Odour Impact Assessment

Haverhill

December, 2024

Widdington Recycling

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1 Introduction

Widdington Recycling Ltd. (herein 'WR') operates a Materials Recycling Facility (MRF) in Haverhill, Suffolk CB9 8QE. Currently, the site is partially developed; the MRF building has been constructed and approximately half of the yard has been laid with concrete slabs.

The site accepts up to 75,000 tonnes of waste per annum; this is comprised of construction and demolition waste (Figure 1.1), as well as skip waste (Figure 1.2). In line with the site's environmental permit, it accepted some municipal waste during the summer of 2024, however due to odour complaints received this waste stream is no longer accepted at the site.

Figure 1.1: Construction and demolition waste being processed on-site (image source: DustScanAQ, 13/11/2024)

As a result of these odour complaints, Suffolk County Council (SCC) has requested an odour assessment to be included with the associated planning application before it can be validated.

On behalf of WR, DustScanAQ (DS) has been instructed by Leivers Consultancy Ltd. to carry out an odour survey and prepare an odour assessment to support the planning application.

Figure 1.2: Skip waste being processed on-site (image source: DustScanAQ, 13/11/2024)

1.1 Site setting

The site is in a predominantly industrial/commercial area to the southeast of Haverhill. Trading estates and commercial units are located immediately to the north and east of the site, whilst to the south and west is the route of a former train track, which has been converted into a public footpath and wooded area. The nearest residential units are to the west of this footpath, along Ashlea Road, approximately 65 m from the site boundary.

It is understood that odour complaints were received during 2024 from a number of sources, including businesses to the north along Sturmer Road, as well as businesses located on Maple Park, a trading estate to the east of the site, off Falconer Road (Figure 1.3).

Figure 1.3: Commercial units within Maple Park, to the east of the site (image source: DustScanAQ, 13/11/2024)

1.2 Potential for emissions

Due to the complaints received during the summer, the site has ceased to accept municipal waste and now only accepts construction and demolition waste, as well as skip waste. In comparison to putrescible waste (which can generate unpleasant odour emissions), the current waste streams handled on site have a limited potential for odour emissions, with much lower or no potential to be unpleasant, so are less likely to cause odour issues.

Factors which may influence the propagation of odour emissions beyond the site boundary include wind speed and direction, rainfall, humidity, and temperature. Furthermore, the proximity of receptors may influence the likelihood of odour impacts, with closer receptors generally more likely to be impacted.

2 Legislation and Policy

This section summarises all legislation, policy, statutory and non-statutory guidelines relevant to the proposed development. Furthermore, the latest regional and local planning policy guidance specifically applicable to the proposed development has been reviewed.

2.1 National Planning Policy Framework

The principal national planning policy guidance in respect of the proposed development is the National Planning Policy Framework (NPPF). The most recent update of the NPPF was published in December 2023 by the Department for Communities and Local Government (DCLG).

The NPPF 2023 contains four sections which are relevant to odour.

Section 180 (e) states that:

> *"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 and water quality, taking into account relevant information such as river basin management plans…"*

Section 191 includes

> *"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…"*

Section 192 states that:

> *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

Section 194 states 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 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.

2.1.1 Public Nuisance in English Law

Public nuisance in English law is an area of tort law. Tort law concerns the compensation for harm to people's rights to health and safety, a clean environment, property, their economic interests, or their reputations. A "tort" is a wrong in law which usually requires a payment of money to make up for damage that is caused. Public nuisance is where the defendant's actions "materially affects the reasonable comfort and convenience of life of a class of His Majesty's subjects"; public nuisance is also a crime. Smells and odours can be nuisances in law. Remedies for public nuisance include damages, injunctions and abatement. In determining whether there is a public nuisance, the court will take into consideration the nature of the nuisance (if it is on-going) and the character of the area (e.g. whether it is residential or industrial). It is noted that the area is industrial, and therefore the threshold for nuisance will be appropriate to an industrial location.

People experiencing a public odour nuisance are advised to complain to their local authority, in the first instance, for action under legislation described in the next section.

2.2 Statutory Nuisance

It is recognised that the planning system presents a way of protecting amenity. However, in cases where planning conditions are not applicable to a development/installation, the requirements of the Environmental Protection Act 1990 still apply. Under Part III of the Environmental Protection Act 1990, local authorities have a statutory duty to investigate any complaints of:

- *“any premises in such a state as to be prejudicial to health or a nuisance*
- *smoke emitted from premises so as to be prejudicial to health or a nuisance*
- *fumes or gases emitted from premises so as to be prejudicial to health or a nuisance*
- *any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance*
- *any accumulation or deposit which is prejudicial to health or a nuisance”*

Where the local authority establishes that any one of these issues constitutes a statutory nuisance and believes it to be unreasonably interfering with the use or enjoyment of someone’s premises and/or is prejudicial to health, an abatement notice will be served on the person responsible for the offence or the owner / occupier. Failure to comply with the notice could lead to a prosecution. It is however considered as a defence if the best practicable means to prevent or to counteract the effects of the nuisance are employed.

3 Methodology

This section outlines the methodology used when undertaking this OIA. This methodology is primarily based on IAQM's 2018 odour assessment guidance, but a number of other guidance documents have also been consulted, in particular the Environment Agency's (EA) 2011 H4 Odour Management guidance[1].

3.1 IAQM Guidance (2018)

IAQM 'Guidance on the assessment of odour for planning'[2] (2018) assesses the effect of odour on amenity and not on human health. It gives guidance on the assessment of odour for planning purposes i.e. predictive assessments.

Odour is subjective to individuals. Perceptions of an odour – whether it is found to be acceptable, objectionable, or offensive – are partly innate and hard-wired, and partly determined through life experiences are therefore subjective to individuals. The population has a spectrum of sensitivities to odour. The guidance and practice are based on typical responses to odour, and up-to-date science and case law.

The odour effect which is assessed is the negative appraisal by a human receptor of the odour exposure. This appraisal, occurring over a matter of seconds or minutes, involves many complex psychological and socio-economic factors. Once exposure to odour has occurred, the process can lead to adverse effects such as disamenity, annoyance, nuisance and possibly complaints.

For exposure to odour to occur, there must be an emission source to the atmosphere, a pathway for the odour to travel along and a receptor that has the potential to experience adverse effects. Therefore, the IAQM guidance is based upon Defra's Green Leaves III guidance[3] which presents the Source-Pathway-Receptor (S-P-R) concept. The S-P-R concept presents the hypothetical relationship between the source (S) of the odour, the pathway (P) by which exposure might occur, and the receptor (R) that could be adversely affected.

In addition, the scale of exposure is determined by the FIDOL factors:

- **F**requency: how often an individual is exposed to odour;
- **I**ntensity: the individual's perception of the strength of the odour;
- **D**uration: the overall duration that individuals are exposed to an odour over time;
- **O**dour unpleasantness: the 'hedonic tone' of the odour (pleasant, neutral or unpleasant, expressed on a nine-point scale); and
- **L**ocation: the type of land use and nature of human activities in the vicinity of an odour source. This can be considered to encompass the receptor characteristics, receptor sensitivity and socio-economic factors.

[1] Environment Agency (2011): 'H4 Odour Management'
[2] Institute of Air Quality Management, (2018). 'Guidance on the assessment of odour for planning'
[3] Department for Environment, Food and Rural Affairs, (2011): 'Guidelines for Environmental Risk Assessment and Management (Green Leaves III)

A comment on the development of the IAQM guidance is that the observational science relating odour annoyance to modelled odour concentrations is based on research into the experience of householders around odorous sites. The IAQM guidance explains that responses to odour depend on individual's attitude to the source and their circumstances.

The relevant table (Table 7) is reproduced below at Table 3.1.

Table 3.1: Proposed odour effect descriptors for impacts predicted by modelling – "Moderately Offensive" odours

Odour Exposure Level C_{98}, ou_E/m^3	Receptor Sensitivity		
	Low	Medium	High
≥10	Moderate	Substantial	Substantial
5-<10	Slight	Moderate	Moderate
3-<5	Negligible	Slight	Moderate
1.5-<3	Negligible	Negligible	Slight
0.5-<1.5	Negligible	Negligible	Negligible
<0.5	Negligible	Negligible	Negligible

It should be noted that the Table applies equally to cases where there are increases and decreases in odour exposure as a result of this development, in which case the appropriate terms "adverse" or "beneficial "should be added to the descriptors.

The IAQM Guidance states that:

> *"It is incumbent on the responsible practitioner to exercise good professional judgement in selecting an appropriate odour assessment criterion for any particular case and providing justification for that selection. Practitioners are also recommended to exercise such judgement in appreciating other factors which govern human responses to odour. It is not simply the presence of odours that govern the responses of individual population members to malodour, but many other socio-psychological factors [Reference 22], including the existence of health conditions, beliefs regarding the alleged harmfulness of the odorants, individual coping behaviours and other demographic and social factors, and the variation in the sensitivity of sense of smell in the general population.*
>
> *This could result in the application of odour exposure criteria that may appear, on the basis of the studies carried out to date, to be erroneous. Such a case has occurred recently, as reported in a Defra publication [Reference 23], where a concerted and comprehensive odour emission sampling and modelling campaign revealed C_{98} concentrations well below the most stringent 1.5 ou_E/m^3 criterion, but where up to 50 complaints about odour per day arose. Similarly, another recent study found numerical odour criteria did not predict complaints around sewage works [Reference 24].*
>
> *The practitioner needs to take into account the uncertainty of the prediction and/or the degree to which conservative assumptions have been used."*

In carrying out this assessment, an observational/empirical approach has been used, using sniff tests and complaints analysis. The qualitative assessment is to evaluate the source

odour potential, the effectiveness of the odour pathway, and the receptor sensitivity to come to a view on the risk of odour exposure.

3.1.1 Odour standards

Practical experience of UK installations has shown that exposures of up to 5 ou_E/m^3, expressed as the 98th percentile of one hourly-average odour concentrations do not generally cause odour nuisance. However, EA (2011) sets benchmark levels as follows:

- 1.5 odour units for most offensive odours;
- 3 odour units for moderately offensive odours; and
- 6 odour units for less offensive odours.

Odours categorised as most offensive include processes involving decaying animal or fish remains, septic effluent or sewage, and biological landfill odours.

Moderately offensive odours arise from a number of processes including intensive livestock rearing, sugar beet processing, fat frying and well aerated green waste composting.

Less offensive odours typically arise from the production of food and drink, such as breweries, confectioners, coffee roasters and bakeries.

3.1.2 Sniff test procedure

Appendix 2 of the IAQM odour guidance (2018) provides a recommended protocol for conducting on-site sniff testing; this approach has been followed for the purposes of this assessment, and the results of the sniff test survey are used to estimate the source odour potential.

IAQM (2018) consider sniff tests using the human nose to be appropriate “considering that (currently) no analytical instrument can give a unified measure of a complex mixture of compounds that quantifies it as a whole in the same way that a human experiences odour”. They also stress that a rigorous, well-designed sniff testing methodology can be expected to be robust and reproducible.

The following key steps should be carried out when carrying out a field odour survey:

1. Conduct the sniff test;
2. Estimate odour exposure at the test location; and
3. Judge the odour effect.

These steps are explained further below.

Step 1: Conduct the sniff test

Conducting a sniff test involves assessing the relative intensity of an odour by trained assessors following a set procedure in order to reduce the risk of subjectivity.

When conducting odour surveys, the following parameters are recorded by the assessor:

- Odour intensity (based on VDI 3940 scale from 0 to 6);
- Odour unpleasantness (hedonic tone) and description of odour; and
- Odour extent (intermittent or constant, normally expressed as a percentage of odour time during any individual sniff test); and
- Weather conditions, in particular wind direction and speed, but also temperature, rainfall and cloud coverage.

Additionally, a note of the site topography as well as any potential screening (such as buildings or vegetation) is made. If any obvious sources of odour are visible (for example, restaurants, odorous vegetation, vehicles), these are also noted.

The odour intensity levels and hedonic tone scale used in the assessment are presented below in Table 3.2 and Table 3.3 respectively.

Table 3.2: VDI 3940 odour intensity scale, based on IAQM (2018)

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

Table 3.3: Hedonic Tone scale used for the assessment

Hedonic Tone Value	Description
-4	Very unpleasant
-3	Unpleasant
-2	Moderately unpleasant
-1	Mildly unpleasant
0	Neutral
+1	Mildly pleasant
+2	Moderately pleasant

Hedonic Tone Value	Description
+3	Pleasant
+4	Very pleasant

The extent of the odour was assessed in accordance with IAQM (2018). For the purposes of this assessment, the extent of both 'site' and 'non-site' odours were calculated by dividing the number of number of samples (typically 5-10 second 'sniffs') where odour was recognisable divided by the total number of samples taken at each assessment point. For example, if an odour was detected in 12 out of 30 samples, the extent would be 40%.

In order to separate 'site' from 'non-site' odours, the most likely source of each odour was determined based on visual observations of materials and activities made while carrying out the sniff tests.

Step 2: Estimate the odour exposure at the test location

The recorded intensity, frequency and duration can then be combined to estimate the odour exposure at each test location using the matrix recommended by IAQM (2018), reproduced here in Table 3.4.

Table 3.4: Matrix to assess odour exposure (from IAQM, 2018)

		Percentage odour time during the test				
		10%	11-20%	21-30%	31-40%	≥40%
Average intensity (I_{mean})	**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

Step 3: Judge the odour effect

Judging the final odour effect is achieved by combining the results of repeated tests and considering them in relation to the sensitivity of all receptors included within the assessment. The approach recommended by IAQM (2018) determines the odour effect by combining the overall odour exposure (over all tests) with the receptor sensitivity, as in Table 3.5.

Table 3.5: Matrix to assess odour effect at individual receptors (from IAQM, 2018)

		Receptor Sensitivity		
		Low	**Medium**	**High**
Overall odour exposure	**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

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

3.2 Odour survey locations

In total, 11 assessment points were chosen, as shown in Figure 3.1 and Table 3.6. Seven survey locations were located on-site, whilst four were located off-site. All locations were surveyed on 13th November 2024.

The purpose of the on-site locations was to measure and characterise the character and intensity of odour generated by current operations, thereby allowing the source odour potential to be determined. Following this, the off-site locations were chosen to determine the extent of odour propagation beyond the site boundary.

It is considered that these assessment points give adequate site coverage, taking into account the locations of potential odour sources, as well as the nearest commercial and residential receptors.

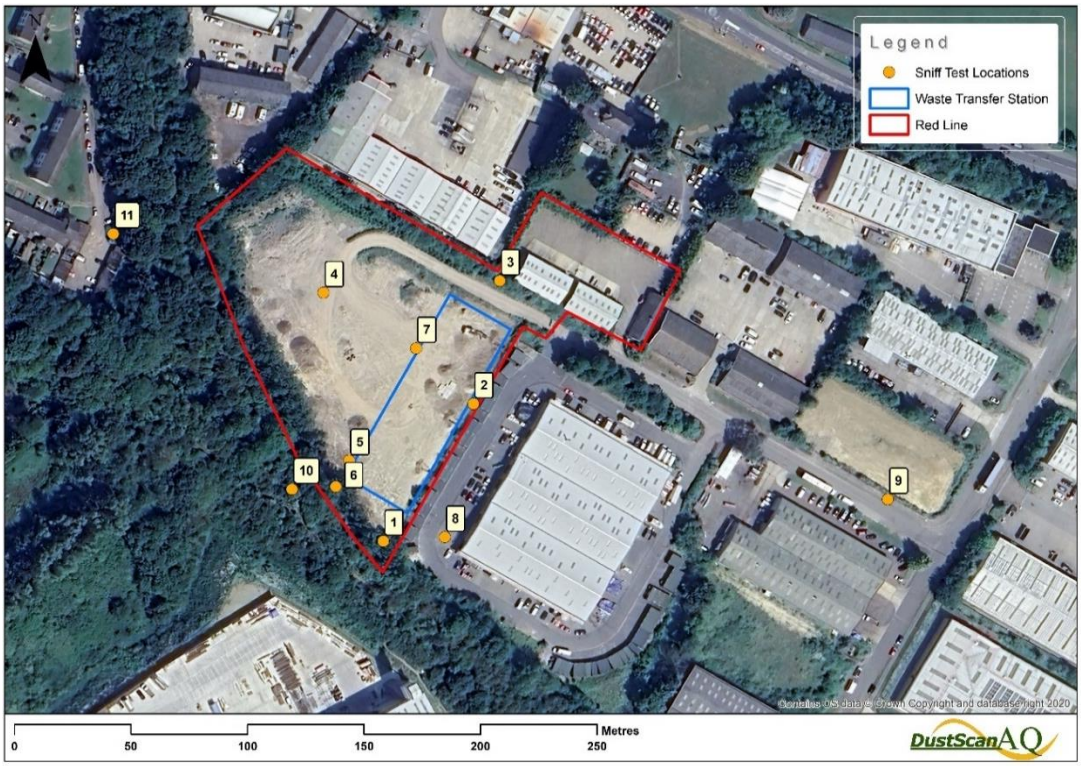

Figure 3.1: Odour sniff test locations

Table 3.6: Odour sniff test assessment points

Monitoring point	what3words address	On/off-site	Description	Sensitivity
1	///aware.kidney.switch	On-site	Southern corner	Low
2	///shrimps.newspaper.mattress	On-site	Eastern site boundary	Low
3	///beefed.grant.crouches	On-site	Northeast of waste transfer station	Low
4	///vegetable.firms.earpiece	On-site	Centre of site	Low
5	///accompany.goals.comedian	On-site	Southwest end of waste transfer station	Low
6	///bench.endings.picnic	On-site	Southwest site boundary	Low
7	///loaders.costumed.electrode	On-site	Centre of waste transfer station entrance	Low
8	///hides.bump.takeover	Off-site	Southwest of site - outside bakery	Medium
9	///universally.wired.looked	Off-site	Southeast of site - beyond site boundary	Medium
10	///stands.nuggets.disco	Off-site	Southwest of site - path beyond site boundary	Medium

Monitoring point	what3words address	On/off-site	Description	Sensitivity
11	///originals.bookcases.graceful	Off-site	Northwest of site- near residential receptors	High

IAQM (2018) provides guidance on the estimation of a sensitivity of a location to odour impacts. Generally speaking, industrial areas are considered to have a low sensitivity, commercial areas have a medium sensitivity and residential areas have a high sensitivity. During the site visit the nature and therefore sensitivity of each monitoring location was determined.

3.3 Uncertainties, limitations and assumptions

There is no standard method for carrying out an odour impact survey and assessment, and IAQM (2018) recognises the need for professional judgement in carrying out such an assessment. The odour assessor was suitable experienced to carry out a sniff test survey, and the lead author of this assessment is suitably experienced to carry out the assessment. Both are familiar with the specific on-site processes relevant to this assessment.

A limitation of this assessment is that it has been carried out with reference to weather data from beyond the site boundary. The weather data used for the assessment were provided by a recognised supplier. The data are considered representative for the region but may not reflect the specific local weather regime in operation around the site, or the weather experienced during the survey.

It is assumed that the site will be developed as described for the purposes of this assessment.

A limitation of sniff test surveys is that they can only give a measure of odour at specific locations under the meteorological and operational conditions prevailing at the times and days of sampling, but cannot cover all locations under every condition over a typical year. The survey was arranged in advance to coincide with relatively calm, dry weather conditions.

4 Results

4.1 Meteorological data

The key meteorological parameters pertinent to odour dispersion are wind speed and wind direction. The most representative meteorological monitoring station identified is from Cambridge which is located approximately 24 km north of the site. Data from this monitoring site are considered to be generally representative of meteorological conditions for this region. Figure 4.1 below presents the overall windrose for the period 2014 – 2018, which clearly demonstrates the dominance of prevailing south-westerly winds in this region, with lesser amounts of westerly, northerly and southerly winds.

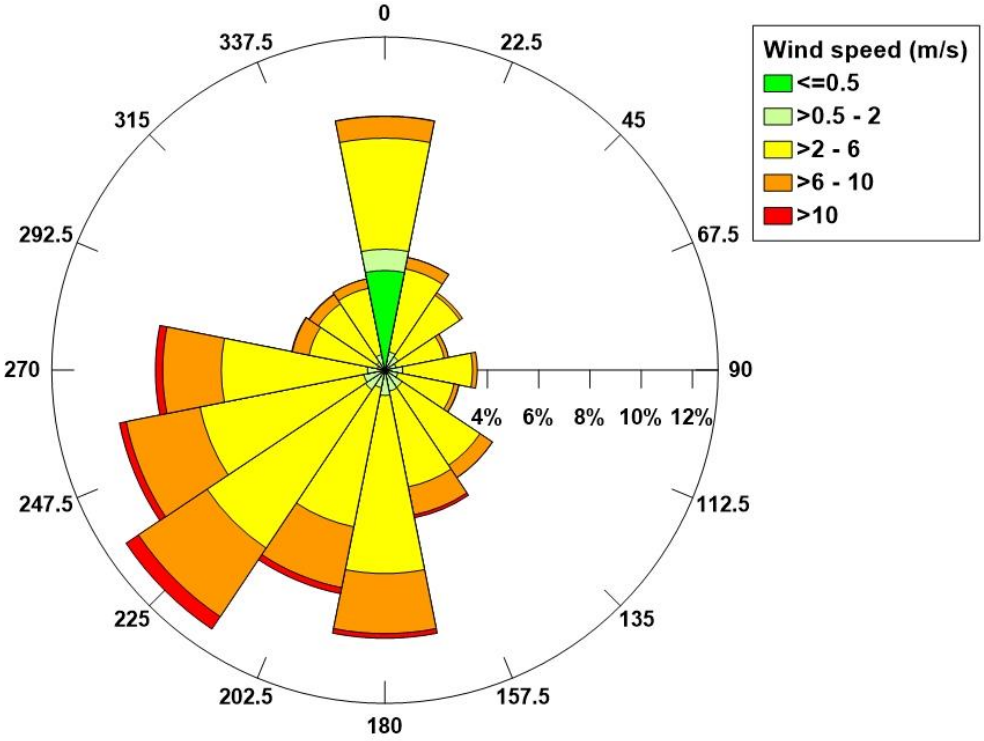

Figure 4.1: Windrose for Cambridge Meteorological Station, 2014-2018 (Source: MET DATA)

During the sniff test, predominantly north and north-westerly winds were recorded during the survey, except for at location 1 where south to south-westerly light winds were recorded.

4.2 Odour survey observations and results

The results of the field odour survey are summarised below in Table 4.1 for 'on-site' odours and in Table 4.2 for 'off-site' odours. A scan of the field notes is provided in Appendix A.

Please note that the odour descriptions listed are not necessarily indicative of materials or activities taking place in the area; merely that the odours present were reminiscent of these descriptors.

Table 4.1: Results from on-site odour monitoring, 13/11/2024

Location	Time	Average VDI	Extent (on-site sources)	Odour descriptions
1	11:51	3	20%	Concrete, earthy
2	12:04	3	20%	Concrete, earthy
3	12:15	3-4	66%	Waste, sulphur, earthy/concrete
4	12:32	2-4	76%	Concrete
5	12:44	2-4	100%	Earthy, concrete, faint solvent/petrol smell
6	13:03	2-4	100%	Earthy, burnt, cleaning fluid
7	13:15	2-4	100%	Earthy
8	14:05	2-4	10%	Earthy
9	14:19	-	0%	-
10	14:38	2-4	60%	Earthy
11	14:50	-	0%	-

Table 4.2: Results from off-site odour monitoring, 13/11/2024

Location	Time	Average VDI	Extent (off-site sources)	Odour descriptions
1	11:51	3-4	80%	Kitchen odour
2	12:04	3	80%	Kitchen odour
3	12:15	-	33%	-
4	12:32	1	23%	Food
5	12:44	-	0%	-
6	13:03	-	0%	-
7	13:15	-	0%	-
8	14:05	2-4	90%	Cake, sickly sweet smell
9	14:19	2-3	100%	Baking odour, sickly sweet, 'PVA' odour, vehicle emissions
10	14:38	-	40%	-

Location	Time	Average VDI	Extent (off-site sources)	Odour descriptions
11	14:50	2-3	100%	Leaves

It is clear from the above tables that at on-site locations, the detected odours were almost exclusively derived from on-site activities and materials, whereas at off-site locations, the odours were primarily related to off-site sources.

At locations 1 – 7 (all on-site), on-site odour sources were generally dominant. The odours were most commonly described as ‘earthy’ and ‘concrete-like’, and it is thought that this is related to the ongoing concrete slab laying activities taking place at the western end of the site. At locations 1 and 2, both along the eastern site boundary, an odour associated with food preparation was most commonly detected. It is thought that this is related to the nearby bakery.

Other odours were less commonly detected, such as those associated with solvents and fuel. At location 3 near the weighbridge, odours described as ‘manure, sulphur, waste’ were recorded, however it can be confirmed that no putrescible waste was observed whilst on site.

At the off-site locations (8 – 11), odours associated with on-site activities or materials were only detected at location 8 (to the east) and location 10) to the west. At location 8, an earthy odour was infrequently detected, whilst at location 10, this same odour was dominant. It is thought that this is due to the proximity of this location to the on-site operations taking place.

At location 9, some detected odours were thought to be associated with the nearby bakery (‘fruit cake’, ‘bakery’, ‘sweet’), whilst some exhaust odours were also detected.

At location 11 (adjacent to the nearest residential receptors), the air was described as ‘neutral’ and ‘leafy’ with a faint ‘burnt’ odour.

The hedonic tone of the odours recorded during the site visit varied from mildly pleasant (cake, +1) to mildly/moderately unpleasant (manure, sulphur, -2 and sickly sweet, -3).

The survey was undertaken on a sunny and partially cloudy day, with variable light-strong NW winds. It is understood that the survey was undertaken during normal operating conditions.

The likely odour exposure at all off-site locations is presented below in Table 4.3, following the IAQM guidance (2018). The odour exposure at on-site locations is not presented as there are no relevant receptors.

Table 4.3: Odour exposure at off-site monitoring locations

Location	On-site odours			Off-site odours		
	Extent	VDI	Odour Exposure	Extent	VDI	Odour Exposure
8	10%	2-4	Small	90%	2-4	Medium-large
9	0%	-	Negligible	100%	2-3	Medium
10	60%	2-4	Medium-large	40%	-	Negligible
11	0%	-	Negligible	100%	2-3	Medium

The odour exposure from on-site sources varied from Negligible at locations 9 and 11, to Small at location 8 (near the bakery) and Medium-large at location 10 (to the west of the site, along the footpath).

In contrast, the odour exposure from on-site sources varied from Negligible at location 10, to Medium at locations 9 and 11 and Medium-large at location 8. It should be stressed however that the exposure score does not consider the relative pleasantness or unpleasantness of the odours, merely its extent and intensity at each location.

It is key to highlight however that of the on-site odours detected at off-site locations, no odours associated with putrescible waste were detected. As outlined earlier, the majority of on-site odours had a relatively neutral hedonic tone, so are unlikely to cause unacceptable odour impacts.

4.2.1 Estimation of source odour potential

The results of on-site surveying can be used to estimate the source odour potential of the site as currently operated.

Based on the intensity, extent and hedonic tone of on-site odours, as well as the generally Small levels of odour exposure at off-site monitoring locations, following guidance from the IAQM (2018) the overall source odour potential of the site is considered to be Small.

4.3 Impact assessment

As outlined above, the overall impact of on-site operations can be estimated by determining the source odour potential, the pathway effectiveness and the receptor sensitivity.

The source odour potential of the site is considered to be Small, as evidenced by the odour survey results outlined in Section 4.2.1.

The pathway effectiveness of relevant off-site monitoring locations can be determined by measuring their distance from the odour source as well estimating the frequency of winds from the source to the receptor, as shown in Table 4.4.

Table 4.4: Pathway effectiveness for off-site receptors

Location	Receptor sensitivity	Distance to site boundary	Orientation (relative to site boundary)	Relative frequency of winds	Pathway effectiveness
8	Medium	20 m	Southeast	Frequent	Moderately effective
9	Medium	175 m	East	Frequent	Ineffective
10	Medium	10 m	Southwest	Infrequent	Ineffective
11	High	50m	West	Infrequent	Ineffective

There is generally an ineffective pathway to most off-site monitoring locations, with the exception of location 8, which has a moderately effective pathway as a result of its proximity to the site boundary and frequency of potentially odorous winds.

The risk of odour exposure can be estimated by combining the pathway effectiveness for each receptor with the overall source odour potential (deemed to be Small for current operations as outlined above). The risk of odour exposure is deemed to be Negligible at locations 9, 10 and 11, whilst there is a Low risk of odour exposure at location 8.

Finally, the risk of odour exposure can be combined with the sensitivity of each receptor to determine the likely magnitude of odour effect. The results of these steps are presented in Table 4.5 below.

Table 4.5: Summary of the risk of odour exposure and likely odour effects at key off-site monitoring locations.

Location	Sensitivity	Pathway Effectiveness	Source odour potential	Risk of odour exposure	Likely magnitude of odour effect
8	Medium	Moderately effective	Small	Low risk	Negligible Effect
9	Medium	Ineffective	Small	Negligible risk	Negligible Effect
10	Medium	Ineffective	Small	Negligible risk	Negligible Effect
11	High	Ineffective	Small	Negligible risk	Negligible Effect

The likely odour effect of change is judged to be Negligible at all identified off-site locations, including those closest to site as a result of the small source odour potential and generally low pathway effectiveness. This assessment result is consistent with the outcome of the odour survey, which suggested that on-site odours were less common than off-site odours.

5 Summary and conclusion

Widdington Recycling Ltd. operates a partially developed but operational Materials Recycling Facility (MRF) in Haverhill, Suffolk CB9 8QE. Complaints were previously received due to the handling of putrescible waste, however the site now exclusively handles skip waste and demolition and construction waste.

A ‘sniff test’ survey was carried out in November 2024 to determine the potential for odour issues at nearby receptor locations. On-site monitoring confirmed that the main odours were due to the handling of the above waste streams, as well as the ongoing groundworks and laying of concrete pads in the west of the site.

At off-site receptor locations, odours associated with on-site processes were not present in sufficient quantities to cause significant issues.

Given that little odour linked to the recycling facility were detected at nearby receptors (housing to the northwest and bakery to the south) it is unlikely that any odour arising from the facility would cause any detriment to nuisance to residents and surrounding businesses during normal operations.

A risk assessment based on the ‘source-pathway-receptor’ model outlined by the IAQM was also carried out, taking into account the results of the odour survey, local meteorological conditions and the proximity of sensitive receptors. The results of this assessment suggested that there would be a Negligible odour effect at off-site receptors during normal site operations.

Furthermore, as the site no longer handles waste with a highly offensive odour, it is considered unlikely that odour issues will occur as a result of typical on-site operations.

DustScanAQ
December 2024

Appendix A: Field notes

Site: Widdington Regely. Project: ZWRHS Consultant name: Paul Exton. 20 a day → 75,000 tonne. → Limit and current tonnage

Date: 13/11/24. Weather: Sunny day with clouds. Variable light winds to NW breezes. Stronger later on.

→ odour distant.

Sample Reference	Time	Intensity	Extent (%)	Hedonic Tone	Descriptor	Notes
1. food 'fresh' concrete	11.51	3-4, 3	Kitchen odour: 33%; Site odour: 20%	0	Kitchen odour; Musty, earthy, concrete-like.	aware, kidney, switch. Still S-SW light breezes, but variable (some NW).
2. food. neutral earthy.	12.04	3	Kitchen odour 76%; Site odour: 20%	0	Kitchen odour; Musty, earthy, concrete-like.	Shrimps, newspaper, mattress. light variable wind.
3 sulphury 'fresh'/neutral earthy	12.15	3-4; 3-4	Site odour: 66%	-2; 0	Manure, sulphurous, waste.; Musty, earthy, concrete like.	~~airship, consented, opposite.~~ beefed, grant, crouches. light wind, occasional breeze, variable direction. W-N. lorry dropped off recycling bank.
4. food. neutral earthy	1232	2-4	Site odour: 76%	0.	Musty, earthy, concrete-like	Vegetable, firms, earpiece. Wind light, some breeze, W-NW. Not much operation happening.
5. earthy burnt	12.44.	2-4; 2-4; 2-4, once 5	Site odour: 100%	-1; 0; -3	Musty, earthy, faint petrol? faint solvent? cleaning fluid?; Musty, earthy, concrete like; burnt, acrid, reminds of rockwool.	accompany, goals, comedians. W-N wind. Some breezes. 360° - engine on - not operational.
6 slight cleaning fluid burnt	13.03	2-4; 2-4, once 5.	Site odour. 100%	-1 - with slight cleaning fluid; 0 - musty earthy; -3 - burnt	Musty, earthy, concrete-like, burnt, 'cleaning fluid'.	~~dictation, tagroom, chatters~~ bench, endings, picnic. NW breeze. 2 360's working - 2 x HGV.

Similar to rockwool?

burnt. one 5

Intensity: 0 - none; 1 - v. faint; 2 - faint; 3 - distinct; 4 - strong; 5 - v. strong; 6 - extremely strong
Extent: 0 - intermittent; 1 - constant
Hedonic Tone: -4 - extremely unpleasant; 0 - neutral; +4 - extremely pleasant

Site: **Project:** **Consultant name:**

Date: **Weather:**

Sample Reference	Time	Intensity	Extent (%)	Hedonic Tone	Descriptor	Notes
7.	13:15	2-4	Site odours: 100%	0.	Musty, earthy.	loaders. costumed. electrode. x2. 360° + shovel working + 1 HGV.
8. cake – neutral; site – 2-4 intensity	14.05 → 2-4; → 2-4; sweet		Site odours: 10%	'cake' 1; V sweet -3; earthy 0	fruit cake like, baking odours. sickly sweet. Musty, earthy	hides. bump. takeover. N W breeze – Mostly NW.
9 fumes. neutral; 'PVA' ; 2-3 intensity; cake	14.19. → 2-4; 2-3 sweet		Site odours: 0%	Vehicle fumes -2; 'cake' 1; 'PVA' like -1; V sweet -3	Vehicle fumes; fruit cake like, baking odour; 'PVA' like odour; Sickly sweet.	Universally. wired. looked. NW.
10. site neutral	14.38. → 2-4		Site odours: 60%	0	Musty, earthy.	Stands. nuggets. disco. NW breeze – gentle. 360° loading HGV at S end shed.
11. fresh leaves. still burnt + leaves	14.50.	2-3	Site odours: 0%	-1→1	largely neutral. Some smell of leaves, & some faint 'burnt' odour.	Originals. bookcases. graceful. V light NW breeze

Intensity: 0 - none; 1 - v. faint; 2 - faint; 3 - distinct; 4 - strong; 5 - v. strong; 6 - extremely strong
Extent: 0 - intermittent; 1 - constant
Hedonic Tone: -4 - extremely unpleasant; 0 - neutral; +4 - extremely pleasant