CWWTPR Odour Fact Sheet

Our commitment

During the first phase of consultation, Anglian Water said we will:

- Minimise odour by incorporating solutions to address it at source, using best operational practices.
- Ensure negligible impact on all known receptors ('negligible' as defined as per Institute of Air Quality (IAQM) guidelines).

This fact sheet explains how we are designing the new facility to deliver on that commitment.

Summary

During the first phase of consultation, the comments received associated with odour were mainly limited to the proposed new WWTW. At that stage of the project the proposed layout of the WWTW was generic to allow a "like for like" comparison between site locations.

Although the layout was generic, it included some odour specific improvements beyond the existing Cambridge WWTW design, namely: covering all the tanks in the sludge treatment centre, as well as the terminal pumping station and inlet works, and venting the air from these processes through odour control (treatment) units. Some sludge treatment centre tanks are and will remain connected to the biogas capture and use system, and emissions from that equipment will continue to comply with the associated air quality emissions requirements. These odour management improvements, beyond the existing Cambridge WWTW design, speaks to our commitment towards ensuring a 'negligible' impact to all receptors in our new site location.

The facility's design is now continually being developed further as part of the ongoing design development. This includes continually driving down odour impacts as part of the design process to ensure the new works achieves 'negligible' impacts on all known receptors. Some of the design elements associated with driving down odour (also referred to as mitigation measures) in the time since we launched our phase one consultation include:

- WATS modelling (modelling biological, chemical, and physical processes in sewer systems) carried out of the sewer network to ensure best sewer pipework routings, connection configurations and identify potential odour levels for mitigation at the new facility.
- Choosing the main treatment process for its lower turbulence and emissions, which achieves a lower odour footprint than the impact at site selection stage.
- Layout arrangements to locate the most odorous elements towards the centre of the site.
- Moving the preferred layout geographically, to achieve the least impact to existing receptors.
- Inlet works layout "straightening" to reduce potential turbulent flow areas.
- Hydraulic design for the uncovered areas of the plant to utilise gravity flow to reduce turbulence.
- Pumped flows to uncovered tanks will be discharged below water level to reduce turbulence.
- Choosing the aeration equipment for appropriate portions of the treatment process as a low-pressure system, which reduces turbulence.

- We cannot eliminate processes involving septic effluent or sludge as we cannot completely control what we receive through the sewers or tankering imports. However, we can control and manage how we treat it and the risks associated with it. Therefore we have covered the reception areas, including the Terminal Pumping Station (TPS), Inlet works and sludge tanks and vent their air through odour control (treatment) units. This addresses the risks associated with elements of the new facility with a higher risk of offensive odours.
- An Odour Management Plan (OMP) will be developed as part of the project, for use by the operations and maintenance teams upon handover. The OMP will outline operational odour management, monitoring and reporting measures and will include controls to be implemented in the event of an incident such as spillage. Establishing and maintaining an Odour Management will be a condition of our environmental permit regulated by the Environment Agency, this will need to be submitted as part of an environmental permit application and will also submitted as part of the DCO application.

We will continue to develop the design and reduce the risk of odour impacts even further as we progress beyond our phase two consultation.

As part of the Environmental Statement for the DCO application, a formal Odour Assessment will be carried out. It will follow the guidance from the Institute of Air Quality Management (IAQM), namely "Guidance on the assessment of odour for planning". The following section details what will be included in this Odour Assessment. All the inputs and outputs associated with producing the Odour Assessment will be made available to the public.

Planned Odour Assessment

The odour assessment required as part of the Environmental Statement for the DCO application will follow the guidance from the Institute of Air Quality Management (IAQM) (namely "Guidance on the assessment of odour for planning") and will include the following:

1. ***A description of the existing baseline odour condition.***

As this is a new site, this section would reference other sources in the area that may impact on the perceived odour, as well as referencing the existing Cambridge facility that will be decommissioned.

2. ***Describe the existing receptors and their relative sensitivities to odour effects, with reference to the grading provided within this IAQM guidance document.***

All existing residential areas and land users surrounding the site (irrespective of distance) are potential receptors. During the first phase of consultation the following impacted receptors were listed in our odour statement. We will continue to evaluate the wind direction and dilution effects (including distance and land use) to consider if other receptors need to be added to this initial list.

Receptor	Surrounding Land Use OR Character of Area	Sensitivity
Snout Corner Fen Track	Recreational (e.g. dog walking)	Low
Disused railway and Low Fen Drove Way	Recreational (e.g. dog walking)	Low
A14	Major Road	Low

3. ***Details of the potential odour sources.***

Additional to the narrative to describe the potential odour sources at the new facility and the hedonic nature (character) of the odours at each source, their expected odour emissions will be included. The odour emissions will include the benchmarking exercise to predict the emissions for the proposed WWTW and the reasoning for selecting the odour emission values used.

4. ***Specific odour control and mitigation measures incorporated into the scheme will be highlighted.***

This will include considerations for process selection, layout arrangement and odour management on site e.g. odour control units. We have provided some examples in the summary, but this list will continue to grow.

5. ***The odour modelling results will be provided.***

We will discuss the odour modelling software used, as well as the inputs for the modelling including meteorological data, dispersion and dilution pathways taking into consideration topography and land use to determine surface roughness factors, layout considerations (refer point 4), and emission values (refer point 3 above).

We cannot yet provide the final version, as the design is still evolving and will respond to consultation feedback. However, attached is the odour modelling that reflects the current design layout, for information only.

6. ***The residual effects on receptors will be determined, using this IAQM guidance document.***

Table 1 below, (Table 7 from the IAQM guidance) indicates the requirements for determining a 'Negligible' impact on receptors for a "normal operation" facility, as is expected as a worst-case position for the new facility. As described in item (h) in the summary above, we cannot avoid receiving the occasional septic influent, but we can take steps to mitigate and control its impacts. We believe the new facility will operate better than "normal". However, we have utilised the "normal operating" classification, in line with the IAQM guidance.

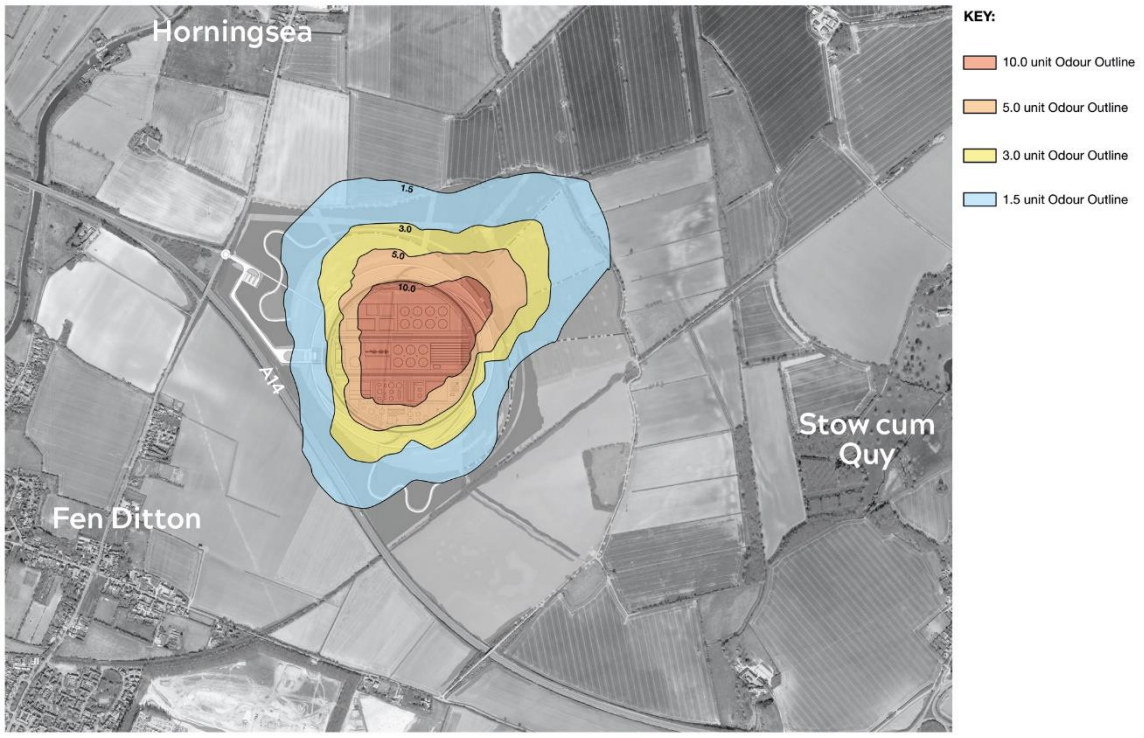
Table 1 – Proposed odour effect descriptors for impacts predicted by modelling for moderately offensive odours

Odour Exposure Level C_{98} OU_E/m^3	**Receptor Sensitivity**		
	Low	Medium	High
≥ 10	Moderate	Substantial	Substantial
5 to < 10	Slight	Moderate	Moderate
3 to < 5	Negligible	Slight	Moderate
1.5 to < 3	Negligible	Negligible	Slight
<1.5	Negligible	Negligible	Negligible

7. ***No mitigation section will be provided as the measures used to reduce odours would be described in point 4 above. Assessments of this nature would typically require mitigation***

sections to address undesired impacts. However, as this is a new facility, the mitigation iterations would already form part of the design process to ensure the new works achieves 'negligible' impacts on all known receptors.

Our most up to date odour model can be found in the 'Minimising odour at source' section of the Phase Two Community Consultation Leaflet and is included below.



Indicative odour model output for the new facility