BYASS WORKS WASTE TRANSFER FACILITY

ODOUR MANAGEMENT PLAN

Operator: AWD (Group) Ltd
Facility: Byass Works, The Docks, Port Talbot, SA13 1RS
Permit reference: EPR/AB3895CN
Waste returns reference: EPR/AB3895CN

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1 INTRODUCTION

1.1 Scope of Report

AWD operates a waste transfer facility at Byass Works, Port Talbot. AWD recognises that the transfer of waste potentially poses risks to the environment and local population. To ensure such risks are identified and evaluated an Environmental Risk Assessment (ERA) has been prepared. The assessment indicates that an Odour Management Plan (OMP) may be required to ensure that odour risks are actively managed.

1.2 Objectives of OMP

This OMP is designed to provide a documented management system that sets out the monitoring and contingency measures that will be implemented to control and minimise odour pollution. AWD will aim to prevent unacceptable odour pollution at all times and reduce the risk of odour releasing incidents or accidents by anticipating them and planning accordingly.

2 OVERVIEW OF POTENTIAL PROBLEM

2.1 What is Odour?

Some highly volatile wastes and wastes undergoing degradation can contain substances that have the potential to emit volatile odorous chemicals. Under suitable conditions, such odorous chemicals can escape and move through the air to human receptors where they are sensed as smell.

The term odour refers to the stimuli from a chemical compound that is volatilised in air. Odour is the human perception of that sensation and what the odour means. Odours may be perceived as pleasant or unpleasant. The main concern with odour is its ability to cause a response in individuals that is considered to be objectionable or offensive.

2.2 What is the potential impact of odour?

Odour detection thresholds can be very low, are often personal and can vary widely between different people. The interpretation of odours can cause an emotional response and some odours may cause some people to become concerned about the potential for harm to health. Some individuals will cope with the stress of odours by trying to deal with the problem (e.g. by making complaints) and may be sensitive to lower levels of exposure. Others will seek to modify their own emotional response and be less sensitive to annoyance. Long-term exposure to odours may give rise to health issues.

2.3 When does impact occur?

There is no single method of reliably measuring or assessing odour pollution, and any conclusion is best based on a number of lines of evidence. The FIDOR acronym, often used by regulators, is a useful reminder of the factors that will determine the degree of potential odour pollution:

- Frequency of detection
- Intensity as perceived
- Duration of exposure
- Offensiveness
- Receptor sensitivity

Frequency and duration - can be assessed from wind direction data, complaints and odour diaries

Exposure intensity - can be assessed from monitoring

Offensiveness - some odours are regarded as more unpleasant than others

Receptor sensitivity - some receptors are more sensitive than others

This OMP is aimed at setting out several steps that will enable reliable on-site monitoring data to be gathered using different techniques. This will enable different lines of evidence to be gathered which will be used to assess the ongoing potential risk of odours to be actively monitored and enable mitigation actions to be undertaken to prevent potential off-site odour problems.

3 POTENTIAL ODOUR RISK

3.1 Receptors

The principal human receptors identified around the proposed site are:

- Local residents and businesses in the immediate surrounding areas of Aberafan and Port Talbot. The closest residential properties are ~75m northwest of the site boundary, on the opposite side of the River Afan.
- Operator's personnel
- Other users of the industrial estate and commercial business to the east

Implementation of the measures set out in this OMP are intended to protect these receptors.

3.2 Odour Sources

3.2.1 Activities at Byass Works

The AWD waste transfer operation is dominated by the acceptance, storage and processing of clean hard plastics using physical processes. This activity does not typically generate detectable odours.

Other activities undertaken by AWD include:

- Indoor sorting of small quantities of paint tins containing residual paint fractions
- Outdoor storage of small quantities of grinding solids

Each of these activities could potentially generate odour and are identified on Figure 1.

3.2.2 Off-site Sources

The immediate surrounding area is dominated by a vacant industrial unit and open brownfield land. This is susceptible to fly-tipping and the adjacent industrial unit contains a very large quantity of soil and stone that has been in position for many years. Such materials could potentially generate odour.

To the north of the site is the River Afan and the Green Park Weir where water is impounded and abstracted to feed the docks to the south.

Beyond the river are residential properties, a fast-food outlet and areas of public open space. The most obvious source of odour in such areas is refuse pending collection and fly-tipping. Some domestic refuse is collected fortnightly.

3.2.3 Baseline Conditions

AWD is to undertake baseline odour monitoring ahead of the proposed permt Variation. The results of this monitoring will be documented and retained. This will be achieved by following the protocol provided in Appendix 1 at the positions shown on Figure 1.

3.3 Pathways

Odours have the potential to be transported to the identified human receptors via transfer through the air. This potential exposure pathway is dependent upon the rate of emission from the waste which is in turn influenced by rate of biodegradation and volatilisation. These factors are in turn dependent upon ambient temperature and relative humidity. Other factors include wind speed and direction and atmospheric turbulence, dilution and dispersion.

Wind direction at Byass Works is primarily from the southwest and away from the closest residential areas to the north and northwest. During the summer months wind from the east can be more prevalent. This would mean that during the summer months the wind direction could be towards the residential area.

4 PREVENTATIVE MEASURES

4.1 Training

AWD will ensure that all relevant staff are trained in key areas of waste acceptance and implications for odour management. This will include an understanding of the processes leading to the generation of odours, the use of monitoring and control techniques and waste acceptance and rejection procedures.

4.2 Control Measures

The following key factors are relevant in controlling and minimising odour emissions:

- Waste acceptance
- Length of waste storage
- Degradation of biodegradable fractions
- Release of vapours

4.2.1 Pre-waste acceptance

Pre-waste acceptance checks will provide AWD opportunity to understand the source of waste and the likelihood of contraries and non-conforming wastes. This will provide an opportunity for AWD to understand the potential risk of odours and will enable AWD to check what procedures producers have in place for waste and odour management.

4.2.2 Waste acceptance

Incoming waste vehicles entering the site will report to the site weighbridge. Each load will be inspected and logged in accordance with waste acceptance procedures.

The presence of odours will be evaluated as the accepted waste is unloaded. Waste showing signs of advanced waste degradation will not be accepted. Personnel will be particularly vigilant for leachate and significantly damaged or wet waste.

4.2.3 Quarantine

Any obviously odorous waste would be removed from site. This would be undertaken immediately, if the delivery vehicle was returning to the customer or within 48 hours. If the problematic waste needed to be stored at Byass Works, such waste would be placed in a sealed skip. These are identified on Figure 1 as Empty skips as they could be sealed, moved and located anywhere on site that suited the nature of the problem at the time. In the first instance, they would be moved to one of the dedicated quarantine bays identified on Figure 1 or retained within a building, if considered to provide greater environmental protection and reduce risk of nuisance

4.2.4 Waste Storage

AWD aims to have a quick turn-over of waste with most waste being on site for less than 1 week.

Proactive daily checks will include personnel checking for the presence of odour in all operational areas. All incidents will be recorded in the Site Diary and appropriate investigation / remedial action instigated as quickly as possible.

4.2.5 Housekeeping

AWD recognises that it is the simple tasks that have the biggest influence on environmental protection. In the case of odour, it is ensuring that conditions cannot develop for waste to degrade.

For this reason, a comprehensive cleaning schedule will be adhered to for all site areas and waste acceptance measures strictly implemented. All waste storage areas will be inspected and cleaned daily and as required. Cleaning will involve a combination of dry sweeping, litter collection and scraping. Jet washing would only be used if absolutely necessary to minimise use of water and generation of dirty water requiring collection and disposal.

When storage areas are emptied the floor and corners will be cleared of any debris before re-filling to minimise build-up of debris. This applies to bays and ROROs.

The cleaning inspection schedule is included with the daily checklist in Form SF07.

5 MONITORING

AWD aims to ensure that the waste storage activity shall be free from odour at levels likely to cause pollution outside the site. The only way to determine whether the processes on site are under control, and to keep them under control, is to undertake boundary monitoring.

5.1 Techniques

Monitoring techniques will include sniff testing around the site boundary, recording of meteorological parameters and documenting and investing complaints. As the operation develops, the suitability of these techniques will be reviewed and modified as necessary. Other techniques may be utilised if necessary.

5.1.1 Sniff Testing

Sniff testing is one way of assessing an odour impact. The technique is simple yet allows some or all of the FIDOR factors to be gauged. The test allows the determination of odour strength (as intensity), the type of odour or hedonic tone to be evaluated, the hourly, daily and seasonal distribution of nuisance, and consideration of odour in the monitored area.

Sniff testing will follow the steps set out in Appendix 1 with the results documented on the associated forms. Routine sniff testing will be undertaken monthly around the perimeter of Byass Works. In addition, the routine monitoring will be supplemented by more frequent sniff testing during activities that may pose a greater risk of releasing odours (e.g. paint and grinding solids delivery and storage). The information gathered from both approaches will be used to dynamically inform and improve operations where required to ensure there is no off-site pollution.

Sniff testing will also be undertaken in response to complaints although during such events the monitoring locations may be targeted to help investigate the complaint. Increased frequency and timing of monitoring, and other techniques will be used if a problem is identified.

The results of the sniff testing will be interpreted in accordance with the contingency action plan. This will be reviewed once the site is operational.

5.1.2 Complaints

AWD recognises that complaints are never a substitute for comprehensive monitoring and waste management practices but they do offer a valuable indicator of offsite odour impact potentially related to the waste storage activity. For this reason, all complaints will be logged and documented in accordance with existing management systems.

Any complaints received will be promptly investigated and appropriate remedial action taken. During this process the following aspects will be considered:

- Is the waste storage activity under control e.g. have odorous wastes been delivered/ placed into quarantine?
- Have there been meteorological changes e.g. has wind direction changed, has there been a temperature inversion?
- Are off-site sources causing the problem?

5.2 Contingency Action Plans

Where observations or complaints indicate a potential odour problem the contingency actions set out in Table 5-1 will be adopted.

Table 5-1 Sniff Test Contingency Action Plan

OBJECTIVE To initiate timely mitigation measures to prevent off-site odour problems		
Frequency of test	Following receipt of latest monthly sniff test results	
Monitoring Locations	Boundary of Byass Works	
CONTINGENCY ACTION RESPONSES		**Response Time**
Step 1. Investigate Potential Sources Following detection of odour during monthly boundary monitoring undertake detailed site inspection. Ideally involve someone who's sense of smell has not become adapted to any odours that might be present. If odour source is obvious go to Step 2. If odour source cannot be identified go to Step 4.		Within 1 day or same day where feasible
Step 2. Remove odorous waste Remove odorous waste to isolation in quarantine immediately. Return to customer as soon as possible. Go to Step 3.		Within 48 hrs of odour detection return the identified problematic waste to customer
Step 3. Continued Monitoring Repeat boundary monitoring once waste has been removed daily for a week. If odour is not detectable return to monthly monitoring. If odour is persistently detectable go to Step 4.		Within 1 week of waste being removed at Step 2.
Step 4. Further Investigation and Monitoring Ensure obvious odorous waste has been removed. Consider all available information including meteorological records, complaints history, other activities occurring at site / in surrounding area and time remaining for waste to be transferred. Repeat sniff testing monitoring daily at different times of day to assess for spatial and temporal variation. Also undertake sniff monitoring beyond site boundary. Continue to inspect waste storage areas. **Outcome 1. Waste storage considered to be odour source.** Review waste acceptance protocols and inform customer to try and identify potential cause. Determine next steps considering time waste has been in storage and time remaining on site. Inform NRW. Investigations may require moving waste. Go to Step 5. **Outcome 2. Waste storage not considered to be odour source.** Document investigations and return to monthly monitoring.		Within 1 week of waste being removed at Step 2
Step 5. Implement Mitigation Measures Review risks to off-site receptors. Implement relevant mitigation measures in consultation with NRW. Once works are completed return to monthly monitoring.		Within 2 weeks of waste being removed at step 2.
OBJECTIVE To proactively investigate odour complaints and implement mitigation measures		
Frequency of test	Following receipt of complaint	
Monitoring Locations	Complaint may come from any location.	
CONTINGENCY ACTION RESPONSES		**Response Time**
Step 1. Investigate Potential Sources Following receipt of complaint undertake detailed site inspection and review of sniff test monitoring. Ideally involve someone who's sense of smell has not become adapted to any odours that might be present. If odour source is obvious go to Step 2. If odour source cannot be identified go to Step 4.		Within 1 day or same day where feasible
Step 2. Remove odorous waste Remove odorous waste to isolation in quarantine. Return to customer as soon as possible. Inform complainant of works undertaken. Go to Step 3.		Within 48 hrs of odour detection
Step 3. Continued Monitoring Repeat boundary monitoring once waste has been removed daily for a week. If odour is not detectable return to monthly monitoring. If odour is persistently detectable go to Step 4.		Within 1 week of waste being removed at Step 2.
Step 4. Further Investigation and Monitoring Ensure obvious odorous waste has been removed. Consider all available information including meteorological records, complaints history, sniff test results, other activities occurring in surrounding area. Repeat sniff testing monitoring daily at different times of day to assess for spatial and temporal variation. Also undertake sniff monitoring in other potential sources beyond site boundary. Continue to inspect waste storage areas and other areas. **Outcome 1. Waste storage considered to be odour source.** Review waste acceptance protocols and inform customer to try and identify potential cause. Determine next steps considering time waste has been in storage and time remaining on site. Inform NRW. Investigations may require moving waste. Go to Step 5. **Outcome 2. Waste storage not considered to be odour source.** Document investigations and return to monthly monitoring. Inform complainant. Consider requesting complainant to complete an Odour Diary.		Within 1 week of waste being removed at Step 2
Step 5. Implement Mitigation Measures Review risks to off-site receptors. Implement relevant mitigation measures in consultation with NRW. Inform complainant. Once works are completed return to monthly monitoring.		Within 2 weeks of waste being removed at step 2.

6 MITIGATION

6.1 Proactive Intervention

Escape of odorous chemicals may, in part, be reduced by techniques that reduce their evaporative flux. These techniques, which may be physical or chemical, are intended to influence the temperature or evaporation rate. Techniques include:

- avoiding direct sunlight to reduce temperature and rate of evaporation
- increasing humidity in the immediate environment to reduce evaporation
- reducing airflow over the waste surface to reduce the rate of evaporation
- introduce temporary surface treatments, such as water, to lower the surface temperature or create a chemical barrier. These treatments can also contain pH buffers or other chemicals intended to make odorous chemicals more soluble and less likely to evaporate

Should this point be reached the techniques listed above will be evaluated. Under such circumstances, passive techniques will be utilised before the potential application of biodegradable chemicals.

6.2 Suspend Storage Activity

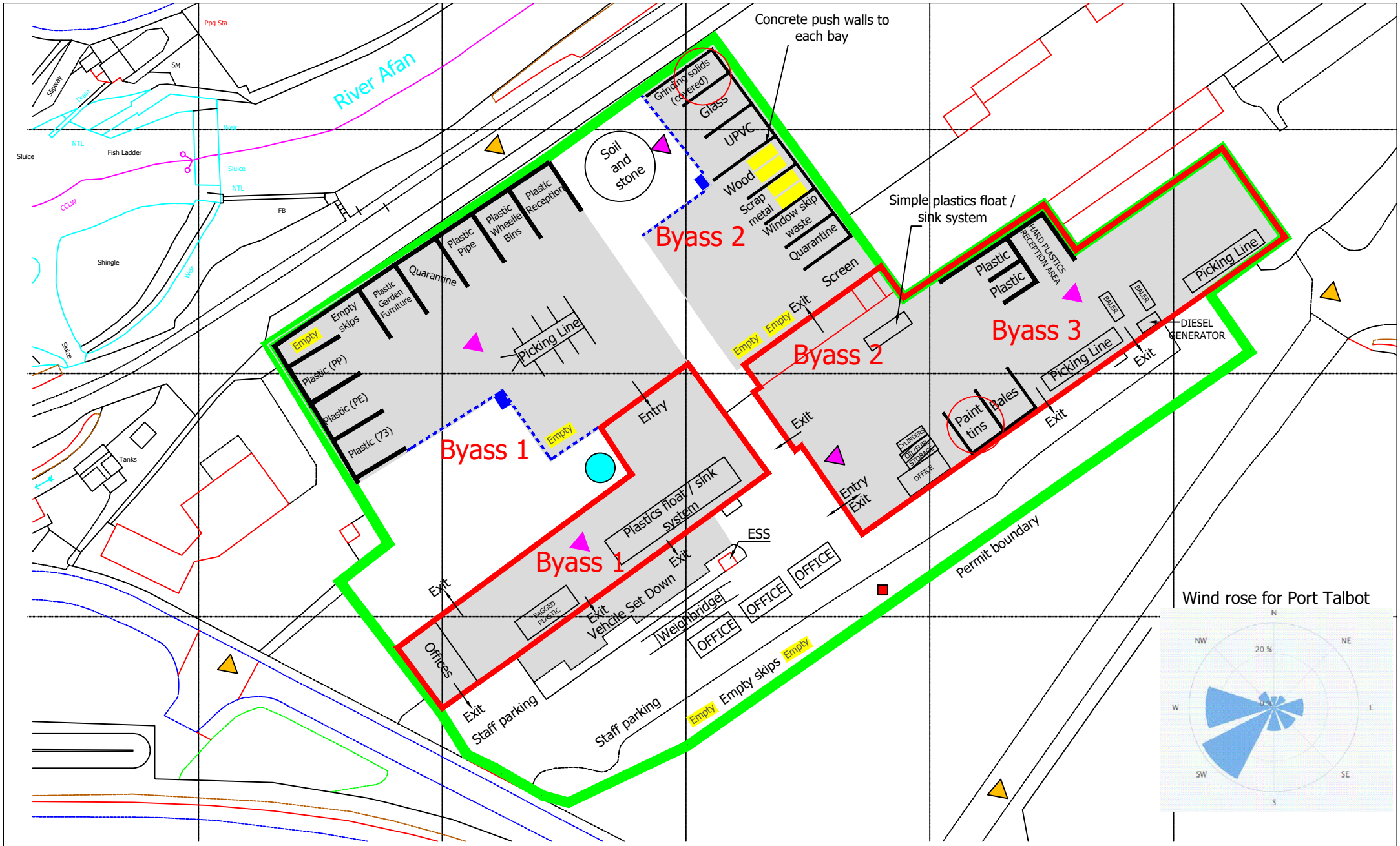
If unreasonable odour amounting to serious pollution is being or is likely to be caused AWD will temporarily cease operations until the problem can be resolved.

6.3 Management Plan Review

This OMP will be reviewed and updated within 6 months of the site accepting new waste streams (paint and grinding solids) and then annually.

Reference

Environment Agency. H4 Odour Management.



Drawing Number 2099r5/1

Legend

- Concrete
- Empty — Sealed skip for quarantine
- Sealed drainage with tanks
- 35m3 fire water tank
- Smoking Area
- Potentially odorous waste
- Monthly perimeter monitoring location
- On-site sniff test location

CLIENT	AWD Ltd
PROJECT	Environmental Permit
TITLE	Odour Sources and Monitoring
DRAWING NUMBER	Figure 1
REVISION	0
SCALE	As Shown
DATE	09/22
DRAWN	BR
CHECKED	

Rev	Date	Status/Ammendments

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Appendix 1
Odour Monitoring Protocol

Assessing potential on site and off site odours

An assessment may need to be conducted to assess the presence and nature of an odour. Use this form for ensuring the test is repeatable and the findings documented.

Please note:

- Staff normally exposed to the odours may not be able to detect or reasonably judge the intensity of odours off-site. You might be better off using office staff or people who have not recently been working on the site to do this.
- Anyone who has a cold or a sore throat, is likely to underestimate the odours.
- To improve (or to check) data quality, you can get two people to do the test independently at the same time.
- Those doing the assessment should avoid strong food or drinks, including coffee, for at least half an hour beforehand. They should also avoid strongly scented toiletries.

The assessment will involve someone walking along an external route, as shown on Figure 4 of the OMP. Routine assessments will involve walking the perimeter route as this provides opportunity for identifying odours between the site and identified human receptors, including residential properties and food establishments. During the survey, if an odour is detected then the surveyor should pause and characterise the location and odour. Record this information on the attached form.

A note of any external activities that could be either the source of the odour, contribute to the odour, or be a confounding factor should be made.

If necessary, this test can be supplemented with laboratory analysis. Should this be required specialist advisors should be consulted and the guidance set out in Horizontal guidance H4 followed.

Sniff Testing Reporting Form	
OBSERVATIONS	
Time and date of survey:	
Location of survey:	
Weather conditions (i.e., dry, rain, fog, snow):	
Temperature (very warm, warm, mild, cold or degrees if known):	
Wind strength (none, light, steady, strong, gusting):	
Wind direction (eg from NE):	
Is there a smell? If so, where? (If not then the survey can be concluded)	
What does odour smell like?	
What is intensity of the odour (see below) ?	
What is hedonic Score ?	
What is duration of smell (time)?	
Was smell constant or intermittent during this ?	
Any other comments about the odour ?	
Are there any other complaints relating to the installation, or to that location? (either previously or relating to the same exposure):	
Any other relevant information:	
ACTIONS	
Do you accept that odour likely to be from waste storage activities?	
What was happening on site at the time the odour occurred?	
Operating conditions at time the odour occurred (e.g.): stockpiles present, doors open, source of waste	
Details of any potential off-site sources and contributory factors:	
Actions required:	
Form completed by:	Signed :

See next page for supporting information.

Use these scales to help characterise the odour.

Intensity	**Hedonic Score** (**How would you rank odour?)**
0 No odour	Delicious (score +4, +3) e.g. bread baking
1 Very faint odour	Coffee (score +2, +1)
2 Faint odour	Neutral (score 0, -1) e.g. raw potato
3 Distinct odour	Wet dog (score -2, -3)
4 Strong odour	Foul, nauseating (-4) e.g. landfill gas
5 Very strong odour	
6 Extremely strong odour	Like Extremely (+4), Like Very Much (+3), Like Moderately (+2), Like Slightly (+1), Neither Like nor Dislike (0) Dislike Slightly (-1), Dislike Moderately (-2), Dislike Very Much (-3), Dislike Extremely (-4)

If necessary sketch a plan of where the odour was detected relative to the potential source(s).

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Appendix 2
Odour Complaints Record

Time and date of complaint:	Name, address tel. no. of complainant:

OBSERVATIONS FROM CLAIMANT	
Date and time of odour:	
Location of odour, if not at site:	
Weather conditions (i.e., dry, rain, fog, snow):	
Temperature (very warm, warm, mild, cold or degrees if known):	
Wind strength (none, light, steady, strong, gusting):	
Wind direction (e.g. from NE):	
Complainant's description of odour: What did it smell like? Do you consider this smell offensive? Use hedonic score if possible (see below)	
What was intensity of the odour (see scale below) ?	
What was duration of smell (time)?	
Was smell constant or intermittent in this period:	
Any other comments about the odour?	
Any other relevant information:	
MHPA ACTION	
Do you accept odour likely to be from waste activities?	
What was happening on site at the time?	

Actions taken / required:		
Form completed by MHPA representative	Signed	Date

Intensity	**Hedonic Score** (**How would you rank odour?)**
0 No odour 1 Very faint odour 2 Faint odour 3 Distinct odour 4 Strong odour 5 Very strong odour 6 Extremely strong odour	Delicious (score +4, +3) e.g. bread baking Coffee (score +2, +1) Neutral (score 0, -1) e.g. raw potato Wet dog (score -2, -3) Foul, nauseating (-4) e.g. landfill gas Like Extremely (+4), Like Very Much (+3), Like Moderately (+2), Like Slightly (+1), Neither Like nor Dislike (0) Dislike Slightly (-1), Dislike Moderately (-2), Dislike Very Much (-3), Dislike Extremely (-4)

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