit a written report on the performance of the effluent treatment plant following the commissioning of the UASB. The assessment of the performance should make reference to the sector guidance IPPC S6.10, Version 1, August 2003, and where any improvements are identified these, with a timetable for implementation, should be included in the report to be approved by the Agency.	01/01/06
IP9	The Operator shall carry out an assessment of the options available for reducing copper and zinc emissions from the effluent treatment plant at the effluent treatment site via emission point W2. A summary of the assessment shall be sent to the Agency in writing together with a timetable to implement any necessary improvements identified.	01/01/06
IP10	The Operator shall submit a written report on an assessment of methods for the handling of hydrogen sulphide generated from the effluent treatment plant with reference to the BREF "Common Waste Water and Waste Gas Treatment/Management Systems in the Chemicals Sector, February 2003. The assessment shall include proposals, with a timetable for implementation, for methods to reduce the impact of air emissions beyond the installation boundary. This assessment shall also include the consideration of raising the stack height of the flare associated with the UASB.	01/02/06
IP11	The Operator shall submit a written Closure Plan that shall be agreed with the Agency. The Plan shall have regard to the requirements set out in section 2.11 of General Sector Guidance for Food and Drink §6.10, issue 1, August 2003.	01/03/06
IP12a	<p>The Operator shall submit a report to be approved by the Agency outlining the monitoring strategy and reporting format for ambient monitoring of oxides of nitrogen from the emission points A1, A2, A3, A4, A5 and A6. The monitoring strategy shall be based on:</p> <ul style="list-style-type: none"> <li>• a minimum of two monitoring locations one being upwind of the prevailing wind direction. Any monitoring locations placed downwind of the prevailing wind direction shall have regard for the findings of any modelling submitted as part of IP7;</li> <li>• a minimum of 2 months continuous monitoring whilst the CHP units are fully operational.</li> </ul> <p>In designing the monitoring strategy, the Operator shall have regard for the monitoring guidance notes M8 'Environmental Monitoring Strategy - Ambient Air' (published 2000) and M9 'Monitoring Methods for Ambient Air' (Published 2000).</p>	01/03/06

**Table S1.3 Improvement programme requirements**

<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IP12b	The Operator shall submit a written report to the Agency on the results and assessment of the ambient monitoring of oxides of nitrogen from the emission points A1, A2, A3, A4, A5 and A6 to the strategy submitted in response to IP12a and approved by the Agency. Where improvements are identified these shall be submitted in the report with a timetable for implementation to be approved by the Agency.	01/12/06
IP13	The Operator shall provide an odour management plan in writing to the Agency, covering all odour emissions from the ETP installation. The plan shall investigate techniques by which the releases of the odorous substances may be further reduced and shall propose a plan and time scale, to be submitted to the Agency for approval.	01/04/06
IP14	The Operator shall submit a written report to the Agency assessing the method used for taking a 01/06/06 composite sample from the effluent treatment plant. This Shall include details of whether this is time-based or flow-based, and a discussion of the suitability of the method. Any improvements identified, with timetable for implementation, shall be approved by the Agency..	01/04/06
IP15	The Operator shall assess the operating performance and efficiency of No.1 and No.2 Hot Temperature Hot Water and No.4 and No.5 steam boilers. A written report shall be submitted to the Agency including details of the results of the efficiency tests and any actions (with timetable) proposed to be approved by the Agency. The report shall also include information on the net and gross thermal input for each of the boiler plant.	01/06/06
IP16	The Operator shall undertake a water efficiency audit of the installation. The audit shall have regard to Section 2.4.3 of the Agency Guidance Note IPPC S6.10, Version 1, August 2003 and shall provide a breakdown of significant water use by department or activity and shall establish the current installation performance (for example titre water/kg of product) and water efficiency objectives. A summary of the audit shall be submitted to the Agency in writing with a timetable to implement any improvements identified. Improvements shall be approved by the Agency.	01/08/06
IP17	The Operator shall demonstrate to the Agency that the composite water sampler used for the collection of samples on W2 is fit for purpose by comparing the manufacturers stated performance of the composite water sampler with the performance criteria for equivalent equipment having an MCERTs certificate as given in document ' Continuous water monitoring equipment part 1: Performance Standards and conformity testing procedures for automatic waste water sampling equipment version 1 , February 2003'. Where this comparison shows that the composite water sampler does not meet the criteria in the above document, the operator shall propose a timescale whereby either the composite water sampler will be able to meet the criteria or for the purchase of suitable replacement equipment. Any timescales shall be approved by the Agency.	01/12/06
IP18	The operator shall demonstrate to the Agency that the pH probe used for continuous monitoring of pH at W2, is fit for purpose by comparing the manufacturers stated performance of the pH probe with the performance criteria for equivalent equipment having an MCERTs conformance certificate as given in document ' Continuous water monitoring equipment part 2: Performance Standards for on-line analysers, Turbidity and pH meters; ammonia, COD, TOC, dissolved O <sub>2</sub> , total phosphorous, nitrate and total oxidised nitrogen analysis version 1, February 2003'. Where this comparison shows that the pH probe does not meet the criteria in the above document, the operator shall propose a timescale whereby either the pH probe will be able to meet the criteria or for the purchase of suitable replacement equipment. Any timescales shall be approved by the Agency.	01/12/06

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
IC19	<p>(a) The Operator shall submit to NRW the maximum capacity of the installation that was used in the most recent risk assessment submitted to NRW.</p> <p>(b) The Operator shall submit to NRW for approval the maximum capacity of the installation at the current time.</p> <p>(c) If the maximum capacity of the installation has increased from the time of the last submitted risk assessment and the current time, the Operator shall review and update the risk assessment to account for the current maximum capacity. The risk assessment shall be submitted to NRW for review.</p>	<p>(a) and (b) Within 6 months of permit variation issue (c) Within 9 months of permit variation issue (if applicable)</p>
	<p>Notes:</p> <p>The capacity is to be taken and presented using the same units from the relevant sub-section of Section 6.8, Part 2, Schedule 1 of the Environmental Permitting Regulations 2016 (as from time to time amended). Capacity is to be taken as the maximum possible capacity of the installation, not the maximum actual production. The risk assessment should follow the methodology set out in The Environmental Risk Assessment (EPR-H1). You may use a methodology other than EPR-H1 however the methodology must address the same issues as in EPR-H1 to an equivalent level of detail.</p>	
IC20	<p>The Operator shall submit for written approval a methodology for meeting the process parameters listed in table S3.4 as per BAT 38 for the anaerobic treatment of waste. The methodology shall identify each of the process parameters and detail the frequency and techniques in place to record the data. Where a process parameter can not be monitored justification should be provided and/or a suitable alternative proposed. The methodology should include trigger levels for each of the parameters with associated procedures in place if trigger levels are exceeded.</p>	<p>4 June 2023 or otherwise agreed in writing with Natural Resources Wales</p>

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

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

<b>Raw materials and fuel description</b>	<b>Specification</b>
Fuel oil	Less than or equal to 0.1% w/w of sulphur
Biogas utilised in flare	Mass emission rate of hydrogen sulphide shall not exceed 0.22 g/s as a ½ hourly average using a monitoring method approved by NRW in IP3
Casutic and acid used for cleaning CIP systems for 'Perfect Draft' Facility	Casutic (1% sodium hydroxide) and acid (0.25% of nitric acid + 0.5% of sulphuric acid). Maximum of 8 m <sup>3</sup> /day of caustic and 8m <sup>3</sup> /day of acid shall be used.

## Schedule 3(a) – Emissions and monitoring effective until 3 December 2023

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point reference	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1, No.1 HTHW Boiler as indicated on site plan <sup>Note 1</sup> ]	No. 1 HTHW boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	220 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A2 [Point A1, No.2 HTHW Boiler as indicated on site plan <sup>Note 1</sup> ]	No. 2 HTHW boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	220 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A3 [Point A1, No.4 Steam Boiler as indicated on site plan <sup>Note 1</sup> ]	No. 4 steam boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	140 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A4 [Point A1, No.5 Steam Boiler as indicated on site plan <sup>Note 1</sup> ]	No. 5 steam boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	140 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A7 [Indicated as 'SOCLE FLARE' in Figure 1.2 'Site Layout Plan', August 2004, in MagDoc 15b]	6.1 m flare stack from anaerobic digestion plant	No parameters set	No limit set	-	-	-
A8 [as shown on drawing 1827_D4002 2 in the variation application EPR/BX7282IS/V003]	Gas engine exhaust stack	Oxides of nitrogen as NO <sub>2</sub>	500 mg/Nm <sup>3</sup>	Periodic	Quarterly	BS EN 14792
		Carbon monoxide	650 mg/Nm <sup>3</sup>	Periodic	Quarterly	BS EN 15058
		Sulphur dioxide	80 mg/Nm <sup>3</sup>	Periodic	Quarterly	BS EN 14791
A9 [Point A9 as shown in site plan in Schedule 7]	Flue-Ace heat recovery system	Oxides of nitrogen as NO <sub>2</sub>	220 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792

Note 1: Hand annotated 'Site Plan September 04' drawing number C750. SITEPLAN2, submitted 14/02/05

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

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b> <sup>Note 1</sup>
Final Effluent Sample Point ST 4369 8494	Discharge from effluent treatment plant	Flow	10,000 m <sup>3</sup> /day	Continuous	To a relevant EN, BS, ISO standard as agreed in IP2
		Flow	126 l/s	Continuous	To a relevant EN, BS, ISO standard as agreed in IP2
		pH	>5, <9	Continuous	No standard method available <sup>Note 2</sup>
		Temperature	30 °C	Continuous	<sup>Note 3</sup>
		Biochemical Oxygen Demand (BOD)	200 mg/l	Weekly composite	SCA Blue Book 130 ISBN 0117522120
		Chemical Oxygen Demand (COD)	450 mg/l	Weekly composite	SCA Blue Book 97 ISBN 0117519154
		Suspended solids	150 mg/l	Weekly	SCA Blue Book 105 ISBN 011751957X
		Total copper & its compounds	0.01 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total cadmium & its compounds	0.005 mg/l as annual average	Monthly composite	BS EN ISO 5961:1995, BS 6068-2.21:1995
		Total chromium & its compounds	0.015 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total mercury & its compounds	0.0005 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total nickel & its compounds	0.03 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total zinc & its compounds	0.07 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
Total arsenic & its compounds	0.025 mg/l as annual average	Monthly composite	BS EN 26595:1993, BS 6068-2.1:1983, ISO 6595-1985		
W3 (MagDoc07B submitted as further information on 24/05/05)	Uncontaminated surface water from effluent treatment plant site to Mill Reen	No parameters set	No limit set	-	-

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

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method <sup>Note 1</sup></b>
W4 as shown on plan H13015 – 160 Rev.C1 dated 19/02/2013	Uncontaminated surface water from brewery site to Waundeilad Reen	No parameters set	No limit set	-	-
W5 [Point W5 as shown in site plan in Schedule 7]	Uncontaminated surface water from lorry park to highways drainage	No parameters set	No limit set	-	-

Note 1: Or to an EN, BS, ISO or SCA blue book standard as approved by NRW

Note 2: The Operator shall provide a procedure / work instruction that shall be approved by NRW for the operation of the continuous pH meter having regard to the calibration requirements given in BS60682.50:1995, ISO 10523:1984.

Note 3: The operator shall submit a method for temperature monitoring that shall be approved by the NRW

**Table S3.3 Annual limits**

Substance	Medium	Limit (including unit)
Total Mercury & its compounds	Water	915 g in a year
Total Cadmium & its compounds	Water	9150 g in a year

**Table S3.4 Process monitoring requirement**

Emission point Reference or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard	Other specification
A1, A2, A3, A4	Temperature	Every 3 months	BS EN 13284-1	None
	Oxygen	Every 3 months	ISO 12039	None
W2	Total iron and its compounds	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998	None
Hydrogen sulphide concentration in the biogas to exit from hydrogen sulphide scrubber	Hydrogen sulphide	Every 6 months	As agreed in IP3	The mass emission rate of hydrogen sulphide shall not exceed 0.22 g/s as a ½ hourly average
Hydrogen sulphide concentration in the biogas at entry to the gas engine	Hydrogen sulphide	Every 6 months	Continuous	Continuous measurement, maximum of 200 ppm

## Schedule 3(b) – Emissions and monitoring effective from 4 December 2023

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

Emission reference	point Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1, No.1 HTHW Boiler as indicated on site plan Note 1]	No. 1 HTHW boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	220 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A2 [Point A1, No.2 HTHW Boiler as indicated on site plan Note 1]	No. 2 HTHW boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	220 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A3 [Point A1, No.4 Steam Boiler as indicated on site plan Note 1]	No. 4 steam boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	140 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A4 [Point A1, No.5 Steam Boiler as indicated on site plan Note 1]	No. 5 steam boiler via stack	Oxides of nitrogen as NO <sub>2</sub>	140 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792
		Carbon monoxide	No limit set	Periodic	Every 6 months	ISO 12039
A7 [Indicated as 'SOCLE FLARE' in Figure 1.2 'Site Layout Plan', August 2004, in MagDoc 15b]	6.1 m flare stack from anaerobic digestion plant	No parameters set	No limit set	-	-	-
A8 [as shown on drawing 1827_D4002 2 in the variation application EPR/BX7282IS/V003]	Gas engine exhaust stack	Oxides of nitrogen as NO <sub>2</sub>	500 mg/Nm <sup>3</sup>	Periodic	Quarterly	BS EN 14792
		Carbon monoxide	650 mg/Nm <sup>3</sup>	Periodic	Quarterly	BS EN 15058
		Sulphur dioxide	80 mg/Nm <sup>3</sup>	Periodic	Quarterly	BS EN 14791
A9 [Point A9 as shown in site plan in Schedule 7]	Flue-Ace heat recovery system	Oxides of nitrogen as NO <sub>2</sub>	220 mg/Nm <sup>3</sup>	Periodic (average over one hour)	Every 6 months	BS EN 14792

Note 1: Hand annotated 'Site Plan September 04' drawing number C750. SITEPLAN2, submitted 14/02/05

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

Emission point ref. & location	Source	Parameter	Limit (including unit)	Monitoring frequency	Monitoring standard or method <sup>Note 1</sup>
Final Effluent Sample Point ST 4369 8494	Discharge from effluent treatment plant	Flow	10,000 m <sup>3</sup> /day	Continuous	To a relevant EN, BS, ISO standard as agreed in IP2
		Flow	126 l/s	Continuous	To a relevant EN, BS, ISO standard as agreed in IP2
		pH	>5, <9	Continuous	No standard method available <sup>Note 2</sup>
		Temperature	30 °C	Continuous	<sup>Note 3</sup>
		Biochemical Oxygen Demand (BOD)	200 mg/l	Weekly composite	BS EN 1899-1
		Chemical Oxygen Demand (COD)	100 mg/l	Weekly composite	BS 6068-2
		Suspended solids	50 mg/l	Weekly	BS EN 872
		Total copper & its compounds	0.01 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total cadmium & its compounds	0.005 mg/l as annual average	Monthly composite	BS EN ISO 5961:1995, BS 6068-2.21:1995
		Total chromium & its compounds	0.015 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total mercury & its compounds	0.0005 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total nickel & its compounds	0.03 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total zinc & its compounds	0.07 mg/l as annual average	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998
		Total arsenic & its compounds	0.025 mg/l as annual average	Monthly composite	BS EN 26595:1993, BS 6068-2.1:1983, ISO 6595-1985
		Total nitrogen (TN)	20 mg/l (daily average)	24 hour flow proportional composite	EN 12260 or EN ISO 11905-1
		Total phosphorous (TP)	2 mg/l (daily average)	24 hour flow proportional composite	EN ISO 6878 or EN ISO 15681-1 and EN ISO 15681-2 or EN ISO 11885
Chloride	No limit set	Monthly composite	EN ISO 10304-1 or EN ISO 15682		

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

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method <sup>Note 1</sup></b>
W3 (MagDoc07B submitted as further information on 24/05/05)	Uncontaminated surface water from effluent treatment plant site to Mill Reen	-	-	-	-
W4 as shown on plan H13015 – 160 Rev.C1 dated 19/02/2013	Uncontaminated surface water from brewery site to Waundeilad Reen	-	-	-	-
W5 [Point W5 as shown in site plan in Schedule 7]	Uncontaminated surface water from lorry park to highways drainage	-	-	-	-

Note 1: Or to an EN, BS, ISO or SCA blue book standard as approved by NRW

Note 2: The Operator shall provide a procedure / work instruction that shall be approved by NRW for the operation of the continuous pH meter having regard to the calibration requirements given in BS60682.50:1995, ISO 10523:1984.

Note 3: The operator shall submit a method for temperature monitoring that shall be approved by the NRW

**Table S3.3 Annual limits**

<b>Substance</b>	<b>Medium</b>	<b>Limit (including unit)</b>
Total Mercury & its compounds	Water	915 g in a year
Total Cadmium & its compounds	Water	9150 g in a year

**Table S3.4 Process monitoring requirement**

Emission point Reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard	Other specification
A1, A2, A3, A4	Temperature	Every 3 months	BS EN 13284-1	None
	Oxygen	Every 3 months	ISO 12039	None
W2	Total iron and its compounds	Monthly composite	BS EN ISO 11885:1998, BS 6068-2.60:1998	None
Hydrogen sulphide concentration in the biogas to exit from hydrogen sulphide scrubber	Hydrogen sulphide	Every 6 months	As agreed in IP3	The mass emission rate of hydrogen sulphide shall not exceed 0.22 g/s as a ½ hourly average
Hydrogen sulphide concentration in the biogas at entry to the gas engine	Hydrogen sulphide	Every 6 months	Continuous	Continuous measurement, maximum of 200 ppm
Digester feed	pH	To be agreed with NRW	To be agreed with NRW	Subject to approved methodology in improvement condition IC20 and as agreed with NRW
	Alkalinity			
Hydraulic and organic loading rates				
Operating temperature				
Liquid and foam levels				
Digester	Concentration of ammonia			
	Concentration of VFAs			
	Alkalinity			
	FOS/TAC ratio (VFA/TA)			
Digestate	pH			
Digestate	Concentration of VFAs			
	Ammonia			
Biogas from digesters	Flow			
	Quantity			
	Pressure			
	Composition			
	Methane			
	Hydrogen Sulphide			
	Carbon Dioxide			

## Schedule 4(a) – Reporting effective until 3 December 2023

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
Emissions to air Parameters as required by condition 3.5.1	A1, A2, A3, A4, A8, A9	Annually	1 January
Emissions to water Parameters as required by condition 3.5.1	Final Effluent Sample Point ST 4369 8494	Quarterly	1 January

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

Parameter	Units
Production of beers and lagers	tonnes

**Table S4.3 Performance parameters**

Parameter	Frequency of assessment	Units
BOD	Quarterly	BOD/t
COD	Quarterly	COD/t
Water usage	Annually	m <sup>3</sup> /t and m <sup>3</sup> /year
Energy usage	Annually	kWh/tonne
Carbon dioxide	Annually	tonne/tonne
Waste disposal and/or recovery	Annually	tonnes/year
Ammonia	Annually	kg/year
Gas engine energy generated, electricity and heat	Annually	MWth
Hydrogen sulphide concentration – Hydrogen sulphide scrubber exit and before entry to gas engine	Annually	ppm
Hydrogen sulphide mass emission	As approved in IP3	g/s

**Table S4.4 Reporting forms**

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Water and Land	Form water 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Water usage	Form water usage 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Energy usage	Form energy 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Performance parameters	Form performance 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Waste return	R1	01/06/05
Other performance indicators	Form performance 1 or other form as agreed in writing by Natural Resources Wales	27/09/22

## Schedule 4(b) – Reporting effective from 4 December 2023

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
Emissions to air Parameters as required by condition 3.5.1	A1, A2, A3, A4, A8, A9	Annually	1 January
Emissions to water Parameters as required by condition 3.5.1	Final Effluent Sample Point ST 4369 8494	Quarterly	1 January

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

Parameter	Units
Production of beers and lagers	tonnes

**Table S4.3 Performance parameters**

Parameter	Frequency of assessment	Units
BOD	Quarterly	BOD/t
COD	Quarterly	COD/t
Water usage	Annually	m <sup>3</sup> /t and m <sup>3</sup> /year
Energy usage	Annually	kWh/tonne
Carbon dioxide	Annually	tonne/tonne
Waste disposal and/or recovery	Annually	tonnes/year
Ammonia	Annually	kg/year
Gas engine energy generated, electricity and heat	Annually	MWth
Hydrogen sulphide concentration – Hydrogen sulphide scrubber exit and before entry to gas engine	Annually	ppm
Hydrogen sulphide mass emission	As approved in IP3	g/s
Generation of residues	Annually	tonnes
Generation of waterwater	Annually	m <sup>3</sup>

**Table S4.4 Reporting forms**

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Water and Land	Form water 1 or other form as agreed in writing by Natural Resources Wales	04/12/23
Water usage	Form water usage 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Energy usage	Form energy 1 or other form as agreed in writing by Natural Resources Wales	27/09/22

**Table S4.4 Reporting forms**

<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Performance parameters	Form performance 1 or other form as agreed in writing by Natural Resources Wales	27/09/22
Waste return	R1	01/06/05
Other performance indicators	Form performance 1 or other form as agreed in writing by Natural Resources Wales	27/09/22

# 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	EPR/BX7282IS
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment</b>	
<b>To be notified within 24 hours</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a permit condition</b>	
<b>To be notified within 24 hours</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

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

(c) In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:	
To be notified within 24 hours	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

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

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

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

\* authorised to sign on behalf of the operator

## Schedule 6 - Interpretation

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

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

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

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

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

*“background concentration”* means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

*“building”* means a construction that has the objective of providing sheltering cover and minimising emissions of noise, particulate matter, odour and litter.

*“combined heat and power” or “CHP” or “Cogeneration”* means the simultaneous generation in one process of thermal energy and electrical or mechanical energy

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

*“emissions to land”* includes emissions to groundwater.

*“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 or background concentration limit.

*“first put into operation”* means that the plant must have been fired with its design fuel up to its full load. This can be, but does not have to be, during commissioning.

*“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 (Wales) Regulations 2005 (as amended)

*“hazardous substance”* means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008

*“impermeable surface”* means a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface

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

*“limited operating hours MCP”* means an MCP that meets the requirements of paragraph 8 of Part 2 of Schedule 25A of the EP Regulations

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

“Medium Combustion Plant” or “MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50 MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and of the Council of the limitation of emissions of certain pollutants into the air from medium combustion plants.

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

“operating hours” means the time, expressed in hours, during which a combustion plant is operating and discharging emissions into the air, excluding start-up and shut-down periods

“Pests” means Birds, Vermin and Insects.

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

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

“residue” means the solid waste generated by the waste treatment activity and is not directly related to the type of waste treated in the plant

“sealed drainage system” in relation to an impermeable surface, means a drainage system with impermeable components which does not leak and which will ensure that:

- no liquids will run off the surface otherwise than via the system
- all liquids entering the system are collected in a sealed sump, except where liquids may be lawfully discharged

“specified generator” or “SG” means has the meaning given in paragraph 2(1) of Schedule 25B of the EP Regulations

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

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

“Waste Treatment BAT Conclusions” means the BAT Conclusions for the Waste Treatment sector published as a Commission Implementing Decision EU 2018/1447 in the Official Journal of the EU on 17 August 2018

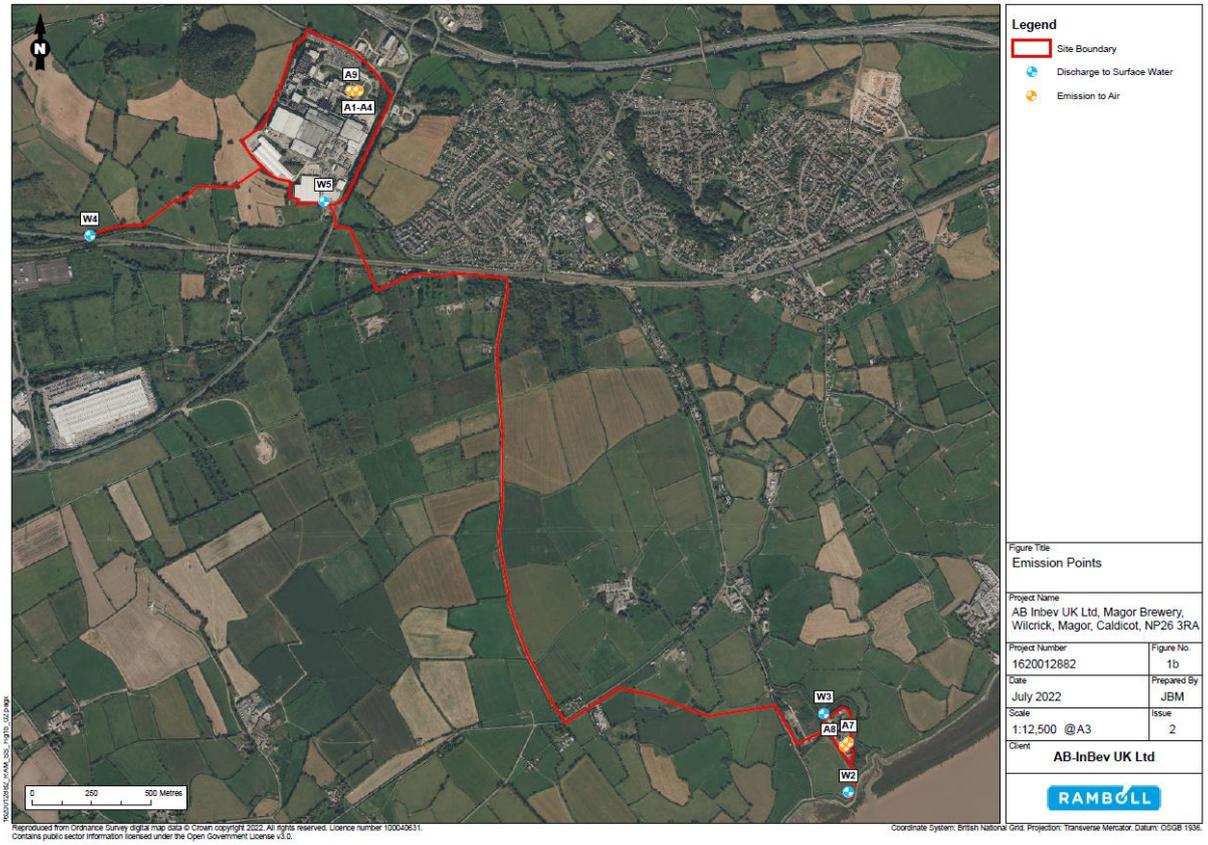
“year” means calendar year ending 31 December.

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

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

- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273 K, at a pressure of 101.3 kPa and with an oxygen content of:  
3 % for all other processes
- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273 K and at a pressure of 101.3 kPa, with no correction for water vapour content

# Schedule 7 - Site plan



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