Permitting decisions

Variation

We have decided to grant the variation for Minworth Sludge Digestion and Combined Heat and Power Plant operated by Severn Trent Water Limited.

The variation number is EPR/BP3631SW/V008.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision making process. It:

- highlights key issues in the determination
- summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice. The introductory note summarises what the variation covers.

Key issues of the decision

Waste types and acceptance procedure for anaerobic digestion

The operator has applied to split the permitted waste types into three groups. This is in line with a number of variations that were issued to the operator as part of the requirements of the Industrial Emissions Directive. These variations were issued as a result of ongoing discussions about waste types and waste acceptance procedures in 2016 between the operator and the Environment Agency. The main issue was that many of the waste streams were deemed non-standard with respect to anaerobic digestion. To ensure these wastes were properly managed and treated, the operator in consultation with the Environment Agency, divided the European Waste Catalogue (EWC) codes into three groups – Groups A, B and C.

- **Group A** consists of wastes listed in the Anaerobic Digestion Quality Protocol, standard rules permits and the T21 exemption. These wastes are known to be suitable for biological treatment. For the purposes of this permit these are deemed "low risk".
- **Group B** consists of 'bespoke' wastes where the variance in waste streams is understood by the operator. These have been deemed "medium risk" by the operator.

- **Group C** consists of 'bespoke' wastes where the variance in waste streams is larger and therefore have been identified as "high risk" wastes by the operator. These wastes will be subject to more rigorous criteria under the waste acceptance procedures.

The three groups of waste streams have differing acceptance procedures based on risk. Group A, being of lower risk, has standard requirements and Groups B and C have more rigorous procedures for acceptance, testing and ensuring compatibility. The compatibility of the waste is assessed following the operators waste acceptance procedures which outlines the techniques and procedures for each grouping. The waste acceptance procedures (WAP) provided during determination have been linked to the permit as operating techniques.

Bioaerosol monitoring

Because the odour treatment unit contains a biofilter and the digestate cake treatment and storage areas (both of which are in the proximity of sensitive receptors) we have imposed an improvement programme to ensure that that the operator summits proposals to undertake representative monitoring of ambient air to determine the impact, if any, of bioaerosols (IC20). IC21 requires the submission of a report that includes the results, analysis, reporting and interpretation of the monitoring required by IC20.

Emissions to air

We looked at the air quality assessment report and modelling files submitted by the operator and assessed their on impacts to air.

Nitrogen dioxide (NO_2)

The impact on air quality from NO_2 emissions has been assessed against the Environmental Standard (ES) of 40 $\mu g/m^3$ as a long term annual average and a short term hourly average of 200 $\mu g/m^3$. The model assumes a 70% NO_X to NO_2 conversion for the long term and 35% for the short term assessment in line with Environment Agency guidance on the use of air dispersion modelling.

It was observed that some of the operator's NO_2 predictions were not insignificant. We ran our own scenarios using conservative assumptions and simplified building configurations and based on these results it was concluded that the annual NO_2 predictions are not likely to be significant. The contribution from the new plant in conjunction with the existing plant is not likely to cause exceedance of the annual Environmental standard (ES).

At sensitive locations peak short term PC is >10% of the ES and the peak long term PC was >1% of the ES so the PC could not be screened out as insignificant. However, both the peak short term and long term predicted environmental outcome (PEC) are <100% of the EQS emissions therefore are unlikely to give rise to significant pollution. Therefore we consider the Applicant's proposals for preventing and minimising the emissions of NO_2 to be BAT for the Installation.

Carbon monoxide (CO)

There is no long term EAL for CO for the protection of human health.

For CO at sensitive locations the peak short term PC is <10% of the ES and so can be screened out as insignificant. Therefore we consider the Applicant's proposals for preventing and minimising the emissions of CO to be BAT for the Installation.

Impact on Habitats sites, SSSIs, non-statutory conservation sites

There are three local wildlife sites within two kilometres of the installation boundary. The Environment Agency dictates that if emissions meet both of the following criteria they're insignificant and don't need to be assessed any further:

- the short-term process contribution (PC) is less than 100% of the short-term environmental standard
- the long-term process contribution (PC) is less than 100% of the long-term environmental standard

Oxides of nitrogen

The results of the maximum annual average oxides of nitrogen concentrations at representative receptor locations are shown in Table 4-4 of the Air Quality Assessment dated 7 September 2017 for comparison with a critical level of 30 $\mu g/m^3$. These are the maximum modelled annual average results at each receptor location for an individual year from the five year data set. The results presented are the highest modelled at each ecological site.

The maximum short-term results for comparison with the non-statutory daily mean EAL (Environment Assessment Level) of 75 $\mu g/m^3$ are also shown in Table 4-4. The process contributions at the local wildlife sites are well below the relevant EAL's for both the annual and daily average concentrations and can therefore be deemed insignificant.

Deposition

A ground level concentration of NO_x of 2.8 $\mu g/m^3$ (or 2.0 $\mu g/m^3$ as NO_2) gives a deposition rate of 0.6kg/ha/yr for forest habitat or 0.3 kg/ha/yr for grassland habitat. The lowest critical levels (environmental standards) on APIS are 10 kg/ha/yr for woodland habitat and 5 kg/ha/yr for acid grassland, the two habitat types which represent the local wildlife sites identified. The contribution of the emissions to the nitrogen load at each nature site will be less than 10% and can therefore be deemed insignificant.

Deposition impacts from nutrient nitrogen on Local wildlife sites within 2km (Minworth STW) – Modelled results					
CLo (kgN/ha/yr)	**Baseline deposition rates (kgN/ha/yr)**	**PC (kgN/ha/yr)**	**PC % of Environmental standard**	**PEC (kgN/ha/yr)**	**PEC % of Environmental standard**
10 Woodland Habitat	--	0.6	6	--	--
5 Acid grassland	--	0.3	6	--	--

Acidification

We've used the operator's figures for NO_x to calculate the rate of acid deposition. The rate is less than 10 per cent and can therefore be deemed insignificant.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
Consultation/Engagement	
Consultation	The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement. The application was publicised on the GOV.UK website. We consulted the following organisations: Food Standards Agency Health and Safety Executive Public Health England Director of Public Health (Birmingham Metropolitan District) Environmental Health (Birmingham Metropolitan District) The comments and our responses are summarised in the consultation section.
The facility	
The regulated facility	We considered the extent and nature of the facilities at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1'. The extent of the facilities are defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.
The site	
Extent of the site of the facility	The operator has provided plans which we consider are satisfactory, showing the extent of the site of the facility. The plan is included in the permit.
Site condition report	The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.

Aspect considered	Decision
Biodiversity, heritage, landscape and nature conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process. We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.
Environmental risk assessment	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory.
Operating techniques	
General operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility. The relevant guidance notes include the following: • IPPC S5.06 – Guidance for the Treatment of Hazardous and Non-Hazardous Waste: • How to comply with your environmental permit, Additional Guidance for: Anaerobic Digestion – Reference LIT8737- Report Version 1.0, November 2013; • Additional Guidance for Combustion Activities (EPR 1.01, March 2009); • Guidance for Monitoring Landfill Gas Engine Emissions (LFTGN 08, v2, March 2010) The proposed techniques/emission levels for priorities for control are in line with the benchmark levels contained in the above technical guidance notes and we consider them to represent appropriate techniques for the facility. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit(s).
Use of conditions other than those from the template	Based on the information in the application, we consider that we do need to impose conditions other than those in our permit template.

Aspect considered	Decision
	Condition 2.3.7 has been re-produced in its existing format. This relates to servicing and tuning of the spark ignition engines.
Raw materials	We have specified limits and controls on the use of raw materials and fuels. Fuel oil – sulphur content not exceeding 0.1% by mass.
Waste types	We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility. We are satisfied that the operator can accept these wastes for the following reasons: • they are suitable for the proposed activities • the proposed infrastructure is appropriate; and • the environmental risk assessment is acceptable. We made these decisions with respect to waste types in accordance with our Technical Guidance Note – Framework for assessing suitability of wastes going to anaerobic digestion, composting and biological treatment.
Improvement programme	Based on the information on the application, we consider that we need to impose an improvement programme. We have imposed an improvement programme to ensure that that the Operator summits proposals to undertake representative monitoring of ambient air to determine the impact, if any, of bioaerosols (IC20). IC21 requires the submission of a report that includes the results, analysis, reporting and interpretation of the monitoring required by IC20.
Emission limits	We have decided that emission limits should be set for the parameters listed in the permit. The following substances – nitrogen oxides, sulphur dioxide, carbon monoxide and volatile organic compounds – are being emitted from the facility. ELV's based on BAT have been set for these substances and others. All CHP (Combined Heat and Power) engines – both existing and those authorised by this variation – must meet, as a minimum, the limits specified in the permit template. In the case of emission points A14d and A14e (exhausts of the new Jenbacher Engines) a tighter limit for sulphur dioxide has been applied as that was what was modelled and proposed by the operator
Monitoring	We have decided that monitoring should be added and amended for the parameters listed in the permit, using the methods detailed and to the frequencies specified. These monitoring requirements have been imposed in order to demonstrate compliance with the conditions of the permit for operations requiring the management of air emissions. We made these decisions in accordance with *LFTGN 08: Guidance for monitoring landfill gas engine emissions and Guidance for monitoring*

Aspect considered	Decision
	enclosed landfill gas flares (LFTGN 05) which are considered the most appropriate TGN for this activity. Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.
Reporting	We have specified reporting in the permit for the following parameters: As the monitoring of point source emissions to air is only require annually, reporting is also required annually. Reporting forms have been prepared to facilitate reporting of data in a consistent format. These reporting requirements are deemed sufficient and proportional for the installation.
Operator competence	
Management system	There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.
Financial competence	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.
Growth Duty	
Section 108 Deregulation Act 2015 – Growth duty	We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit. Paragraph 1.3 of the guidance says: "The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation." We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections. We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from
Public Health England
Brief summary of issues raised
"…no significant concerns regarding risk to health of the local population from this proposed activity, providing that the applicant takes all appropriate measures to prevent or control pollution, in accordance with the relevant sector technical guidance or industry best practice."
Summary of actions taken or show how this has been covered
The permit has a number of robust conditions that ensure that activities will meet the relevant sector technical guidance or industry best practice.