



Odour Assessment: Butts Batch, Wroughton

August 2020



Experts in air quality
management & assessment

Document Control

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1 Introduction

- 1.1 This report describes the assessment of odour effects associated with Wrington Sewage Treatment Works (STW) on a proposed residential development located at Butts Batch in Wrington, North Somerset. The assessment has been carried out by Air Quality Consultants Ltd (AQC) on behalf of Strongvox Homes and is provided to support the planning application for the proposed development.
- 1.2 The STW has the potential to generate odours which may adversely affect future residents of the proposed development. This assessment uses dispersion modelling, field odour surveys (sniff tests) and complaints data analysis to determine whether there are any constraints to residential development at the site as a result of odours. The assessment follows a methodology agreed with Wessex Water (the STW operator).

2 Odour in Legislation, Policy and Guidance

National Legislation

Environmental Protection Act

- 2.1 There are currently no statutory standards in the UK covering the release and subsequent impacts of odours. This is due to complexities involved with measuring and assessing odours against compliance criteria, and the inherently subjective nature of odours.
- 2.2 It is recognised that odours have the potential to pose a nuisance for residents living near to an offensive source of odour. Determination of whether or not an odour constitutes a statutory nuisance in these cases is usually the responsibility of the local planning authority or the Environment Agency. The Environmental Protection Act 1990 (1990) outlines that a local authority can require measures to be taken where any:

“dust, steam, smell or other effluvia arising on an industrial, trade and business premises and being prejudicial to health or a nuisance...” or

“fumes or gases are emitted from premises so as to be prejudicial to health or cause a nuisance..”

- 2.3 Odour can also be controlled under the Statutory Nuisance provisions of Part III of the Environmental Protection Act.

Planning Policy

National Planning Policy Framework

- 2.4 The National Planning Policy Framework (NPPF) (2019) sets out planning policy for England. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, and that the planning system has three overarching objectives, one of which is an environmental objective:

“to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy”.

- 2.5 To prevent unacceptable risks from pollution, the NPPF states that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by...preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land

instability. Development should, wherever possible, help to improve local environmental conditions such as air quality”.

and

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development”.

- 2.6 The NPPF is supported by Planning Practice Guidance (PPG) (Ministry of Housing, Communities & Local Government, 2019), which makes clear that *“Odour...can also be a planning concern, for example, because of the effect on local amenity”*. It also provides guidance on options for mitigating impacts, and states that *“Mitigation options where necessary, will depend on the proposed development and should be proportionate to the likely impact”*.

Odour Guidance

Environment Agency Guidance

- 2.7 The Environment Agency has produced a horizontal guidance note (H4) on odour assessment and management (Environment Agency, 2011), which is designed for operators of Environment Agency-regulated processes (i.e., those which classify as Part A(1) processes under the Pollution Prevention and Control (PPC) regime). The H4 guidance document is primarily aimed at methods to control and manage the release of odours, but also contains a series of recommended assessment methods which can be used to assess potential odour impacts.

Institute of Air Quality Management Guidance

- 2.8 The latest UK guidance on odour was published by the Institute of Air Quality Management (IAQM) in 2018 (IAQM, 2018). The IAQM guidance sets out assessment methods which may be utilised in the assessment of odours for planning applications. It is the only UK odour guidance document which contains a method for estimating the significance of potential odour impacts.
- 2.9 The IAQM guidance endorses the use of multiple assessment tools for odours, stating that, *“best practice is to use a multi-tool approach where practicable”*. This is in order to improve the robustness of the assessment conclusions. Some of the methods outlined in the IAQM guidance have been adopted in this odour assessment.

Wessex Water Odour Guidance

- 2.1 Wessex Water has issued its own internal guidance for the assessment of odours from its STWs and pumping stations. The guidance is formed of two documents; the ‘Odour Plan’ (Wessex Water, 2016) and the ‘Odour Risk Assessment Procedure for Proposed New Development’ (Wessex Water,

2016a). Whilst the Wessex Water guidance is not statutory, the company will be a statutory consultee for a planning application. Therefore, the assessment needs to take this into consideration.

Odour Plan

- 2.2 The Wessex Water 'Odour Plan' outlines the company's requirements for odour control and assessment, specifically stating that:

"Wessex Water shall ensure that new assets are assessed for odour risk and shall be designed and operated to minimise risk of causing odour nuisance to receptors in consultation with planning authorities and environmental regulators."

Existing assets with the potential to generate odours must comply with either generic or site specific odour management plans to limit risk of causing an odour nuisance."

- 2.3 In terms of new, sensitive development within close proximity to a Wessex Water STW or pumping station, the 'Odour Plan' states that:

"If a proposed development falls within a consultation zone around a potential odour generating asset, then a Preliminary Odour Risk Assessment (PORA) will be undertaken, following the process in TRTWG669 - Odour Risk Assessment Procedure for Proposed New Development..."

...Where the PORA indicates a high risk of potential odour impact, then modelling should be carried out by the developer to more accurately establish potential impacts."

Odour Risk Assessment Procedure for Proposed New Development

- 2.4 The 'Odour Risk Assessment Procedure for Proposed New Development' guidance sets out the methodology that should be used when assessing odour impacts from Wessex Water operated STWs and pumping stations. The guidance takes into account the methodologies set out in the relevant Environment Agency (Environment Agency, 2011), Defra (Defra, 2010)¹ and IAQM (IAQM, 2018)² guidance documents.
- 2.5 The guidance indicates that, where the initial PORA (undertaken internally by Wessex Water) indicates a high risk of potential odour impacts, then odour modelling should be undertaken. It also states that other methods of odour assessment, such as sniff-testing, should only be used to support the odour modelling, and should not be used in isolation. The guidance sets out the methodologies

¹ The Defra guidance was withdrawn in 2017; however, there has been no replacement guidance issued.

² The Wessex Water guidance was based upon the 2014 version of the IAQM guidance (version 1.0); however, there have been no changes to the guidance which will affect the assessment procedure.

for obtaining odour emission rates, either from library data or from at-source odour monitoring, and outlines the requirements to the approach for the odour dispersion modelling study.

- 2.6 Importantly, the approach to modelling, including all input parameters and emission rates, must be agreed with the assigned Wessex Water representative prior to commencement of the modelling study.

3 Assessment Approach

- 3.1 Odour impact assessment is a challenging and subjective science. There are a number of odour assessment methods and tools that have been developed which are widely used in the UK, including desk-based methods, such as complaints analysis and qualitative risk assessment, through to field odour testing (sniff testing) and dispersion modelling. Each has its advantages and disadvantages and not all assessment methods are appropriate in every case; for example, where a potentially odorous process is proposed rather than existing, then assessment methods such as sniff testing and odour sampling are less relevant than predictive methods such as odour risk assessment. The scale and location of odorous processes is also important in selecting appropriate assessment methodologies, with more simple methodologies often sufficient for small or remotely located processes.
- 3.2 The approach to assessing the odour impacts from the STW has been to use odour dispersion modelling using the ADMS-5 dispersion model as well as semi-quantitative on-site field odour assessments (sniff testing) and review of any complaints data made available by Wessex Water.

Odour Sniff Testing

Sniff Test Methodology

- 3.3 This assessment uses the approach set out in the IAQM Guidance on the Assessment of Odours for Planning (IAQM, 2018), as set out below.
- 3.4 The observers undertaking the sniff-tests have had their olfactory acuity checked prior to carrying out the observations to demonstrate that their sense of smell is within the 'normal' range (i.e. is neither over- nor under-sensitive to odours); acuity test certificates for the assessors are provided in Appendix A1. On the evening before, and on the day of the observations, the observers consumed no strong food or drinks. No strongly scented toiletries were worn. These protocols are recommended in a number of odour guidance documents, including those published by the IAQM (IAQM, 2018) and Environment Agency (Environment Agency, 2011).
- 3.5 The sniff tests conducted followed the procedure described in the IAQM guidance on assessment of odours for planning (IAQM, 2018). The tests aimed to identify key characteristics of all odours detected, in particular their 'FIDOR' factors (as described in IAQM and EA guidance), which were appraised and recorded using the guidance outlined in Table 1.

Table 1: Description of the FIDOR factors

Factor	Description
Frequency	The frequency with which odours are detected.
Intensity ^a	The degree to which an odour is detectable on a 0-6 scale where: 0 = No odour, 1 = Very faint odour; 2 = Faint odour; 3 = Moderate odour; 4 = Strong odour; 5 = Very strong odour, and 6 = Extremely strong odour.
Duration	The duration of exposure to detectable odours.
Offensiveness	The level of pleasantness or unpleasantness of odours, in relation to its Hedonic Tone. Hedonic Tone is scored on a scale of +4 to -4 where: +4 = Pleasant odours; 0 = Neutral odours; and -4 = Foul odours.
Receptor sensitivity	The sensitivity of the location where odours are detected, and/or the proximity of odour releases to an odour-sensitive location.

^a Intensity scale has been taken from the IAQM guidance (IAQM, 2018), and is based upon the VDI 3940 scale. Odours of intensity of 4 or greater are considered to have significant potential for annoyance. Odours of intensity of 2 or less are often so faint that the character of the odour cannot be described and annoyance is unlikely.

3.6 Two site visits were carried out to undertake the sniff testing. During each site visit, the sniff test surveys started at the most distant location downwind of the odour source and were then carried out along a transect running across the site towards the odour source. At each location, the odour detected during each of 30 observations was recorded. Based on 5-10 seconds between each observation, each test lasted for a total of approximately three to five minutes. The intensity was noted using the criteria set out in Table 1, and, where relevant, a description of the odour was recorded.

Assessment of Odour Impacts

3.7 The IAQM guidance on the assessment of odours for planning (IAQM, 2018) includes an approach to determine the impacts of odours based on the results of sniff testing. This involves a two-stage process; the first stage is to identify the odour exposure at a sniff test location and the second stage is to combine the odour exposure with the sensitivity of the location to determine an odour impact for each location.

3.8 The matrix shown in Table 2 is transposed from the IAQM guidance and shows how the odour exposure at each sniff-test location is estimated. The matrix requires two parameters to be calculated; first the average odour intensity during the sniff test (I_{mean}), which is the average odour intensity from the 30 observations made during each test; and the second is the percentage odour

time ($t_{i \geq 4}$), which is the percentage of time during each sniff test when an odour intensity of 4 or higher was recorded by the observer.

Table 2: Matrix to Assess Odour Exposure at each Sniff-Test Location

Average Intensity (I_{mean})	Percentage odour time ($t_{i \geq 4}$) during the test				
	$\leq 10\%$	11-20%	21-30%	31-40%	$\geq 41\%$
6	Large	Very Large	Very Large	Very Large	Very Large
5	Medium	Large	Large	Very Large	Very Large
4	Small	Medium	Medium	Large	Large
3	Small	Medium	Medium	Medium	Medium
2	Small	Small	Medium	Medium	Medium
1	Small	Small	Small	N/A	N/A

Notes: I_{mean} should be rounded to the nearest whole number.

The following overriding considerations affect the scoring of the odour annoyance impact: if $I_{mean} = 0$, or if $I_{mean} = 1$, and $t_{i \geq 4} = 0\%$, then the odour effect can for practical purposes be considered negligible.

- 3.9 This process identifies the odour exposure during each test. To extrapolate this to estimate the total odour exposure at a given location, the results of multiple sniff tests can be combined, applying professional judgement, and taking account of factors such as the frequency of wind conditions and the variability of the odour source being assessed.
- 3.10 Once the overall odour exposure at a given location has been estimated, the odour impact can be determined using the matrix presented in Table 3 which is also transposed from the IAQM guidance. The matrix combines the overall odour exposure with the sensitivity of the location to determine the odour impact. The IAQM guidance provides a description and examples of low, medium and high sensitivity receptors. The receptor sensitivity principally relates to the perceived level of amenity that would be expected by users of a particular land use, where land uses such as industry and farms are considered to be of low sensitivity, commercial premises and recreation facilities are considered

to be of medium sensitivity, and residential properties, schools and hospitals are considered to be of high sensitivity to odours.

Table 3: Matrix to Assess Odour Impact at each Sniff-Test Location

Overall Odour Exposure ^a	Receptor Sensitivity		
	Low	Medium	High
Very Large	Substantial Adverse	Substantial Adverse	Substantial Adverse
Large	Moderate Adverse	Moderate Adverse	Substantial Adverse
Medium	Slight Adverse	Slight Adverse	Moderate Adverse
Small	Negligible	Negligible	Slight Adverse

^a Determined using the matrix in Table 2.

A further application of professional judgement then needs to be applied to conclude the significance of the odour effect on, or from, the development as a whole, taking into account the possibly different magnitudes of effects that occur at different receptors.

3.11 The matrix in Table 3 can be used to identify the potential odour impacts at an individual location, but the guidance advises that the overall significance of odour effects on a development is determined using professional judgement, taking account of the significance of impacts at all locations. The professional experience of the consultants who completed this assessment are summarised in Appendix A2.

Odour Dispersion Modelling

Model Inputs

- 3.12 Odour dispersion modelling for the STW has been carried out using the ADMS-5 dispersion model. The locations of the modelled odour sources are shown in Figure 1. A summary of the model input parameters for each odour source is provided in Appendix A3.
- 3.13 Information on the STW process has been obtained from Wessex Water during an accompanied visit to the works. The odour emission rates have been estimated using library odour emissions data obtained from the UK Water Industry Research Ltd Technical Reference Document (UKWIR Ltd, 2001) and using elements of AQC's professional judgement. The professional experience of the odour practitioners who carried out this assessment is set out in Appendix A1. All model input parameters have been discussed and agreed with Wessex Water.

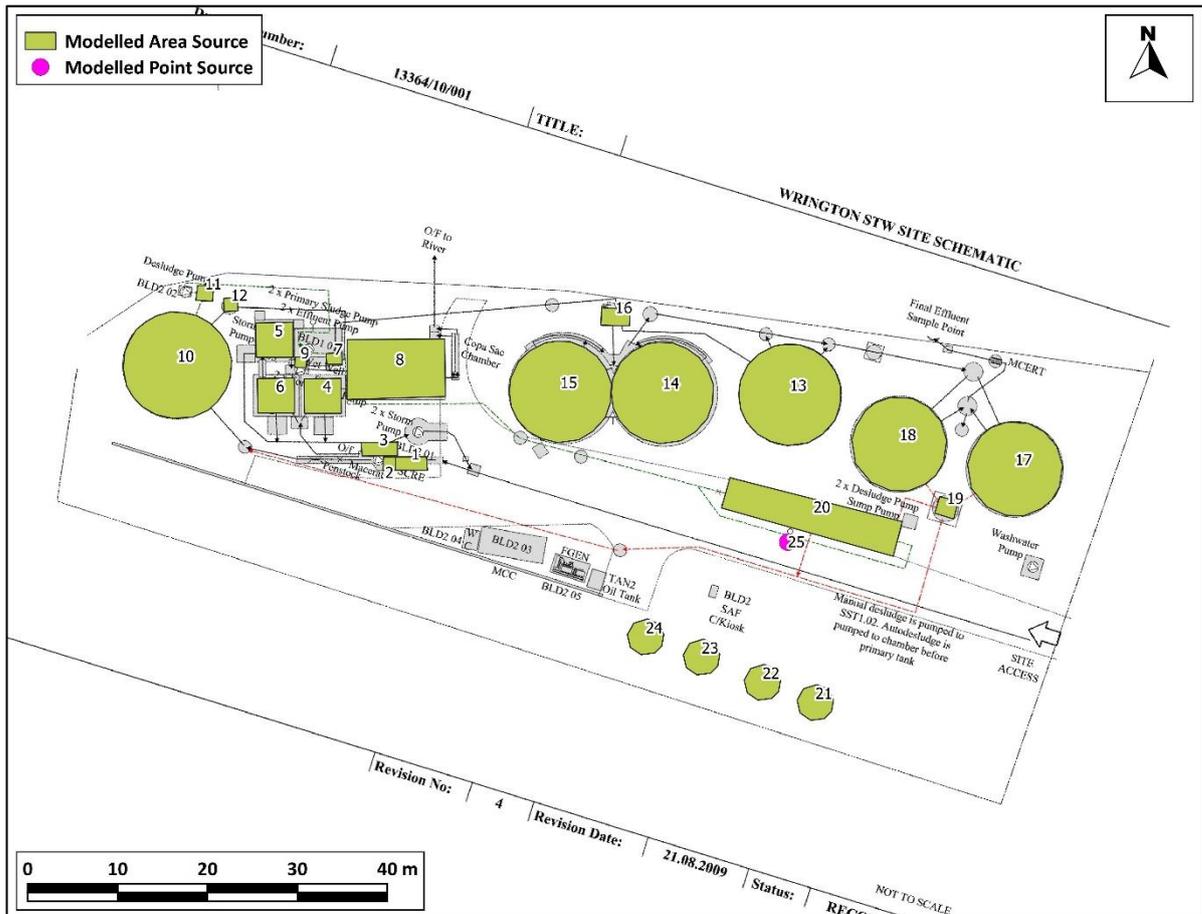


Figure 1: Modelled Odour Sources (see Appendix A3 for corresponding information relating to the numbered labels)

Contains site schematic provided by Wessex Water.

Meteorological Data

- 3.14 At the specific request of Wessex Water, the meteorological data used in this study has been obtained from assimilation and short-term forecast fields of the Numerical Weather Prediction (NWP) system known as the Global Forecast System (GFS). The model has been run using five-years of hourly sequential data (2015-2019) for Wrington. Wind roses and further details of the meteorological data used in the modelling are displayed in Appendix A4.
- 3.15 For the dispersion site, a variable surface roughness file was used. The meteorological input parameters for the modelling are set out in Table 4.

Table 4: Meteorological Data Model Input Parameters

Site	Surface Roughness	MO Length	Priestley-Taylor Parameter
Meteorological Site	0.2 ^a	10	1
Dispersion Site	Variable roughness file	10	1

^a Calculated as the average surface roughness value from the variable surface roughness file for all points within 2 km of the dispersion site. This is the best practice approach for determining surface roughness for NWP data.

Sensitive Locations

3.16 Concentrations have been predicted across nested Cartesian grids. These grids have a spacing of 5 m x 5 m within 400 m of the STW and 10 m x 10 m within 800 m. The receptor grid has been modelled at a height of 1.5 m above ground level.

Terrain

3.17 Local terrain has been included within the model based on OS Terrain 50 data.

Model Outputs

3.18 The model has been run to predict the 98th percentile of 1-hour odour concentrations across the grid of receptors. The predicted 98th percentiles of 1-hour odour concentrations have been compared to the suggested benchmarks outlined in the IAQM guidance on the assessment of odours for planning (IAQM, 2018).

3.19 The IAQM guidance states that “*odours from sewage treatment works plant operating normally, i.e. non-septic conditions, would not be expected to be at the ‘most offensive’ end of the spectrum...and can be considered on par with ‘moderately offensive’ odours such as intensive livestock rearing*”. Therefore, the odours from the STW have been assumed to be “*moderately offensive*” when assessing the significance of the impacts.

3.20 The IAQM guidance provides descriptors for odour effects for “*moderately offensive*” odours for high sensitivity land use (i.e. residential). These have been set out in Table 5 below, and have been used to determine the overall significance of the odour effects at the proposed development.

Table 5: Odour Effect Descriptors for Impacts Predicted by Modelling – “Moderately Offensive” Odours at High Sensitivity Receptors

Risk of Odour Impact	Odour Effect
≥10	Substantial
5-<10	Moderate
3-<5	Moderate
1.5-<3	Slight
0.5-<1.5	Negligible
<0.5	Negligible

4 Odour Impact Assessment

Odour Complaints Data Analysis

- 4.1 Wessex Water has confirmed that no odour-related complaints have been received in relation to Wrington STW.
- 4.2 The proposed development does not introduce any sensitive exposure closer to the STW than the existing properties located to the east of the works; the absence of complaints data is thus a good indicator that odours generated at the STW have historically not been detectable offsite at intensities and frequencies that result in justifiable annoyance.

Sniff Testing

- 4.3 Two field odour surveys were undertaken at the proposed development site on separate, non-consecutive days. Both surveys were undertaken on days with north-westerly winds; i.e. when the development site was directly downwind of the STW.
- 4.4 The results of the sniff testing are summarised in Figure 2 and Figure 3 and the raw data from the observations made during the site visits are presented in Appendix A6. The impacts have been calculated using the criteria set out in Table 2 and Table 3, and are based upon each location representing highly sensitive receptors (i.e. residential properties).

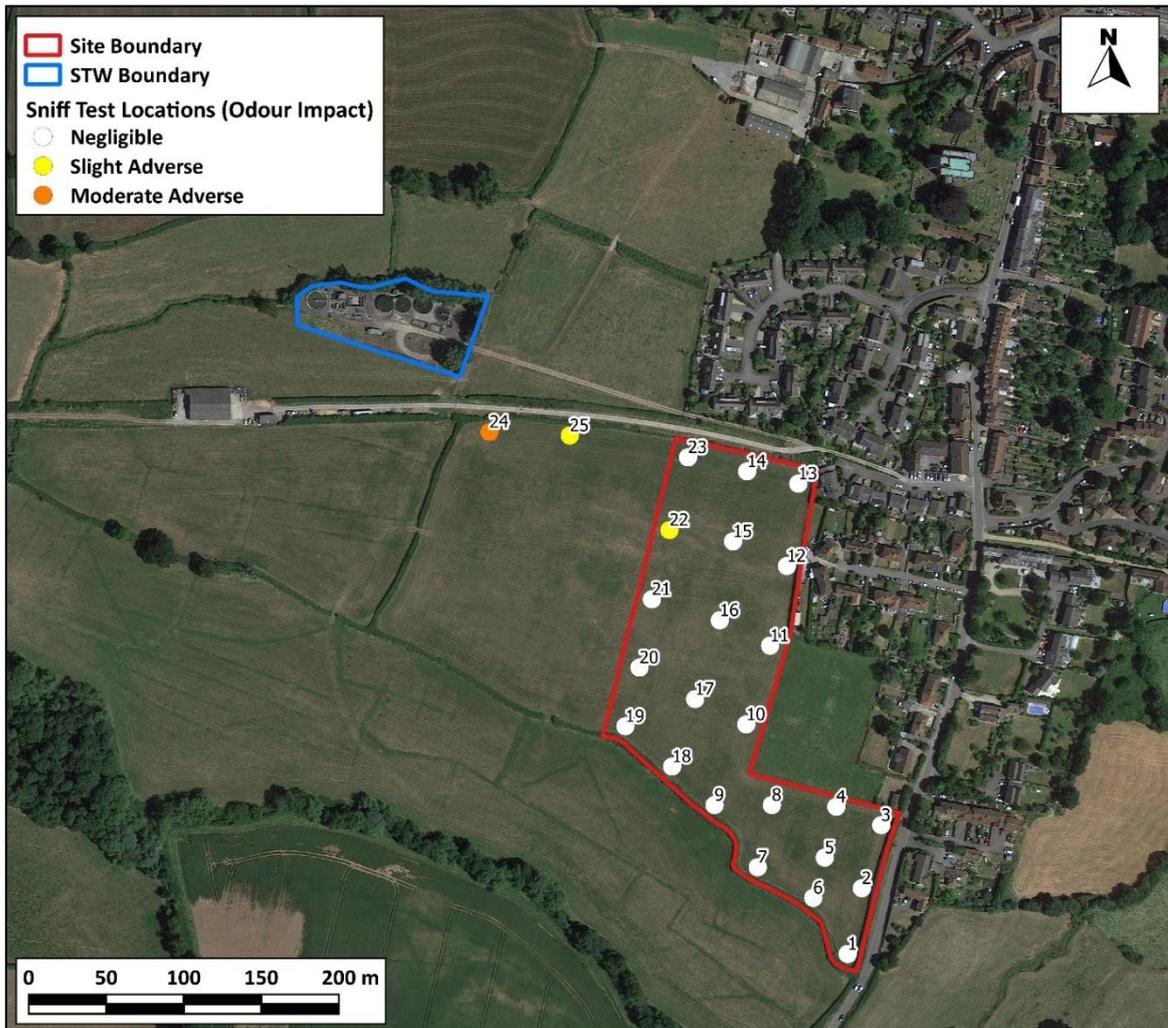


Figure 2: Sniff Test Results - 4 June 2020

Imagery ©2020 Google.

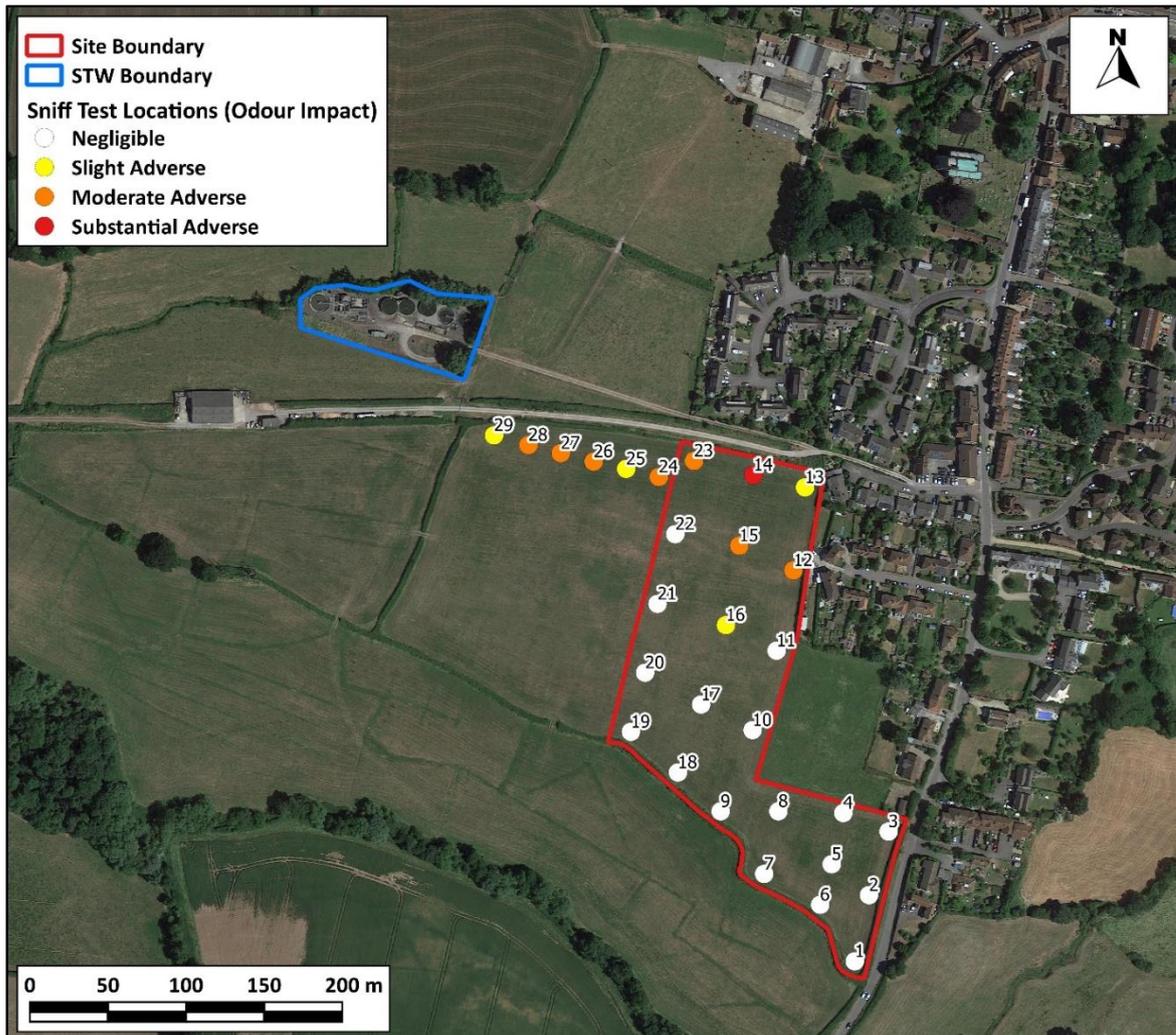


Figure 3: Sniff Test Results - 11 August 2020

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Sniff Test Results – 4 June 2020

- 4.5 The survey was undertaken during north-westerly winds, with mild temperatures of around 15°C and wind speeds varying between 0.2 m/s and 3.4 m/s. Conditions were described by the assessor as “overcast, dry and mild”.
- 4.6 During the first site visit, no odours related to the STW were detected for the majority of the test. Odours described by the assessor as “STW, unpleasant” were first detected at location 14; however, the odour was only detected on a single inhalation. At location 22, STW odours were detected at intensities and frequencies to result in a slight adverse impact. The impacts at all other locations across the development site were negligible.

- 4.7 Following the survey, two additional observations were made close to the STW and outside of the development site boundary. The odours at these locations were described by the assessor as “*very unpleasant*” and were directly attributed to the STW.

Sniff Test Results – 11 August 2020

- 4.8 The survey was undertaken during north-westerly winds, with temperatures of around 28°C and wind speeds varying between 0.2 m/s and 3.5 m/s. Conditions were described by the assessor as “*clear, dry and very hot*”. These conditions are worst-case for the assessment of odours from a STW; warm weather results in increased microbial activity in the wastewater which in turn leads to increased odour generation. Furthermore, extended periods of dry and warm weather results in a very low dilution of the wastewater (thus a higher proportion of solid organic material) which also leads to an increased level of odours from the works.
- 4.9 Odours described by the assessor as “*sewage*” and being “*unpleasant*” in nature were not detected at any of the sniff test locations located within the southern portion of the site. Odours identified as being from the STW were, however, detected at intensities and frequencies which result in slight adverse impacts at locations 16 and 13. At locations 12 and 15, an average odour intensity of 2, and percentage odour times of 27% and 30%, respectively, led to moderate adverse impacts at these locations. At location 14, identifiable STW-related odours were detected by the assessor for over 70% of the time, and the predicted impact here is substantial adverse.
- 4.10 Observations made by the assessor offsite - closer to the STW - demonstrate that STW odours were detectable along the northern boundary of the adjacent field to the west.

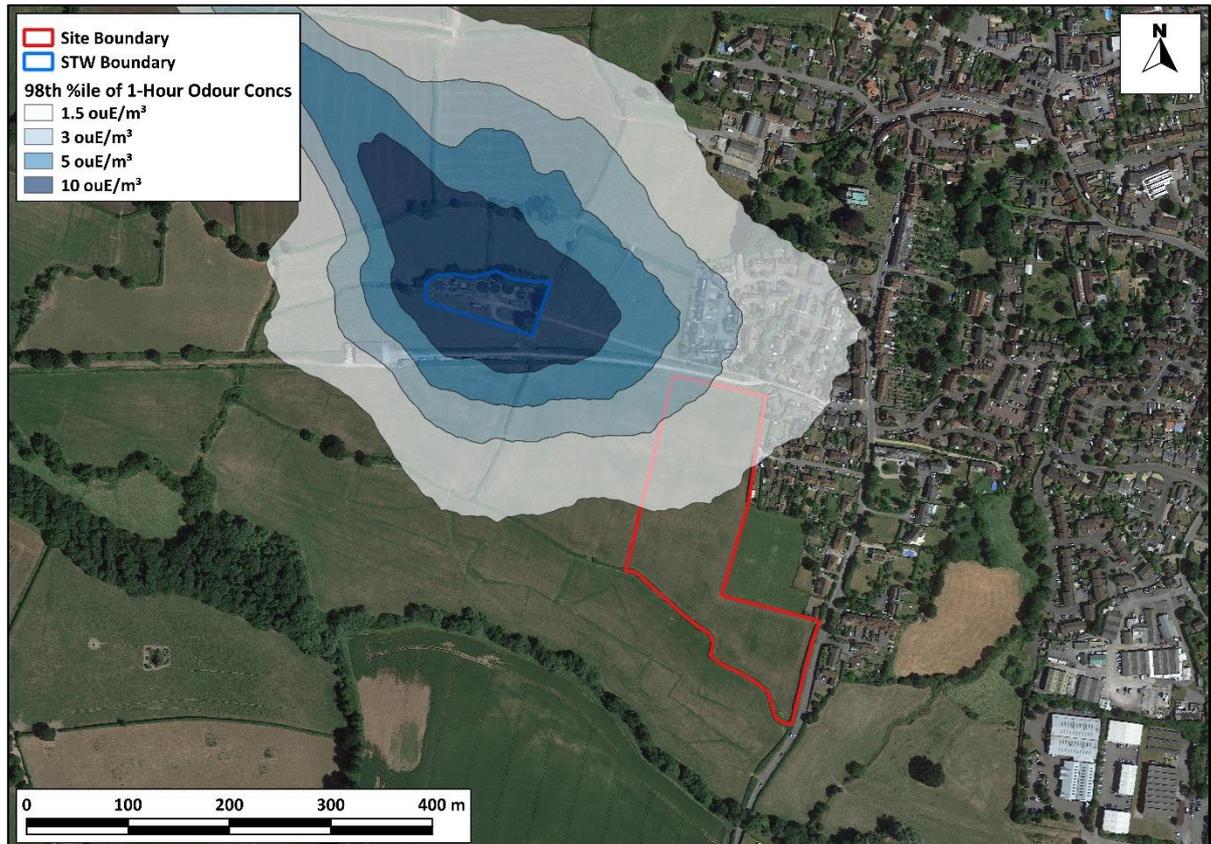
Summary

- 4.11 The results of the first sniff test demonstrate that odours generated by the STW are not detectable at unacceptable intensities, frequencies and durations to result in significant adverse effects anywhere on the development site (the IAQM guidance states that “*where the overall effect is greater than “slight adverse”, the effect is likely to be considered significant*”). The results of the second survey, however, predicted significant effects up to approximately 65 m south of the northern boundary of the development site. It should be noted, though, that the second survey was undertaken during very worst-case conditions, and that extremely warm and dry weather coinciding with north-westerly winds is very rare. Analysis of the meteorological data used in the modelling show that, between 2015 and 2019 inclusive, there were a total of only 15 hours when temperatures exceeded 25°C when the development site was downwind of the STW, with a maximum of 14 hours in any one year (0.16% of the year). It is therefore judged that whilst under certain meteorological conditions STW odours may be detectable at locations within the development site, the frequency of these events will be very low and very unlikely to result in annoyance.

Odour Dispersion Modelling

Model Results

- 4.12 In order to demonstrate the predicted spatial dispersion of odours from the STW across the development site, contour plots of odour concentrations from the worst-case meteorological year (2017) are shown in Figure 4. Contour plots for other modelled meteorological years are presented in Appendix A5.



**Figure 4: Contour Plot of 98th Percentile of 1-hour Odour Concentrations – 2017
Meteorological Data**

Imagery ©2020 Google.

Potential Odour Effects

- 4.13 The results of the dispersion modelling, using the criteria set out in Table 5, are summarised in Table 6.

Table 6: Predicted Odour Effects at the Development Site

Risk of Odour Impact	Effect	Odour Effect
≥10	Substantial Adverse	No Exposure
5-<10	Moderate Adverse	No Exposure
3-<5	Moderate Adverse	3% of development site
1.5-<3	Slight Adverse	35% of development site
<1.5	Negligible	62% of development site

4.14 The results of the modelling show that a large proportion of the development site will not experience adverse odour effects. Approximately one third of the proposed development lies within the 1.5-<3 OU_E/m³ contours; however, the IAQM guidance states that “*where the overall effect is greater than “slight adverse”, the effect is likely to be considered significant*” and thus there should be no constraint to the development of residential properties in this area. Whilst a very small area of the development site is predicted to experience moderate adverse effects, approximately 12 existing properties are also located within this contour; an absence of any historical complaint data (see Paragraphs 4.1 to 4.2) suggests that the model may therefore be over-predicting.

Overall Significance of Odour Effects

4.15 The odour dispersion modelling has demonstrated that only a very small area at the north-western corner of the development site is predicted to experience significant effects. The modelled impacts also suggest that a number of existing properties are subject to adverse effects and, taking into consideration that Wessex Water have received no odour-related complaints for the STW, it is possible that the model may be over-predicting the impacts.

4.16 The findings of the first sniff test corroborate the results of the dispersion modelling and demonstrate that no significant effects are predicted at any location on the development site. The findings of the second survey indicate significant effects at a number of locations close to the northern boundary of the site; however, this test was undertaken under extremely worst-case conditions which are not typical of meteorological conditions in the study area for the vast majority of the year.

4.17 Overall, it is judged that the effects of odours generated at the STW on the proposed development will be ‘*not significant*’. This judgement is made in accordance with IAQM guidance (IAQM, 2018), which states that the assessment of the significance of odour effects should be based on the drawing together of findings from multiple odour assessment tools, applying an appropriate amount of weight to each tool according to how well-suited it is to the study scenario in question. In the case of this assessment, most weight has been applied to the results of the dispersion modelling, which has been undertaken in accordance with Wessex Water’s guidance, and is based upon emissions data obtained from detailed discussions with Wessex Water and an accompanied visit to the works. Also in accordance with the Wessex Water guidance, the sniff tests have been used to support the modelling, and the findings of the surveys corroborate the results of the modelling study.

5 Summary

- 5.1 The potential for odour effects of Wroughton STW on a proposed residential development located at Butts Batch, Wroughton, has been assessed using odour dispersion modelling, field odour surveys and analysis of complaints data.
- 5.2 The dispersion modelling has demonstrated that odours from the STW should provide no constraints to residential development at the site. The sniff tests have demonstrated that, whilst under certain meteorological conditions STW odours may be detected at the development site from time to time, the frequency and duration of these events will be low enough to not result in annoyance.
- 5.3 Overall, it is judged that the effects of odours generated by the STW on the proposed development will be '*not significant*', and that the site is suitable for residential development.

6 References

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A1 Odour Acuity Test Certificates

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Acuity Test Certificate

Organisation	Air Quality Consultants Ltd.
Contact	Paul Outen
Address	23 Cold Harbour Road Bristol BS6 7JT
Telephone	0117 9741086
Participant Name	Paul Outen
Date	07/07/2020

Criteria Assessed	Acceptable Range	Participants Results
Average of ITE (10 ^{YITE})	20 ≤ 10 ^{YITE} ≤ 80	47.62
Standard deviation of ITE (10 ^{SITE})	10 ^{SITE} ≤ 2.3	1.63

Participants Acuity Result	Qualified
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Result clarification:

Assessor Paul Outen qualified as a panel member as his sensitivity to the reference material n-butanol fell within the defined bandwidth according to BSEN 13725 guidelines; also the repeatability of his responses resulted in a standard deviation that was below the limit specified.

Acuity testing was carried out in accordance with standard BS EN 13725:2003 'Air quality – Determination of odour concentration by dynamic olfactometry'. The test was carried out over one day, which is the only variation to the standard.

Holly Dawson
Laboratory Manager

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Acuity Test Certificate

Organisation	Air Quality Consultants Ltd.
Contact	Paul Outen
Address	23 Cold Harbour Road Bristol BS6 7JT
Telephone	0117 9741086
Participant Name	Jamie Dennis
Date	07/07/2020

Criteria Assessed	Acceptable Range	Participants Results
Average of ITE (10^{ITE})	$20 \leq 10^{ITE} \leq 80$	38.80
Standard deviation of ITE (10^{SITE})	$10^{SITE} \leq 2.3$	1.76

Participants Acuity Result	Qualified
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Result clarification:

Assessor Jamie Dennis qualified as a panel member as his sensitivity to the reference material n-butanol fell within the defined bandwidth according to BSEN 13725 guidelines; also the repeatability of his responses resulted in a standard deviation that was below the limit specified.

Acuity testing was carried out in accordance with standard BS EN 13725:2003 'Air quality – Determination of odour concentration by dynamic olfactometry'. The test was carried out over one day, which is the only variation to the standard.

Holly Dawson

Laboratory Manager



A2 Professional Experience

Penny Wilson, BSc (Hons) CSci MEnvSc MIAQM

Ms Wilson is an Associate Director with AQC, with more than 19 years' relevant experience in the field of air quality. She has been responsible for air quality assessments of a wide range of development projects, covering retail, housing, roads, ports, railways and airports. She has also prepared air quality review and assessment reports and air quality action plans for local authorities and appraised local authority assessments and air quality grant applications on behalf of the UK governments. Ms Wilson has arranged air quality and dust monitoring programmes and carried out dust and odour assessments. She has provided expert witness services for planning appeals and is Member of the Institute of Air Quality Management and a Chartered Scientist.

Paul Outen, BSc (Hons) MEnvSc MIAQM

Mr Outen is a Senior Consultant with AQC, having joined in 2014. He undertakes air quality and odour assessments for AQC, covering residential and commercial developments, industrial installations, road schemes, energy centres and mineral and waste facilities. These involve qualitative assessments, and quantitative modelling assessments using the ADMS dispersion models, for both planning and permitting purposes. He has also presented evidence at public hearings. Mr Outen has a particular interest in odour assessment, and has extensive experience in the assessment of odours across a wide range of industries throughout the UK, Europe and Asia. He also has experience in pollutant monitoring techniques, and played a key role in the development and standardisation of isokinetic bioaerosol sampling in the UK. He regularly undertakes site audits for various installations to advise on pollution control and mitigation strategies. He is a Member of both the Institute of Environmental Sciences and Institute of Air Quality Management.

A3 Modelled Emission Rates

I.D.	Odour Source	Modelled Parameters ^a			
		Surface Area (m ²)	Height (m)	Odour Emission Rate (OU _E /m ² /s)	Time Weighted Total Source Emission (OU _E /s)
1	Inlet works	5.25	0	125.0	656
2	Screens	2.00	1	125.0	250
3	Screening skip	6.00	1	50.0	300
4	Storm tank 1 ^b	16.00	0	41.7 ^c	190
5	Storm tank 2 ^b	16.00	0	41.7 ^c	190
6	Storm tank 3 ^b	16.00	0	41.7 ^c	190
7	Sludge return well (exposed area)	2.10	0	710.0	1491
8	Storm tank 4 ^b	72.80	0	41.7 ^c	867
9	Effluent well (exposed area)	0.70	0	125.0	88
10	PST	113.10	0.5	7.5	848
11	PST desludge chamber	3.14	0	710.0	2,231
12	PST outflow chamber	2.27	0	7.5	17
13	Filter bed 1	95.03	1.4	2.3	214
14	Filter bed 2	95.03	1.4	2.3	214
15	Filter bed 3	95.03	1.4	2.3	214
16	Filter bed dist chamber	6.00	3.2	3.4	20
17	Final tank 1	84.95	0	0.7	59
18	Final tank 2	84.95	0	0.7	59
19	Humus desludge chamber	4.15	0	710.0	2,950
20	Sludge beds	74.10	0	40.0	2,964
21	Proposed SAF tank 1 ^d	12.57	2	5.0	63
22	Proposed SAF tank 2 ^d	12.57	2	5.0	63
23	Proposed SAF tank 3 ^d	12.57	2	5.0	63
24	Proposed SAF tank 4 ^d	12.57	2	5.0	63
25	Sludge tanker displaced air ^e	NA	0.5	100 (OU _E /s)	1.19
Total Site Odour Emissions					14,265

- ^a All modelled parameters have been discussed and agreed with James Humphries at Wessex Water prior to undertaking the assessment.
- ^b The storm tanks have been assumed to be in use for two days per week. When not in use, the tanks have been assumed to emit no odour. The total emission from this source is thus time-factored.
- ^c The works diverts to storm tanks at approximately 3x dry weather flow, and thus the storm water is assumed to be 3x less odorous than the typical influent due to the effects of dilution during storm events.

- ^d The SAF tanks are proposed, and thus do not currently form part of treatment process at the works; however, AQC was instructed to include them by Wessex Water.
- ^e Sludge exports are understood to take place twice per week. For the purposes of modelling, and to represent a conservative assessment, each sludge export event is assumed to last for one hour. The total emission from this source is thus time-factored.

A4 Wind Roses

A4.1 Wind roses for the meteorological data used in the modelling are shown in the figures below.

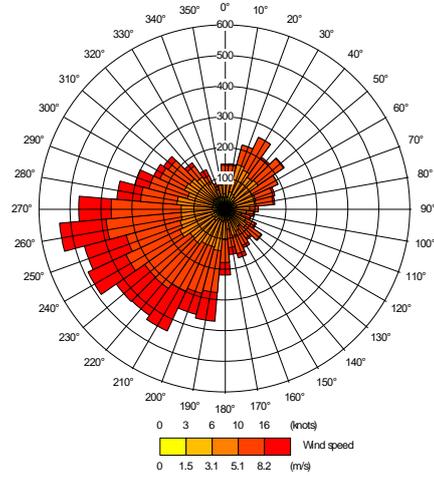


Figure A4.1: Wind Rose from NWP Meteorological Data for Wrington 2015

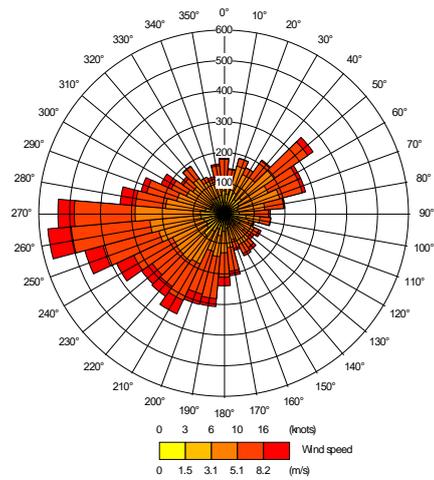


Figure A4.2: Wind Rose from NWP Meteorological Data for Wrington 2016

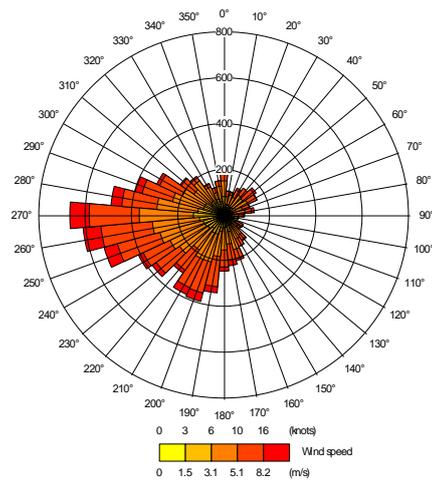


Figure A4.3: Wind Rose from NWP Meteorological Data for Wrington 2017

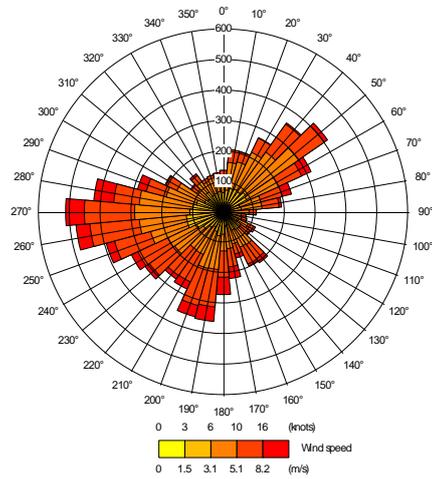


Figure A4.4: Wind Rose from NWP Meteorological Data for Wrington 2018

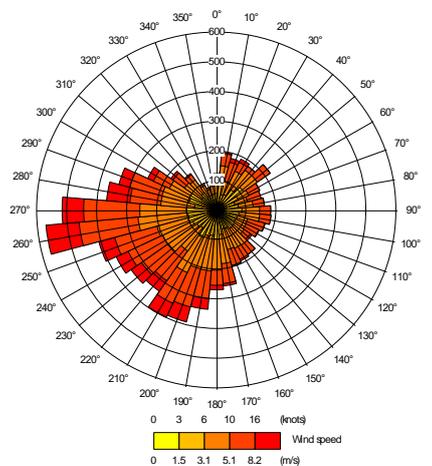


Figure A4.5: Wind Rose from NWP Meteorological Data for Wrington 2019

A4.2 The meteorological data used in this study is obtained from assimilation and short-term forecast fields of the Numerical Weather Prediction (NWP) system known as the Global Forecast System (GFS).

A4.3 The GFS is a spectral model: the physics/dynamics model has an equivalent resolution of approximately 13 km (latterly 9 km); terrain is understood to be resolved at a resolution of approximately 2 km, with sub-13/9 km terrain effects parameterised. Site specific data may be extrapolated from nearby archive grid points or a most representative grid point chosen. The GFS resolution adequately captures major topographical features and the broad-scale characteristics of the weather over the UK. Smaller scale topological features may be included in the dispersion modelling by using the flow field module of ADMS (FLOWSTAR). The use of NWP data has advantages over traditional meteorological records because:

- calm periods in traditional observational records may be overrepresented, this is because the instrumentation used may not record wind speeds below approximately 0.5 m/s and start up wind speeds may be greater than 1.0 m/s. In NWP data, the wind speed is continuous down to 0.0 m/s, allowing the calms module of ADMS to function correctly;
- traditional records may include very local deviations from the broad-scale wind flow that would not necessarily be representative of the site being modelled; these deviations are difficult to identify and remove from a meteorological record. Conversely, local effects at the site being modelled are relatively easy to impose on the broad-scale flow and provided horizontal resolution is not too great, the meteorological records from NWP data may be expected to represent well the broad-scale flow; and
- information on the state of the atmosphere above ground level which would otherwise be estimated by the meteorological pre-processor may be included explicitly.

A5 Odour Contours

A5.1 Odour contour plots for the years 2015, 2016, 2018 and 2019 are shown in the figures below. Contour plots for 2017 are presented in the main body of the report.

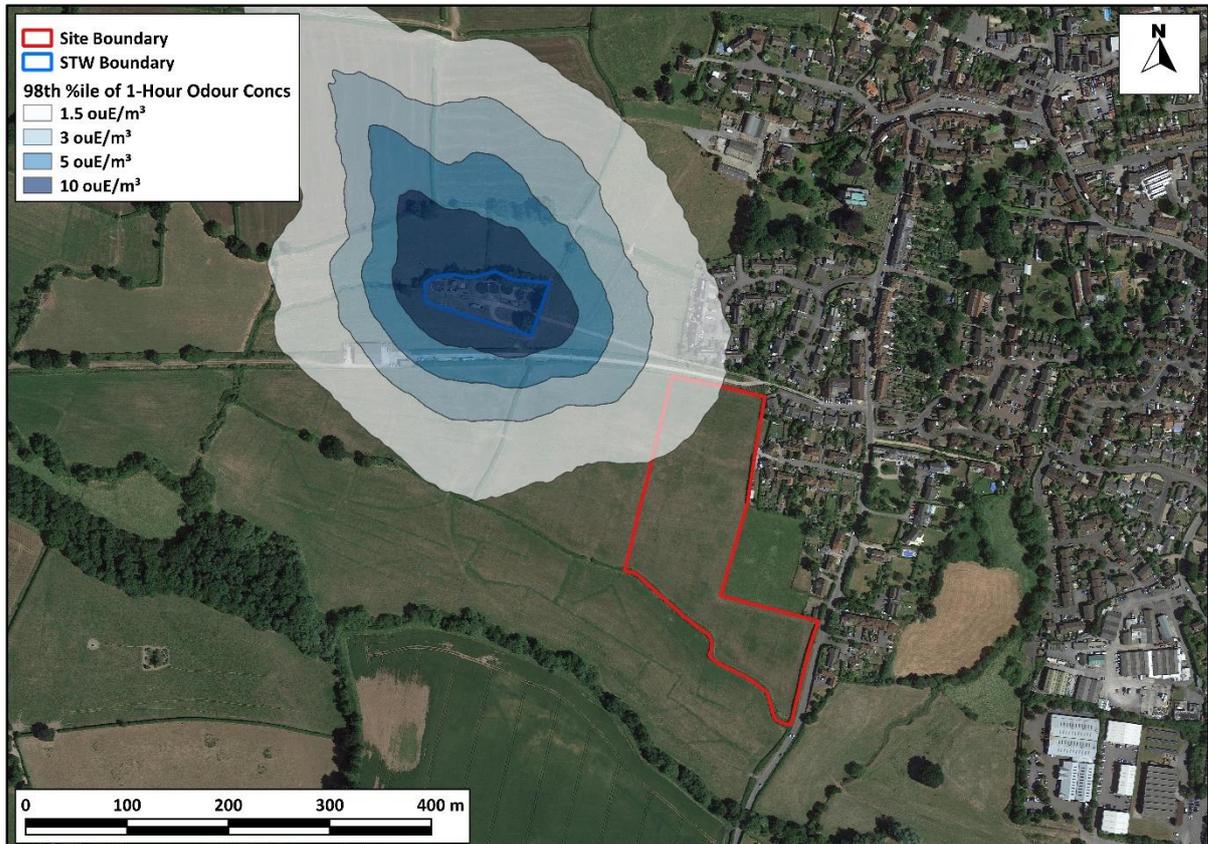


Figure A5.1: Contour plot of 98th percentile of hourly mean odour concentrations, using 2015 meteorological data

Imagery ©2020 Google.

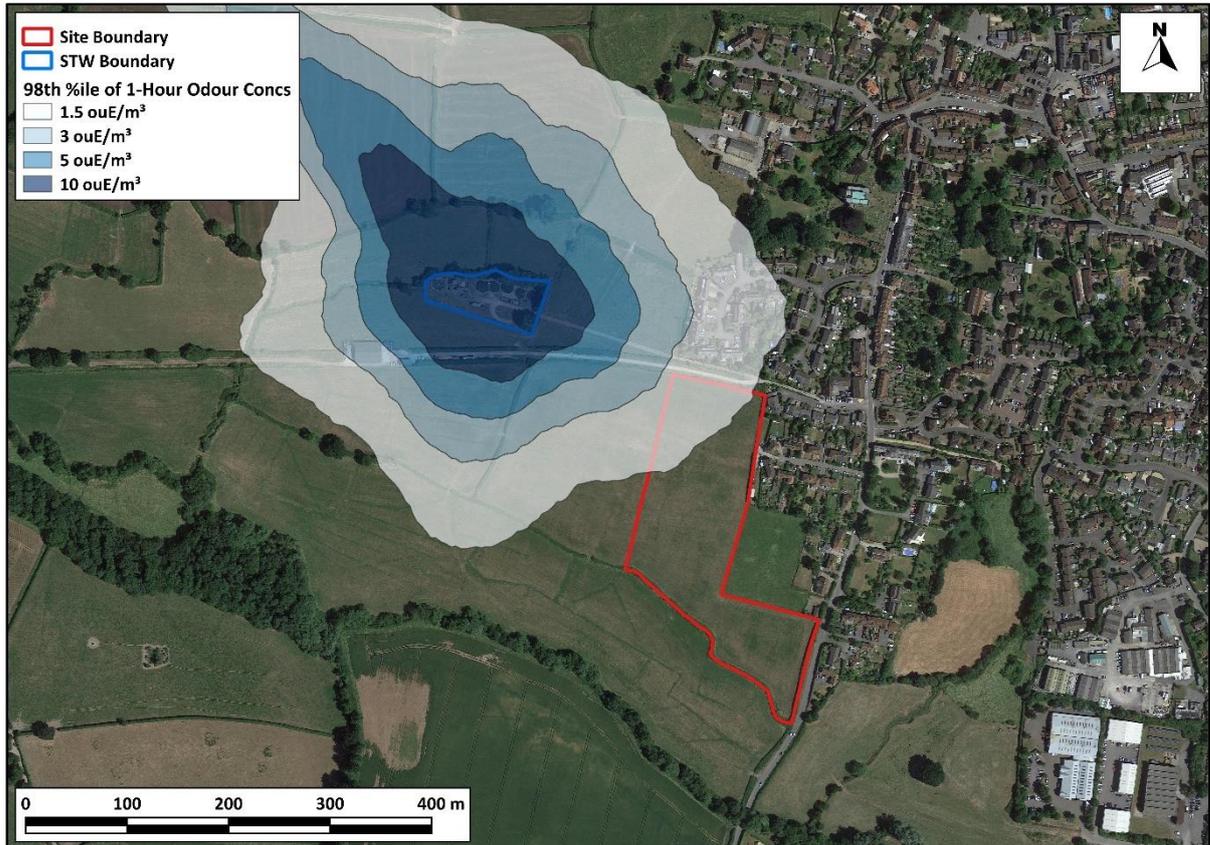


Figure A5.2: Contour plot of 98th percentile of hourly mean odour concentrations, using 2016 meteorological data

Imagery ©2020 Google.

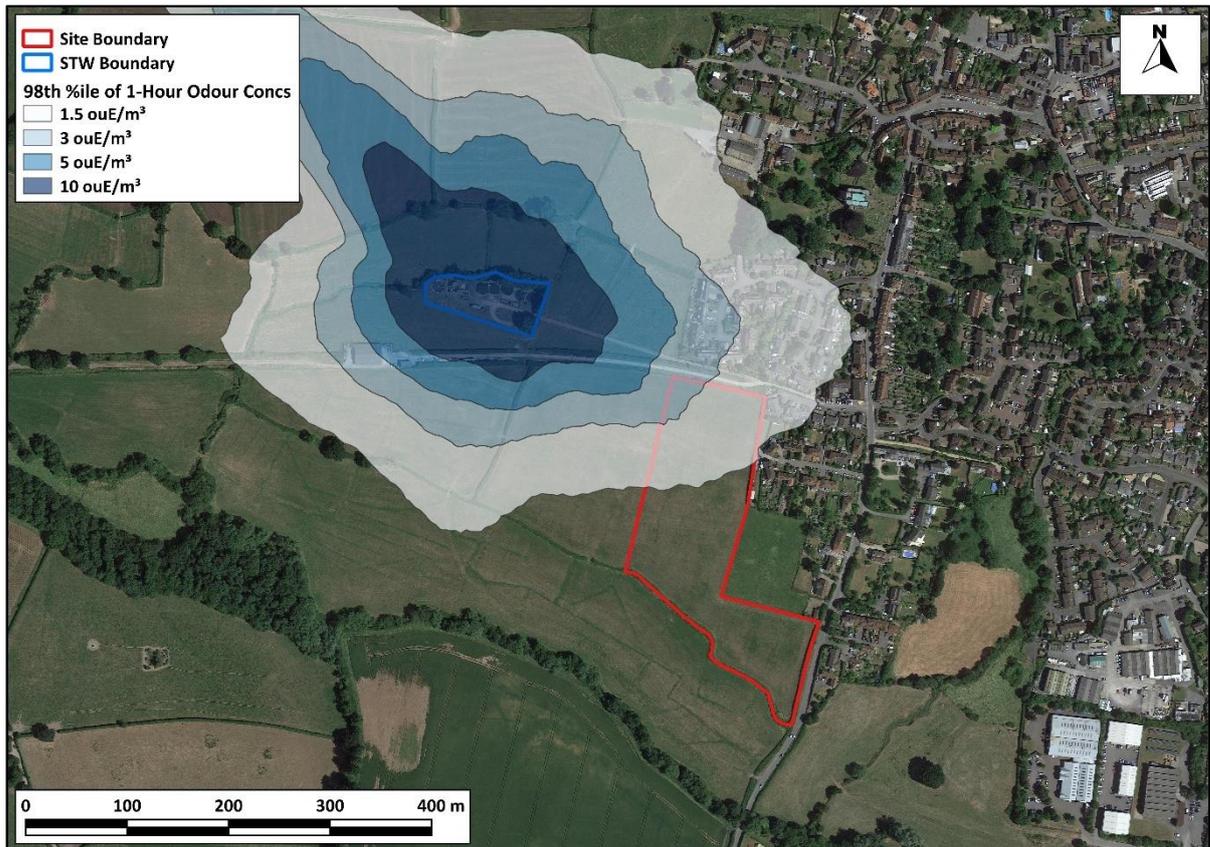


Figure A5.3: Contour plot of 98th percentile of hourly mean odour concentrations, using 2018 meteorological data

Imagery ©2020 Google.

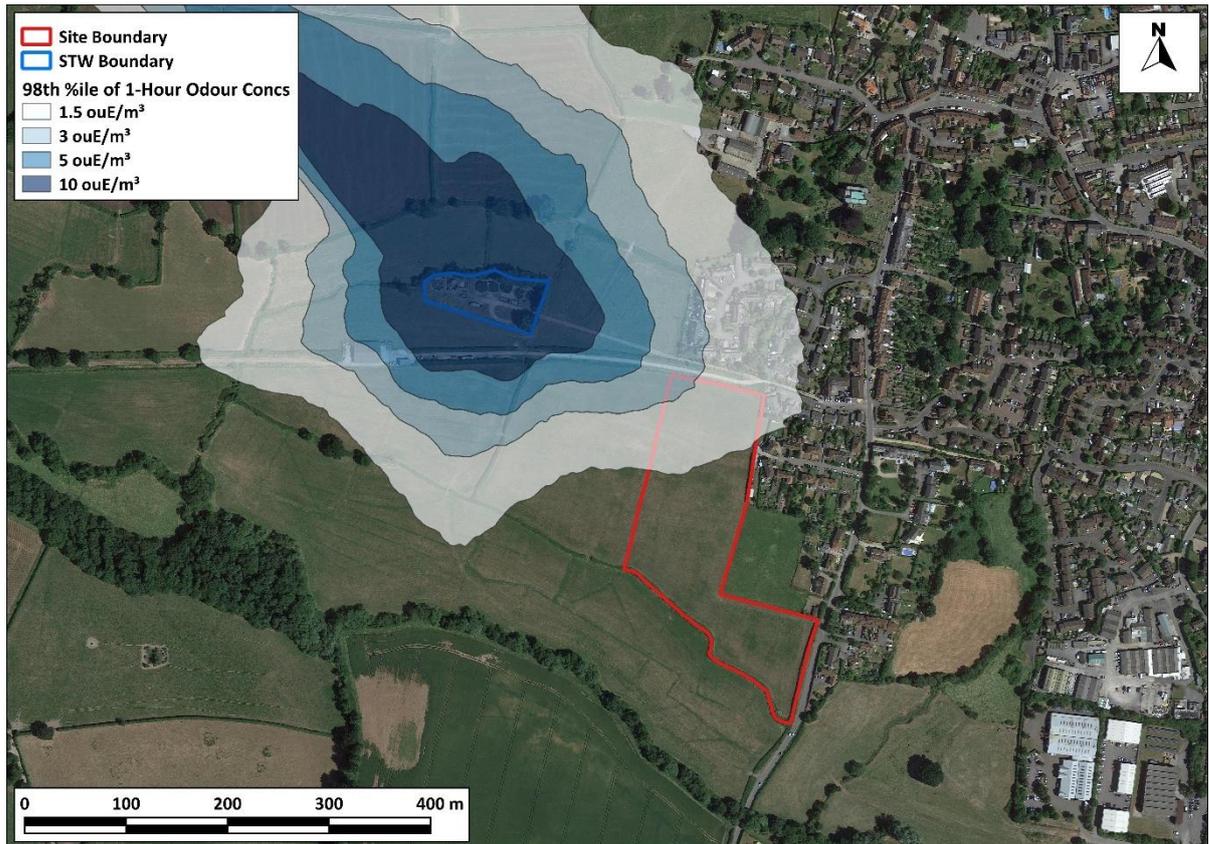


Figure A5.4: Contour plot of 98th percentile of hourly mean odour concentrations, using 2019 meteorological data

Imagery ©2020 Google.

A6 Sniff Test Raw Data

Date		04/06/2020																							
Wind Speed		1.3			1.57			1.6			1.4			2.4			0.2			1.3			1.3		
Wind Direction		NW			NW			NW			NW			NW			NW			NW			NW		
Start Time		10:33			10:39			10:44			10:50			10:54			10:58			11:01			11:12		
Sniff Location		1			2			3			4			5			6			7			8		
Sensitivity		High			High			High			High			High			High			High			High		
Results		Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted
Odour Intensity	1	4	No	N/A	4	No	N/A	0	No	0	0	No	0	4	No	N/A	3	No	N/A	0	No	0	0	No	0
	2	4	No	N/A	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	4	No	N/A	0	No	0
	3	4	No	N/A	2	No	N/A	0	No	0	0	No	0	4	No	N/A	4	No	N/A	0	No	0	0	No	0
	4	3	No	N/A	0	No	0	4	No	N/A	0	No	0	0	No	0									
	5	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0
	6	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0
	7	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0
	8	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0
	9	0	No	0	3	No	N/A	4	No	N/A	0	No	0	0	No	0									
	10	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0									
	11	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	3	No	N/A	0	No	0	0	No	0
	12	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	0	No	0	3	No	N/A
	13	0	No	0	0	No	0	4	No	N/A	4	No	N/A	4	No	N/A	3	No	N/A	0	No	0	3	No	N/A
	14	2	No	N/A	0	No	0	4	No	N/A	0	No	0	4	No	N/A	4	No	N/A	4	No	N/A	0	No	0
	15	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0
	16	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0									
	17	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	4	No	N/A	0	No	0	0	No	0
	18	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0
	19	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0
	20	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	0	No	0
	21	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0
	22	1	No	N/A	0	No	0	0	No	0	4	No	N/A	0	No	0	4	No	N/A	0	No	0	0	No	0
	23	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	4	No	N/A	0	No	0
	24	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	4	No	N/A	0	No	0
	25	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0
	26	0	No	0	4	No	N/A	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0
	27	0	No	0	3	No	N/A	0	No	0	0	No	0												
	28	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0
	29	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0
	30	0	No	0	0	No	0	4	No	N/A	4	No	N/A	0	No	0	0	No	0	0	No	0	0	No	0
Odour Descriptor	Manure, farmland			Manure, farmland			Manure, farmland			Manure, farmland			Manure, farmland			Manure, farmland			Manure, farmland			Manure, farmland			
End Time	10:39			10:44			10:50			10:54			10:58			11:01			11:12			11:16			
Comments	Not STW odours			Not STW odours			Not STW odours			Not STW odours			Not STW odours			Not STW odours			Not STW odours			Not STW odours			
Mean Odour Intensity	0			0			0			0			0			0			0			0			
% Odour Time (T>4)	0			0			0			0			0			0			0			0			
Odour Exposure	Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			
Odour Impact	Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			

Date		04/06/2020																								
Wind Speed		1			1.4			1			1			2.4			1.7			1.5			3.4			
Wind Direction		NW			NW			NW			NW			NW			NW			NW			NW			
Start Time		11:16			11:21			11:26			11:31			11:35			11:39			11:45			11:49			
Sniff Location		9			10			11			12			13			14			15			16			
Sensitivity		High			High			High			High			High			High			High			High			
Results		Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	
Odour Intensity	1	0	No	0	0	No	0	0	No	0	0	No	0	5	No	N/A	3	No	N/A	0	No	0	3	Yes	3	
	2	0	No	0	2	No	N/A	0	No	0	0	No	0	4	No	N/A	4	No	N/A	0	No	0	3	Yes	3	
	3	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	3	Yes	3	
	4	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	0	Yes	0	
	5	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	4	No	N/A	
	6	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	4	No	N/A	
	7	0	No	0	4	No	N/A	0	No	0	0	No	0	3	No	N/A	3	Yes	3	0	No	0	0	Yes	0	
	8	0	No	0	4	No	N/A	4	No	N/A	0	No	0	0	0	No	0	0	No	0	3	No	N/A	0	Yes	0
	9	0	No	0	0	No	0	0	No	0	0	No	0	0	0	No	0	0	No	0	0	No	0	4	No	N/A
	10	0	No	0	4	No	N/A	0	No	0	0	No	0	0	0	No	0	0	No	0	0	No	0	4	No	N/A
	11	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	4	No	N/A	0	Yes	0	
	12	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	0	Yes	0	
	13	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	0	No	0	0	Yes	0	
	14	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	0	No	0	0	Yes	0	
	15	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	3	No	N/A	0	Yes	0	
	16	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	0	No	0	0	Yes	0	
	17	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	0	Yes	0	
	18	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
	19	0	No	0	0	No	0	0	No	0	0	No	0	3	No	N/A	0	No	0	0	No	0	0	Yes	0	
	20	0	No	0	0	No	0	0	No	0	0	No	0	2	No	N/A	0	No	0	0	No	0	0	Yes	0	
	21	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
	22	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
	23	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	
	24	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
	25	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
	26	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	
	27	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	
	28	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
	29	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
	30	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	Yes	0	
Odour Descriptor		Manure, farmland			Fresh grass, pleasant						Manure, farmland			Manure, farmland and STW			Manure, farmland			Manure, farmland and STW						
End Time	11:21			11:26			11:31			11:35			11:39			11:45			11:49			11:55				
Comments				Not STW odours			Not STW odours			NA			Not STW odours						Not STW odours							
Mean Odour Intensity	0			0			0			0			0			0			0			0				
% Odour Time (T≥4)	0			0			0			0			0			0			0			0				
Odour Exposure	Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible				
Odour Impact	Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible				

Date		04/06/2020																							
Wind Speed		1			2			1.3			2.4			1			3			1					
Wind Direction		NW			NW			NW			NW			NW			NW			NW					
Start Time		11:55			11:59			12:03			12:07			12:11			12:15			12:19			12:23		
Sniff Location		17			18			19			20			21			22			23			24		
Sensitivity		High			High			High			High			High			High			High			High		
Results		Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted
Odour Intensity	1	0	No	0	5	No	N/A	0	No	0	0	No	0	0	No	0	0	No	0	3	No	N/A	Yes	0	
	2	0	No	0	4	No	N/A	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	3	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	4	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	5	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	6	0	No	0	5	No	N/A	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	7	0	No	0	4	No	N/A	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	Yes	0	
	8	4	No	N/A	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	Yes	0	
	9	4	No	N/A	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	Yes	0	
	10	4	No	N/A	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	11	4	No	N/A	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	3	No	N/A	Yes	0	
	12	4	No	N/A	0	No	0	0	No	0	0	No	0	5	No	N/A	0	No	0	4	No	N/A	Yes	0	
	13	4	No	N/A	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	4	No	N/A	Yes	0	
	14	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	4	No	N/A	Yes	0	
	15	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	Yes	0	
	16	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	0	No	0	Yes	0	
	17	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	4	Yes	4	0	No	0	Yes	0	
	18	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	Yes	4	0	No	0	Yes	0	
	19	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	5	Yes	5	0	No	0	Yes	0	
	20	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	5	Yes	5	0	No	0	Yes	0	
	21	0	No	0	4	No	N/A	0	No	0	0	No	0	0	No	0	4	No	N/A	4	No	N/A	Yes	0	
	22	0	No	0	4	No	N/A	0	No	0	0	No	0	0	No	0	4	No	N/A	0	No	0	Yes	0	
	23	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	24	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	25	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	26	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	27	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	28	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	29	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	Yes	0	
	30	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	0	No	0	4	No	N/A	Yes	0	
Odour Descriptor	Manure, farmland			Manure, farmland						Manure, farmland			Manure, farmland			Manure, farmland and STW			Manure, farmland						
End Time	11:59			12:03			12:07			12:11			12:15			12:19			12:23						
Comments	Not STW odours			Not STW odours						Not STW odours			Not STW odours			Some STW odours			Not STW odours						
Mean Odour Intensity	0			0			0			0			0			1			0			0			
% Odour Time (T≥4)	0			0			0			0			0			15			0			0			
Odour Exposure	Negligible			Negligible			Negligible			Negligible			Negligible			Small			Negligible			Negligible			
Odour Impact	Negligible			Negligible			Negligible			Negligible			Negligible			Slight Adverse			Negligible			Negligible			

Date		04/06/2020																				
Wind Speed		1.4					1.4															
Wind Direction		NW					NW															
Start Time		12:25					12:30															
Sniff Location		A					B															
Sensitivity		High					High															
Results	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	
Odour Intensity	1	5	Yes	5	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	2	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	3	5	Yes	5	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	4	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	5	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	6	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	7	3	Yes	3	4	No	N/A	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	8	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	9	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	10	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	11	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	12	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	13	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	14	4	Yes	4	4	Yes	4	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	15	4	Yes	4	4	Yes	4	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	16	4	Yes	4	3	Yes	3	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	17	5	Yes	5	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	18	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	19	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	20	6	Yes	6	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	21	0	Yes	0	4	Yes	4	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	22	4	Yes	4	4	Yes	4	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	23	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	24	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	25	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	26	0	Yes	0	4	Yes	4	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	27	0	Yes	0	5	Yes	5	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	28	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	29	4	Yes	4	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
	30	0	Yes	0	0	Yes	0	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes
Odour Descriptor	STW			STW and manure on 1 inhale																		
End Time	12:30			12:34																		
Comments	Very unpleasant. Def STW			Very unpleasant. Def STW																		
Mean Odour Intensity	3			1			#DIV/0!															
% Odour Time (T≥4)	60			21			#DIV/0!															
Odour Exposure	Medium			Small			#DIV/0!															
Odour Impact	Moderate Adverse			Slight Adverse			#DIV/0!															

Date		11.08.2020																							
Wind Speed		1.2			2.2			0.8			3.2			2.7			1.6			1.4			2		
Wind Direction		NW			NW			NW			NW			NW			NW			NW			NW		
Start Time		15:10			15:12			15:14			15:17			15:20			15:23			15:25			15:28		
Sniff Location		1			2			3			4			5			6			7			8		
Sensitivity		High			High			High			High			High			High			High			High		
Results		Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted
Odour Intensity	1	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	2	No	N/A	1	Yes	1
	2	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	1	No	N/A	2	Yes	2
	3	0	Yes	0	0	Yes	0	4	No	N/A	0	Yes	0	0	Yes	0	0	No	0	1	No	N/A	2	Yes	2
	4	0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	0	Yes	0	0	No	0	2	No	N/A	0	Yes	0
	5	0	Yes	0	0	Yes	0	4	No	N/A	0	Yes	0	0	Yes	0	3	No	N/A	1	No	N/A	0	Yes	0
	6	0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	0	Yes	0	0	No	0	1	No	N/A	0	Yes	0
	7	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	3	No	N/A	0	Yes	0
	8	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	9	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	10	0	Yes	0	0	Yes	0	2	No	N/A	0	Yes	0	0	Yes	0	0	No	0	2	No	N/A	0	Yes	0
	11	0	Yes	0	0	Yes	0	2	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	12	0	Yes	0	0	Yes	0	0	No	0	3	Yes	3	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	13	0	Yes	0	0	Yes	0	2	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	14	0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	0	Yes	0	3	No	N/A	0	No	0	0	Yes	0
	15	0	Yes	0	0	Yes	0	4	No	N/A	0	Yes	0	0	Yes	0	2	No	N/A	0	No	0	0	Yes	0
	16	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	17	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	18	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	3	No	N/A	0	Yes	0
	19	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	3	No	N/A	0	Yes	0
	20	0	Yes	0	0	Yes	0	4	No	N/A	0	Yes	0	0	Yes	0	0	No	0	2	No	N/A	0	Yes	0
	21	0	Yes	0	0	Yes	0	4	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	22	0	Yes	0	0	Yes	0	2	No	N/A	0	Yes	0	0	Yes	0	0	No	0	2	No	N/A	0	Yes	0
	23	0	Yes	0	1	Yes	1	4	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	24	0	Yes	0	1	Yes	1	4	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	25	0	Yes	0	2	Yes	2	3	No	N/A	0	Yes	0	0	Yes	0	2	No	N/A	0	No	0	0	Yes	0
	26	0	Yes	0	1	Yes	1	3	No	N/A	0	Yes	0	0	Yes	0	2	No	N/A	0	No	0	2	Yes	2
	27	0	Yes	0	0	Yes	0	3	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	28	0	Yes	0	0	Yes	0	2	No	N/A	0	Yes	0	0	Yes	0	0	No	0	0	No	0	0	Yes	0
	29	0	Yes	0	0	Yes	0	2	No	N/A	0	Yes	0	0	Yes	0	2	No	N/A	0	No	0	0	Yes	0
	30	0	Yes	0	0	Yes	0	4	No	N/A	0	Yes	0	0	Yes	0	2	No	N/A	0	No	0	0	Yes	0
Odour Descriptor					Something v sweet, inoffensive, fermenting fruits/berries?			faint sewage?						barn/farm smells			pleasant grass, maybe STW at 19			faint sewage?					
End Time		15:12			15:14			15:17			15:20			15:23			15:25			15:28			15:31		
Comments					Something v sweet, inoffensive, fermenting fruits/berries?			faint sewage?						barn/farm smells			pleasant grass, maybe STW at 19			faint sewage?					
Mean Odour Intensity		0			0			0			0			0			0			0					
% Odour Time (T≥4)		0			0			0			0			0			0			0					
Odour Exposure		Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible					
Odour Impact		Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Negligible					

Date		11.08.2020																														
Wind Speed		0.2			1.6			3			1.6			1.5			2			1.72			2.2									
Wind Direction		WNW			WNW			WNW			WNW			WNW			WNW			WNW			WNW									
Start Time		15:31			15:35			15:37			15:41			15:44			15:47			15:51			15:53									
Sniff Location		9			10			11			12			13			14			15			16									
Sensitivity		High			High			High			High			High			High			High			High									
Results		Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted							
		Odour Intensity		0	Yes	0	0	Yes	0	0	No	0	2	Yes	2	4	Yes	4	4	Yes	4	4	Yes	4	0	Yes	0					
		0	Yes	0	0	Yes	0	2	No	N/A	3	Yes	3	3	Yes	3	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	2	No	N/A	2	Yes	2	3	Yes	3	4	Yes	4	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	1	Yes	1	4	Yes	4	3	Yes	3	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	2	No	N/A	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	4	Yes	4	3	Yes	3	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	4	Yes	4	4	Yes	4	2	Yes	2	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	3	Yes	3	2	Yes	2	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	1	Yes	1	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	3	Yes	3	0	Yes	0	4	Yes	4	3	Yes	3	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	0	Yes	0	3	Yes	3	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	1	Yes	1	4	Yes	4	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	3	Yes	3	1	Yes	1	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	4	No	N/A	1	Yes	1	0	Yes	0	4	Yes	4	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	3	No	N/A	4	Yes	4	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	4	Yes	4	3	Yes	3	4	Yes	4	3	Yes	3	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	2	Yes	2	0	Yes	0	2	Yes	2	1	Yes	1	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	1	Yes	1	0	Yes	0	4	Yes	4	2	Yes	2	3	Yes	3							
		0	Yes	0	0	Yes	0	0	No	0	4	Yes	4	0	Yes	0	1	Yes	1	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	2	Yes	2	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4							
		0	Yes	0	0	Yes	0	0	No	0	4	Yes	4	0	Yes	0	3	Yes	3	0	Yes	0	3	Yes	3							
		0	Yes	0	0	Yes	0	0	No	0	4	Yes	4	0	Yes	0	4	Yes	4	0	Yes	0	4	Yes	4							
		0	Yes	0	0	Yes	0	0	No	0	4	Yes	4	0	Yes	0	4	Yes	4	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	4	Yes	4	0	Yes	0	3	Yes	3	0	Yes	0	4	Yes	4							
		0	Yes	0	0	Yes	0	0	No	0	4	Yes	4	0	Yes	0	2	Yes	2	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	3	Yes	3	0	Yes	0	3	Yes	3	0	Yes	0	0	Yes	0							
		0	Yes	0	0	Yes	0	0	No	0	1	Yes	1	0	Yes	0	4	Yes	4	0	Yes	0	4	Yes	4							
Odour Descriptor									smoke					faint sewage					sewage, a few strong whiffs, wind picks up at 10					sewage, stronger				sewage				sewage
End Time		15:35			15:37			15:41			15:44			15:47			15:51			15:53			15:57									
Comments									smoke					faint sewage					sewage, a few strong whiffs, wind picks up at 10					sewage, stronger				sewage				sewage
Mean Odour Intensity		0			0			0			2			1			4			2			1									
% Odour Time (T≥4)		0			0			0			27			20			73			30			13									
Odour Exposure		Negligible			Negligible			Negligible			Medium			Small			Large			Medium			Small									
Odour Impact		Negligible			Negligible			Negligible			Moderate Adverse			Slight Adverse			Substantial Adverse			Moderate Adverse			Slight Adverse									

Date		11.08.2020																							
Wind Speed		3.5			1.6			1.7			2.6			2			2.4			1.4			1.4		
Wind Direction		NW			NW			NW			NW			NW			NW			NW			NW		
Start Time		15:57			16:01			16:04			16:07			16:10			16:13			16:16			16:19		
Sniff Location		17			18			19			20			21			22			23			24		
Sensitivity		High			High			High			High			High			High			High			High		
Results		Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted
		Odour Intensity	1	0	Yes	0	0	Yes	0	5	Yes	5	4												
	2	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4
	3	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	3	Yes	3	3	Yes	3
	4	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	3	Yes	3	0	Yes	0
	5	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
	6	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	1	Yes	1	3	Yes	3
	7	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	3	Yes	3
	8	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4
	9	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	0	Yes	0	4	Yes	4	4	Yes	4
	10	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	3	Yes	3	0	Yes	0	4	Yes	4	4	Yes	4
	11	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4
	12	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4
	13	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4
	14	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	2	Yes	2
	15	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	3	Yes	3
	16	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
	17	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
	18	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
	19	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	3	Yes	3	0	Yes	0
	20	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	2	Yes	2	0	Yes	0
	21	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	0	Yes	0
	22	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0
	23	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	3	Yes	3	0	Yes	0
	24	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	3	Yes	3	4	Yes	4	0	Yes	0
	25	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
	26	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
	27	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
	28	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	0	Yes	0
	29	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	1	Yes	1	0	Yes	0
	30	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0
Odour Descriptor																	Sewage			Sewage			Sewage		
End Time		16:01			16:04			16:07			16:10			16:13			16:16			16:19			16:24		
Comments																	Sewage			Sewage			Sewage		
Mean Odour Intensity		0			0			0			0			0			0			3			2		
% Odour Time (T≥4)		0			0			0			0			0			3			63			27		
Odour Exposure		Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Medium			Medium		
Odour Impact		Negligible			Negligible			Negligible			Negligible			Negligible			Negligible			Moderate Adverse			Moderate Adverse		

Date		11.08.2020																							
Wind Speed		1.7				1.8				1.6				1.8				1.2							
Wind Direction		NW				NW				NW				NW				NW							
Start Time		16:24				16:28				16:30				16:33				16:36							
Sniff Location		25				26				27				28				29							
Sensitivity		High				High				High				High				High							
Results	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	Score	Related to Source?	Adjusted	
Odour Intensity	1	0	Yes	0	4	Yes	4	5	Yes	5	4	Yes	4	3	Yes	3	Yes	0	Yes	0	Yes	0	Yes	0	
	2	0	Yes	0	4	Yes	4	5	Yes	5	4	Yes	4	3	Yes	3	Yes	0	Yes	0	Yes	0	Yes	0	
	3	0	Yes	0	4	Yes	4	4	Yes	4	2	Yes	2	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	4	0	Yes	0	4	Yes	4	4	Yes	4	4	Yes	4	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	5	0	Yes	0	4	Yes	4	4	Yes	4	5	Yes	5	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	6	0	Yes	0	3	Yes	3	5	Yes	5	3	Yes	3	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	7	0	Yes	0	3	Yes	3	4	Yes	4	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	8	0	Yes	0	4	Yes	4	4	Yes	4	2	Yes	2	3	Yes	3	Yes	0	Yes	0	Yes	0	Yes	0	
	9	0	Yes	0	4	Yes	4	4	Yes	4	3	Yes	3	2	Yes	2	Yes	0	Yes	0	Yes	0	Yes	0	
	10	0	Yes	0	4	Yes	4	4	Yes	4	4	Yes	4	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	11	0	Yes	0	4	Yes	4	5	Yes	5	4	Yes	4	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	12	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	13	0	Yes	0	2	Yes	2	4	Yes	4	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	14	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	15	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4	3	Yes	3	Yes	0	Yes	0	Yes	0	Yes	0	
	16	0	Yes	0	0	Yes	0	4	Yes	4	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	17	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	18	0	Yes	0	0	Yes	0	4	Yes	4	5	Yes	5	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	19	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	20	0	Yes	0	0	Yes	0	4	Yes	4	4	Yes	4	4	Yes	4	Yes	0	Yes	0	Yes	0	Yes	0	
	21	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	22	0	Yes	0	0	Yes	0	3	Yes	3	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	23	0	Yes	0	0	Yes	0	2	Yes	2	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	24	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	Yes	0	Yes	0	Yes	0	Yes	0	
	25	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	2	Yes	2	Yes	0	Yes	0	Yes	0	Yes	0	
	26	4	Yes	4	0	Yes	0	3	Yes	3	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	27	4	Yes	4	0	Yes	0	0	Yes	0	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	28	4	Yes	4	0	Yes	0	2	Yes	2	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	29	3	Yes	3	3	Yes	3	0	Yes	0	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
	30	4	Yes	4	4	Yes	4	3	Yes	3	0	Yes	0	0	Yes	0	Yes	0	Yes	0	Yes	0	Yes	0	
Odour Descriptor	Sewage				Sewage				Sewage				Sewage				Sewage								
End Time	16:28				16:30				16:33				16:36				16:39								
Comments	Sewage				Sewage				Sewage				Sewage				Sewage				Note that the STW was still detectable from the parking location on Butts Batch, (No. 1-4 Butts Orchard)				
Mean Odour Intensity	1				2				3				2				1				0	0	0		
% Odour Time (T≥4)	13				37				67				37				3				0	0	0		
Odour Exposure	Small				Medium				Medium				Medium				Small				Negligible	Negligible	Negligible		
Odour Impact	Slight Adverse				Moderate Adverse				Moderate Adverse				Moderate Adverse				Slight Adverse				Negligible	Negligible	Negligible		