Odour Management Plan

Berwick Farm Landfill

SUEZ Recycling and Recovery UK Limited

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# Introduction

This Odour Management Plan (OMP) has been prepared by SLR Consulting Limited (SLR) on behalf of SUEZ Recycling and Recovery UK Limited (SUEZ) and forms part of the Environmental Permit (EP) variation application for the Berwick Farm Landfill near Bristol, hereafter referred to as ‘the Site’.

The Site is a closed landfill site which is regulated under an existing Environmental Permit, issued by the Environment Agency (EA) under the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

The Site is operated by, and the EP is in the name of Cliffeville Limited (a subsidiary of SUEZ Recycling and Recovery Holdings UK Ltd, referred to from herein as SUEZ).

The EP variation application seeks the addition of a Leachate Treatment Plant (LTP) within the existing footprint of the Berwick Farm Landfill. The LTP would remove dissolved methane from leachate generated by the closed Berwick Farm Landfill.

## Document Scope

It is recognised that activities on Site could lead to release of fugitive odours with the potential to reduce amenity in the local area, therefore control would be implemented to prevent or mitigate these potential odours.

This OMP sets out the potential sources of odour at the Site, control measures to be implemented, and any management and monitoring actions that will be undertaken.

This OMP is intended for use as a reference working document for operational staff on a day-to-day basis. As such, a copy of the OMP will be kept in the Site office and will be available to all employees. An OMP is a ‘live document’, and as such the control measures and management procedures contained within it will be updated on a periodic basis.

## Key Guidance

This OMP has been produced in reference to the following key guidance documents:

* EA, H4 Odour Management guidance[[1]](#footnote-1);
* EA, OMP template[[2]](#footnote-2); and
* Institute of Air Quality Management (IAQM), Guidance on the Assessment of Odour for Planning[[3]](#footnote-3).

# Baseline Environment

## Location

The Site is situated approximately 2.3km south-east of the River Severn in the Hallen area, 640m northwest of Henbury, Bristol, at the approximate National Grid Reference (NGR): x355330, y180720. The Site is set within a semi-rural area land uses and is bounded by:

* Agricultural land to the north and east;
* Agricultural buildings and a small number of isolated residential properties immediately to the west including Boscombe Business Park and Historic Landfill, with the M49 and Bristol & Avon Transport & Recycling Ltd beyond;
* Residential properties of Hallen and Berwick Wood to the south, with the M5 beyond;
* Mixed residential and agricultural areas to the east, with Berwick wood beyond.

The EP boundary and the Site location is illustrated in Figure 2-1 below.

A map of a land with a red line

Description automatically generated

Figure 2‑1: Site Location

## Sensitive Receptors

Receptors in proximity to the Site with a sensitivity to odours have been identified and presented in Table 2-1. The sensitivity of receptors to odours has been determined with reference to the IAQM Odour Guidance. The closest and highest sensitivity receptors in each direction have been identified; this does not represent an exhaustive list.

Table 2‑1: Sensitive Receptors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Receptor Type** | **Sensitivity to Odours** | **Direction from Site Boundary** | **Distance from Permit Boundary (m)** | **Distance from nearest odour source (m)** |
| R1 | Residential | High | SW | 140 | 150 |
| R2 | Residential | High | SW | 260 | 280 |
| R3 | Residential | High | SW | 300 | 315 |
| R4 | Residential | High | SW | 285 | 310 |
| R5 | Residential | High | SW | 330 | 380 |
| R6 | Residential | High | SW | 350 | 385 |
| R7 | Residential | High | E | 85 | 585 |
| R8 | Residential | High | E | 160 | 690 |
| R9 | Residential | High | NE | 410 | 915 |
| R10 | Residential | High | S | 20 | 250 |
| R11 | Commercial | Medium | W | 175 | 485 |
| R12 | Commercial | Medium | W | 150 | 620 |
| R13 | Commercial | Medium | N | 180 | 1105 |
| R14 | Commercial | Medium | NE | 390 | 915 |
| R15 | Commercial | Medium | S | 20 | 360 |
| R16 | Farm | Low | E | 15 | 510 |
| R17 | Footpath | Low | NW, W, S, SE | 5 | 20 |

## Meteorological Conditions

The nearest meteorological recording station is the Filton recording station, located approximately 4km east of the Site. A wind rose of wind speed and direction is presented in Figure 2‑2. Prevailing winds in the Site locale are from the western and southwestern sectors.

A diagram of a wind turbine

Description automatically generated

Figure 2‑2: Filton Meteorological Station Wind Rose (2012-2016 Average)

## Existing Odour Sources

A number of existing odour sources are identified within the Site locale, summarised in Table 2‑2.

Table 2‑2 Existing odour sources and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Existing potential odour source | | Distance from Site (m) | Odour potential | Additional notes |
| Source ID | Source Name |
| EOS1 | Existing site operations | N/A | Intermediate | Existing closed landfill site operations. |
| EOS2 | Hutton & Sons Dairy Farm | E 50m | Intermediate | This is most notable for receptors near the farm. |
| EOS3 | Bristol & Avon Transport & Recycling Ltd | NW 165m | Minor | This is most notable for receptors near the waste management service. |

A map of land with red lines

Description automatically generated

Figure 2‑3 Existing odour sources

# Site Operations

## Proposed LTP Operations

The LTP would entail new activities at the Site, including:

* New surface laid leachate pipework to facilitate transfer of leachate from existing collection sumps to the Methane Stripping Plant (MSP);
* Methane Stripping Plant (MSP).

New surface laid leachate pipework is to be constructed at the site in order to facilitate transfer of leachate from existing collection sumps to the MSP. It is anticipated that the location of the MSP will be sited close to the site entrance, adjacent to the former weighbridge. The new surface laid leachate pipework will deliver leachate from the three existing collection sumps to this location. There is currently no storage facility present at the site.

The MSP process involves the aeration of leachate in a series of aeration tanks to remove dissolved methane from the liquid, followed by transfer into a pumping chamber. Leachate will be discharged from the MSP to sewer under a Trade Effluent Discharge Consent from Wessex Water. There is no change proposed to the existing permitting point source emissions to sewer other than the methane concentration.

There are currently three sewer discharge connections at COL (MH6), COLA (MH7) and Monks Well (MH1). Quantitative leachate monitoring at the sewer discharge connection points is undertaken in accordance with the approved Leachate Management Plan, and the site’s EP. It is anticipated that under normal operating conditions when the MSP is operational the treated effluent from the MSP will discharge at a single location within the Monks Well sump, shown in Drawing 002. Under abnormal conditions such as a power cut, it would not be possible to pump leachate from the collection sumps (COL, and COLA) to the MSP. The system will be safely shut down, and the relevant maintenance team will be deployed. Whilst the leachate treatment system is non-operational, leachate will discharge to sewer at the existing three locations (COL, COLA, and Monks Well) under gravity. There is therefore an operational requirement for SUEZ to retain all existing sewer discharge connection points. Leachate at all discharge points will continue to be monitored in accordance with the Leachate Management Plan and EP.

## Site Layout

Figure 3-1 illustrates the proposed location of the MSP within the existing Site boundary.

See document ‘410.065456.00001\_PROPOSED SITE LAYOUT\_001A’ for onsite source locations.



Figure 3‑1: Site Layout

## Hours of Operation

The MSP will be fully automated and controlled by a SCADA system for 24-hour operation 365 days per year. By extension, the new surface laid leachate pipework to facilitate transfer of leachate from existing collection sumps to the MSP will be operational at the same time.

# Sources, Releases and Potential Impacts

In order to consider the likely significance of effects of potential odours arising from the Site operations upon nearby sensitive receptors it important to consider the following:

* Source: i.e. magnitude of release;
* Pathway: i.e. the prevailing meteorological conditions and distance / direction of receptors in relation to the facility; and
* Receptors: i.e. the sensitivity of receptors to potential odours.

Further details on the source, pathway and receptors are outlined within the sections below.

## Source

The application of good working practices and process control is of fundamental importance in eliminating and minimising the quantities of odours formed on Site and their subsequent release to atmosphere. This section provides an inventory of all potential odour sources under the full range of normal operating conditions.

The overall aim in the operation of the Site is to apply Best Available Techniques (BAT) at all stages of the site operations. For this reason, the Site is operated and managed in accordance with the accepted hierarchy of preferred controls, that is:

1. Prevent the formation or emission of odorous compounds in the first place;
2. Where this is not practicable, minimise the release of odour;
3. Abate excessive emissions; then
4. Dilute any residual odour by effective dispersion in the atmosphere.

Potential odour sources associated with the operation of the Site have been identified in consideration of the Site operations, as outlined in Section 3.0. The key potential odour sources identified at the Site are as follows:

* Aeration tanks.

In consideration of the key odour sources (as identified above) and in adoption of a precautionary approach, the source odour potential of the Site operations is considered ‘low’ after control measures are taken into account. Further details on the specific odour sources identified within each of these stages of the site operations are outlined in the sections below.

### Aeration Tanks

The process of methane stripping involves the aeration of raw leachate in a series of aeration tanks to remove dissolved methane from the liquid. This has the potential to be moderately offensive. These are enclosed sources, with covers and passive ventilation.

## Pathway

The pathway by which odours may impact upon receptor locations is a result of atmospheric dispersion. In general, high wind speeds lead to emitted odour being rapidly dispersed and diluted due to turbulence, and conversely low wind speeds inhibit the dilution of odours.

Prevailing wind directions are considered in assessing the likelihood and management of emission risks. In consideration of the local meteorological conditions presented in Section 2.3, prevailing wind in the Site locale are anticipated to be from the west and southwest. Consequently, the potential impact of emissions is likely to be greater to the north and north-east of the Site.

Low wind speeds (i.e. <5m/s) in the Site locale are anticipated to be frequent (observed for approximately 65% of hours within an average year at the Filton recording station). In consideration of the frequent low wind speeds, the resulting dispersion and dilution of odours is considered to be reduced.

In reference to Section 2.1, nearby sensitive receptors are considered close (6m or more) to the potential odour sources identified.

## Receptor

Potentially sensitive receptor locations for odour are typically defined as locations where people spend time and expect a reasonable level of amenity. Therefore, residential properties are regarded high sensitivity receptors, commercial properties are generally regarded as receptors of medium sensitivity, and public areas (i.e. footpaths, carparks) as low sensitivity.

It should also be considered that there are two potential sources of odour in the Site locale, as outlined in Section 2.4. In consideration of the odorous activities already undertaken in this area, the surrounding receptors might be considered less sensitive than would typically be associated with such uses.

Human receptors considered are shown in Table 2‑1, whilst their locations are illustrated in Figure 2-1. Receptors R1 – R17 are representative of worst-case exposure locations at existing receptors within the development locale and do not represent an exhaustive list. The closest sensitive receptors in each direction surrounding the Site have been identified.

## Significance of Effects

A summary of the likely odour effect on each receptor is summarised in Table 4‑1.

Table 4‑1 Likely odour effect

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Receptor ID | Source odour potential | Pathway effectiveness | Odour exposure | Receptor sensitivity | Likely odour effect |
| R1 | Small | Moderately Effective | Negligible | High | Negligible |
| R2 | Moderately Effective | Negligible | High | Negligible |
| R3 | Ineffective | Negligible | High | Negligible |
| R4 | Ineffective | Negligible | High | Negligible |
| R5 | Ineffective | Negligible | High | Negligible |
| R6 | Ineffective | Negligible | High | Negligible |
| R7 | Ineffective | Negligible | High | Negligible |
| R8 | Ineffective | Negligible | High | Negligible |
| R9 | Ineffective | Negligible | High | Negligible |
| R10 | Highly Effective | Low | High | Slight Adverse |
| R11 | Ineffective | Negligible | Medium | Negligible |
| R12 | Ineffective | Negligible | Medium | Negligible |
| R13 | Ineffective | Negligible | Medium | Negligible |
| R14 | Ineffective | Negligible | Medium | Negligible |
| R15 | Ineffective | Negligible | Medium | Negligible |
| R16 | Ineffective | Negligible | Low | Negligible |
| R17 | Highly Effective | Low | Low | Negligible |

In consideration of the Source-Pathway-Receptor (S-P-R) conceptual model outlined within the IAQM Odour Guidance, the likely odour effect because of potential odours from the Site operations is considered to be at worst ‘slight adverse’ (at R10). It can be inferred that receptors located at a greater separation distance (and/or not directly downwind of the Site) would observe a lesser effect.

Taking into consideration that the low wind speeds (i.e. <5m/s) in the Site locale are anticipated to be frequent (approximately 65% of hours within an average year), the resulting dispersion and dilution of odours is reduced. Taking this into account, the likely odour effect on all local receptors may be considered ‘negligible’.

As such the resulting significance of effects at nearby sensitive receptors because of the Site operations is considered ‘not significant’.

A range of odour control measures are proposed to ensure potential odours from the Site operations remain negligible.

# Control Measures and Process Monitoring

A full list of the Best Available Techniques measures to be adopted are presented within document ‘410.065456.00001 Berwick Farm BATOT V1’. The key odour control measures to be employed at the Site are summarised in Table 5-1 below.

Table 5‑1: Appropriate Techniques / BAT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Process / Material | Control Measures | Monitoring Frequency | Monitoring Procedure and Optimum Process Parameters | Trigger level |
| Aeration Tanks | Covers – these provide a level of containment of fugitive odours | Refer to operator manual | Visual inspection of covers, noting any damage or fugitive leaks (other than ventilation).  Where damage, defects or potential leaks are identified, these are to be investigated and remediated as a priority. | Identification of defects |
| Ensure the effective operation of the aeration plant | Refer to operator manual | Regular visual inspections to the plant (i.e. to identify blockages or where maintenance is required). | Identification of defects |
| Dosing of chemicals to mitigate the formation of odorous compounds | Reactive measure to be undertaken where required | Not routinely undertaken, unless this is identified to be required. | Receipt of substantiated odour complaints |

# Monitoring and Maintenance

Monitoring of process controls, odour containment, odorous releases, and dispersion pathways are as described in the sections below.

## Monitoring of Ambient Odours

Monitoring ambient odour provides a broad indication of the effectiveness of the odour management, i.e. odour minimisation, containment, treatment and dispersion. This is a reactive process and should be considered as a final indicator of odour control effectiveness.

The assessment is “sensory” in that the human noise is used as the detector – a sound approach considering that no analytical instrument can give a unified measure of a complex mixture of compounds in the same way that a human experiences odour.

Olfactory monitoring will be carried out by site operatives whenever present on site. Should abnormal odour be detected, a sniff-test will be employed.

Sniff testing will also be employed for the following reasons:

* As part of a routine monitoring at the Site boundary during normal operations in accordance with Suez’s IMS, to ensure odour is not escaping the boundary;
* During periods of adverse meteorological conditions, breakdowns or during other abnormal events to evaluate the effectiveness of the control measures in place and the likelihood that odour complaints will be received; and
* In the event that complaints are received, at the locations of sensitive receptors as part of a complaint investigation procedure.

‘Sniff-tests’ will follow the procedure detailed within Appendix C as set out within the H4 Odour Guidance and will be undertaken periodically if odour complaints are received. Any abnormal monitoring will be recorded in the site diary.

## Control Measures during Routine Maintenance

During necessary maintenance works, there is the potential that the facility is more vulnerable or a risk of a small odour release.

During maintenance periods continuous olfactory monitoring will be carried out by site operatives when on site. Any abnormal monitoring will be recorded in the site diary.

## Monitoring Meteorological Conditions

If odour complaints are received the Site Manager or other designated responsible person will record daily weather conditions in the Site Diary from online data sources (i.e. local forecast), including wind direction, wind speeds and ambient temperatures.

The recording of meteorological data can also be an effective management tool when used for the following:

* During routine operations, to plan where boundary monitoring should be focussed to assess odour impacts;
* At the time of abnormal events (i.e. breakdown) to predict where odour impacts could potentially occur; and
* In the investigation of odour complaints or to verify community observations.

## Recording of Results and Reporting

Daily records are maintained and include the following details (where applicable)

* Results of inspections and any olfactory monitoring carried out by site personnel;
* Operational problems including date, time, duration, and cause of problem;
* Complaints received including address (if available); and
* Details of corrective actions taken and any subsequent changes to operational procedures.

The sniff-tests undertaken will be made on the Odour Monitoring Form presented in Appendix A which will be filed and kept on site for inspection by the EA as and when required.

In the event that odour is detected at the Site boundary, this will be noted in the Site diary and the Site Manager (or any appointed representative) will be informed to allow for appropriate steps to be taken to mitigate the odour.

## Notifying the Environment Agency

In the event that an accident or incident occurs, the Operator will notify the EA as soon as practicably possible using the emergency 24hr phone line (0800 807060). The Site Manager for the facility will also notify the Regulatory Officer should any complaints be received directly to the Site and advise what remedial measures have been undertaken. Copies of any complaints will be made available for EA to review.

# Contingencies

In accordance with H4 Odour Guidance on OMPs, where observations indicate odour pollution is occurring (i.e. monitoring indicates that a potential odour source is not completely under control, or that adverse impact has occurred) the operator will be required to take appropriate contingency measures.

This includes accidents (or incidents) which would result in the loss of control of odorous substances and have the potential to cause an unacceptable short-term impact on the local community but are not considered an emergency situation.

## Foreseeable Events

Table 7-1 below outlines some of the foreseeable ‘abnormal events’ which might occur at the Site and the associated contingencies and recovery steps to address these events.

Table 7‑1: Foreseeable Events

|  |  |
| --- | --- |
| Abnormal event | Recovery steps |
| Plant Failure | Under normal operating conditions treated leachate will be discharged to sewer at a single location within the Monks Well Sump on Site, under an existing permitted point source emission to sewer. There is no change proposed to the existing permitted point source emissions to sewer other than the methane concentration.  Under abnormal conditions such as if there is a failure within the MSP, which prevents the treatment of leachate, the system will be safely shut down and operations will cease. The relevant maintenance team will be deployed.  The leachate treatment system will undergo a programme of routine servicing and maintenance in line with manufacturer’s recommendations as well as forming part of the regular on-site inspection regime. All maintenance issues will be dealt with as soon as possible to prevent downtime and the accumulation of leachate. |
| Flood | Widespread flooding may prevent access to site. The MSP will be designed to be fit for purpose given its’ location within a Flood Zone 3. It will be surrounded by bunding to ensure flood resilience. Measures will be taken to ensure continuing function or mitigation measures for disrupted operations of the MSP. |
| Staff Shortage | If long-term staff shortage (or a prolonged and widespread period of staff absence) occurs the operators will take steps to ensure the continuing function of the new surface laid leachate pipework and MSP. |
| Fire | A fire would be handled in accordance with the Site’s Accident Management Plan. The key principles are prompt responses that contain the fire and attempt to extinguish it, minimise damage to containment and mitigation infrastructure. The EA would be informed of any such occurrence and local residents informed. |
| Loss of Containment | Loss of containment could lead to spillage and leakage of potentially contaminating liquids. The BATOT document contains the location and storage arrangement of all potentially contaminating liquids on site.  To prevent loss of containment and minimise the risk and impact of releases, the following measures will be implemented:   * Storage vessels: storage tanks/vessels will be constructed to the appropriate British Standard (where applicable) or to an appropriate standard in line with industry practice; * Inspection: tanks/vessels will be inspected visually on a regular basis by the Site staff to ensure the continued integrity of the tanks/vessels, and identify the requirement for any remedial action; * Spill kits: materials suitable for absorbing and containing minor spillages will be maintained on site. Spill kit levels will be subject to regular inspection. * Monitoring techniques: Site staff will undertake regular monitoring for evidence of spillage and leakage; and * Pipework will be placed above ground.   In the event of any potentially polluting leak or spillage occurring on Site, the following action will be taken:   * Minor spillages will be cleaned up immediately, using sand or proprietary absorbent. The resultant materials will be placed into containers and will then be removed from Site and disposed of at a suitably permitted facility. The incident will be logged in the site diary. * In the event of a major spillage, which is causing or is likely to cause polluting emissions to the environment, immediate action will be taken to contain the spillage and prevent liquid from entering surface water or drains. The spillage will be cleared immediately and placed in containers for off Site disposal, and the EA will be informed.   The leachate treatment system will be purpose built. All tanks associated with the plant will be sited within bunding. Bunding (with a capacity at least 110% of the largest vessel or 25% of the total tankage volume, whichever is the greater) will be provided to contain a spillage and prevent the release of leachate from the Site. |
| Security and Vandalism | The Site will have a number of security measures in place to limit the likelihood of vandalism including:   * Mixture of fencing and hedgerow around the perimeter of the landfill site which the leachate treatment facility is contained within. In addition, the MSP will be surrounded by its own security fencing; * Security gating which is locked outside of operational hours; * Inspection and maintenance procedures; and * Visitors will be by appointment only and logged on arrival at the site by the site manager or technically competent person. All visitors are accompanied by a member of staff for the duration of their visit.   In the event of a breach of security at the Site, the cause will be investigated, and appropriate mitigation measures implemented. This will be recorded in the online diary/application. Records maintained will include, breaches of security, investigations and actions taken. |

In the event of Site emergency, an assessment will be made to determine whether the incident has the potential for off-Site environmental impacts and the Assistant Regional Manager will be notified in line with the categorisation criteria without delay and the Site’s Incident Response Plan will be followed.

## Detection of Odour in Response to Received Complaints

Where odour complaints are received, olfactory surveys will be undertaken (as detailed in Appendix C) and the likely source or sources of odours identified by determining the sources of greatest odour intensity. Contingency actions would then be implemented as identified above. All information regarding action taken shall be recorded on the external odour assessment form (Appendix A).

The olfactory surveys will be repeated on consecutive days after initiation of corrective actions, until odour has reduced to an acceptable level and odour complaints are no longer received.

The EA will be informed in line with Permit requirements.

## Out of Hours Contact Details

An Emergency Duty Standby Number is available which will always be answered in the event of an emergency.

## Receipt of an Odour Complaint

### Complaint Logging

All complaints will be recorded on an Odour Complaint Form such as that presented in Appendix B and reported in accordance with the Site Permit. Information that will be recorded will include the following:

* Date and time of odour complaint and odour detection;
* Location / address of complainant (where provided); and
* A description of the odour from the complainant (where provided).

Following an odour complaint, a trained member of staff will undertake an olfactory survey (as detailed in Appendix C), recording the results on an Odour Monitoring Form (see Appendix A). If an odour is encountered during the survey (which would reasonably be linked to the Site operations), the source will be investigated by site management and the outcome recorded.

Investigations will include the likely source and cause of the odour and a review of the meteorological data. Suitable remedial action will be instigated, where required. The complainant will be informed of any action taken and all actions will be recorded.

Should no odour be observed, a record of the monitoring survey will be made, the meteorological conditions checked, a report would be provided to the EA and suitable feedback provided to the complainant.

### Complaint Investigation

The following actions will be taken upon receipt of an odour complaint:

1. The Site Manager (or any appointed representative) will be informed of the odour complaint as soon as possible, including the location, time and date (if reported) of the complaint being lodged;
2. The Site Manager (or any appointed representative) will undertake the following assessment process:

* review of the site operations prior to and at the time of the complaint to include:
  + if any abnormal operating conditions occurring;
  + if any accidents or incidents requiring contingency actions were being undertaken; and
  + if any emergency situations existed at the time.
* review of the meteorological conditions (wind speed and direction) prior to and at the time of the complaint, to establish whether a pathway can be established between the site and the complainant; and
* review the previous history of complaints at the location identified.

1. The Site Manager (or appointed representative) will visit the complaint location as soon as is possible in order to subjectively determine odour presence / absence. If an odour is determined to be present, odour characteristics and intensity would be determined (in accordance with the procedure detailed in Appendix C) and a complaint form completed (see Appendix B).
2. The EA will be informed in line with Permit requirements.

# Document Updates and Reviews / Management

## Odour Management Plan Review

This OMP is a controlled document, and forms part of the EMS. A comprehensive record of the results of the monitoring and inspection programme contained within this OMP will also form part of the EMS.

Responsible staff and general procedures for training and competency of staff working on the MSP process will be overseen by the Site Manager (or appointed representative).

The specification for the periodic review and update of the OMP will be set out within the Site Management System. In line with the recommendations of the H4 Odour Guidance, this will take place on an annual basis, as a minimum, and formally recorded.

However, the OMP is intended to be a live document which serves as a reference during daily operations, and as such would be updated on a more frequent basis should the following occur:

* Significant changes are made to the plant or operational practices;
* There is a change to the management structure, designation of responsibility or training provision;
* The EA requests that the OMP is updated, in their role as regulator; or
* Complaints are received, which on subsequent investigation result in the identification of further control measures or remedial action, in addition to those set out within this OMP.

1. Odour Assessment Form

Odour Management Plan

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Odour Assessment Form** | | | | | | | | | | | |
| Person Undertaking Survey (& Position) | | | | | | |  | | | | |
| Date: | | |  | | | | Time: | | | |  |
| Description of Wind Strength (i.e. strong, gusty) | | | | | | |  | | | | |
| Wind Direction | | | | | | |  | | | | |
| Weather description (i.e. sunny, overcast) | | | | | | |  | | | | |
| Temperature (°C) | | | | | | |  | | | | |
| **Survey Results** | | | | | | | | | | | |
| **Location** | **Intensity (1-6)**  **(see below)** | | | | | **Persistence (A-E)**  **(see below)** | | | | **Odour Character (i.e. leachate odour)** | |
| Northern boundary |  | | | | |  | | | |  | |
| Eastern boundary |  | | | | |  | | | |  | |
| Southern Boundary |  | | | | |  | | | |  | |
| Western Boundary |  | | | | |  | | | |  | |
| Closest Property |  | | | | |  | | | |  | |
| If odour is strong / persistent additional information to be detailed below | | | | | | | | | | | |
| **Intensity** | | | | | | | | | | | |
| 1 | | No detectable odour | | | | | | | | | |
| 2 | | Faint odour (barely noticeable) | | | | | | | | | |
| 3 | | Moderate odour (odour easily detected) | | | | | | | | | |
| 4 | | Strong odour (bearable but offensive) | | | | | | | | | |
| 5 | | Very strong odour (instinct to walk away) | | | | | | | | | |
| 6 | | Extremely strong odour highly likely to cause annoyance (May induce nausea) | | | | | | | | | |
| **Persistence** | | | | | | | | | | | |
| A | | | | | Occasional | | | Less than 10% of the time | | | |
| B | | | | | Intermittent | | | 10-30% of the time | | | |
| C | | | | | Frequent | | | 30-50% of the time | | | |
| D | | | | | Persistent | | | 50-75% of the time | | | |
| E | | | | | Constant | | | >75% of the time | | | |
| **Further Actions** | | | | | | | | | | | |
| If during the survey the odour is strong or persistent at any location on the site boundary, the following information requires completion regarding plant operation. | | | | | | | | | | | |
| Containment | | | | Has any loss of containment occurred on site? | | | | |  | | |
| If yes, what procedures are being followed? | | | | |  | | |

1. Odour Complaints Reporting Form

Odour Management Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Odour Complaints Reporting Form** | | | | |
| **Installation to which complaint relates:** | | **Date recorded:** | | **Ref No:** |
| Name and address of caller: | |  | | |
| Tel No. of caller: | |  | | |
| Location of caller in relation to installation: | |  | | |
| Time and date of complaint: | |  | | |
| Date, time and duration of offending odour: | |  | | |
| Caller’s description of odour, e.g. comparison with other odours, strong/weak, continuous, fluctuating: | |  | | |
| Has the caller any other comments about the offending odour? | |  | | |
| Weather conditions (e.g. dry, rain fog, snow): | |  | | |
| Wind strength and direction (e.g. light, steady, strong, gusting): | |  | | |
| Any previous complaints relating to this odour? | |  | | |
| Any other relevant information: | |  | | |
| Potential odour sources that could give rise to the complaint: | |  | | |
| Operating conditions at the time offending odour occurred – e.g. any loss of containment, abnormal meteorological conditions, for example | |  | | |
| **Follow up**  Date and time caller contacted: | |  | | |
| Action taken: | |  | | |
| Amendment required to Odour Management Plan (Y/N, if Y provide details) | |  | | |
| Form completed by: |  | Signed: |  | |

1. Odour Survey Methodology

Odour Management Plan

The exact locations for offsite monitoring are selected based on the prevailing wind direction on the day of monitoring, and in consideration of the proximity of operations to sensitive receptors.

The monitoring will be extended to the surrounding locality if odour likely to cause annoyance is detected at the Site boundary.

At each location observations shall be made concerning odour intensity, persistence and character, time, date, weather conditions and any ‘abnormal’ site operating conditions at the time of the survey. Surveys shall be carried out in accordance with the monitoring protocol contained within the H4 Odour Guidance.

The odour assessor should not be subject to significant site odour in the 30-minutes prior to the assessment. This is to ensure that monitors are not suffering from odour fatigue and will be sensitive to site odours. Furthermore, the following exclusions shall apply:

* staff members that are regularly exposed to site odours for longer than 30-minutes; and
* any staff members known or suspected of having a poor sense of smell should not be used for odour monitoring routinely.

The inspections shall be undertaken as follows:

1. The person should walk slowly and breathe normally and begin their assessment at areas of expected low odour concentration, i.e. upwind of the site, and should move to areas of high odour concentration. If odour is detected while walking, the intensity should be recorded as at least 3 (distinct), or higher.
2. If an odour cannot be detected whilst walking, the person should periodically stand still and inhale deeply facing upwind. If odour is then detected, but can only be detected in this manner, the odour ‘intensity’ should be recorded as 1 (very faint) or 2 (faint).
3. Following detection of any odour of intensity 3 or above at the Site boundary during an odour inspection, the following measures will be taken:

* the olfactory survey will deviate to determine the extent of plume downwind (at or above an intensity level 3) and at potential receptors affected. Contingency measures will be followed; and
* an on-site inspection shall be carried out seeking to trace any observed odour back to source so that the appropriate corrective and/or preventative action can be taken (with regard to Contingency Measures).

On-site inspections would be undertaken by continuing the olfactory survey methodology onto the site in an attempt to identify the likely source of the odours detected.

The Site Manager (or any appointed representative) shall be notified immediately of any detected odours that are considered to have the potential to give rise to significant off-site odour impact (intensity 3 at a receptor location).

1. Environment Agency (March 2011) *H4 Odour Management: How to comply with your environmental permit*. [↑](#footnote-ref-1)
2. Environment Agency (July 2023) *Odour Management Plan Template*, v2. [↑](#footnote-ref-2)
3. IAQM (July 2018) *Guidance on the Assessment of Odour for Planning*. [↑](#footnote-ref-3)