

Notice of variation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

Inbev UK Limited

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

Variation application number

EPR/BX7282IS/V003

Permit number

EPR/BX7282IS

Magor Brewery

Permit number EPR/BX7282IS

Introductory note

This introductory note does not form a part of the notice.

The following notice gives notice of the variation of an environmental permit.

This normal variation is for the use of a gas engine to burn biogas at the existing effluent treatment plant. The biogas will be cleaned first in a hydrogen sulphide scrubbing unit and a gas conditioning unit. Heat and electricity from the gas engine will be recovered and used by the effluent treatment plant. Some electricity will also be exported to the grid.

The Schedules specify the changes made to the original permit.

Schedule 1 of the notice lists any conditions that have been deleted, Schedule 2 of the notice lists any amended conditions and Schedule 3 of the notice lists any conditions that have been added.

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

Status Log of permit		
Detail	Date	Response Date
Application EPR/BX7282IS/A001	Received 28/10/04	
Response to request for information (Schedule 4)	Request dated 17/01/05	Response dated 14/02/05
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 EPR/BX7282IS/V002	16/06/06	
Variation Application EPR/BX7282IS/V003	Duly made 18/07/11	
Variation determined EPR/BX7282IS/V003	16/08/11	

End of Introductory note

Notice of variation

Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/BX7282IS

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies the environmental permit issued to

Inbev UK Limited ("the operator")

whose registered office is
Porter Tun House
500 Capability Green
Luton
Bedfordshire
LU1 3LS

company registration number **3982132**

to operate a regulated facility at
Magor Brewery
The Brewery
Wilcrick
Magor
Caldicot
Monmouthshire
NP26 3RA

to the extent set out in the schedules.

The notice shall take effect from 16/08/11

Name	Date
	16 th August 2011

Authorised on behalf of the Environment Agency

Schedule 1 – conditions to be deleted

None

Schedule 2 – conditions to be amended

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

- Table 1.1.1 is amended to include cleaning of biogas, operation of gas engine and to specify when the flare can be used. The amended table is as follows:

Table 1.1.1		
Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	Description of specified activity	Limits of specified activity
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.
Section 6.8 A(1)(d)(ii) - Treating and processing materials product capacity of more than 300 tonnes per day (average value on a quarterly basis).	Brew Line 2 - Milling, mashing, mash filtration, wort boiling, trub separation, filtration, yeast pitching, fermentation, treatment	Receipt of raw materials to packaging.
Section 6.8 A(1)(d)(ii) - Treating and processing materials product capacity of more than 300 tonnes per day (average value on a quarterly basis).	Packaging and flash pasteurisation of keg beer	Receipt of beer to despatch of final product.
Section 6.8 A(1)(d)(ii) - Treating and processing materials product capacity of more than 300 tonnes per day (average value on a quarterly basis).	Packaging and tunnel pasteurisation of canned beer - Line 1	Receipt of beer to despatch of final product.
Section 6.8 A(1)(d)(ii) - Treating and processing materials product capacity of more than 300 tonnes per day (average value on a quarterly basis).	Packaging and tunnel pasteurisation of canned beer - Line 2	Receipt of beer to despatch of final product.
Section 6.8 A(1)(d)(ii) - Treating and processing materials product capacity of more than 300 tonnes per day (average value on a quarterly basis).	Packaging and flash pasteurisation of bottled beer – Line 1	Receipt of beer to despatch of final product.
Section 6.8 A(1)(d)(ii) - Treating and processing materials product capacity of more than 300 tonnes per day (average value on a quarterly basis).	Packaging and flash pasteurisation of bottled beer – Line 2	Receipt of beer to despatch of final product.

Table 1.1.1		
Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	Description of specified activity	Limits of specified activity
Section 1.1 A(1)(a) – Burning any fuel in an appliance with a rated thermal input of 50MW or more	Natural gas fired CHP boilers and fossil fuel fired high temperature hot water and 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
Section 5.3 A(1)(c)(i) – Effluent treatment in excess of 300m ³ per day	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.
Directly associated activity	Disposal of surface water at main brewery site.	From collection to dispatch into Waundeilad Reen.
Directly associated activity	Disposal of surface water at the effluent treatment plant site.	From collection to dispatch into Mill Reen.
Directly associated activity	Cleaning of biogas prior to combustion	Use of condensate pots, hydrogen sulphide scrubbing and gas conditioning plant
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 H ₂ S levels are above 1500ppm or if excess biogas is produced.
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.

- Table 2.1.1 is amended to include operating techniques for the biogas cleaning and gas engine. The amended table is as follows:

Table 2.1.1: Operating techniques		
Description	Parts	Date Received
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 WWWTCPHP A	18/07/11

- Table 2.2.1 is amended to include A8, the gas engine emission point. The amended table is as follows:

Table 2.2.1 : Emission points to air

Emission point reference or description	Source	Location of emission point
A1	No.1 HTHW boiler via stack	Point A1, No.1 HTHW Boiler as indicated on Site PlanNote1
A2	No.2 HTHW boiler via stack	Point A1, No.2 HTHW Boiler as indicated on Site PlanNote1
A3	No.4 steam boiler via stack	Point A1, No.4 Steam Boiler as indicated on Site PlanNote1
A4	No.5 steam boiler via stack	Point A1, No.5 Steam Boiler as indicated on Site PlanNote1
A5	CHP No.1	Point A2 as indicated on Site Plan February 2004 as submitted with the Application further detailed in amended Site PlanNote1
A6	CHP No.2	Point A3 as indicated on Site Plan February 2004 as submitted with the Application further detailed in amended Site PlanNote1
A7	6.1m flare stack from anaerobic digestion plant	Indicated as 'SOCLE FLARE' in Figure1.2 'Site Layout Plan', August 2004, in MagDoc 15b submitted in supporting information to Application.
A8	Gas engine exhaust stack	Effluent treatment plant gas engine as shown on drawing 1827_D4002 2 in the variation application EPR/BX7282IS/V003

Note1: Hand annotated 'Site Plan September 04' drawing number C750. SITEPLAN2, submitted 14/02/05

- Table 2.2.2 is amended to include emission limits for A8. The amended table is as follows:

Table 2.2.2 : Emission limits to air and monitoring

Emission point reference	Parameter	Limit (including Reference Period)	Monitoring frequency	Monitoring method ^{Note 1}
A1	Oxides of nitrogen as NO ₂ ^{Note 2}	220mg/m ³ as an hourly average ^{Note 3}	Every 6 months	ISO 10849
A2	Oxides of nitrogen as NO ₂ ^{Note 2}	220mg/m ³ as an hourly average ^{Note 3}	Every 6 months	ISO 10849
A3	Oxides of nitrogen as NO ₂ ^{Note 2}	140mg/m ³ as an hourly average ^{Note 3}	Every 6 months	ISO 10849
A4	Oxides of nitrogen as NO ₂ ^{Note 2}	140mg/m ³ as an hourly average ^{Note 3}	Every 6 months	ISO 10849
A5	Oxides of nitrogen as NO ₂	350mg/m ³ as an hourly average ^{Note 4}	Every 3 months	ISO 10849
A5	Carbon monoxide	350mg/m ³ as an hourly average ^{Note 4}	Every 3 months	ISO 12039

Table 2.2.2 : Emission limits to air and monitoring

Emission point reference	Parameter	Limit (including Reference Period)	Monitoring frequency	Monitoring method ^{Note 1}
A6	Oxides of nitrogen as NO ₂	350mg/m ³ as an hourly average ^{Note 4}	Every 3 months	ISO 10849
A6	Carbon monoxide	350mg/m ³ as an hourly average ^{Note 4}	Every 3 months	ISO 12039
A8	Oxides of nitrogen as NO ₂	500mg/m ³ ^{Note 5}	Quarterly	BS EN 14792
A8	Carbon monoxide	650mg/m ³ ^{Note 5}	Quarterly	BS EN 15058
A8	Sulphur dioxide	80mg/m ³ ^{Note 5}	Quarterly	BS EN 14791

Note 1: Or to an EN, BS, or ISO standard as approved by the Agency

Note 2: Refers to limits firing on natural gas

Note 3: See Condition 6.1.3.1 for reference conditions

Note 4: See Condition 6.1.3.1 for reference conditions replacing 3% oxygen with 15% oxygen

Note 5: See Condition 6.1.3.1 for reference conditions replacing 3% oxygen with 5% oxygen

- Table 2.2.11 is amended to include hydrogen sulphide monitoring and limit in the biogas. The amended table reads as follows:

Table 2.2.11 Equivalent parameters and technical measures

Parameter or measure	Requirement or description of measure, and frequency if relevant
Sulphur content in fuel oil used in No.1 and No.2 HTHW boilers and No.4 and No.5 steam boilers.	Less than or equal to 0.1% w/w of sulphur.
Mass emission of hydrogen sulphide in the biogas utilised in the flare stack associated with the UASB at the effluent treatment plant, leading to air emission point A7.	The mass emission rate of hydrogen sulphide shall not exceed 0.22g/s as a 1/2-hourly average, using a monitoring methodology approved by the Agency in IP3.
Hydrogen sulphide concentration in the biogas at exit from hydrogen sulphide scrubber	Continuous
Hydrogen sulphide concentration in the biogas at entry to the gas engine	Continuous measurement . Maximum of 200ppm

- Table S2 is amended to include reporting of monitoring for emissions from A8, for hydrogen sulphide content in the biogas and energy generation. The amended table is as follows:

Table S2: Reporting of monitoring data

Parameter	Emission point	Reporting period	Period begins
Oxides of nitrogen as NO ₂ , mg/m ³	A1, A2, A3, A4, A8	Annually	01/01/05
Oxides of sulphur as SO ₂ , mg/m ³	A1, A2, A3, A4, A8	Annually	01/01/05
Carbon monoxide, mg/m ³	A1, A2, A3, A4, A8	Annually	01/01/05
Temperature, °C	A1, A2, A3, A4	Annually	01/01/05
Oxygen, %	A1, A2, A3, A4	Annually	01/01/05
Oxides of nitrogen as NO ₂ , mg/m ³	A5, A6	Every 6 months	01/07/05
Carbon monoxide, mg/m ³	A5, A6	Every 6 months	01/07/05

Table S2: Reporting of monitoring data

Parameter	Emission point	Reporting period	Period begins
Temperature, °C	A5, A6	Every 6 months	01/07/05
Oxygen, %	A5, A6	Every 6 months	01/07/05
Hydrogen sulphide, g/s	Note 1	Note 1	Note 1
Hydrogen sulphide	Hydrogen sulphide scrubber exit and before entry to gas engine (as required by table 2.2.11)	Every 6 months	01/07/11
Flow, m ³ /d	W2	Quarterly	01/07/05
Flow, m ³ /s	W2	Quarterly	01/07/05
pH	W2	Quarterly	01/07/05
Temperature, °C	W2	Quarterly	01/07/05
BOD, mg/l	W2	Quarterly	01/07/05
COD, mg/l	W2	Quarterly	01/07/05
Suspended solids, mg/l	W2	Quarterly	01/07/05
Total cadmium & its compounds, mg/l	W2	Annually	01/07/05
Total chromium & its compounds, mg/l	W2	Annually	01/07/05
Total copper & its compounds, mg/l	W2	Annually	01/07/05
Total mercury & its compounds, mg/l	W2	Annually	01/07/05
Total nickel & its compounds, mg/l	W2	Annually	01/07/05
Total zinc & its compounds, mg/l	W2	Annually	01/07/05
Total arsenic & its compounds, mg/l	W2	Annually	01/07/05
Total iron & its compounds, mg/l	W2	Annually	01/07/05
Total cadmium & its compounds, g/yr	W2	Annually	01/01/05
Total mercury & its compounds, g/yr	W2	Annually	01/01/05
Ammonia, kg/year	NA	Annually	01/01/05
Water usage, m ³ /year	NA	Annually	01/01/05
Energy usage,	NA	Annually	01/01/05
Waste disposal and/or recovery, tonnes/year	NA	Annually	01/01/05
Gas engine energy generated, electricity and heat. MWh	Gas engine	Annually	01/01/11

Note 1: As approved by the Agency in IP3

- Table S3 was amended to include new forms A2, E2 and Gas1. The amended table is as follows:

Table S3: Reporting Forms

Media / parameter	Form Number	Date of Form
Air	A1	01/06/05
Air	A2	19/07/11
Water (excluding sewer)	W1	01/06/05
Energy	E1	01/06/05

Table S3: Reporting Forms		
Media / parameter	Form Number	Date of Form
Energy generation	E2	19/07/11
Waste Return	R1	01/06/05
Water Usage	WU1	01/06/05
Mass Release	MR1	01/06/05
Performance Indicators	PI1	01/06/05
Biogas quality	Gas 1	19/07/11

Schedule 3 – conditions to be added

None