



Odour Assessment	
Ludgershall, Wiltshire	
Job number:	J0304
Document number:	J0304/1/F1
Date:	01 April 2019
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## 1 Introduction

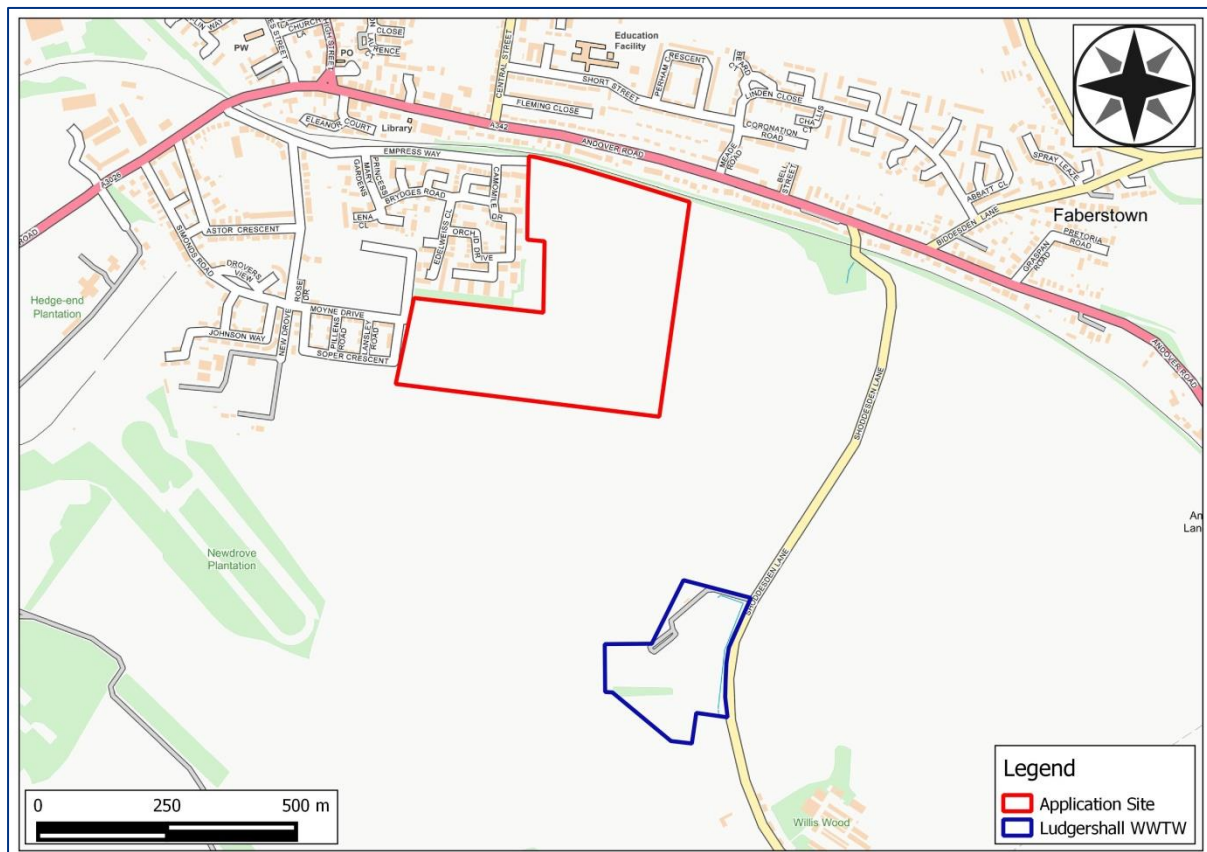
### 1.1. Proposed Development

1.1.1 Air Quality Assessments Ltd (AQA) has been commissioned by Mr S Crook to undertake an odour assessment for the proposed mixed-use development of land southeast of Ludgershall, Wiltshire. The application site is shown in **Figure 1**.

### 1.2. Scope of Assessment

1.2.1 There is a risk that odour emissions from the Ludgershall Waste Water Treatment Works (WWTW) will impact on the amenity of future occupiers of the proposed development. This assessment has been undertaken to determine whether there are likely to be odour effects at the application site due to the operation of the WWTW.

1.2.2 The assessment has been prepared taking into account all relevant local and national guidance and regulations. The references used in this assessment are shown in **Section 6**.



**Figure 1: Application Site and Ludgershall WWTW**

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## 2 Odour Legislation, Policy & Guidance

### 2.1. Legislation

#### ***Environmental Protection Act***

2.1.1 Nuisances caused by odours are regulated by the statutory nuisance provisions in Part III of the Environmental Protection Act (EPA) (HMSO, 1990). Section 79(1)(d) of the EPA states that a statutory nuisance is:

*“dust, steam, smell or other effluvia arising on an industrial, trade and business premises and being prejudicial to health or a nuisance”* (Section 79(1)(d))

2.1.2 Local authorities have a duty under the Environmental Protection Act to inspect their districts from time to time for statutory nuisances and to investigate any complaint about an alleged odour nuisance made by a member of the public.

2.1.3 If the local authority finds that a statutory nuisance exists, then it must serve an abatement notice. If the process operates under an environmental permit, any court proceedings should be brought by the Environment Agency for failure to comply with the operating permit. This is to avoid an operation being subject to regulatory action by both the Environment Agency and the local authority for the same incident.

### 2.2. Planning Policy

#### ***National Policies***

2.2.1 The National Planning Policy Framework (NPPF) sets out the Government’s planning policies for England and how these should be applied (Ministry of Housing, Communities & Local Government, 2019). It provides a framework within which locally-prepared plans for development can be produced. It states that the purpose of the planning system is to contribute to the achievement of sustainable development and includes an overarching 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.”*

2.2.2 The NPPF states that:

*“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.”*

2.2.3 The NPPF goes on to say that:

*“The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning*

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*decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.”*

- 2.2.4 The NPPF is supported by Planning Practice Guidance (PPG) (DCLG, 2014). The PPG makes clear that:

*“Odour and dust can also be a planning concern, for example, because of the effect on local amenity”.*

### **Local Policies**

- 2.2.5 The Wiltshire Core Strategy includes Core Policy 57 Ensuring High Quality Design and Place Shaping, which states that (Wiltshire Council, 2015):

*“A high standard of design is required in all new developments, including extensions, alterations, and changes of use of existing buildings. Development is expected to create a strong sense of place through drawing on the local context and being complementary to the locality. Applications for new development must be accompanied by appropriate information to demonstrate how the proposal will make a positive contribution to the character of Wiltshire through: ...*

*“vii. having regard to the compatibility of adjoining buildings and uses, the impact on the amenities of existing occupants, and ensuring that appropriate levels of amenity are achievable within the development itself, including the consideration of privacy, overshadowing, vibration, and pollution (e.g. light intrusion, noise, smoke, fumes, effluent, waste or litter)”*

## **2.3. Guidance**

### **Environment Agency Guidance**

- 2.3.1 The Environment Agency has produced horizontal guidance on odour assessment and management (H4) (Environment Agency, 2011). The H4 guidance document is primarily aimed at process operators looking to control and manage the release of odours, but also contains a series of recommended assessment methods.

### **Institute of Air Quality Management Guidance**

- 2.3.2 Guidance on the Assessment of Odour for Planning has been published by the Institute of Air Quality Management (IAQM) <sup>1</sup> (IAQM, 2018). The guidance describes what the IAQM considers to be current best practice with regard to odour assessment, and sets out a range of methodologies that can be used for assessing odour impacts for planning purposes. The IAQM guidance recommends the use of multiple assessment tools to increase confidence in the overall conclusion of the odour assessment, and a number of methods have been used in this assessment. The IAQM guidance also includes odour assessment criteria that can be used to determine the level of significance of an odour impact (see **Section 3.1**).

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<sup>1</sup> The IAQM is the professional body for air quality practitioners in the UK.

## 3 Methodology

### 3.1. Odour Assessment

- 3.1.1 The IAQM guidance describes a range of methodologies that can be used for odour assessment, and states that *“best practice is to use a multi-modal approach where practicable”*. A predictive assessment has been undertaken using qualitative methods, which has been supplemented by the results of an odour sniff test survey.
- 3.1.2 Southern Water have been contacted in order to obtain the data that would be required in order to undertake dispersion modelling; however, despite an initial response, Southern Water have since not answered any emails or telephone messages. Email correspondences with Southern Water are shown in **Appendix A1**.

#### *Register of Complaints*

- 3.1.3 Wiltshire Council has queried its database for odour complaints relating to the operation of Ludgershall WWTW.

#### *Industrial Sources*

- 3.1.4 Local industrial and waste management sources that may also emit odour have been screened using Defra’s Pollutant Release and Transfer Register (Defra, 2019).

#### *Site Visit and Sniff Test Survey*

- 3.1.5 To establish existing odour conditions at the application site, a number of sniff tests were carried out during a site visit undertaken on Thursday 28<sup>th</sup> March 2019. The sniff tests were carried out at a number of locations within the application site and closer to the WWTW. The results of the sniff test help define the likely intensity and offensiveness of any odours from the WWTW and the distances from the WWTW over which odours occur. The sniff tests were undertaken following the methodology set out in Appendix 2 of the IAQM Guidance on the Assessment of Odour for Planning.
- 3.1.6 The sniff test locations are shown in **Figure 1**. The sniff test locations were limited by the presence of crops in the fields. A first attempt at undertaking the survey was abandoned at location 3 as crop spraying started in the field between the application site and the WWTW, which may have caused odour interference. The survey was started again later in the day. Each sniff test took approximately 3 minutes to complete, during which the odour intensity was recorded using an intensity scale of 0-6, as described in **Table 1**.
- 3.1.7 The average odour intensity during each sniff test has been calculated, along with the pervasiveness/extent of the odour, calculated as the percentage odour time, i.e. the number of samples where odour was recognisable ( $\geq$  an odour intensity of 4) divided by the total number of samples. The matrix shown in **Table 2** has then been used to assess the odour exposure at the time and place of sampling. Where the average odour intensity is 0, or the average odour intensity is 1, but the odour time is 0%, then the odour effect can be considered negligible.

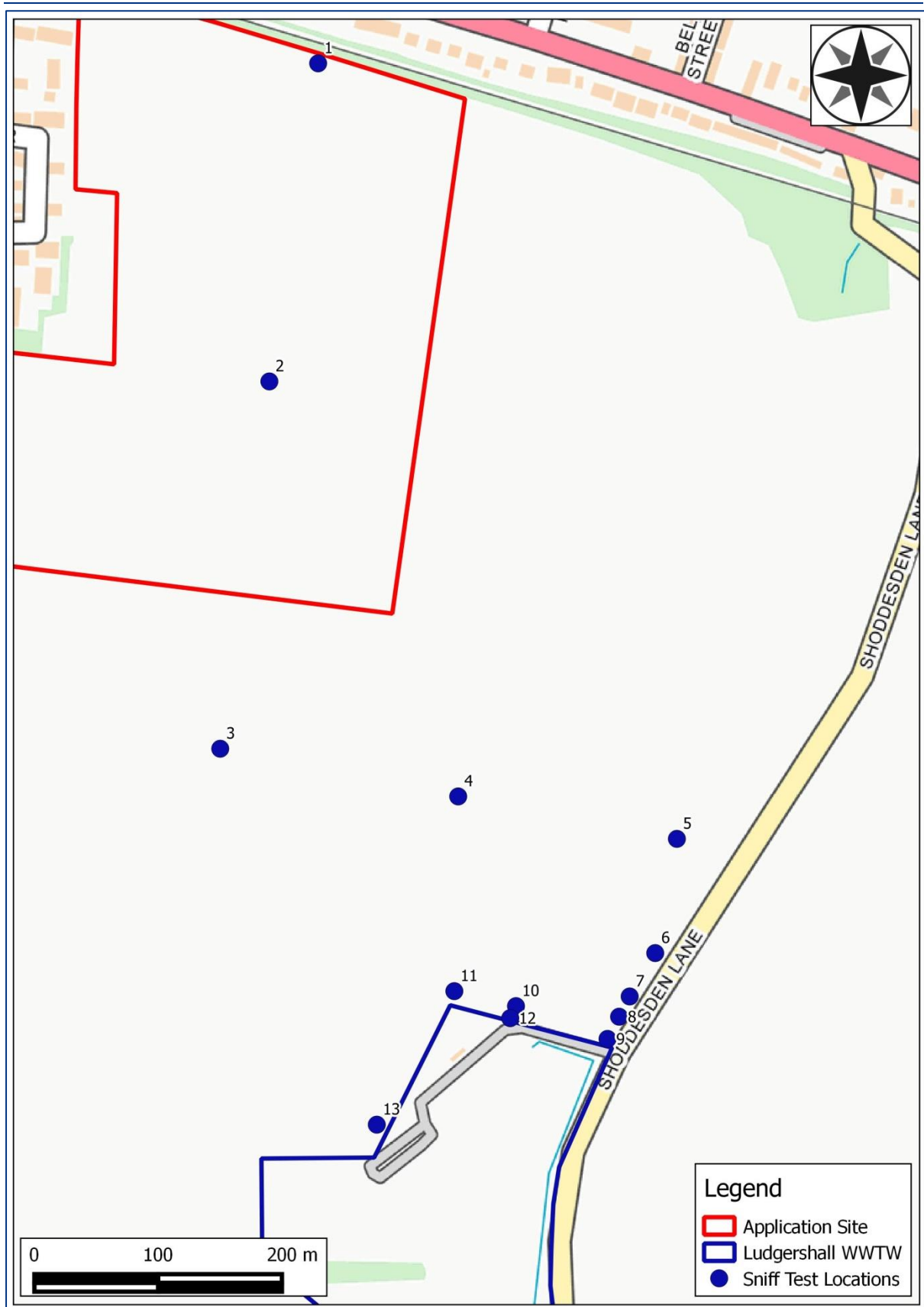
**Table 1: Odour Intensity Scale**

Odour Strength	Intensity	Comments
No odour/not perceptible	0	No odour when compared to clean site
Slight/very weak	1	There is probably some doubt as to whether the odour is actually present
Slight/weak	2	The odour is present but cannot be described using precise words or terms
Distinct	3	The odour character is barely recognisable
Strong	4	The odour character is easily recognisable
Very strong	5	The odour is offensive. Exposure to this level would be considered undesirable
Extremely strong	6	The odour is offensive. An instinctive reaction would be to mitigate against further exposure

**Table 2: Odour Exposure at Time and Place of Sampling**

Average Intensity	Odour Time During the Test (%)				
	≤10	11-20	21-30	31-40	≥41
6	Large	Very Large	Very Large	Very Large	Very Large
5	Medium	Large	Large	Very Large	Very Large
4	Small	Medium	Medium	Very Large	Very Large
3	Small	Medium	Medium	Medium	Medium
2	Small	Small	Medium	Medium	Medium
1	n/a	n/a	Small	Small	Small





**Figure 2: Sniff Test Locations**

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### **Qualitative Risk Assessment**

- 3.1.8 The qualitative odour risk assessment utilises an approach based on the source-pathway-receptor chain. All three links in the chain would need to be present for an adverse effect to occur. Adverse effects from odour lead to annoyance, which can result in a nuisance if exposure is ongoing.
- 3.1.9 The scale of exposure to odour (the impact) and the sensitivity of the receptor determines the overall effect, with the impact (FIDO) and receptor sensitivity (L) known as the FIDOL factors:
- **F**requency – how often an individual is exposed to odour;
  - **I**ntensity – the individuals perception of the strength of the odour;
  - **D**uration – the duration that individuals are exposed to an odour over time;
  - **O**ffensiveness – the character, or pleasantness/unpleasantness of the odour; and
  - **L**ocation – the sensitivity of the location/receptors to odours.
- 3.1.10 The IAQM guidance describes a framework for qualitative odour assessment which incorporates the FIDOL factors and uses a number of steps to determine the overall effect from the source odour potential, the pathway effectiveness and the receptor sensitivity.
- 3.1.11 The first step is to estimate the source odour potential, which takes account of the magnitude of the odour release, how inherently odorous the source is, the unpleasantness of the odour and the effectiveness of any mitigation. The examples in **Table 3** can be used to estimate the odour source potential.
- 3.1.12 The second step is to estimate the pathway effectiveness, or the odour flux to the receptor, based on distance from source to receptor, the frequency of winds from the source to the receptor, the effects of dispersion and dilution and the topography/terrain. The pathway effectiveness can be estimated using the examples in **Table 4**.
- 3.1.13 The third step is to consider the source odour potential and the pathway effectiveness together to determine the risk of odour exposure (the impact) at the receptors, using the matrix in **Table 5**.
- 3.1.14 The fourth step is to determine the sensitivity of the receptors to odour. Professional judgement, along with the general principles in **Table 6**, should be used to determine the sensitivity of the receptors.
- 3.1.15 Finally, the effect of the odour impact at the receptors, taking account of the receptor sensitivities, is determined using the matrix in **Table 7**.

**Table 3: Source Odour Potential**

Source Odour Potential	Magnitude of Odour Release	Offensiveness of Odour	Mitigation	Examples
<b>Large</b>	Materials use >100,000 tonnes/m <sup>3</sup> /yr, area source >1,000 m <sup>2</sup>	Very odorous (e.g. mercaptans) with very low detection thresholds, most offensive, unpleasant (-2) to very unpleasant (-4) hedonic score	Open air operation, no containment, reliance solely on good management techniques and best practice	Large permitted processes of odorous nature or large sewage treatment works (STW)
<b>Medium</b>	Materials use >1,000 but <100,000 tonnes/m <sup>3</sup> /yr, area source >100m <sup>2</sup> but <1,000 m <sup>2</sup>	Moderately odorous, moderately offensive, neutral (0) to unpleasant (-2) hedonic score	Some mitigation measures in place, but significant residual odour	Smaller permitted processes or small STW
<b>Small</b>	Materials use <1,000 tonnes/m <sup>3</sup> /yr, area source <1,000 m <sup>2</sup>	Mildly odorous with high odour detection threshold, less offensive, neutral (0) to very pleasant (+4) hedonic score	Effective, tangible mitigation measures in place leading to little or no residual odour	Falls below Part B threshold

**Table 4: Pathway Effectiveness**

Pathway Effectiveness	Distance	Direction	Dispersion/Dilution
<b>High</b>	Receptor adjacent to source, distance well below set-back distances	High frequency (%) of winds from source to receptor, or receptors downwind of source with respect to the prevailing wind	Open process with low level releases, e.g. lagoons, uncovered effluent treatment plant, landfilling of putrescible wastes
<b>Moderate</b>	Receptor local to the source	Medium frequency (%) of winds from source to receptor, or receptors neither upwind nor downwind of source with respect to the prevailing wind	Releases are elevated, but compromised by building effects
<b>Ineffective</b>	Receptor remote from source, distance exceeds official set-back distances	Low frequency (%) of winds from source to receptor, or receptors upwind of source with respect to the prevailing wind	Releases are from high level (e.g. stacks, or roof vents >3m above ridge height) and are not compromised by surrounding buildings

**Table 5: Risk of Odour Impact at Receptors**

Pathway Effectiveness	Source Odour Potential		
	Small	Medium	Large
<b>High</b>	Low	Medium	High
<b>Moderate</b>	Negligible	Low	Medium
<b>Ineffective</b>	Negligible	Negligible	Low

**Table 6: Receptor Sensitivity**

Sensitivity	Principles	Exposure	Examples
<b>High</b>	Users can reasonably expect enjoyment of a high level of amenity	People would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land	Residential dwellings, hospitals, schools/education and tourist/cultural
<b>Medium</b>	Users would expect to enjoy a reasonable level of amenity, but wouldn't reasonably expect to enjoy the same level of amenity as in their home	People wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land	Places of work, commercial/retail premises and playing/recreation fields
<b>Low</b>	Enjoyment of amenity would not reasonably be expected	Transient exposure, where people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land	Industrial, farms, footpaths and roads

### *Assessment Criteria*

#### *Qualitative Assessment*

3.1.16 The IAQM odour guidance includes a matrix of the risk of odour exposure and sensitivity categories which provide an impact descriptor for qualitative odour assessments (as shown in **Table 7**).

**Table 7: Odour Effect Descriptors for Impacts Predicted Qualitatively <sup>a</sup>**

Risk of Odour Exposure	Receptor Sensitivity		
	Low	Medium	High
<b>High</b>	Slight	Moderate	Substantial
<b>Medium</b>	Negligible	Slight	Moderate
<b>Low</b>	Negligible	Negligible	Slight
<b>Negligible</b>	Negligible	Negligible	Negligible

<sup>a</sup> Examples of odour sensitive receptors are shown in **Table 6**.

## 4 Odour Assessment

### 4.1. Register of Complaints

4.1.1 John Freegard, Senior Public Protection Officer at Wiltshire Council, has confirmed that there have been no complaints relating to odour due to the operation of the Ludgershall WWTW. The closest existing dwellings to the WWTW are located approximately 350m to the southeast of the WWTW, on Shoddesden Lane.

### 4.2. Industrial Sources

4.2.1 A search of the UK Pollutant Release and Transfer Register did not identify any other significant industrial or waste management sources in the area that might contribute to odours at the application site.

### 4.3. Sniff Tests

4.3.1 The application site was visited on a day when the wind was blowing from the WWTW towards the application site after around five days of dry and relatively warm weather.

4.3.2 A summary of the sniff test results is shown in **Table 8**. Full details of the sniff test results are shown in **Appendix A1**.

4.3.3 No odours, apart from odours from an oilseed rape crop, which has a cabbage odour, were detected until the assessor was within around 50m of the WWTW boundary at location 7. At this point an odour was barely detectable, only becoming recognisable as an odour from the WWTW at around 30m from the WWTW boundary. Odours within 30m were only detectable intermittently as the wind speed changed. No odour was detected at the WWTW boundary at location 12, which would suggest that at this point odours were elevated and coming to ground further from the WWTW. At location 13, adjacent to sludge processing operations at the WWTW, there was a very strong sludge odour. This odour was detected fairly consistently in the area immediately to the west of the WWTW.

4.3.4 As the assessor walked back along the route taken during the survey, the wind picked up slightly, and odour from the WWTW was detected fairly consistently up to location 8, and then intermittently up to location 6, about 100m from the WWTW and directly downwind during the survey. No odour was detected at locations 5 back to the location 1.

4.3.5 Using the matrix at **Table 2**, odour exposure would be described as negligible at sniff test locations 1-9 and small to large at locations 10-13.

**Table 8: Summary of Sniff Test Results**

Location	Odour Descriptor	Mean Odour Intensity	Odour Time (%)	Odour Exposure
1	No odour	0	0	Negligible
2	No odour	0	0	Negligible
3	No odour	0	0	Negligible
4	No odour	0	0	Negligible
5	No odour	0	0	Negligible
6	No odour	0	0	Negligible
7	Barest hint of an odour	0	0	Negligible
8	Odour recognisable from WWTW	1	3	Negligible
9	No odour	0	0	Negligible
10	Unpleasant, sludge odour from WWTW	2	30	Medium
11	Unpleasant, sludge odour from WWTW	1	3	Small
12	No odour	0	0	Negligible
13	Unpleasant, strong sludge odour from WWTW	4	40	Large

#### 4.4. Qualitative Odour Risk Assessment

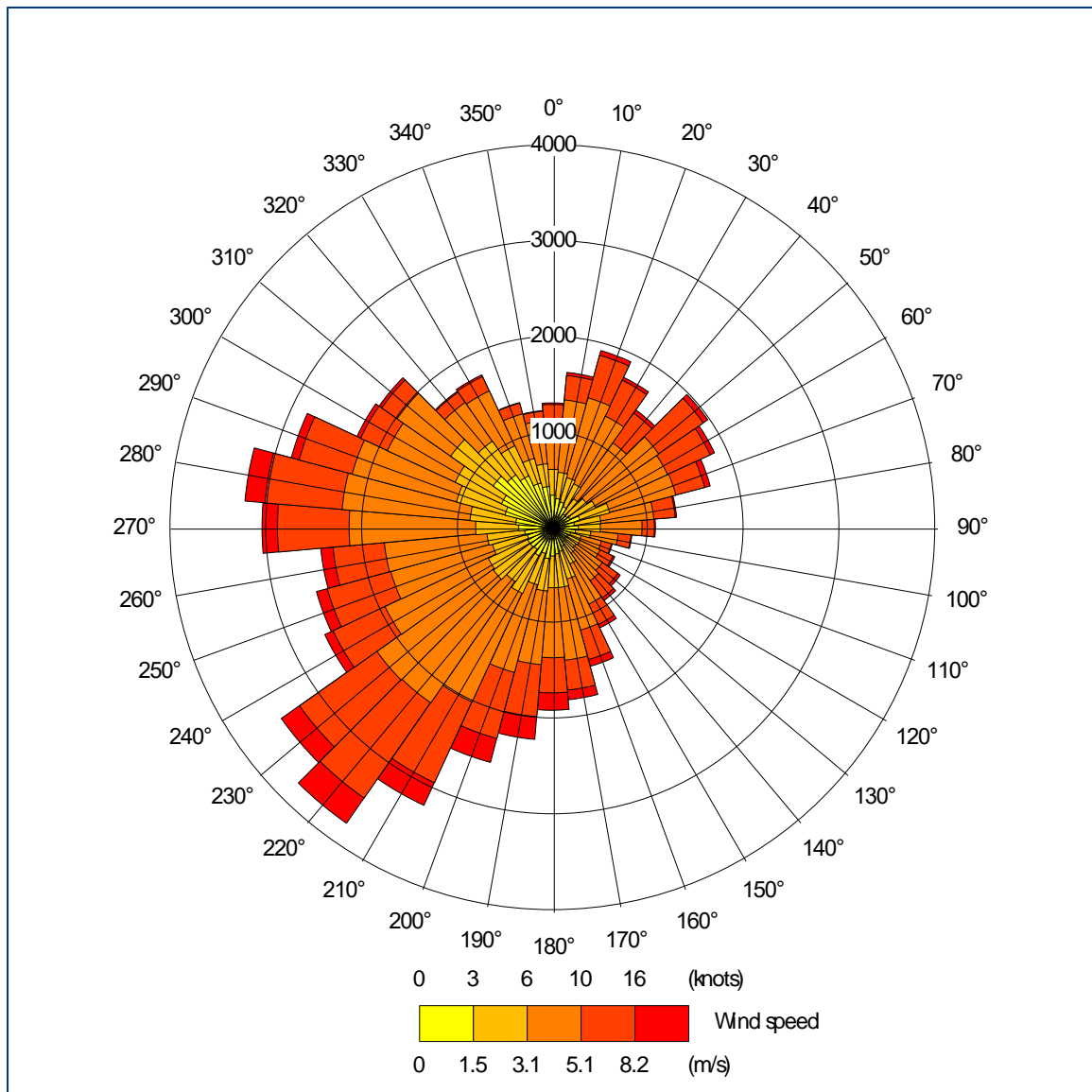
##### *Source Odour Potential*

- 4.4.1 Odour emissions can occur at all stages of waste water treatment; however, the most odorous parts of the works are those involved in the handling and treatment of raw effluent, or sludge extracted from the raw effluent.
- 4.4.2 Odour emissions are likely to be lower during the winter months, due to higher levels of dilution of the effluent with rainwater and lower temperatures.
- 4.4.3 The Ludgershall WWTW is a relatively small works. Unpleasant residual odours have been detected beyond the WWTW boundary; however, given the lack of odour complaints from existing residential receptors, the source odour potential is considered to be medium.

##### *Pathway Effectiveness*

- 4.4.4 Odour impacts can occur over large distances from source, depending on the meteorological conditions. The worst odour dispersion conditions often occur at night, under stable atmospheric conditions.

- 4.4.5 The 8 year average wind rose from Middle Wallop meteorological station, approximately 12 km south-southeast of the study area, shows that prevailing winds in the area blow from the southwest through to the west (see **Figure 3**). The frequency distribution of the wind direction is shown in **Table 9**.
- 4.4.6 Winds could blow from the direction of significant odour sources within the WWTW towards the application site, from the southeast through to the south, for approximately 13% of the time. Therefore, winds are considered to blow from the WWTW towards the application with a low frequency.



**Figure 3: 8 Year Average Wind Rose, Middle Wallop 2008-2015**



**Table 9: 10 Year Average Frequency Distribution, Middle Wallop 2008-2015**

Direction	Frequency (%)
N	10.6
NE	10.1
E	8.0
SE	5.3
S	14.3
SW	18.7
W	20.1
NW	11.4
Calms	1.2
Missing	0.3
Total	100.0

4.4.7 The application site boundary is approximately 350m north of odour sources at the WWTW at its closest point. Odour sensitive receptors within the proposed development will be even further from the odour sources. The most recent indicative masterplan shows residential use and a school approximately 500m and 380m from odour sources at the WWTW respectively. At these distances, the receptors are considered to be remote from the odour sources at the WWTW.

4.4.8 **Table 10** shows a summary of the information used to determine the pathway effectiveness towards the receptor areas. The application site is considered to be remote from the source and the frequency of winds towards the proposed development is low; therefore, based on the examples in **Table 4**, the pathway effectiveness is considered to be ineffective.

**Table 10: Odour Pathway Effectiveness**

Receptor	Distance from Source	Frequency of Wind Towards Receptor (%)	Pathway Effectiveness
Application site	Remote	Low (13%)	Ineffective

***Receptor Sensitivity, Risk of Odour Impacts & Magnitude of Effects***

4.4.9 The risk of odour exposure has been determined by combining the source odour potential with the pathway effectiveness using the matrix in **Table 5**. The proposed development is mixed-use, with residential use and a school closest to the WWTW; therefore, the receptor sensitivity has been determined as high using the

information in **Table 6**. The risk of odour impacts and the receptor sensitivity has then been combined using the matrix in **Table 7** to determine that the magnitude of the odour effect at the proposed development is likely to be slight, as shown in **Table 11**.

**Table 11: Risk of Odour Impacts**

Receptor	Risk of Odour Impact			Receptor Sensitivity	Likely Odour Effect
	Source Odour Potential	Pathway Effectiveness	Risk of Odour Exposure		
Application Site	Medium	Ineffective	Negligible	High	Negligible

## 5 Discussion and Conclusions

- 5.1.1 The results of the qualitative risk assessment indicate that there is likely to be a negligible effect due to odour from the WWTW at the application site. .
- 5.1.2 The results of the sniff test survey indicate that odour from the WWTW is detected at a distance up to 100m downwind of the WWTW. The application site boundary is 350m from odour sources and the wind only blows towards the application site 13% of the time; therefore, odour at the application site is extremely unlikely.
- 5.1.3 Ideally, sniff test surveys would be undertaken on sufficient occasions to represent the full range of likely odour emissions and meteorological conditions favourable to odour detection. Due to time constraints, this has not been possible; however, the conditions during the sniff test survey are likely to be those experienced during worst case wind conditions, i.e. light winds with little turbulent mixing and dilution blowing from the south towards the application site.
- 5.1.4 The lack of odour complaints from existing receptors 350-450m to the southeast of the WWTW would indicate that odour from the WWTW does not cause annoyance. Winds blow towards the existing receptors around 13% of the time, the same amount of time as it blows towards the proposed receptors.
- 5.1.5 It is considered that the risk of odour effects at the application site is negligible and that the effect would be insignificant. There should be no constraints to development at the site with regard to odour as the proposed development is consistent with the relevant parts of:
- The NPPF; and
  - Core Policy 57 of the Wiltshire Core Strategy.
- 5.1.6 With the co-operation of Southern Water, access could be gained to the WWTW and an inventory of odour sources at the WWTW compiled which would enable odour modelling to be undertaken in support of this assessment.

## 6 References

DCLG (2014) *Planning Practice Guidance Air Quality*, [Online], Available: <http://planningguidance.planningportal.gov.uk/blog/guidance/air-quality>.

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## 7 Appendices

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## A1 Email Correspondence with Southern Water

**From:** [Bob Thomas](#)  
**To:** [Whitcher, Daniel \(Daniel.Whitcher@southernwater.co.uk\)](mailto:Daniel.Whitcher@southernwater.co.uk)  
**Subject:** FW: Ludgershall WWTW - odour assessment  
**Date:** 25 March 2019 10:14:00  
**Attachments:** [image003.png](#)

---

Dear Daniel,

Please can you provide contact details for Gong Yang so that I can discuss the assessment methodology.

**Kind Regards**

**Bob Thomas**

**Air Quality Assessments Ltd**

Tel: 07940 478134

Email: [Bob@aqassessments.co.uk](mailto:Bob@aqassessments.co.uk)

Web: <http://aqassessments.co.uk>

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**From:** Bob Thomas [<mailto:bob@aqassessments.co.uk>]  
**Sent:** 20 March 2019 08:55  
**To:** Whitcher, Daniel ([Daniel.Whitcher@southernwater.co.uk](mailto:Daniel.Whitcher@southernwater.co.uk))  
**Subject:** RE: Ludgershall WWTW - odour assessment

Dear Daniel,

I need to provide evidence to an Examination Inspector with regard to the allocation of land at Ludgershall on the 4<sup>th</sup> April and would be grateful if you could get back to me on the below asap to enable me to complete any assessment work by this date.

Please can you provide contact details for Gong Yang so that I can discuss the assessment methodology.

**Kind Regards**

**Bob Thomas**

**Air Quality Assessments Ltd**

Tel: 07940 478134

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**From:** Bob Thomas [mailto:bob@aqassessments.co.uk]  
**Sent:** 15 March 2019 10:11  
**To:** 'Whitcher, Daniel'  
**Subject:** RE: Ludgershall WWTW - odour assessment

Dear Daniel,

Thank you for getting back to me. My client has confirmed that they are willing to cover the additional costs, so I can now make progress.

It is not my intention to undertake odour sampling at the WWTW, just to see what specific odour sources are there and then to use library odour emissions data from UKWIR Odour Control in Wastewater Treatment for odour modelling. It may not be necessary for an operative from Southern Water to come to the site. If an accurate plan or odour emissions inventory is available for the Ludgershall WWTW, I will be able to work from that. However, if no plan/inventory is available, I will need to visit the WWTW to produce an inventory and undertake some measurements of the odour sources.

Please can you provide me with contact details for Gong Yang so that we can agree the assessment methodology.

**Kind Regards**

**Bob Thomas**  
**Air Quality Assessments Ltd**

Tel: 07940 478134

Email: [Bob@aqassessments.co.uk](mailto:Bob@aqassessments.co.uk)

Web: <http://aqassessments.co.uk>

Registered Office: c/o Ardwyn Channon, 12 Victoria Street, Burnham-on-Sea, Somerset TA8 1AL  
Companies House Registration: 8895617

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**Think about the environment, only print this email if you need to.**

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**From:** Whitcher, Daniel [mailto:Daniel.Whitcher@southernwater.co.uk]  
**Sent:** 13 March 2019 15:49  
**To:** 'bob@aqassessments.co.uk'  
**Subject:** RE: Ludgershall WWTW - odour assessment

Good afternoon Bob,

Thank you for your email.

Please find attached a draft procedure for these types of enquiries.

I have spoken with Gong Yang who is our Principle Engineer in these matters as well as our land surveyor and any survey works will need to be agreed in advance by Gong.

There will also be a cost to Southern Water in the time spent by our Wastewater Treatment Work operators reviewing H & S proposals and in meetings etc on Site.

It is assumed that the work will all be non-intrusive. However, we will need to see certificates of testing for portable equipment to be used on-site.

We have assumed that you are going to be on-site for a day. So for reviewing the RAMS and accompanying on-site, the cost will be £350.

Should you wish to discuss this matter further, please don't hesitate to contact me on the number below.

Best regards

**Daniel Whitcher**  
Technical Manager



T. 01962 716275 | M. 07798 856269  
[www.southernwater.co.uk](http://www.southernwater.co.uk)

Southern Water, Sparrowgrove House, Sparrowgrove, Otterbourne, SO21 2SW

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**From:** Developer Services

**Sent:** 06 March 2019 11:43

**To:** Foster, Brenda <[Brenda.Foster@southernwater.co.uk](mailto:Brenda.Foster@southernwater.co.uk)>; Whitfield, Nick <[Nick.Whitfield2@southernwater.co.uk](mailto:Nick.Whitfield2@southernwater.co.uk)>; Bonney, John <[John.Bonney@southernwater.co.uk](mailto:John.Bonney@southernwater.co.uk)>

**Subject:** FW: Ludgershall WWTW - odour assessment

FYA?:

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**From:** Bob Thomas [<mailto:bob@aqassessments.co.uk>]

**Sent:** 06 March 2019 11:33

**To:** Developer Services <[Developer.Services@southernwater.co.uk](mailto:Developer.Services@southernwater.co.uk)>

**Subject:** Ludgershall WWTW - odour assessment

Dear Sir/Madam,

Please can you provide some assistance with the query below, or forward to the relevant person.



I have been instructed to undertake an odour assessment due to potential impacts from the Ludgershall Waste Water Treatment Works (WWTW) on a proposed housing allocation in the draft Wiltshire Local Plan. Southern Water have commented on this (see attached) and have requested that an odour assessment is undertaken.

I would be grateful if you could provide some assistance with regard to the following:

- . Have any complaints been made to Southern Water with regard to odours from the Ludgershall WWTW?
- . Has any odour modelling been undertaken by Southern Water at the Ludgershall WWTW?
- . Is there an inventory of the odour sources at the Ludgershall WWTW, or a diagram showing the WWTW layout? If not, would it be possible to arrange a site visit so that an inventory could be undertaken?
- . Has any odour sampling been undertaken at the Ludgershall WWTW?

#### Kind Regards

**Bob Thomas**

**Air Quality Assessments Ltd**

Tel: 07940 478134

Email: [Bob@aqassessments.co.uk](mailto:Bob@aqassessments.co.uk)

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## A2 Professional Experience

*Bob Thomas, BSc (Hons) PgDip MSc MEnvSc MIAQM CSci*

Bob Thomas is a Director at AQA, with over eleven years' experience in the field of air quality management and assessment. He has carried out air quality assessments for a wide range of developments, including residential, commercial, industrial, minerals and waste developments. He has been responsible for air quality projects that include ambient air quality monitoring of nitrogen dioxide, dust and PM<sub>10</sub>, the assessment of nuisance odours and dust, and the preparation of Review and Assessment reports for local authorities. He has extensive dispersion modelling experience for road traffic, energy centre and industrial sources, and has completed many stand-alone reports and chapters for inclusion within an Environmental Statement. Bob has worked with a variety of clients to provide expert air quality services and advice, including local authorities, planners, developers, architects and process operators, and has provided expert witness services at public inquiry. He is a Chartered Scientist, a Member of the Institute of Air Quality Management and a Member of the Institution of Environmental Sciences.

A full CV for Bob Thomas is available at <http://aqassessments.co.uk/about>

## **A3 Sniff Test Results**

Odour Test Report						
Location	1	2	3	1	2	3
Wind speed	Slight breeze	Slight breeze	Slight breeze	Slight breeze	Slight breeze	Light air/calm
Wind direction	SE	SE	SE	S	S	S
Start time	11:20	11:25	11:30	15:05	15:10	15:15
Odour Intensity (I) During Sampling	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0
	6	0	0	0	0	0
	7	0	0	0	0	0
	8	0	0	0	0	0
	9	0	0	0	0	0
	10	0	0	0	0	0
	11	0	0	0	0	0
	12	0	0	0	0	0
	13	0	0	0	0	0
	14	0	0	0	0	0
	15	0	0	0	0	0
	16	0	0	0	0	0
	17	0	0	0	0	0
	18	0	0	0	0	0
	19	0	0	0	0	0
	20	0	0	0	0	0
End Time	11:23	11:28	11:33	15:08	15:13	15:18
Mean Odour Intensity	0	0	0	0	0	0
% Odour Time	0	0	0	0	0	0
Odour Descriptor	No WWTW odour, crop odour (rape)	No WWTW odour, crop odour (rape)	No WWTW odour, crop odour (rape)	No WWTW odour, crop odour (rape)	No WWTW odour, crop odour (rape)	No WWTW odour, crop odour (rape)

Odour Test Report					
Location	4	5	6	7	8
Wind speed	Light air/calm	Light air	Light air	Light air	Light air/calm
Wind direction	S	S	SSW-SW	SSW-SW	SSW-SW
Start time	15:20	15:25	15:30	15:35	15:40
Odour Intensity (I) During Sampling	1	0	0	0	0
	2	0	0	0	2
	3	0	0	0	0
	4	0	0	0	0
	5	0	0	0	0
	6	0	0	0	0
	7	0	0	0	0
	8	0	0	0	0
	9	0	0	0	0
	10	0	0	0	0
	11	0	0	0	0
	12	0	0	0	0
	13	0	0	0	0
	14	0	0	0	0
	15	0	0	0	0
	16	0	0	0	0
	17	0	0	0	0
	18	0	0	0	0
	19	0	0	0	0
	20	0	0	0	0
End Time	15:23	15:28	15:33	15:38	15:43
Mean Odour Intensity	0	0	0	0	1
% Odour Time	0	0	0	0	3
Odour Descriptor	No odour	No odour	No odour	Barest hint of an odour	Unpleasant odour recognisable as from WWTW

Odour Test Report					
Location	9	10	11	12	13
Wind speed	Calm	Light air	Light air/calm	Calm	Light air/calm
Wind direction	SSW-SW	SSW-SW	SSW-SW	SSW-SW	SSW-SW
Start time	15:45	15:50	15:55	16:00	16:05
Odour Intensity (I) During Sampling	1	0	0	0	6
	2	0	0	2	0
	3	0	0	2	0
	4	0	0	0	0
	5	0	0	2	0
	6	0	0	0	0
	7	0	0	0	0
	8	0	2	2	0
	9	0	3	3	0
	10	0	3	0	0
	11	0	4	0	0
	12	0	4	0	0
	13	0	3	0	0
	14	0	4	0	0
	15	0	4	0	0
	16	0	4	0	0
	17	0	4	0	0
	18	0	4	0	0
	19	0	4	0	0
	20	0	4	4	0
End Time	15:48	15:53	15:58	16:03	16:08
Mean Odour Intensity	0	2	1	0	4
% Odour Time	0	30	3	0	40
Odour Descriptor	No odour	Unpleasant odour recognisable as from WWTW (sludge)	Unpleasant odour recognisable as from WWTW (sludge)	No odour	Unpleasant, strong odour of sludge from WWTW