

Permitting decisions

Variation

We have decided to grant the variation for Davyhulme Wastewater Treatment Works – Sludge Treatment Facility operated by United Utilities Water Limited.

The variation number is [EPR/HP3931LJ/V010](#).

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

This variation authorises the transfer of surplus activated sludge (SAS) from Davyhulme WwtW to the sludge treatment installation. The SAS will be thickened in drum thickeners prior to being blended with other sludge imports and biologically treated within the sludge treatment installation. The filtrate from the drum thickening process will be returned back to the activated sludge process tanks at Davyhulme WwtW.

The main changes to the permit are as follows:

- The new drum thickeners replace redundant technology and are housed within an existing building. The associated SAS buffer tank and polymer dosing plant are situated adjacent to the building. These changes are reflected in table S1.1 as revised limits of activities.
- The operating techniques associated with the permit have been updated to add details of new pollution prevention infrastructure and reference to a previous odour management plan has been removed.
- An improvement programme has been added to table S1.3 to require a new odour management plan to be developed and incorporated into the sites operating techniques, and a report on the performance of the new odour control unit.
- Total storage capacity and annual throughput of waste have been increased to reflect the increased efficiency and treatment capacity of the drum thickeners. These changes are shown in tables S3.2 and S3.3.
- A new odour control unit comprising of a SULPHUS biofilter system and 11m high stack replaces the temporary odour control unit. The temporary emission point has been replaced with a permanent emission point with an amended emission point location and hydrogen sulphide monitoring (as shown in table S4.1).
- The off-site transfers of sludge emission points have been updated in table S4.3.
- New drainage pipelines are introduced from the SAS plant to direct surface drainage and filtrate to Davyhulme WwtW to full flow treatment via a new splitter chamber for process flow control. The site boundary is revised to incorporate this new drainage pipeline route in schedule 4 to this variation notice.

The main points considered during the determination of this variation are summarised below.

Increased throughput of sludge

The variation requested the increase in annual throughput of sludge from 4,635,865 tonnes to 10,032,025 tonnes. At present the surplus activated sludge is sent back to primary settlement tanks for co-settlement. The Operator intends to improve the overall performance of their activated sludge processing tanks, and have therefore decided to thicken the sludge instead of sending it for co-settling. The net effect on overall sludge production is not expected to change.

The sludge will enter a new thickening plant where the sludge will be thickened and transferred separately into the existing sludge digestion treatment. The same sludge load shall be processed by the existing sludge digestion facility.

The thickened sludge aims to result in a more efficient anaerobic digestion process, with a marginal increase in biogas production. The site's existing Combined Heat and Power and Gas to Grid plants will accommodate this marginal increase in biogas with no likely significant effect upon emissions. No additional abatement is required for any emissions associated with this variation, other than the new Odour Control Unit for the new drum thickeners. Therefore we conclude that there is unlikely to be any adverse environmental impact from this increase in annual throughput from the connected activities.

Odour Control Unit

The Operator is replacing the temporary odour control unit with a new odour control unit serving the new drum thickening process. The 'SULPHUS' biofilter system employs a fixed, high surface area, synthetic media and

an irrigation system utilising final effluent from Davyhulme WwtW. The biofilter is an induced-vacuum system with an odour removal efficiency of 95% for hydrogen sulphide, mercaptans, VOCs and ammonia and has a residence time of 22.5 seconds.

Continuous pH measurement of the biofilter liquid effluent will be undertaken to maintain odour performance of the biofilter process by controlling the frequency of active irrigation of the supporting media. This is enhanced with the addition of a micro-nutrient solution to supply the irrigation water feed and maximise biological health.

Odours generated from the thickening process will be contained and extracted for treatment through a dedicated biofilter unit before being released to atmosphere via an 11m high discharge stack. H₂S has been chosen as the best indicator species for monitoring the effectiveness of the odour control unit, this is in line with our guidance. H₂S is subject to continuous in-line monitoring at the outlet stack.

We have assessed the specifics of the odour control unit using our Environmental permitting: H4 odour management guidance and we consider this type of odour abatement is suitable for this activity. The details provided have demonstrated to us that the odour control unit should be effective. Therefore we conclude that odour from the facility should not be at levels likely to cause pollution.

We have included an improvement programme for the Operator to provide a report on the performance of the odour control unit following commissioning to validate assumptions made within the application.

Odour Modelling

The Operator provided an odour modelling report and modelling data for the existing and a proposed scenario reflecting this variation. We have decided not to conduct a detailed audit for the following reasons:

- In both scenarios, there are a large number of emission sources modelled, there are a large number of buildings modelled and the discrete receptors modelled on which the assessment is based are located between 79m and 700m from the site. The nearest receptors are likely to be within the building wake and therefore subject to high modelling uncertainties. Furthermore, the number of sources modelled and the presence of area sources also will add to the uncertainty in modelling predictions.
- We have reviewed the emission rates included in the model. The Operators numbers are internally consistent, however we cannot comment on the validity of any emission rates and that they would not vary over time. This also adds to uncertainties in the reports predictions.
- The output of the assessment suggests that comparing the existing and proposed scenario, the change in impact would be between an increase of approximately 5 ouE/m³ to a decrease of approximately 2 ouE/m³ at receptors. The magnitude of these changes are very small.
- There are currently no odour complaints relating to the site.
- The proposed changes are aimed at causing an overall improvement to odour releases

Given the modelling uncertainties, auditing the validity of a minor improvement would be unlikely to offer any information to support a decision. Therefore we have decided that that dispersion modelling is not crucial to the decision in this case and the presence of a robust odour management plan is of more importance. As we are satisfied with the new odour control unit and general odour control management details for the aspects related to this variation we have decided to obtain an updated Odour Management Plan through an improvement programme.

Conclusion

We have assessed the upgraded technology against our guidance SGN5.06 recovery and disposal of hazardous and non-hazardous waste and consider them to be the best available techniques. The new odour control unit will abate the majority of odours leaving only an insignificant amount of residual odour. We conclude that there will unlikely be any increased odour effect on the surrounding environment.

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	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>The application was publicised on the GOV.UK website.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> • Food Standards Agency • Health and Safety Executive • Public Health England • Environmental Health – Trafford Council • Director of Public Health – Trafford Council <p>The comments and our responses are summarised in the consultation section.</p>
The facility	
The regulated facility	<p>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' and Appendix 1 of RGN 2 'Interpretation of Schedule 1'.</p> <p>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.</p>
The site	
Extent of the site of the facility	The operator has provided a plan which we consider is 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.

Aspect considered	Decision
Biodiversity, heritage, landscape and nature conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>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.</p> <p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified.</p> <p>We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.</p>
Environmental risk assessment	
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p>
Operating techniques	
General operating techniques	<p>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.</p> <p>The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p>
Odour management	<p>We have reviewed the odour management plan in accordance with our guidance on odour management.</p> <p>While we consider that the applicant's proposals represent the appropriate measures to minimise odour from the permitted activities we do not consider that the odour management plan is satisfactory. We are satisfied in principal with the changes made during this variation so have included an improvement programme for a fully updated odour management plan.</p>
Permit conditions	
Waste types	<p>We have specified the permitted waste quantities, which can be accepted at the regulated facility.</p> <p>We are satisfied that the operator can accept this quantity of waste for the following reasons:</p> <ul style="list-style-type: none"> • the proposed infrastructure is appropriate; and • the environmental risk assessment is acceptable.
Improvement programme	<p>Based on the information on the application, we consider that we need to impose an improvement programme.</p> <p>We have imposed an improvement programme to ensure that an updated odour management plan is in place for the site. See key issues for further details.</p>

Aspect considered	Decision
Emission limits	No emission limits have been added, amended or deleted as a result of this variation.
Monitoring	Monitoring has not changed as a result of this variation.
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.
Growth duty	
Section 108 Deregulation Act 2015 – Growth duty	<p>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.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“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.”</p> <p>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.</p> <p>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.</p>

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 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
We have fully assessed the odour abatement system against all relevant guidance, see key issues for further details.

No further responses were received from other organisations or to our notice on GOV.UK.