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Addendum Report

Updated odour dispersion modelling for Cambridge Water Recycling Centre

Client:

South Cambridgeshire District Council

Report Number:

CACC19A_06

Project Code

CACC19A

Title:	Updated odour dispersion modelling for Cambridge Water Recycling Centre
Report number:	CACC19A_06
Project code:	CACC19A
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1 Scope and approach

1.1 Scope

The purpose of this addendum report is to present the results of the updated odour dispersion modelling which has been undertaken to assess the risk of impact of the odour emissions from the Cambridge Water Recycling Centre.

The modelling which was undertaken by Odournet UK Ltd (the former name of Olfasense UK Ltd) in 2017 (report reference "CACC17A_08_final") was repeated using the most recent versions of the AERMOD and AERMET modelling software.

The updated model output is presented in this report.

1.2 Approach

1.2.1 Dispersion modelling

The original modelling which was conducted in 2017 was undertaken using versions of AERMOD and AERMET which have now been superseded.

The updated modelling was conducted using an updated version of the AERMOD dispersion model (BREEZE Version 9.0 incorporating the US EPA 19191 AERMOD executable) and an updated version of the AERMET meteorological pre-processor (BREEZE Version 8.0 incorporating the US EPA 19191 AERMET executable).

A key element of the AERMET updates which have been implemented by the US EPA is an improvement in model performance for sources that generate peak exposure concentrations under low wind, stable atmospheric conditions, and to address potential overestimation of impacts from near-ground-level emissions sources. For newer modelling studies which use the updated software the predicted level of impact is typically lower.

In all other respects the approach applied for the updated modelling matched that applied in 2017. The odour sources, emission rates, assumptions, meteorological data, topographical data, receptor grid, and modelling approach were identical to those applied (full details are presented in report reference CACC17A_08_final).

The model was run for the 2013 meteorological year.

2   Results

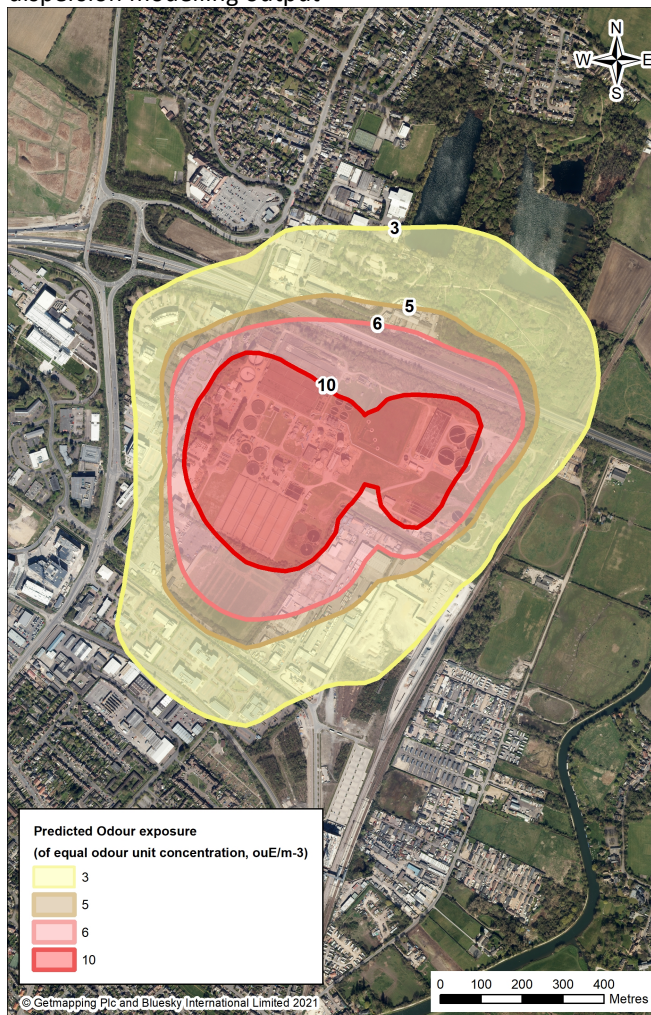### 2.1   Updated model ouput

The results of the updated modelling are presented below.

In the 2017 study (report reference "CACC17A_08_final") it was reported that 2013 is likely to be the worst case year, although this is dependent on which specific offsite location is being assessed. The revised model output below is for the 2013 meteorological year which has again been generated using a 100 m receptor grid spacing.

The revised model output below supersedes the original Figure 5 in Odournet report reference "CACC17A_08_final". The figure presents isopleths defining the area where predicted odour exposure levels will exceed $C_{98,\ 1\text{-hour}}$ = 3, 5 and 6 ou_E/m^3.

Figure 1: Updated dispersion modelling output

The updated model output indicates a reduction in the extent of the odour isopleths in comparison to those produced in 2017 (presented in report reference "CACC17A_08_final").

2.2 Conclusions

The conclusions of the study are as follows:

1. Updated modelling has been undertaken to assess the risk of impact of the odour emissions from the Cambridge Water Recycling Centre, using updated versions of the AERMET meteorological pre-processor and AERMOD dispersion model.

2. The updated model output indicates a reduction in the extent of the odour isopleths in comparison to those produced in 2017.

3. The original model output from the 2017 Odournet study is therefore superseded by the model output presented within this report.