Compliance Assessment Report

Report ID: CAR_NRW0033429

This form will report compliance with your permit as determined by an NRW officer					
Site	Magor Brewery EPR/BX7282IS	Permit Ref	BX7282IS		
Operator/Permit holder	AB InBev UK Ltd				
Regime	Installations				
Date of assessment	16/04/2018	Time in	09:30	Out	12:30
Assessment type	Check Monitoring/Sampling				
Parts of the permit assessed	Annual returns				
Lead officer's name	Willey, David				
Accompanied by					
Recipient's name/position	Carl Rogers/ ES Manager	Date issued	31/05/2018		

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	**CCS Category**	**Condition(s) breached**
D2 - Incident Management - Accidents, emergency and incident planning	C3	2.3.5
E3 - Emissions - Surface water	C3	2.2.2.4
	C3	2.2.2.4

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.
A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,
O = Ongoing non-compliance, not scored.

Number of breaches recorded	3	**Total compliance score** (see section 5 for scoring scheme)	12

If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

ABInBev – site visit 16th April 2018

Actions carried forward from CAR Form issued on 3rd May 2017.

The following actions have now been completed or progressed:

ACTION: The permit variation needs to address the following:

1) After discussions on site there are a few scenarios that need to be considered:

a) the new Flu-Ace running independently with a small flow going through the existing stack (normal operating scenario)

b) the new Flu-Ace and the existing stack both running at 50% (if applicable)

c) a comparison of the old process and the new process demonstrating impact

2) The assessment needs to consider the new emission point with associated Emission Limit Values (ELVs). The impact from the existing stack will remain the same as currently permitted and will serve as backup in case the FLU-ACE fails.

3) Consideration needs to be given to the height of the new stack and its effect on dispersion. The temperature at the point of emission will be reduced but with the forced flow should provide adequate dispersion. This needs to be demonstrated through a risk assessment. An assessment for deriving stack height has been undertaken but has not followed the requirements of H1.

4) The stack needs to have appropriate sampling ports in line with the requirements of M1.

1 – 4 completed / progressing: Pre application discussions have taken place and assessments being undertaken for the emissions to air.

ACTION: With the permit variation a revised site boundary should be submitted to include the new storage areas and any other changes that may be in the pipeline. **Completed** – this will form part of the permit variation.

ACTION: ABInBev to install safety barriers alongside the road to prevent potential accidents from moving traffic near to the HCL tank. If the Operator does not propose to install safety barriers please supply suitable justification. **Completed.**

ACTION: Confirm whether the process will be direct or in-direct heat recovery. If direct how ensure water quality is clean enough for the process. **Completed.** The heat recovery will be indirect.

ACTION: With the permit variation a revised site boundary should be submitted to include the new storage areas and any other changes that may be in the pipeline. **Completed.** ABInBev are aware of this and will be including an updated site plan when they apply for the variation to their permit.

ACTION: Update the AMP in line with the appropriate tank specifications for the different chemicals stored on site. **Completed.** Examples of the procurement process and specifications of the tanks was provided in the Engineering Standard document for the tank to be replaced, tank drawing and layout drawing.

ACTION: Update the AMP to include notification to NRW of any incidents. **Completed.** ABInBev have crisis management procedures that dictate who should be contacted/notified. These are detailed in the AMP.

ACTION: Provide a copy of the maintenance programme in place at ABInBev as required by condition 2.3.6.1. This can form part of the AMP or a standalone Preventative Maintenance Plan. **Completed.** The AMP was updated to include all critical checks performed on bunds.

ACTION: Phone numbers to be updated in the Accident Management Plan. **Completed.**

Enforcement Authorities

Organisation	Contact	Phone No.
Health & Safety Executive	Joanne Carter	02920 263031
	Incident report Centre	0845 3009923
Natural Resources for Wales	David Willey	02920 245303 mob 07767 381010
Environmental Health Officer		
Counter Terrorism SA	Andy Goodenough	0789147428

ACTION: ABInBev to update NRW contact details with the following:

Landline: 03000 65 3372

Mobile: 07867 140033

Incident number: 03000 65 3000

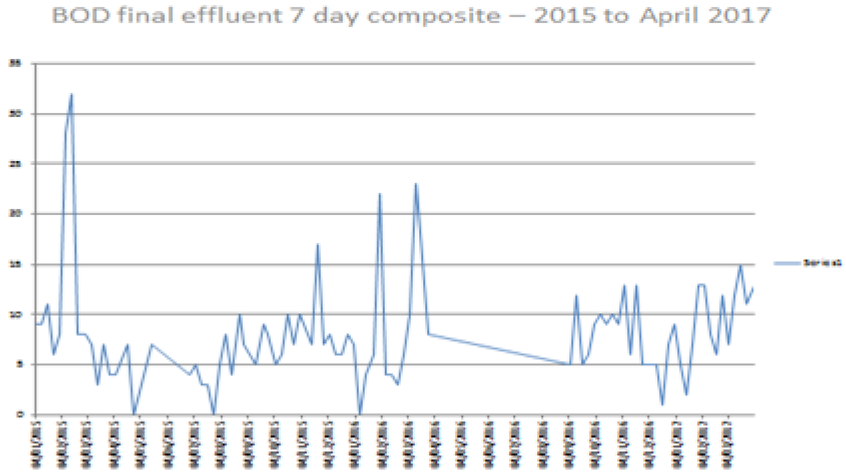
ACTION: ABInBev to incorporate the inspections undertaken by Flexible Solutions into the sites EMS / PMP with associated proformas. **Completed.** Flexible solutions are incorporated into the sites system for key works. An overview is shown below. Flexible Solutions nowne provide reports for justifications of works (including drains). Two documents were supplied as evidence, the Brewery Site Interceptors Drain Maintenance 2016 and Magor Brewery Cleaning Programme 2017.

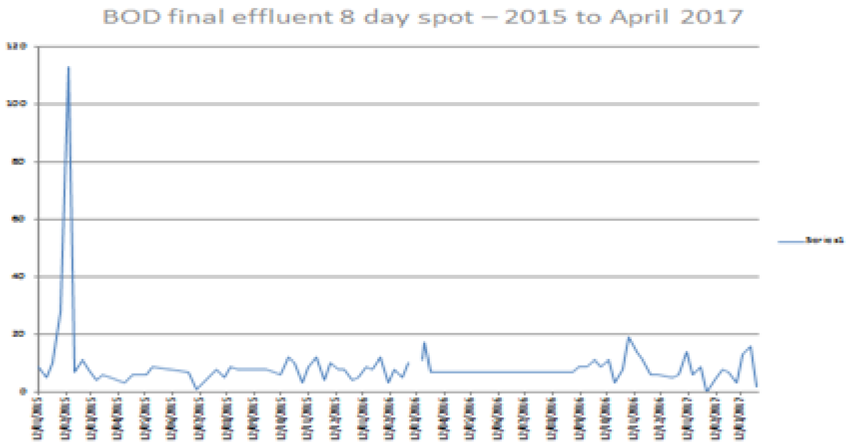
ACTION: ABInBev to demonstrate how the sites EMS has been amended to incorporate SUEZ and their ways of working. **Completed.** Suez have their own EMS and are currently applying for the 14001 standard and are contractually bound to AB InBev through Key Performance Indicators. The EMS includes Effluent Management Compliance as a basic fundamental block, and therefore whoever the provider, they will need to comply with AB InBev policy and procedures. Within this block there are a series of policies and procedures that are required for compliance. An OMA will be carried out by NRW in Q3/4 of 2018.

ACTION: AB InBev to provide the updated AMP as required by permit condition 2.8.1 due in 2018.

ACTION: ABInBev to confirm the procedure undertaken for the monitoring of BOD5 weekly composite in line with SCA Blue Book 130 ISBN 0117522120 and, where there are deviations from this method, provide justification. This will include the time between the sample being taken and the analysis beginning.
Completed. AB InBev confirmed that the BOD monitoring is undertaken in line with SCA Blue book 130. This is reflected in the Veolia monitoring document: WI018 lists all the methods used in Appendix 2 with STL analysts comments. NRW were advised that Veolia are changing their operational instructions to ensure the BOD samples are stored under 5 deg C. This will be checked during future OMAs. There has been no change to process since Suez have been on board.

A seven day composite sample plus an 8 day spot are taken. The 7 day is used for compliance purposes. The 7 and 8 day results have been supplied for comparison, the limit in the permit is 200mg/l.





ACTION: ABInBev to provide spill kits and consider alternate arrangements to delivering the chemicals to the building. If this is not practicable procedures should be in place to minimise the time the chemicals are stored in this area with associated measures to avoid release to surface water drains. **Completed.** All surface water drains are treated as site effluent. Spill kits are provided at each chemical storage area with a map available.

This action was in response to an audit where a full IBC on a returnable pallet had just been presented to the back of FV's (via an FLT movement onto a loading platform). The operator had not yet had a chance to retrieve the pallet using a pallet handler. The risk was extremely low because:

1) due to the surface water situation

2) the position of the pallet (i.e. not in any proximity to moving machinery and risk from impact.)

ACTION: ABInBev to provide the results of the monitoring undertaken upstream of discharge point W3 from the day of the incident. **Completed.** This action has been considered to be competed as is no longer relevant.

ACTION: ABInBev to complete and submit the Schedule 1 notice informing NRW of abnormal operating *conditions. This should include the outcome of the investigation undertaken.* **Completed.**

ACTION: ABInBev to confirm whether there has been any data lost from the SCADA system. **Completed.** There was no loss of data and AB InBev have now installed backup power to the UPS.

ACTION: NRW and ABInBev to agree date for the next OMA for water. An OMA is required due to the effluent treatment plant now being managed by SUEZ. **Completed.** NRW have agreed for the OMA to be carried out in Q3/4 2018.

ACTION: Please could AB InBev provide details of the standard operating procedure for the agreement for the discharge to the Reens from the Brewery W4 discharge point? **Completed.** Referenced Storm Water Discharge v6. At present the site only uses this discharge location in extreme rainfall events and is not routinely used. Monitoring is undertaken prior to any discharge from W4 for pH, TOC, and COD. This monitoring is undertaken every 15 minutes.

ACTION: ABInBev to clarify whether the 548mg/m3 value should be considered for assessment. If so, please provide suitable evidence of this from the monitoring company. **Completed.** This monitoring was repeated in November due to the quality of gas and engine cutting out during the testing. This result was for A8 Q3 2016 and did not have the uncertainty of measurement removed. The uncertainty value for this round of monitoring was 119% and over the maximum uncertainty of 10% for periodic monitoring as set out in M2: Monitoring of stack emissions to air.
ACTION: AB InBev to ensure that an investigation is undertaken into the high uncertainty values as required by M2.
Using the maximum measurement uncertainty of 10% the value is 54.8mg/m3 giving a compliance value of 493.2mg/m3 to be used for reporting.
Form Gas 1 - The result obtained during this monitoring round was 200ppm against a hydrogen sulphide maximum concentration is 200ppm.

ACTION: Please could ABInbev expand on this reading and the typical readings associated with the monitoring. Measurement is continuous so trending should indicate typical levels. For these measured levels a Schedule 1 Notification form should be submitted to NRW. **Completed.** The limits were submitted here, not the true values. This was an error. SCADA data is available from the site through SUEZ.

Form PI1 - NRW only have data for 2016 for the annual production.

ACTION: Could ABInBev supply previous years' data to allow for trending? **Completed.**

ACTION: Please could ABInBev confirm that the cereal dust is disposed or undergoes some sort of recovery treatment. The EMS states zero waste to landfill indicating that there is no final disposal of any waste streams. **Carried forward.** AB InBev explained that the reason that malt dust was disposed of as deep trench burial is predominantly due to personnel safety and handling of the dust. The zero waste to landfill is applied to all dry waste streams (not malt dust which used to be separate).

ACTION: Please could ABInBEV confirm what methods are in place to record refrigerant loss and what reporting mechanism is in place to identify and quantify any releases. **Completed.** These small air conditioning units are serviced by a third party contractor in compliance to F gas regulations. The frequency of inspection is dictated by the size of the units with records kept through Mitie Facility Services and can be accessed at any time.

2017 Annual returns

Form W1 for Q3 2017

pH exceeded the upper pH range of 9 with a sample of 9.9.

Considered a category 3 breach of permit condition 2.2.2.4.

Temperature exceeded the 30ºC limit with a reading of 31.8ºC. This occurred on the19th July 2017 reading 31.8°C with readings increasing in the two days before and staying raised for the day after before returning to normal operating conditions.

Flow clean water effluent m³/d	pH effluent minimum	pH effluent average	pH effluent maximum	T° effluent minimum °C	T° effluent average °C	T° effluent maximum °C
4726	8.5	8.5	8.5	25.3	27.1	29.4
3312	8.5	8.6	8.6	25.3	26.6	31.8
4065	8.5	8.5	8.6	22.6	24.8	28.2
4647	8.5	8.5	8.6	22.2	23.8	26.8

The average temperature on the day was 26.6 ºC with the flow low on this particular day. Although the reading does indicate an exceedance of the limit this has not been considered to be a breach. Unlike the June exceedances the associated average temperature is lower at 26.6ºC indicating an abnormal maximum reading. The exceedance does not indicate an issue with process control.
NRW were notified of four exceedances in June that were associated with the hot liquor tank. The limit of 30ºC was exceeded with readings of 30.8ºC on the 19th, 31.7ºC on the 20th, 32ºC on the 21st and 30ºC on the 22nd June. CAPEX has now been put in place to replace the hot liquor tank. AB InBev have also purchased a glycol chiller that is located by the on site ETP.
These have been consolidated into one breach and considered to be a category 3 breach of permit condition 2.2.2.4.
ACTION: The monitoring returns for AB InBev need to ensure that they reflect the monitored values. The Q2 returns did not show the June exceedances and appeared to reflect the highest average value. The Q3 return appears to report the highest maximum value.
ACTION: AB InBev and NRW to agree approach to monitoring of temperature to be incorporated into the next permit variation.

Form W1 for Q4 2017

No exceedances. Also received were the annual monitoring for metals with no exceedances recorded.

Form A1 for emissions to air

6 monthly monitoring for the period January to June and July to December for emission points A1, A2 A3 and A4 showed no exceedances.

Quarterly monitoring undertaken for A5 and A6 is no longer required as the CHP units are not operational.

ACTION: AB InBev to provide more information on the carbon monoxide reading for the December 2017 monitoring round for release point A1. The submitted reading was >5770mg/m3.

Form A2 for emissions to air

Quarterly monitoring undertaken for A8 with no exceedances reported.

Form Gas1

July to September submitted readings of 177ppm for hydrogen sulphide for outlet of the scrubber and entry to the gas engine.

Form E2 for Energy Generation

Received with no comments.

Form R1 for waste disposal and recovery

Received with no comments

Form WU1 for water usage

Received with no comments

Form E1 for Energy Usage

Primary energy use increased in 2017 through the use of gas as Budweiser is a more energy intensive process. This resulted in a reduced amount of CO_2 produced compared to 2016 where gas oil was used as well as gas.

Form PI1 for performance indicators

Received with no comments

Form MR1 form for the release in 2017

The form states zero kg/annum but the annual report states a figure of 500kg released from one of the refrigerant units.

ACTION: Please update the form MR1 to ensure consistency with the annual report.

Fugitive emissions plan

The fugitive emission plan was reviewed in 2018

ACTION: The cereal dust states that the spent malt dust is disposed of via a deep trench burial. Are there any options to recover this material?

The filter powder dust states that the spent Kiesulguhur dusts are disposed of via land injection. This use of material is to benefit crop group and can be considered as a recovery operation.

Ozone depleting substance recorded the addition of 500kg of R410a in 2017. This equates to 1044000kg (1044 tonnes) CO_2 based on the GWP of 2088 for R410a.

ACTION: The report states that the 500kg of R410a was added to just one refrigeration unit, could AB InBev please provide more details on any issues with this unit and what steps have been taken to ensure there are no such leaks in 2018?

The effluent treatment plant is trialling the use of hydrogen sulphide.

ACTION: Please could AB InBev provide some feedback on this trial?

<u>2017 EMS annual submission</u>

The key environmental initiatives for 2018 are the restoration of the integrity of storm water and waste water drains, update the key environmental critical equipment list in AAP and BTS control and optimisation.

AB InBev are progressing with the installation of a volute dewatering press at the BTS, this will reduce the strain on the BTS and enable recovery of a dryer material as well as reducing haulage costs.

CAPEX for 2018 was provided as part of the EMS overview.

There is a feasibility study under way to discuss the implementation of a Moving Bed Bio Reactor (MBBR) as well as discussions around the potential for a geothermal heat exchanger.

AB InBev are looking into to run a Project called Yellowstone which will change how we boil wort in Magor. The site currently uses water vapour to do the protein coagulation and volatile stripping. Magor has in place vapour condensers on the two kettles serve a dual purpose. The first is to recover energy from the steam back into the system, and the second is to control odour emissions.

Under the new wort boiling process, Magor will move to using Nitrogen gas for the volatile stripping and protein coagulation. This means that the process can be run with a significant reduction of energy input, as there in no longer a need to boil the wort. This however will make the vapour condensers less efficient at recovering energy, and potentially condensing any odorous volatiles.

AB InBev believe that the vapour condensers can still make an impact on condensing the volatiles as a small amount of water vapour will be generated and carried through the system with the nitrogen gas. Also due to the carrier gas being nitrogen, they are expecting that any volatiles would be carried much higher and dispersed more widely than the current system with water vapour.

ACTION: AB InBev to provide an update on the project to ensure that there is no impact from odour generation at nearby receptors. The odour management plan should be used during any trials and updated accordingly.

<u>Notification</u>

Schedule 1 Notification forms have been received for the following:

1) 5th January 2018 - Notification form for abnormal emissions received for a welsh water pump station overflow. AB InBev attempted to prevent the flow from the pump station entering the site and subsequently to the reens. Welsh Water were informed from both AB InBev and from NRW with Welsh Water investigating and mitigating against the pumping station failure.

2) 23rd September 2017 - Notification of repair to the PLC following a failure with associated pH and COD discharged. A power spike blew the control card in the scada system with the scada system appearing to be working correctly. The brewery was running with one line with the effluent going to the Estuary in emergency mode. Once noticed the effluent to the BTS was stopped as the brewery ahs capacity to hold back 3 hours worth of effluent whilst the system was reinstalled. The reason the control card blew was due to the UPS being out of action a result of the events of the 1th/15th September.

ACTION: NRW/AB InBev to revisit the emergency action plan for the BTS in response to these latest incidents.

3) 14th/15th September 2017 - Notification of the replacement of the UPS battery backup with estimated flow provided. The UPS linked to the PLC had blown and led to the Biological Treatment System (BTS) shutting down as there was no power and was put into protection mode. This is in line with the sites emergency plans. Any effluent was discharged to the estuary as there is no pump to pump the effluent to the calamity tank.

SUEZ enabled this to work by passing the UPS and have subsequently ordered 2 new UPS. There was minimal effluent discharged due to the Brewery being on maintenance with low flow to the BTS.

Considered a category 3 breach of permit condition 2.3.5 where the failure of the UPS should be assessed with associated backup systems in place.

4) 11th - 22nd June 2017 - Notification of temperature exceedance at the BTS exceeding the limit of 30 with readings of 30.8 on the 19th, 31.7 on the 20th, 32 on the 21st and 30 on the 22nd June and 31.8 on the 19th July.

End.

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition.
Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	**CCS Category**	**Action required/advised**	**Due Date**
See Section 1 above			
E3	C3	Process check and ensure on going compliance.	29/06/2018
D2	C3	Install backup	31/08/2018
E3	C3	AB InBev to replace hot liquor tank	31/05/2019

Section 5 – Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may
- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- Ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- Ensure you comply with other legislative provisions which may apply

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance that could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General information

Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within fifteen working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language
If you would like this form in Welsh please contact your Regulatory Officer.