Determination of an Application for an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010

Consultation on our draft decision document recording our decision-making process

The Permit Number is: EPR/AB3307LK/A001
The Applicant is: Riverside AD Limited
The facility is located at: 43 Willow Lane,
Willow Lane Industrial Estate
Mitcham
Surrey
CR4 4NA

Consultation commences on: 24/10/14
Consultation ends on: 21/11/14

What this document is about

This is a draft decision document, which accompanies a draft permit.

It explains how we have considered the Applicant's Application, and why we have included the specific conditions in the draft permit we are proposing to issue to the Applicant. It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position. Unless the document explains otherwise, we have accepted the Applicant's proposals.

The document is in draft at this stage, because we have yet to make a final decision. Before we make this decision we want to explain our thinking to the public and other interested parties, to give them a chance to understand that thinking and, if they wish, to make relevant representations to us. We will make our final decision only after carefully taking into account any relevant matter raised in the responses we receive. Our mind remains open at this stage: although we believe we have covered all the relevant issues and reached a reasonable conclusion, our ultimate decision could yet be affected by any information that is relevant to the issues we have to consider. However, unless we receive information that leads us to alter the conditions in the draft Permit, or to reject the Application altogether, we will issue the Permit in its current form.

In this document we frequently say "we have decided". That gives the impression that our mind is already made up; but as we have explained above, we have not yet done so. The language we use enables this document

to become the final decision document in due course with no more re-drafting than is absolutely necessary.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future. A lot of technical terms and acronyms are inevitable in a document of this nature: we provide a glossary of acronyms near the front of the document, for ease of reference.

Preliminary information and use of terms

We gave the application the reference number EPR/AB3307LK/A001. We refer to the application as "the **Application**" in this document in order to be consistent.

The number we propose to give to the permit is EPR/AB3307LK. We refer to the proposed permit as "the **Permit**" in this document.

The Application was duly made on 8 October 2013.

The Applicant is Riverside AD Limited. We refer to Riverside AD Limited as "the **Applicant**" in this document. Where we are talking about what would happen after the Permit is granted (if that is our final decision), we call Riverside AD Limited "the **Operator**".

Riverside AD Limited's proposed facility is located at 43 Willow Lane, Willow Lane Industrial Estate, Mitcham, Surrey, CR4 4NA. We refer to this as "the **Facility**" in this document.

How this document is structured

- Glossary of acronyms
- Our proposed decision
- How we reached our draft decision
- The legal framework
- The Facility
  - Description of the facility and related issues
  - The site and its protection
  - Operation of the facility – general issues
- Minimising the facility's environmental impact
  - Assessment of impact on air quality
  - Impact on Habitats sites, SSSIs and non-statutory conservation sites
- Other Emissions to the Environment
  - Point source emissions
  - Other emissions
- Annex 1
  - Consultation Responses

Glossary of acronyms used in this document

AD	Anaerobic digestion
CHP	Combined heat and power
CROW	Countryside and rights of way Act 2000
DD	Decision document
EAL	Environmental assessment level
ELV	Emission limit value
EMS	Environmental Management System
EPR	Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No. 675) as amended
EQS	Environmental quality standard
EU-EQS	European Union Environmental Quality Standard
EWC	European waste catalogue
HRA	Human Rights Act 1998
IED	Industrial Emissions Directive (2010/75/EU)
NOx	Oxides of nitrogen (NO plus NO_2 expressed as NO_2)
Opra	Operator Performance Risk Appraisal
PC	Process Contribution
PEC	Predicted Environmental Concentration
PPS	Public participation statement
PR	Public register
PHE	Public Health England
RGN	Regulatory Guidance Note
SAC	Special Area of Conservation
SGN	Sector guidance note
SHPI(s)	Site(s) of High Public Interest
SPA(s)	Special Protection Area(s)
SSSI(s)	Site(s) of Special Scientific Interest
TGN	Technical guidance note
WFD	Waste Framework Directive (2008/98/EC)

1 Our proposed decision

We are minded to grant the Permit to the Applicant. This will allow it to operate the facility, subject to the conditions in the Permit.

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the permit will ensure that a high level of protection is provided for the environment and human health.

This Application is to operate a bespoke waste facility which is subject principally to the Waste Framework Directive.

The draft Permit contains many conditions taken from our standard Environmental Permit template. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations (EPR) and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the permit, we have considered the Application and accepted the details are sufficient and satisfactory to make the standard condition appropriate. This document does, however, provide an explanation of our use of "tailor-made" conditions, or where our Permit template provides two or more options.

2 How we reached our draft decision

2.1 Receipt of Application

The Application was duly made on 8 October 2013. This means we considered it was in the correct form and contained sufficient information for us to begin our determination but not that it necessarily contained all the information we would need to complete that determination. In addition to our information notices, we received additional information during the determination from Riverside AD Limited (see section 2.3 on page 7).

The Applicant made no claim for commercial confidentiality. We have not received any information in relation to the Application that appears to be confidential in relation to any party.

2.2 Consultation on the Application

We carried out consultation on the Application in accordance with the EPR, our statutory Public Participation Statement (PPS) and our own Regulatory Guidance Note 6 (RGN 6) for Determinations involving Sites of High Public Interest. We consider that this process satisfies, and frequently goes beyond the requirements of the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters. We have also taken into account our obligations under the Local Democracy, Economic Development and Construction Act 2009 (particularly Section 23). This requires us, where we consider it appropriate, to take such steps as we consider appropriate to secure the involvement of representatives of interested persons in the exercise of our functions, by providing them with information, consulting them or involving them in any other way. In this case, our consultation already satisfies the Act's requirements.

We advertised the Application by a notice placed on our website, including telling people where and when they could see a copy of the Application. We also placed an advertisement in the Kent Messenger on 15 November 2013.

We placed a paper copy of the Application and all other documents relevant to our determination (see below) on our Public Register at Environment Agency, Orchard House, Endeavour Park, London Road, West Malling, ME19 5SH and also sent a copy to London Borough of Merton Council for its own Public Register. Anyone wishing to see these documents could do so and arrange for copies to be made. Following the amendment of the Environmental Permitting (England and Wales) Regulations 2010 in February 2014, all documents (including responses from the Applicant) were placed on the Environment Agency Public Register only.

We sent copies of the Application to the following bodies, which includes those with whom we have "Working Together Agreements":

- Public Health England
- Director of Public Health, London Borough of Merton

- London Borough of Merton (Planning Authority)
- London Borough of Merton (Environmental Health)
- Thames Water
- Animal Health
- Health & Safety Executive
- National Grid

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly. Please note that under our "Working Together Agreement" with Natural England, we only consult Natural England where a regulated facility is within specific distance criteria of a designated Habitat site or Site of Special Scientific Interest (SSSI). We did not consult Natural England on this Application as there is no relevant Habitat site or SSSI within the distance criteria from the waste facility.

A summary of consultation comments and our response to the representations we received can be found in Annex 1. We have taken all relevant representations into consideration in reaching our draft determination.

2.3 Requests for Further Information

Although we were able to consider the Application duly made, we did in fact need more information in order to determine it, and issued an information notice on 13 February 2014. A copy of the information notice was placed on our Public Register and sent to London Borough of Merton local authority for inclusion on its Public Register, as was the response when received. As mentioned above, following the amendment of the Environmental Permitting (England and Wales) Regulations 2010 in February 2014, all documents (including responses from the Applicant) were placed on the Environment Agency Public Register only.

In addition to our information notices, we requested for additional information by e-mails and received additional information by e-mail during the determination from the Applicant:

- Request for additional information concerning "Zero contamination (Baseline assessment) and noise impact was sent to the applicant on 20 June 2014.
  Response received by the Environment Agency on 07 July 2014
- Request for confirmation on inclusion of biogas cleaning and upgrading was sent to the applicant on 09 July 2014.
  Response was received by the Environment Agency on 09 July 2014.
- Request for additional information to confirm acceptance of zero contamination was sent on 09 July 2014.
  Response was received by the Environment Agency on 22 October 2014.
- Request for additional information on monitoring the level of digestate was sent on 14 July 2014.
  Response was received by the Environment Agency on 16 July 2014.

- The applicant responded to the draft permit on 21 August 2014
  The Environment Agency responded to the applicant's comments following the applicant's review on 08 September 2014.
- The applicant sent an updated site plan in response the draft permit on 26 August 2014 showing the shared responsibility.
- The applicant requested for application amendments on 10 September 2014.

We made a copy of this information available to the public in the same way as the response to our information notice.

Having carefully considered the Application and all other relevant information, we are now putting our draft decision before the public and other interested parties in the form of a draft Permit, together with this explanatory document. As a result of this stage in the process, the public has been provided with all the information that is relevant to our determination, including the original Application and additional information obtained subsequently, and we have given the public opportunities (including this one) to comment on the Application and its determination. Once again, we will consider all relevant representations we receive in response to this final consultation and will amend this explanatory document as appropriate to explain how we have done this, when we publish our final decision.

3 The legal framework

The Permit will be granted, if appropriate, under Regulation 13 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is a *waste operation* covered by the Waste Framework Directive.

We consider that, if we grant the Permit, it will ensure that the operation of the facility complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

4 The facility

4.1 Description of the facility and related issues

4.1.1 The permitted activities

The facility is subject to the EPR because it carries out a "relevant waste operation" as specified in Schedule 9 to the EPR.

The regulated facility is a waste operation (A23 – *Anaerobic digestion including the use of resultant biogas*) at which the following waste recovery operations will be undertaken:

- R1: Use principally as a fuel or other means to generate energy
- R3: Recycling/reclamation of organic substances which are not used as solvents
- R13: Storage of waste pending operation R1 and R3 (excluding temporary storage, pending collection, on the site where it is produced)

The extent/nature of the regulated activities taking place at the site required clarification. We wrote to the Applicant on 9 July 2014 to confirm whether or not upgrading of biogas to biomethane was proposed at the facility. Confirmation was received from the Applicant (email dated 9 July 2014) that there was no intention to include the upgrading of biogas to biomethane activity. The Application was determined on the basis of this response.

The draft permit was prepared and sent to the Applicant for comments on 25 July 2014. The Applicant then advised the Environment Agency during the review of the draft permit (email dated 31 July 2014), that they now wished to make a change to the original Application, to include the upgrading of biogas to biomethane activity.

We considered that the change the Applicant proposed would require another round of consultation with members of the public and other relevant organisations. We would also need to re-advertise the Application in a local newspaper in line with our PPS. In addition, detailed risk assessments of the proposed biogas upgrading activity would be required. The information submitted on 21 August 2014 was insufficient and did not address any risks associated with the upgrading of biogas to biomethane (with associated storage of propane at the facility).

Consequently we have not included the upgrading of biogas to biomethane as part of this Application. Following the issue of this permit (if that is our final decision), the Applicant will be required to submit an application to vary the Permit to include the upgrading of biogas to biomethane with appropriate supporting information.

4.1.2 Key Issues in the Determination

The key issues arising during this determination were: emissions to air from the CHP engine and emergency flare, impact of noise emissions, odour emissions and secondary containment. We therefore describe how we determined these issues in most detail in this document.

4.2 The site and its protection

4.2.1 Site setting, layout and history

The site is located within the Willow Lane Industrial Estate Area, on the western side of Willow Lane at grid reference TQ 27569 67516. The site is adjacent to the River Wandle, and approximately 750 metres to the south east of Mitcham Railway station. Beyond the River Wandle, there are woodlands and recreational grounds. To the north of the facility, are industrial units which form the rest of Willow Lane Industrial Estate. A Local Nature Reserve (*Bennett's Hole*) is within 200 metres of the facility. The site lies within a borough-wide Air Quality Management Areas (AQMA) declared by London Borough of Merton Council with respect to nitrogen dioxide and particulate matter. The AQMA is declared for road traffic sources.

The Applicant submitted a plan which we consider is satisfactory, showing the site of the facility and its extent. A plan is included in Schedule 7 to the Permit, and the Operator is required to carry on the permitted activities within the site boundary.

4.2.2 Site condition report / baseline reference data

A site condition report (SCR) is required for any facility regulated under the EPR, where there may be a significant risk to land or groundwater. The SCR should include a baseline report, which is an important reference document in the assessment of contamination that might arise during the operational lifetime of the regulated facility and at cessation of activities.

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. To do this, the Operator has to apply to us for surrender, which we will not grant unless and until we are satisfied that these requirements have been met.

The Applicant submitted a site condition report which included soil and groundwater data for parts of the site following a site investigation undertaken in 2005 and 2013. We have reviewed the report (including the baseline data) and consider that it does not adequately describe the condition of the soil and groundwater at the site.

In response to a request for information, the Applicant stated that there were no plans to carry out any further soil and groundwater analysis. The Applicant

reports that the whole site is bunded and all materials stored are located on hardstanding, therefore the risk of polluting the ground is likely to be minimal. However, during the determination, the Applicant requested the Environment Agency to include an Improvement Condition in the permit to obtain baseline reference data for the site. We did not agree to this request as valid site baseline reference data can only be obtained prior to the commencement of commissioning of the AD facility.

Two options are available to the Applicant:

- We may include a Pre-operational Condition in the Permit, which requires the Applicant to undertake a site intrusive investigation to obtain the site baseline reference data prior to the commissioning of the AD facility and site operations, or

- As an alternative approach, an Applicant can accept that there is "zero contamination" beneath the site, irrespective of the site history. However, any contamination by substances used at, produced or released from the facility would be considered to have resulted from the operation of the facility. This is in accordance with the Environment Agency Guidance H5 – *Site Condition Report.*

In the absence of valid baseline site reference data, we consider that the Applicant has assumed that the site has zero contamination.

4.3 Operation of the facility – general issues

4.3.1 Administrative issues

This is a multi-Operator facility. The proposed activities will be carried out within a site boundary which is part of another permitted site, an in-vessel aerobic biological treatment facility operated by Riverside Bio Limited. Riverside Bio Limited shares the infrastructure tanker loading area with Riverside AD Limited. This area will be maintained and managed by Riverside Bio Limited regulated under a separate Permit. The site plan included in Schedule 7 of the Permit shows the areas that are under the responsibility of Riverside AD Limited.

We are satisfied that the Applicant is the person who will have control over the operation of Riverside AD Facility after the granting of the Permit and that the Applicant will be able to operate the facility so as to comply with the conditions included in the Permit. The decision was taken in accordance with EPR RGN 1 – *Understanding the meaning of operator*.

4.3.2 Management

The Applicant has stated in the Application that they will implement an Environmental Management System (EMS). We are satisfied that appropriate management systems and management structures will be in place for this facility, and that sufficient resources are available to the Operator to ensure compliance with all the Permit conditions.

4.3.3 Accident management

The Applicant has submitted an Accident Management Plan. Having considered the Plan and other information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that accidents that may cause pollution are prevented but that, if they should occur, their consequences are minimised.

4.3.4 Operating techniques

We have specified that the Applicant must operate the facility in accordance with the following documents contained in the Application:

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/AB3307LK/A001	Document reference CRM.1036.002.R.004 in response to section 3, Part B2 and sections 1, 3a and 3b, Part B4 of the application form Document reference CRM.1036.002.R.003 in response to section 7, Part B2 of the application form Document reference CRM.1036.002.R.004 in response to section 6b, Part B2 of the application form Appendix B – Process flow diagram; Drawings CRM.1036.002.D001 – D005; Drawing EDS-PR0104-003	08/10/13
Additional information	Document reference CRM.1036.002.C.003.B – response to Schedule 5 notice regarding several aspects of the application (clarification of baseline soil reference data, accident management plan, process monitoring plan, site surface system, secondary containment, operational techniques, odour management plan, technical competence, process description, revised drawing showing site areas of responsibility – CRM.1036.002.D.006) excluding reference to proposed waste types.	31/03/14
Additional information	Email confirmation from applicant in relation to the upgrading of biogas	09/07/14
Additional information	Email confirmation from Applicant in relation to	16/07/14

	monitoring levels of digestate within the digestion tank	
Environment Agency Guidance Document	How to Comply with your Environmental Permit and any revised edition thereof	Version 6 – June 2013

We have reviewed the techniques proposed by the Applicant and compared these with the relevant Technical Guidance Note – *How to comply with your Environmental Permit*. The proposed techniques for pollution control are in line with the Technical Guidance Note and we consider them to represent appropriate measures for the facility. The details set out in the table above describe the techniques that will be used for the operation of the facility as specified in Condition 2.3.1 and Table S1.2 in the Permit.

Waste types

We have also specified the following limits and controls on the waste types accepted at the facility:

The Application contains a list of those wastes coded by the European Waste Catalogue (EWC) number, which the Applicant will accept in the waste streams entering the plant and which the plant is capable of treating in an environmentally acceptable way. We have specified the permitted waste types, descriptions and where appropriate quantities which can be accepted at the facility in Table S2.1 in the Permit.

We are satisfied that the Applicant can accept the wastes contained in Table S2.1 of the Permit because:

(i) these wastes are categorised as non-hazardous in the European Waste Catalogue and are capable of being safely treated via AD at the facility;

(ii) these wastes are allowed by the Anaerobic Digestate Quality Protocol (as revised in 2014); and

(iii) these wastes are unlikely to contain harmful components that cannot be safely processed at the facility

The Applicant requested the addition of new waste types EWC 19 05 03 and 19 02 09*. The relevant codes and descriptions for the output from the adjacent aerobic treatment process (which are to be fed into the AD) are:

i. EWC 19 02 06 – Sludges from physico/chemical treatment other than those containing dangerous substances (biodegradable waste only) (Used only if the waste is lime-treated through the ATAD process)

ii. EWC 19 05 99 – Liquid digestate from the aerobic treatment of source-segregated biodegradable waste

The following waste types were excluded from the Application:

i. EWC 19 02 09* – *solid combustible wastes containing dangerous substances*

ii. EWC 19 02 10 – *combustible wastes other than those mentioned in 19 02 08 and 19 02 09*

iii. EWC 19 05 03 – *off-specification compost from source segregated biodegradable waste*

We have excluded the above waste types for the following reasons:

- 19 02 09* is not an appropriate waste code for the AD process. 19 02 09* is a mirror entry in the EWC catalogue and is not included in the revised Anaerobic Digestate Quality Protocol. The Standard Rules AD Permit SR2012 No12 includes 19 02 10 '*glycerol not designated as hazardous*' and 07 01 08* – *other still bottoms and reaction residues - glycerol residue from biodiesel manufacture from non-waste vegetable oils only*

- The Applicant's response to Questions 4 and 9 of the Schedule 5 notice dated 31 March 2014 confirmed that "*only waste firstly treated through the existing ATAD process will be transferred into the digester tank for further treatment. There will be no other waste transferred into the digestate tank without passing through the ATAD plant first*".

- Glycerol from waste treatment processes (e.g. bio-diesel manufacture) requires very careful management if being used in AD due to the known negative effects it can have on the process, e.g. foaming events. No risk assessments or appropriate measures for pre-acceptance, acceptance and storage procedures were included in the supporting information to demonstrate how glycerol would be adequately managed at the facility.

Annual throughput

We have limited the annual throughput of the facility to 36,000 tonnes. This is because the facility has only one digester with a working volume of 4,000 tonnes and a retention time of 60 days, which equates to a daily throughput of approximately 67 tonnes.

During the determination, the Applicant requested an increase in the annual throughput from 36,000 to 90,000 tonnes.

We did not increase the annual throughput for the following reasons:

- The revised figure of 90,000 tonnes annual throughput did not form part of the original Application. We consider that the increase of the annual throughput by 54,000 tonnes represents a substantial change to the original Application.

- It is unclear how the Applicant would achieve a throughput of 90,000 tonnes per annum with one digester tank of 4,000 tonnes capacity and still remain a bespoke waste facility. The increase suggests a treatment capacity of 246 to 250 tonnes/day which exceeds the 100 tonne/day treatment threshold under the Industrial Emissions Directive (IED) and would make the AD facility an IED Installation. The Application submitted to us for determination is for an environmental permit to operate a bespoke waste facility, not an IED installation.

The facility will be designed, constructed and operated using appropriate measures for the AD of the permitted wastes. We are satisfied that the operating and abatement techniques are appropriate measures for the biological treatment (via AD) for these types of waste.

5. Minimising the facility's environmental impact

Regulated activities can present different types of risk to the environment. These include odour, noise and vibration, accidents, fugitive emissions to air and water as well as point source releases to air, discharges to ground or groundwater and generation of waste. Consideration may also have to be given to the effect of emissions being subsequently deposited onto land (where there are ecological receptors). All these factors are discussed in this section of the document.

For a waste facility of this kind, the principal emissions are those to air, although we also consider those to land and water. The next sections of this document explain how we have approached the critical issue of assessing the likely impact of the emissions to air from the facility on human health and the environment and what measures we are requiring to ensure a high level of protection.

5.1 Assessment of Impact on Air Quality

5.1.1 Assessment of air dispersion modelling outputs

The Applicant's assessment of the impact of air quality is set out in the Application. The assessment comprises:

- An H1 screening assessment of emissions to air from the operation of the facility;
- Dispersion modelling of emissions to air from the operation of one CHP engine; and
- A study of the impact of emissions on nearby sensitive habitat/conservation sites.

The assessment considered the emissions arising from one operating scenario at the facility as follows:

- Scenario 1: Proposed situation to reflect one CHP engine with a stack height of 7.9 metres operating continuously for 8,760 hours per annum.

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the stack and its impact on local air quality and conservation sites. These assessments predict the potential effects on local air quality from the facility's stack emissions using the ADMS-5 dispersion model, which is a commonly used computer model for regulatory dispersion modelling.

Meteorological data for the assessment comprises five years continuous monitoring from Heathrow Airport Weather station (2008-2012). The Applicant considered this station as the most suitable source of meteorological data due to its proximity to the facility. The impact of the terrain surrounding the site and buildings upon plume dispersion was considered in the dispersion modelling. As well as calculating the peak ground level concentration, the Applicant has

modelled the concentration of key pollutants at a number of specified locations within the surrounding area.

The pollutants considered in the assessment are those associated with combustion activities, namely nitrogen dioxide, sulphur dioxide, carbon monoxide and total volatile organic compounds (VOCs). We are satisfied that there is no need to consider any other pollutants, as the fuel is biogas derived from source-segregated biodegradable waste.

The way in which the Applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed by the Environment Agency's modelling specialists to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts and impact on habitats and conservation sites.

Our review of the Applicant's assessment leads us to agree with the Applicant's conclusions. We have also audited the air quality impact assessment and agree that the conclusions drawn in the report were acceptable.

Human receptors

The Applicant's modelling predictions are presented in Table 1 below. The figures shown indicate the predicted peak ground level exposure to pollutants in ambient air. We have made our own simple verification of the percentage process contribution and predicted environmental concentration submitted by the Applicant. These may be very slightly different to those shown in the Application. Any such minor discrepancies do not materially impact on our conclusions.

The assessment in this section focuses on the impact of nitrogen dioxide, sulphur dioxide and VOCs on human health. Emissions of carbon monoxide were screened out (insignificant), therefore are not included in this section.

Table 1 Maximum modelled pollutant concentrations at the most sensitive human receptor (Residence 1)

Pollutant	EQS / EAL	Back-ground [note 1]	Process Contribution (PC)		Predicted Environmental Concentration (PEC) [note 1]	
	µg/m^3	µg/m^3	µg/m^3	% of EAL	µg/m^3	% of EAL
NO_2 (annual)	40	23.78	0.9	2.3	24.68	61.7
NO_2 (1 hour)	200	--	5.6	2.8	--	--
SO_2 (15-min)	266	--	10.2	3.8	--	--
SO_2 (1 hour)	350	--	7.3	2.1	--	--
SO_2 (24 hour)	125	--	3.8	3.0	--	--
VOCs (annual)	5	0.67	2.6	52.0	3.27	65.4

Note 1 – Where the PC is demonstrated to be less than 1% of the long term EAL and less than 10% of the short term EAL, a level below which we consider to indicate insignificant impact, examination of the background concentration and PEC is not required. For the assessment of short term impacts, the PEC is determined by adding twice the long term background concentration to the short term process contribution.

From Table 1 above, sulphur dioxide can be screened out as insignificant in that the process contribution is <10% of the short term EAQ/EAL. Nitrogen dioxide and VOCs which were not screened out as insignificant have been assessed as being unlikely to give rise to significant pollution in that the predicted environmental concentration (PEC) is less than 100% (taking expected modelling uncertainties into account) of both the long term and short term EQS/EAL

We have carefully scrutinised the Applicant's proposals to ensure that they are applying appropriate measures to prevent and minimise emissions of these substances. The conclusion is that there will be no significant impact to human health caused by the operation of the AD facility.

As mentioned in section 4.2.1, the site lies within a borough-wide AQMA. Overall, whilst emissions of nitrogen dioxide cannot be screened out as insignificant, the Applicant's modelling shows that the facility is unlikely to result in a breach of the EUEQS within the AQMA. The Applicant is required to prevent, minimise and control emissions using "appropriate measures".

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

5.2.1 Sites Considered

There are no designated Habitats (*Special Areas of Conservation, Special Protection Areas* and *Ramsar*) or Sites of Special Scientific Interest (SSSI) sites within the relevant distance criteria of the proposed facility. As mentioned in section 2.2, consultation with Natural England was not required during this determination.

There are two non-statutory sites, Bennett's Hole (*Local Nature Reserve*) and Upper River Wandle (*Local Wildlife Site*) within 200 metres of the facility. As there are no specific regulations for the protection of non-statutory sites *(beyond our requirements to enhance biodiversity under the Natural Environment and Rural Communities Act 2006 and our wider conservation duties under the Environment Act*), we are required to ensure that the permitting of the facility will not result in significant pollution.

The potential hazards at the Upper River Wandle include changes in water level and flow, nutrient enrichment, acidification, siltation, smothering, watercourse modification, disease and sand/gravel extraction. There are currently no data on nutrient enrichment and acidification for this non-statutory site. Only uncontaminated site surface water will be discharged to the River Wandle following checks at the facility. We consider that there is no mechanism or pathway for the potential hazards to occur at the Upper River Wandle site as a result of the operation of the AD facility.

The Applicant's assessment of Bennett's Hole (*Local Nature Reserve*) was reviewed by the Environment Agency and is summarised in Table 2.

Table 2 – Maximum modelled concentrations of NO_X and SO_2 at the non-statutory habitat site (*Bennett's Hole LNR*)

Pollutant	EQS / EAL (µg/m^3)	PC (µg/m^3)[1]	PC as % of EQS / EAL
NO_x	75 (ST)	105.3	140.4
	30 (LT)	19.8	65.9
SO_2	20 (LT)	5.9	29.5

The Applicant has not assessed the critical loads for nitrogen and acid deposition because there are no site specific critical loads for *Bennett's Hole* LNR. Overall, we consider that the Applicant's emission rates used in the air dispersion modelling are likely to be less than stated. Taking a risk-based approach, we consider that the proposal will not damage the special features of the non-statutory sites as a result of the operation of the AD facility. The Applicant is required to apply appropriate measures to prevent and minimise emissions from the operation of the facility.

6. Other emissions to the Environment

6.1 Point source emissions

6.1.1 Emissions to air

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and/or minimise emissions to air.

Annual monitoring of emissions from the CHP engine and emergency flare will be undertaken by MCERTS accredited personnel using MCERTS approved methods. We have specified that monitoring of the CHP engine should be carried out in accordance with emission standards in LFTGN 08 - *Guidance for monitoring landfill gas engine emissions* (see Table 8 below) and the monitoring requirements of M2 - *Technical Guidance Note, Monitoring of stack emissions to air* (see Table S3.1 in the Permit).

We have also specified in the Permit that emissions testing on the emergency flare should be undertaken 12 months following commissioning and then in the event the flare has been operational for over 10% of the year (876 hours). The Technical Guidance LFTGN 05 – *Guidance for monitoring enclosed landfill gas flares* (LFTGN 05) sets out the emission standards for enclosed flares, which is the most appropriate guidance document for the AD facility.

6.1.2 Emissions to surface water

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise emissions to surface water.

The Applicant reports that only uncontaminated surface water from the facility will be passed through an interceptor and surface water shut-off system prior to discharge to the River Wandle (via ditch system) at release points SW1 and SW2. The Applicant reports that the discharge points SW1 and SW2 are under the responsibility of Riverside Bio Limited. We consider it prudent to set a daily requirement for visual checks (oil and grease) on the surface water stream from the facility prior to discharge to ensure that the interceptor/surface water shut-off system continue to work effectively (see Table S3.2 in the Permit).

6.2 Other emissions

6.2.1 Fugitive emissions

Based upon the information provided, we are satisfied that appropriate measures are in place to prevent fugitive emissions to air, land and water.

Activities on site will be managed in accordance with the site's management systems. This will include regular inspections and maintenance of equipment to ensure they continue to operate at optimum conditions. The digester is

fitted with a leak detection system beneath the concrete base of the tank. Operational areas of the site will benefit from a hardstanding surface. These measures will prevent the release of potentially polluting liquids to surface water and groundwater.

The Applicant reports that the proposed site secondary containment is designed to hold a minimum of 110% of the capacity of the largest tank or 25% of total tank volume, whichever is the greater. Secondary containment consists of a site bund of a 0.6 metre high perimeter concrete bund wall. The bund wall will merge in to the ramp across the site entrance, ensuring that liquids are prevented from escaping through the site entrance. In the event of a catastrophic digester tank failure, process effluent will flow into the adjacent building. The Applicant reports that this unlikely event has been included in the calculation of the site's containment volume.

The feedstock for the AD facility will be obtained from the adjacent in-vessel aerobic treatment facility. Only waste firstly treated through the aerobic treatment facility will be transferred via pipeline to the digester which is sealed. There will be no other waste transferred into the digester without first passing through the adjacent in-vessel aerobic treatment facility. Digestate will exit the digester via a series of pipelines and transferred to a tanker for despatch off-site. This permit does not authorise the spreading of digestate (solid or liquid) from this facility on land. The spreading of digestate on land is subject to a separate Permit of which an Application must be submitted by the Applicant.

The digestion process will benefit from a number of process control features and prevent the development of abnormal operating conditions. Operations will be controlled and monitored using the Supervisory Control and Data Acquisition (SCADA) system which creates documentation that can be accessed in remote locations. The system will provide a range of control and monitoring functions that automate and monitor actions throughout the plant. These procedures are designed to ensure the integrity of the plant throughout the life of the facility.

The Environment Agency considers that the Applicant has proposed appropriate measures to minimise the impact of fugitive emissions from the facility. The Permit conditions (3.2.1 to 3.2.3) are sufficient to ensure that emissions of substances not controlled by emission limits do not cause pollution. The Applicant is required to submit an emissions management plan and implement the mitigation measures, in the event activities on site are causing pollution.

6.2.2 Odour emissions

Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise odour and to prevent pollution from odour.

The feedstock for the AD facility will be transferred via steel pipeline from the adjacent in-vessel aerobic treatment facility operated by Riverside Bio Limited. The in-vessel aerobic treatment is required to undertake batch testing to ensure that pasteurisation standards have been fully achieved. Only if the output material has been confirmed to have passed the necessary standards will the materials be fed into a 100-tonne storage tank, prior to transfer to the AD facility via pipeline. The Applicant reports that no waste will be received from off-site sources or ad-hoc deliveries accepted directly into the digester. The digestate will exit the digester via pipeline and transferred to a tanker for despatch off-site.

The Applicant reports that the entire AD system will be enclosed and all gaseous emissions contained within the pipework or the gas storage membrane in the digester tank. The feedstock or digestate will not be exposed to the environment throughout the process. The adjacent facility is fitted with a combined carbon filter and wet scrubber which will treat odours associated with the handling of wastes in the reception building.

We recently varied the Environmental Permit for Riverside Bio Limited to accurately reflect the changes that have taken place at the site since 2010. This variation was issued on 19 September 2014. In varying the Permit, we included Improvement Conditions to address emissions to air, odour abatement, process monitoring and emissions to surface water.

The Applicant submitted an odour management plan (OMP) which we have accepted. We consider that the Applicant has proposed appropriate odour management measures to minimise any impact on nearby sensitive receptors. The Applicant is required to operate at all times in accordance with the OMP to prevent pollution arising from odours and implement mitigation measures in line with the plan. The odour conditions in the Permit (3.3.1 and 3.3.2) are sufficient to ensure that odour emissions from the facility do not cause annoyance. Process monitoring conditions including daily olfactory tests at the site boundary will also ensure that emissions of odour are not causing annoyance.

6.2.3 Noise and vibration emissions

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent pollution from noise and vibration outside the site.

The Application contained a noise impact assessment which identified local noise-sensitive receptors and potential sources of noise at the proposed plant. Measurements were taken of the prevailing ambient noise levels to produce a baseline noise survey and an assessment was carried out in accordance with BS4142 to compare the predicted plant rating noise levels with the established background levels.

The assessment considered the noise emissions arising from two operating scenarios at the facility as follows:

- Scenario 1: CHP engine is operational for a typical operational assessment period. The emergency flare is not operational;

- Scenario 2: CHP engine is not operational with gas transferred to the emergency flare which would be operational for 100% of a typical breakdown assessment period

For both scenarios, the assessment showed a positive indication that noise complaints would be unlikely as a result of the operation of the CHP engine and emergency flare during day and night time.

The Applicant's dispersion model, its selection of input data, use of background data and the assumptions it made have been reviewed by the Environment Agency's modelling specialists to establish the robustness of the Applicant's noise impact assessment. Our review of the Applicant's assessment leads us to agree with the Applicant's conclusions. We agree that the conclusions drawn in the reports were acceptable.

ANNEX 1: Consultation Responses

A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with the Environment Agency's PPS. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of all consultation responses have been placed on the Environment Agency Public Register.

The Application was advertised on the Environment Agency website from 5 November 2013 to 29 November 2013 and in the Kent Messenger on 15 November 2013. Copies of the Application were placed in the Environment Public Register at Orchard House, Endeavour Park, London Road, West Malling, ME19 5SH and the London Borough of Merton Council Public Register at Civic Centre, London Road, Morden, SM4 5DX.

The following statutory and non-statutory bodies were consulted: -

- Public Health England
- Director of Public Health, London Borough of Merton
- London Borough of Merton (Planning Authority)
- London Borough of Merton (Environmental Health)
- Thames Water
- Animal Health
- Health & Safety Executive
- National Grid

1) Consultation Responses from Statutory and Non-Statutory Bodies

Response received from London Borough of Merton Council (Planning Authority) dated 13/11/13	
Brief summary of issues raised:	Summary of action taken / how this has been covered
The standard Environment Agency proforma concerning Planning and Nuisance was completed and returned to us. It confirmed that there were planning conditions relating to noise but there was no history of noise complaints in the past three years.	The Environment Agency standard Permit conditions for noise and vibration emissions and management are considered adequate and will not compromise the requirements of the Planning Consent.

Response received from National Grid dated 19/11/13	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
No issues raised	None required

Response received from Public Health England dated 29/11/13	
Brief summary of issues raised:	Summary of action taken / how this has been covered
1. PHE recommend that any Environmental Permit issued should contain conditions to ensure that the following potential emissions do not impact upon public health: • Point and fugitive emissions to air of NOx, particulate matter, SO_2, and VOCs • Odour emissions arising from the site's operational activities including fugitive releases of liquid digestate	1. Appropriate conditions have been included in the Environmental Permit to address issues raised by the PHE: • Emissions to air from the facility and their potential impacts are discussed in section 5.1 of this decision document. We also assessed the Applicant's air quality modelling and agree that the conclusions drawn in the report is acceptable, that there would be no significant impact to the environment or human health. We have set conditions in the permit in relation to emissions to air (3.1.1, 3.1.2, 3.5.1 (a) and Table S3.1). • Permit conditions 3.2.1 and 3.2.2 address fugitive emissions (including dust) • Permit conditions 3.3.1 and 3.3.2 address odour emissions
2. PHE recommend that the Environment Agency consult the Local Authority with regard to matters relating to impact on public health; the Food Standards Agency where there is the potential for deposition on land used for the growing of food crops or animal rearing; and the Director of Public Health for matters relating to the wider public health impacts.	2. The following mentioned organisations were consulted • London Borough of Merton Council (Planning Authority and Environmental Health) were consulted during the determination of the Application. Comments made by the Planning Authority are covered in this Annex. No comments were made by Environmental Health. No further action. • We did not consult the Food Standards Agency (FSA) as the Application fell out of the screening criteria in accordance with our "*Working Together Agreement*" with FSA. No further action. • We consulted the Director of Public Health, London Borough of Merton. We did not receive any response or concerns. No further action.
3. PHE concludes that they have no significant concerns regarding risk to health of the local population from the proposed activity, provided that the Applicant takes all appropriate measures to prevent and control pollution, in accordance with the relevant sector technical guidance or industry best practice.	3. No further action.

No responses received from the following organisations
• Thames Water • Health & Safety Executive • Food Standards Agency • London Borough of Merton Council (Environmental Health Department) • Director of Public Health (London Borough of Merton Council) • Animal Health

2) Consultation Responses from Members of the Public and Community Organisations

a) Representations from Individual Members of the Public

A total of six responses were received from individual members of the public.

Response received from individual members of the Public	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Impact of odour and noise on residential receptors.	Measures to control odour and noise emissions will be put in place and are discussed in sections 6.2.2 and 6.2.3 of this decision document. Conditions within the Permit will ensure that odour and noise resulting from the facility will not cause pollution beyond the boundary of the site. We are satisfied that the operation of the facility, as described within the Application, will minimise the risks of pollution from odour and noise emissions.
Proximity of facility to residential properties and River Wandle	Decisions over land use are matters for the Planning system. The location of the regulated facility is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. The environmental impact is assessed as part of the determination process and has been reported upon in the main body of this decision document. The Environmental Permitting regime does not require an Applicant to demonstrate need. We have had regard to the objectives of the Waste Framework Directive.