For Denbighshire County Council

Colomendy Waste Transfer Station Odour Management Plan

Report for Denbighshire County Council

Project code: CCP102-194
Research date: May 2022 – January 2023 **Date:** January 2023

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Document reference (please use this reference when citing WRAP's work):
[WRAP, 2023, Denbighshire CC, Colomendy WTS Odour Management Plan, Prepared by Eunomia Research & Consulting Ltd]

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Front cover photography: Denbighshire Council Logo, Eunomia Logo

Version Control Table

Version	Date	Author	Description
V0.1	14/06/2022	Rebecca Southall	First draft (internal)
V0.2	23/06/2022	Rebecca Southall	Second draft (internal)
V0.3	27/06/2022	Rebecca Southall	Amends following SC review
V1.0	28/06/2022	Laura Williams	First draft (issued to client)
V1.1	07/07/2022	Rebecca Southall	Amends following Client feedback
V1.2	14/07/2022	Rebecca Southall	Third draft (internal)
V1.3	24/11/2022	Rebecca Southall	Fourth draft following site layout updates (Internal)
V1.4	04/01/2023	Rebecca Southall	Updates following Client review
V2.0	11/01/2023	Rebecca Southall	Second draft (issued to client)
V2.1	18/08/2023	Rebecca Southall	Updates following NRW RFI
V3.0	01/09/2023	Rebecca Southall	Third draft (issued to client)

Acknowledgements

Our thanks to WRAP and Denbighshire County Council for providing the necessary information to complete this document.

Contents

1.0 Introduction

This odour management plan (OMP) has been compiled for Denbighshire County Council's (DCC) Colomendy waste transfer station (WTS) 'the site'. This document, which will form part of the site's management system, has been produced in accordance with Natural Resources Wales (NRW) guidance of 'How to Comply with your Environment Permit'[1], the Environment Agency's (EA's) H4 Odour Management guidance[2], and to supplement the site's Environment Risk Assessment.

The objective of this OMP is to identify and minimise the risks of odour emissions from the site activities and to describe the appropriate measures that are in place to prevent or, where that is not practicable, to minimise the presence of odour which is likely to cause pollution, hazard or annoyance outside the boundary of the site.

Other aspects that this OMP will cover include:

- Monitoring;
- Actions plans in the event of odour emissions;
- Allocation of responsibilities; and
- Review schedule for assessing effectiveness of the measures within this plan.

2.0 Site Background

2.1 Introduction

The site is operated by DCC, who are the permit holder. The site operates as a waste transfer station and depot, accepting a range of material streams from local residents and from small commercial waste operators for processing (sorting and baling), as well as highways material. The site is permitted to accept up to 55,000 tonnes of material per year; a daily throughput limit of 212 tonnes.

2.2 Site Setting

The WTS is situated on Colomendy industrial estate located off the Ffordd Y Graig Road in Denbigh. The site is on an industrial estate situated between farmland to the north and east, commercial premises to the south-east and south, and an aggregate quarry to the west. Beyond the commercial premise to the south and southeast, there are residential properties within 1km, whilst to the west (and within 1km), woodland surrounds the quarry, including two Sites of Special Scientific Interest (SSSI) within 2km.

2.3 Site Layout

The layout of the site is shown in Figure 2-1.

2.4 Operating Times

The site operating times are:

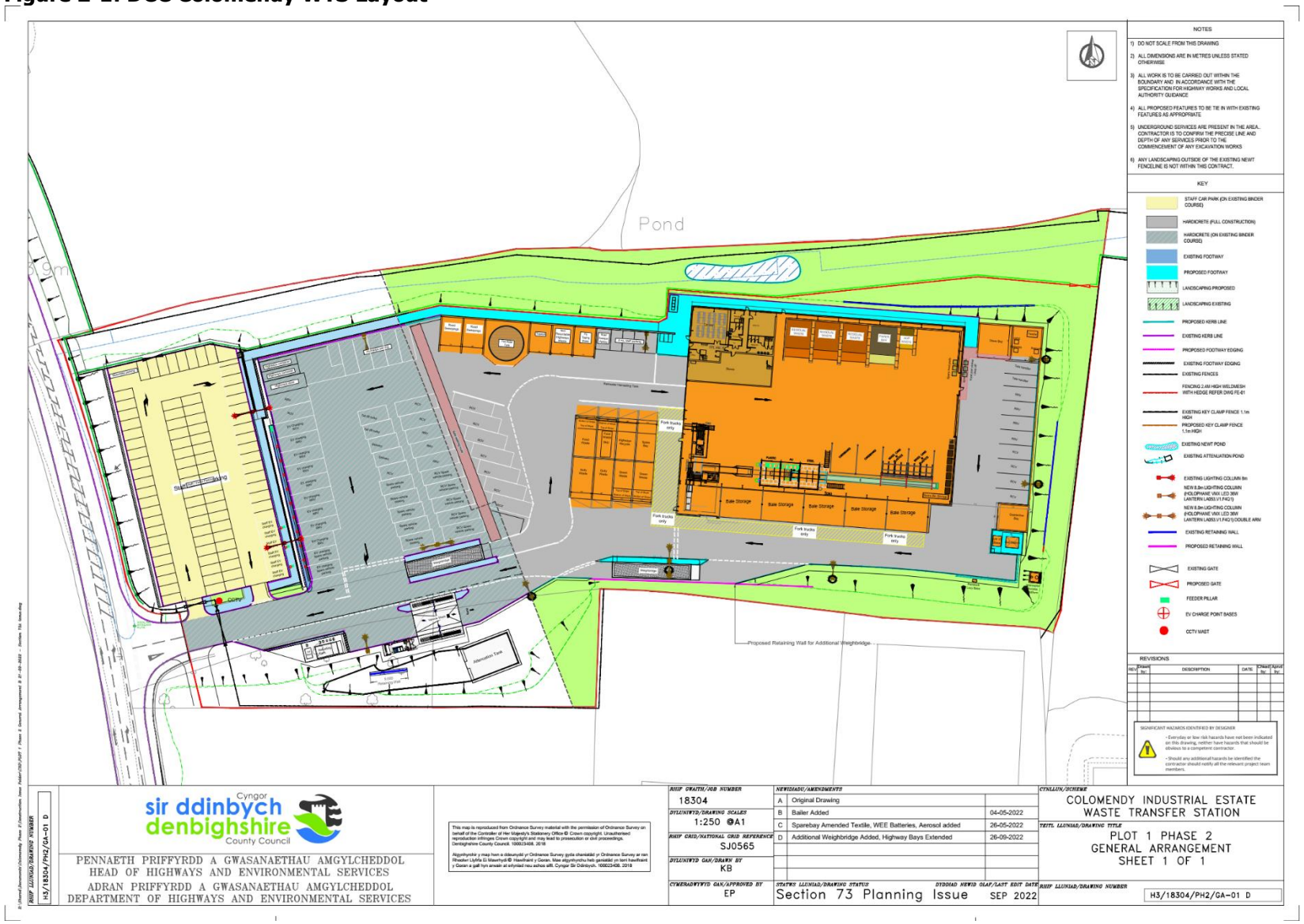
- Monday - Saturday 06:00 - 19:00
- Sunday 09:00 - 16:00

No operations take place on Christmas and New Year's Day.

[1] https://naturalresources.wales/permits-and-permissions/environmental-permits/guidance-to-help-you-comply-with-your-environmental-permit/?lang=en (last accessed 23/06/2022)

[2] https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management (last accessed 23/06/2022)

Figure 2-1: DCC Colomendy WTS Layout



The working area of the site has impermeable surfacing and is accessed via a gate to the south west of site, from Graig Road. The site comprises of:

- The main waste transfer building, containing:
  - Bays for residual waste, paper, absorbent hygiene products (AHP), cardboard, mixed metals and plastics and sorted metals and plastics;
  - A sorting line;
  - Two balers; and
  - Office and welfare facilities.
- Secondary sheds containing:
  - Gully waste, recyclable highways waste and green waste bays;
  - Food waste sealed skip area;
  - Vehicle wash; and
  - Bale storage.
- In addition to the waste mentioned above, there are external bays for glass, spare materials, fly-tipped waste, topsoil, non-recyclable highways waste, a covered bay for road sweepings, containers for textiles, Waste Electrical and Electronic Equipment (WEEE), batteries and aerosols and a dedicated quarantine bay.
- The site has two weighbridges.
- The main building and external shed contains a dust and odour suppression system.
- There is parking for waste fleet vehicles and separate staff parking.
- To the north of the site is a firewater supply tank.

2.5 Waste Activities

Activities that take place on site include:

- Loading and unloading of waste material;
- Sorting;
- Baling; and
- Storage.

Waste operation name	Description of the waste operation	Annex I or Annex II (disposal and recovery) codes
Colomendy Waste Transfer Station	Transfer of waste: household commercial and industrial Transfer of waste: hazardous	**R3:** Recycling/reclamation of organic substances which are not used as solvents **R4:** Recycling/reclamation of metals and metal compounds **R5**: Recycling/reclamation of other inorganic materials **R13:** Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) **D9:** Physico-chemical treatment not specified elsewhere in Annex II which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12 **D14:** Repackaging prior to submission to any of the operations D1 to 13 **D15:** Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)

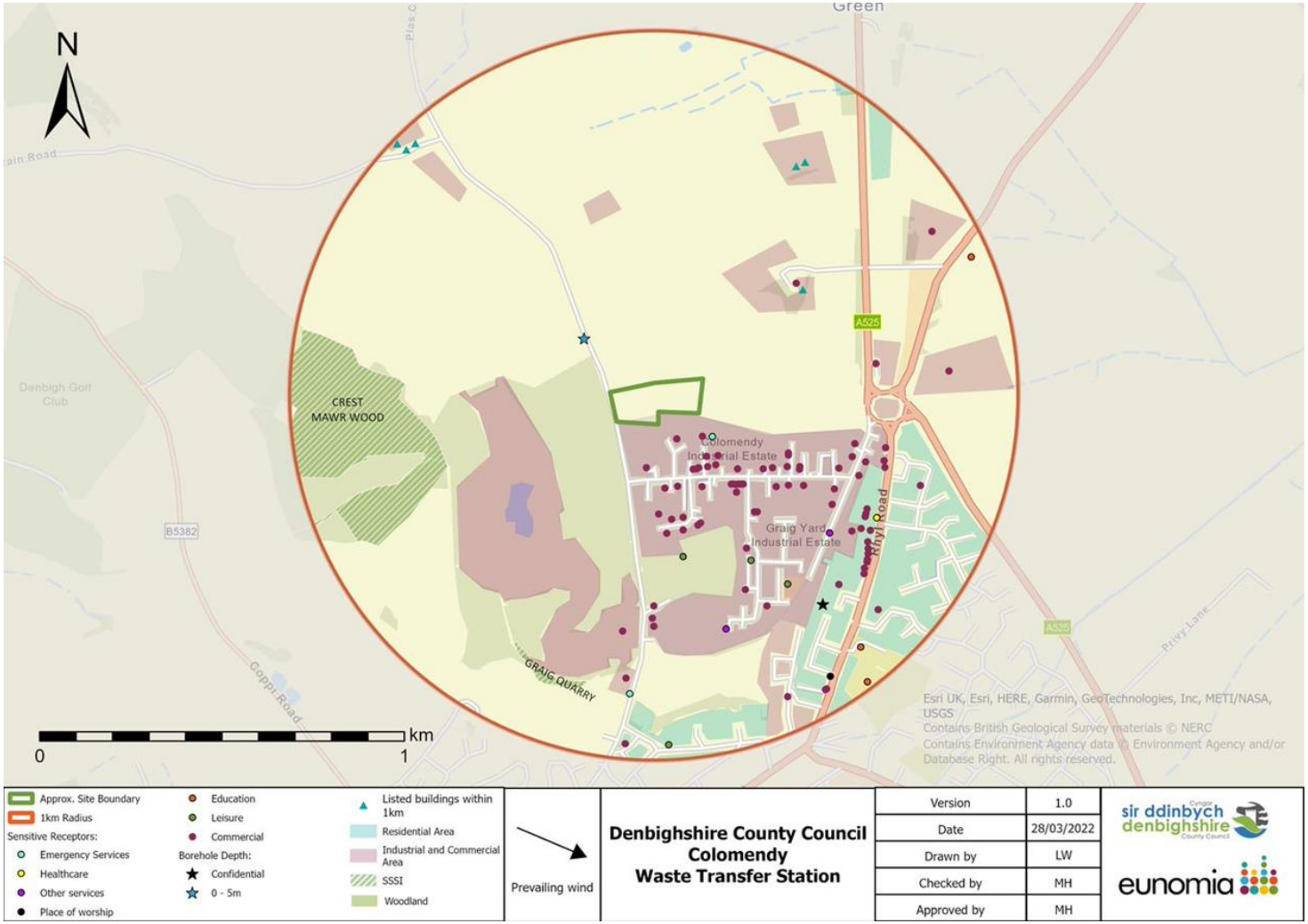
3.0 Sensitive Receptors

A map of the sensitive receptors within 1km of the site is detailed in Figure 3-1. The sensitive receptors that are most likely to be affected by an odour emission incident have been identified. These receptors may need to be contacted during an incident with updates on the expected duration. The contact details for these receptors can be found in the appendix.

In the event of a significant odour emission incident, DCC will use its website and social media channels to communicate information with sensitive receptors throughout the borough. DCC officers may also visit adjacent or high risk sensitive receptors to deliver the message in person.

The potential impact on these receptors is also assessed within a separate Environmental Risk Assessment which forms part of the site's management system.

Figure 3-1: Surrounding Land-use and Sensitive Receptors within 1km of the Site[3]



[3] *There are no other SSSIs within 2km other than those shown in this 1km boundary*

4.0 Potential Odour Sources

An odour impact assessment was carried out at the nearest sensitive receptors to the site using appropriate measurement equipment, using the Source-Pathway-Receptor (S-P-R) Framework approach, a standard approach for assessing qualitative risk, as recommended by the Institute of Air Quality (IAQM) 2018 odour assessment guidance[4]. Based on this odour impact assessment, operation from the development is likely to have a medium odour source potential and potentially high receptor sensitivity. However, the pathway effectiveness (likelihood of transmitting the odours to the receptors) is deemed ineffective. The overall impact during the operational daytime periods at the nearest odour sensitive receptors is expected to be low, or 'not significant'.

It is therefore not anticipated that odour emissions would be excessive or a cause for pollution or nuisance under normal conditions, with appropriate measures in place.

A copy of the odour impact assessment can be found in the site's environmental management system.

4.1 Identification of Sources

Sources of odour at site include:

- Acceptance and storage of odorous waste streams, including:
    - Food waste
    - AHP
    - Garden waste
    - Residual waste

4.2 Preventative and Control Measures - Normal Conditions

Appropriate measures will be taken in order to minimise the odour emissions from the site, following the EA's 'H4 Odour Management' guidance.

4.2.1 Acceptance and storage of odorous waste streams

A full waste acceptance procedure is in place as part of the site's EMS. All vehicles bringing waste material to the site will be purpose-built vehicles that are regularly cleaned and maintained. The majority of waste accepted at the site will be from household kerbside collections via the Local Authority's weekly waste collection service, therefore is unlikely to be aged to the point of putrescence due to the regular collections. Should, for any reason, regular collections be unable to take place, agency staff can be arranged within 72 hours. Waste collection crews receive ongoing supervision and training to identify waste streams at the kerbside that may be odorous. Wastes that are deemed by operatives, via olfactory monitoring (sniff tests), to be highly odorous or otherwise unacceptable will not be collected and the householder will be notified.

By their nature, some of the wastes accepted at site will be odorous and prone to putrescence, such as residual, garden, food and AHP waste. Under normal circumstances, these wastes are collected from source and delivered to site within a small timeframe and are not stored on site for longer than a week before being removed, therefore they should not have adequate time to become putrid- the waste streams associated with the highest odour potential will be either containerised or stored indoors. All loads received at site are inspected and site operatives carry out olfactory monitoring (sniff tests) to determine if the

[4] https://iaqm.co.uk/guidance/ (last accessed 23/06/2022)

waste is odorous. Wastes that arrive at site that are putrid or have been stored for long periods before arriving at site will be rejected.

Odorous wastes will be stored in sealed containers or in designated bays within the waste transfer building. The building has fast-closing roller shutter doors and a ventilation system to minimise the escape of odours from the waste streams stored within. The doors to the building will only be opened to allow vehicle access. In addition to the measures listed above, the site has a dust and odour suppression system is in place in the main building and external sheds to help with odour control for wastes that are inherently more odorous (i.e. residual waste, food waste, AHP). The system uses a water based, scented, odour suppressant which is added at a low dosage to the misting jets. Under normal conditions, periodically through the day, the jets will activate creating a light fog. The timing and interval period of the system being activated can be adjusted to suit the odorous conditions as monitored through daily checks.

Odorous wastes will be stored on site for a maximum of 3 days under normal circumstances.

Drainage channels that accept runoff from bays containing odorous wastes will be regularly inspected and cleaned to avoid odour from stagnating water or waste residues.

4.2.2 Food Waste

Food waste is putrescible and therefore potentially highly odorous. The unpleasantness of the odour depends on the contents of the food waste, presence of anaerobic conditions and the degree of decomposition. Food waste will be delivered to the site in RRVs and stored within sealed containers. These containers prevent exposure to sunlight and airflow, minimising evaporation and odour release. The food waste containers will be closed when they are not in use.

Food waste will be stored on site for 24 hours under normal circumstances. Tipping areas will be swept and washed down once cleared to minimise the waste residues that could cause odour. A maximum of 50 tonnes of food waste will be stored at any time under normal circumstances.

4.2.3 AHP

AHP waste is comprised of nappies and sanitary products and is highly odorous. This waste will be collected in bags which provides a level of containment of the odour. The waste is stored in a sealed container in the designated bay within the waste transfer building, where is it stored for up to 3 days under normal circumstances, before being removed for further treatment. AHP waste is not treated on site and the bags are not opened. Tipping areas and containers will be washed down once cleared to minimise the waste residues that could cause odour. A maximum of 35 tonnes of AHP waste will be stored at any time under normal circumstances .

4.2.4 Garden Waste

Garden waste has the potential to become odorous once decomposition occurs. Garden waste will be deposited in an external covered bay. Under normal circumstances, garden waste is stored on site for up to 3 days. In this timeframe, it is highly unlikely that decomposition will have a chance to occur and therefore the risk of this waste becoming odorous is low under normal circumstances. A maximum of 50 tonnes of garden waste will be stored at any time under normal circumstances.

4.2.5 Residual Waste

Residual waste is general household black bag waste and is potentially highly odorous and putrescent. This waste will be stored within the waste transfer building for no more than 2

days under normal circumstances. Residual waste will not be treated on-site and will remain within the bags, reducing the potential for odour release. Tipping areas will be swept and washed down once cleared to minimise the waste residues that could cause odour. A maximum of 75 tonnes of residual waste will be stored at any time under normal circumstances.

4.3 Preventative and Control Measures - Abnormal Conditions

4.3.1 General Procedure

In the event that significant odour is observed on site, or in the event that significant levels of odour are observed outside the site boundary, action will be taken. Firstly, the source of the odour will be identified. Depending on the severity of the odour, the odorous activity will either be reduced, altered or stopped until circumstances have changed, or other appropriate measures have been put in place (e.g. waste moved to a sealed container). The odour suppression system will be manually activated to aid in neutralising any lingering odour, but the source of the odour should still be dealt with as per procedure.
Should waste be unable to be dealt with during the proposed timescales above, contingency plans will be put in place as appropriate, e.g. diverting wastes to another facility:

- Green waste will be direct delivered to Greenfields site in Flintshire.
- Other waste will be diverted to the waste facilities in neighbouring councils of:
    - Conwy Council – Gofer WTS, Abergele LL22 9SE, Recycling
    - Thorncliffes WTS - Abergele LL22 9SE, Residual
      Flintshire Council-Parc Adfer, 4 Weighbridge Rd, Deeside CH5 2LL, Residual

Abnormal conditions that may arise include:

- Machinery breakdown;
- Weather conditions; and
- An incident on site.

4.3.2 Machinery Breakdown

All plant and machinery sourced will be appropriately designed, well-maintained and subject to a maintenance/ servicing schedule to prevent odour arising from waste backlog due to malfunctioning plant or machinery. Should an item of machinery breakdown, the machinery will be switched off, isolated and corrective action taken. The machinery will not be used until repairs have been carried out. This will be within 72 hours under normal circumstances. If the plant cannot be repaired within this timeframe, additional plant may be hired to cover. Depending on the nature of the fault, the item of plant or machinery may be replaced or subject to increased maintenance or servicing to prevent reoccurrence.

In the event that machinery breakdown is prolonged and potentially odorous waste is likely to accumulate beyond the normal storage times, contingency plans will be put in place as appropriate, e.g. diverting wastes to another facility, as listed above.

4.3.3 Weather Conditions

The site buildings will have adequate ventilation systems to prevent the need to open windows or doors in hot weather. The weather forecast will be monitored daily by site management using the local weather forecast from the nearest weather station and the frequency of olfactory monitoring (see Section 5.1) adjusted accordingly, with more frequent monitoring on hotter days and hourly monitoring if temperature exceeds 30°C. In addition, the number of collections of potentially odorous waste will be increased on these days to minimise the risk of stagnation and accelerated decomposition of waste such as food or garden waste that can be caused by increased temperatures. If odour emissions are detected, the source of the odour will be isolated for removal off site, as detailed above. Odour suppression system is operational intermittently independent of weather conditions.

4.3.4 Abnormal Load

Should an excessively odorous load, defined as likely to cause offense or complaint when subjected to olfactory monitoring (sniff test), be accepted or identified on site, the offending material will be rejected. If the odorous material has already been deposited, it will be moved to a sealed skip or container in the quarantine area, if safe to do so, prior to removal off site within 72 hours.

4.3.5 Other Incidents

Should an incident occur on site that is likely to cause or contribute to odour pollution, e.g. a failure in waste containment, the sensitive receptors will be notified of the cause and expected duration, if appropriate, following the procedures in the site management system and Operating Techniques.

5.0 Monitoring and Responsibilities

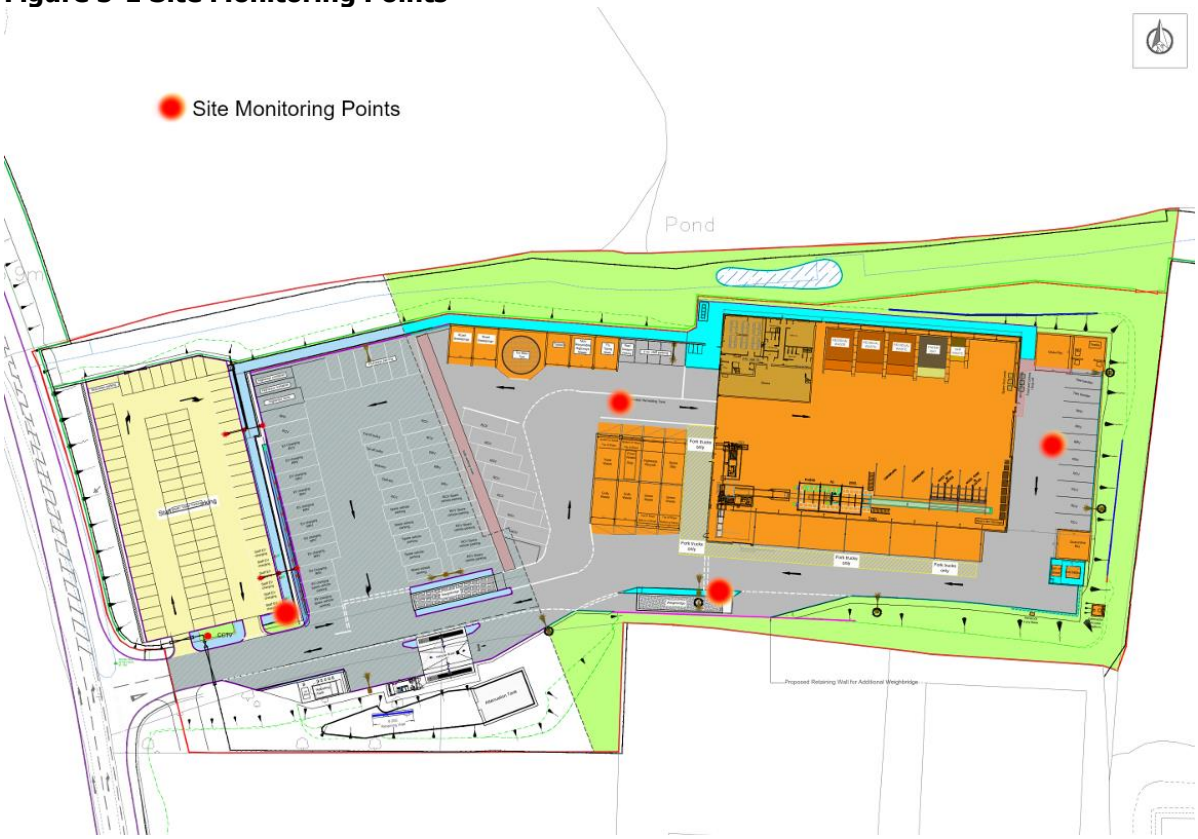
Odour monitoring will be undertaken:

- in line with preventative measures;
- in order to assess how successful the operational management and mitigating control measures are at the facility;
- to identify whether odour is causing a potential nuisance; and
- to ensure that appropriate remediation measures are adopted early.

The trigger point for action will be any complaint, any identification of odour outside the boundary or odour deemed offensive by site operatives during olfactory monitoring, as specified in section 5.1. Monitoring will be undertaken by trained, designated staff. All depot staff will be trained on all procedures in the OMP. This will form part of their training matrix. Depot staff will take turns in undertaking the daily checks.

All site personnel will be responsible for reporting any problem odours identified during their day to day operations and for carrying out the procedures in Section 4.0. Set monitoring points are shown in Figure 5-1 however additional monitoring will be undertaken via the daily site checks during the site walkaround, taking into consideration the operations and weather conditions at the time.

Figure 5-1 Site Monitoring Points



Parameter	Monitoring Technique	Frequency	Responsibility
Olfactory Monitoring	Site perimeter and off site checks (along the site perimeter). In line with EA guidance: H4 Odour Management	During normal operating conditions: • Daily During an incident or abnormal operating conditions: • Frequency of monitoring will be increased until incident is resolved	Trained, designated staff members.
Complaints Monitoring	Logged and actioned as in Section 6.0	• Ad-Hoc/ following incidents.	Site manager
Review the effectiveness of the OMP	This OMP will be reviewed for effectiveness and continuous improvement.	In lieu of no complaints: • Annually After a complaint that was substantiated: • Immediately following a complaint at the Facility.	Site manager

The site manager is responsible for periodically reviewing the OMP and updating this procedure with any changes required or following a significant odour emission incident.

To maintain continuous improvement, as part of the annual review of the OMP - or sooner, if a review is prompted by an incident - all complaints and incidents will be reviewed and operations, infrastructure and training needs will be revised in line with these, with the aim of improving operations on site.

5.1 Olfactory Monitoring

As part of the daily inspections, appropriately trained and experienced site personnel will carry out subjective olfactory monitoring around the site using check points from the H4 Odour Guidance, like those shown on the example shown in Appendix Figure 7-1. The monitoring results will be recorded on the site daily inspection sheet and site diary, which forms part of the site's environmental management system. These records will include:

- Date and time of monitoring;
- Monitoring location;
- Monitoring duration;
- Wind direction and strength;
- Processes occurring during the monitoring;
- Level of any detectable odour (subjective);
- Weather conditions; and
- Temperature.

During normal operating conditions olfactory monitoring will take place daily when the designated person carrying out the monitoring arrives onsite. This responsible person will vary in line with the H4 Odour Management guidance, to avoid odour desensitisation. This monitoring will occur at various times during the day to avoid bias from regularly monitoring at the same time (e.g. always monitoring outside of the loading/unloading window).

Odour nuisance levels will be assessed in line with the H4 Odour Management guidance, and FIDOR recommendations:

- **F**requency of detection – based on emissions data, wind direction data and any complaints.
- **I**ntensity as perceived – the intensity of the exposure, for example by utilising 'the sniff test'
- **D**uration of exposure
- **O**ffensiveness – a subjective gauge of the unpleasantness of the perceived odour
- **R**eceptor sensitivity – consideration of the locality, nature and sensitivity of nearby receptors.

During abnormal operating conditions odour monitoring will take place at least twice a day. The frequency of monitoring can be further increased until the incident is resolved or in case of an odour complaint. In the case of multiple complaints within a short time, or in the case of any instances of odour being perceived to be above acceptable levels, either during the daily subjective olfactory monitoring or at any other time, this will be reported to site management. The site manager will take action to find the source of the odour and mitigate it as appropriate using the procedures in section 4.3 and follow the complaints procedure in Section 6.0.

If required, specialist odour monitoring or mitigation advice will be sought by a qualified third party contractor.

Daily checks will be kept on record for 3 years, the site diary will also be updated with any issues and kept for three years.

6.0 Complaints

In the event of any odour complaint, investigations will commence immediately to identify the source of the odour. These investigations will be carried out by the site manager and will:

- Ensure odour management procedures are in place for the source odour;
- Check if odour management procedures have failed; and
- Note the impact of the odour emissions.

Should the investigation identify that remedial action be taken, the procedure in Section 4.3 will be followed.

A record of the complaint(s) and investigation will be made and kept within the site office, using a template like that shown in Appendix Figure 7-2. A record of the complaint and investigation will also be made in DCCs corporate customer service software, that demands a response and follow up to complaints. Complaints are to be responded to within 10 working days. Investigations are carried out and appropriate measures put in place to prevent reoccurrence, and reviewed with the aim of improving operations on site.

Details of complaints, investigations and actions will be made available to NRW on request.

Information will be provided to the local neighbours regarding the point and method of contact for the site in the event of an odour complaint or if they want to discuss any activities at the site.

- The neighbours can be advised that any complaints or concerns will be addressed immediately following identification and notification, and contingency action implemented;
- The neighbours can be advised of any corrective action and a follow up call carried out if required.

The primary point of contact at the site for complaints and liaison with the neighbours is the site manager who will ensure that the recording, investigation and close out of complaints is undertaken as described above and in accordance with company management procedures.

7.0 APPENDICES

7.1 List of Sensitive Receptors

Table 7-1: Sensitive Receptor Contact Details

Contact Name	Contact Number	Location/Address
21st Webb	0333 366 1289	Unit 1, Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ
Acre House Equestrian	0174 581 6628	Unit 2, Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ
A & D Motor Cycles Ltd	0174 581 5105	Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ
Adjustamatic Beds Ltd	0800 080 5000	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TS
AG Leisure	0792 004 7435	AG leisure Unit 7E, Denbigh LL16 5TA
ALDI	0800 042 0800	Station Rd, Denbigh LL16 3AL
Aqualeisure	0174 581 5476	Unit 7 G&H, Colomendy Ind Estate, Denbigh LL16 5TA
Baa Stool Ltd.	0182 479 0882	13 Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA
ATS Euromaster Denbigh	0174 581 2217	Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA
Beth's Sandwich Bar	0174 581 4647	Maldwyn Williams Garage Services, Rhyl Rd, Denbigh LL16 5TH
Birch Hire	0174 581 3583	Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA
Blind Solutions Ltd Workshop	01745 815549	Denbigh LL16 5TS
Brady Global Ltd	01745 814 978	34 Bryn Gwyrdd, Colomendy Ind Est, Denbigh LL16 5TA
BrickPlus	0174 547 2150	Colomendy Ind Estate, 34 Bryn Gwyrdd, Denbigh LL16 5TA
Breedon Denbigh Quarry Aggregates	0174 527 4830	Plas Chambres Road, Denbigh LL16 5US
CAD RECYCLING LTD	0174 581 2661	Spencer Trading Estate, Unit 5 & 6, Rhyl Rd, Denbigh LL16 5TQ
Capel Y Fron	None available	41 Rhyl Rd, Denbigh LL16 3DT
Cake to Cake	0796 698 9583	9 Ffordd Celyn, Denbigh LL16 5UU
Castle Steel Fabricators	0174 581 3341	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Catalyst Systems	01745 816611	Unit 15b, Colomendy Industrial Estate, Denbigh LL16 5TA
Celtic Dreams	0174 581 3245	Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SU
Clwb Rygbi Dinbych	0174 581 4060	Ffordd Y Graig, Denbigh LL16 5US
Clwyd Wood Products	0174 581 2010	Rhyl Rd, Denbigh LL16 5TH
Clwydian	0174 581 6720	Clwydian, Rhyl Rd, Denbigh LL16 5TH
Clwydian Leasing	0174 581 6720	Rhyl Rd, Denbigh LL16 5TH
Con Amici	0174 581 4444	Rhyl Rd, Denbigh LL16 3DS
CVAM Ltd	0174 581 6775	Rhyl Rd, Denbigh LL16 5SU
D Jones Plant Hire & Sales Ltd	0174 581 5554	Unit 5, Colomendy Ind Est, Rhyl Rd, Denbigh LL16 5TA
DAS Outdoors	0174 581 4978	Colomendy industrial estate, 34 Bryn Gwyrdd, Denbigh LL16 5TA
DB Touring	0778 744 6658	Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SU
Denbigh Ambulance Station	01824 706000	Denbigh LL16 5TD
Denbigh Auto Body	0174 581 5559	Ffordd Y Graig, Denbigh LL16 5US

Contact Name	Contact Number	Location/Address
Denbigh Building Plastics Limited	0174 581 8849	Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA
Denbigh Carpet & Bed Centre	0174 581 7034	Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SJ
Denbigh Locksmiths	0781 385 0008	Unit A1/Trem y Dyffryn/Erw Las/Colomendy Ind Est, Denbigh LL16 5TX
Denbigh Plant Services - Denbigh	0174 581 4762	Unit 10B, Colomendy Industrial Estate, Denbigh LL16 5TA
Denbigh Museum	0174 581 4323	Grove Rd, Denbigh LL16 3UU
Denbigh waste and recycling park	01824 706000	Ffordd Colomendy, Denbigh LL16 5TA
Denbighshire Antiques	0174 581 8888	Rhyl Rd, Denbigh LL16 3DY
Denbighshire Leisure Ltd	None available	Colomendy industrial estate, 8-11 Trem Y Dyffryn, Denbigh LL16 5TA
Denbighshire Music Co-operative	0174 581 3542	1, Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ
Dovecote Brewery	0790 895 7116	Unit 2 Enterprise Centre, Colomendy Industrial Estate, Denbigh LL16 5TA
Drysuit Doctor	0174 581 5476	Colomendy Industrial Estate, Units G & H 7, Denbigh LL16 5TA
E. Jones & Son	0174 581 5717	Denbigh LL16 5US
Emyr Evans	0174 581 2333	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
ForFarmers	0174 581 6391	Denbigh LL16 5TD
G & G Motors NW Ltd	0174 581 2483	Colomendy industrial estate, Bryn Gwyrdd, Denbigh LL16 5TA
Glyn Evans Autoclinic Ltd	0174 581 5141	Erw Las, Colomendy industrial Estate, Denbigh LL16 5TA
Graig Motors	0174 581 5606	Graig Yard, Graig Road, Denbigh LL16 5US
Happy Homes Furniture Factory	0174 581 2377	Denbigh LL16 5TD
Harrison Machinery Ltd	0182 470 7003	Cae Gwyn Farm, Mold Road, Denbigh LL16 4BH
Henllan Bakery	0174 581 2671	Colomendy industrial estate, 1, Rhyl Rd, Denbigh LL16 5TA
Howdens – Denbigh	0174 581 7484	Colomendy industrial estate, Unit 10 Rhyl Rd, Denbigh LL16 5TA
J & G Tyres	0174 581 7676	Unit 1, Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SJ
Humphreys Signs Ltd	0174 581 4066	Rhyl Rd, Denbigh LL16 5TA
Jewson Denbigh	0174 581 2606	Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA
Lawson Civil Engineering & Utilities Ltd	0174 581 4681	Graig Farm Buildings, Graig Road, Denbigh LL16 5US
Londis	0174 581 6524	Denbigh LL16 5SU
Mac3	0174 581 6266	B12, Colomendy Industrial Estate, Trem Y Dyffryn, Denbigh LL16 5TX
Maldwyn car wash	01745 812542	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Malmö International	None available	Colomendy Ind Estate, 34 Bryn Gwyrdd, Denbigh LL16 5TA
Marg's Takeaway	0174 581 7080	1 Rhyl Rd, Denbigh LL16 5TA
Malpas Tractors	0174 581 7060	33a, Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Maldwyn Williams Ltd Garage Services	0174 581 2542	Maldwyn Williams Garage Services, Rhyl Rd, Denbigh LL16 5TH
Mars-Jones Ltd	0174 581 8721	Vale Park Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA

Contact Name	Contact Number	Location/Address
Mason's Arms	0174 581 2831	Rhyl Rd, Denbigh LL16 3DT
Meifod Wood Products	0174 581 6900	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Meirion Davies & Co	0174 581 2400	2 Colomendy Industrial Estate, Rhyl Road, Denbigh LL16 5TA
MGM-Worktops	0174 581 2532	Morris Granite & Marble, Denbigh LL16 5TA
MJ Driver Training	0174 581 3226	29 LLys Gwydyr, Denbigh LL16 3ET
Monster Munchiez Cafe	0788 549 3071	Colomendy industrial estate, Unit 1 Enterprise Centre, Denbigh LL12 5TA
Morris E G	0174 581 3272	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Nixon Plumbing & Heating	0174 528 4700	Colomendy Industrial Estate, Unit 1 Norparc, Denbigh LL16 5TA
NHC Technology Ltd.	0174 581 1200	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TS
North Wales Police	0330 330 0101	Ffordd Y Graig, Denbigh LL16 3YB
Oelheld UK Ltd	0174 581 4777	Unit 16, Colomendy Industrial Estate, Denbigh LL16 5TA
Oshwash	0756 851 2024	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Pen-Y-Bryn Joinery Ltd	0174 581 5481	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Plas Eleri Nursing Home	0174 581 4613	Denbigh LL16 5SY
Pressed 2 Perfection	0174 579 8055	Denbigh LL16 5TX
Pro Finish Cosmetic Car Repairs	0757 688 4976	Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SU
R R Auto	0758 674 6122	Unit 8c, Denbigh LL16 5SU
Ravenscroft & Thackeray Fine Foods	0174 581 8900	Colomendy industrial estate, Cranswick House, Denbigh LL16 5TA
R Smith & Son	0174 581 2043	Coal Yard, Ffordd Y Graig, Denbigh LL16 5US
Rich Thomas Personal Training	0774 800 2273	Unit 3, Speddyd Industrial Units, Llandyrnog, Denbigh LL16 4LE
Riley Land Rover	0747 342 2588	Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SJ
Rizzi	0174 581 2548	Fron Eirian/Rhyl Rd, Denbigh LL16 5TG
Ruthin & Denbigh Gymnastics Club Ltd	0777 907 9838	Colomendy Industrial Estate, Erw Las, Denbigh LL16 5TA
Sam's cafe	0739 596 2724	Sams Cafe, Spencer Industrial Estate, Denbigh LL16 5TQ
Screwfix	0333 011 2112	Unit 3, Retail Park, Denbigh LL16 3AL
Shell	0174 581 6524	Rhyl Rd, Denbigh LL16 5SU
Shorecliffe Training	0174 581 5977	Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA
Simply Fish & Chips	0174 581 2999	31 Rhyl Rd, Denbigh LL16 3DT
St. Brigid's School	0174 581 5228	Plas Yn Green, Denbigh LL16 4BH
Star Premier Stores	0174 579 7026	3EA, Rhyl Rd, Denbigh
Telsol	0174 581 4678	23-24 Colomendy Industrial Estate, Rhyl Road, Denbigh LL16 5TA
The Garment Spa	0174 581 3312	Vale Park Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA
Travis Perkins	0174 581 3332	Colomendy industrial estate, Plot 10C, Denbigh LL16 5TA
Vale Of Clwyd Memorials	0174 581 5770	Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA

Contact Name	Contact Number	Location/Address
W T Pritchard Ltd	0174 581 2047	Veterinary Centre/Colomendy Ind Est/Rhyl Rd, Denbigh LL16 5TA
Welsh Adventure Racing	0174 581 8893	Denbigh LL16 5TL
Welsh Health Supplies	0174 581 8200	Denbigh NHS Stores/Colomendy Ind Est/Rhyl Rd, Denbigh LL16 5TA
Visage Beauty Salon	0174 581 2215	Maes y Mes/Rhyl Rd, Denbigh LL16 5TH
Y Bwthyn Bach	0174 581 2311	5 Frances Ln, Saundersfoot SA69 9HB
Wern Vets	0174 581 2336	Rhyl Rd, Denbigh LL16 5TH
Ysgol Frongoch County Primary School	0174 581 2410	Ffordd, Rhyl Rd, Denbigh LL16 3DP
Ysgol Twm O'r Nant	0174 581 2261	Ty'n Fron School Annexe/Rhyl Rd, Denbigh LL16 3DP
Ty'n Yr Eithin	0174 581 3211	Mold Rd, Denbigh LL16 4BH

Figure 7-1: Olfactory Monitoring Check (Example)

Odour report form				Date	
Time of test					
Location of test e.g. street name etc					
Weather conditions (dry, rain, fog, snow etc):					
Temperature (very warm, warm, mild, cold, or degrees if known)					
Wind strength (none, light, steady, strong, gusting) Use Beaufort scale if known					
Wind direction (e.g. from NE)					
Intensity (see below)					
Duration (of test)					
Constant or intermittent in this period or persistence					
What does it smell like?					
Receptor sensitivity (see below)					
Is the source evident?					
Any other comments or observations					

Sketch a plan of where the tests were taken, the potential source(s).

Intensity		**Receptor sensitivity**
0 No odour	4 Strong odour	Low (e.g footpath, road)
1 Very faint odour	5 Very strong odour	Medium (e.g. industrial or commercial workplaces)
2 Faint odour	6 Extremely strong odour	High (e.g. housing, pub/hotel etc)
3 Distinct odour	Ref: German Standard VDI 3882, Part 14	

Figure 7-2: Odour Complaint Form (Example)

Odour Complaint Report Form	
Time and date of complaint:	Name and address of complainant:
Telephone number of complainant:	

Date of odour:		
Time of odour:		
Location of odour, if not at above address:		
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):		
Complainant's description of odour: ○ What does it smell like?		
○ Intensity (see below):		
○ Duration (time):		
○ Constant or intermittent in this period:		
○ Does the complainant have 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:		
Do you accept that odour likely to be from your activities?		
What was happening on site at the time the odour occurred?		
Operating conditions at time the odour occurred (eg flow rate, pressure at inlet and pressure at outlet):		
Actions taken:		
Form completed by:	Date	Signed

Intensity

0 No odour
1 Very faint odour
2 Faint odour
3 Distinct odour
4 Strong odour
5 Very strong odour
6 Extremely strong odour

Figure 7-3: Odour & Dust Suppression System Specification

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The concept of a mist-air® System.

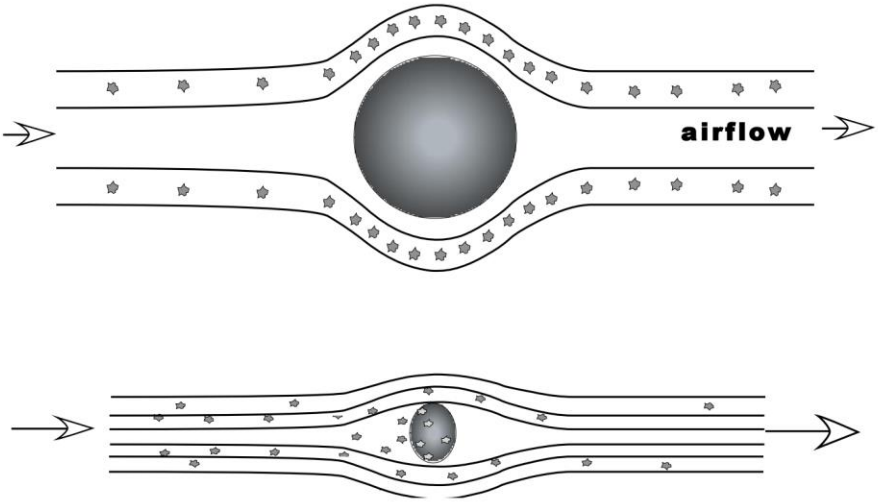
mist-air® produces large quantities of microfine fog from very little water, which then floats in the air without falling to the ground so keeping materials, floors, machinery and personnel dry, preventing screen binding or slipping belts associated with water sprays or the course droplets formed by rotary atomisers. Fine airborne dust and odorous gases are attracted to the mist-air® fog.

To put this into perspective, rain and spray jets are up to 3 mm in diameter, a human hair is 70 microns, aerosol sprays are 50 microns. mist-air® F fog is as low as 5 microns. i.e. 5000th. of a millimetre.

Rotary atomisers form very course large droplets which falls to the ground creating wetting in front of the fans.

Why the system works.

Dust and gas particles flow around large droplets due to the higher surface tension of the droplet, and because it displaces more airspace.



However, dust particles and gases are actually attracted to the microfine fog particles created by Mist-Air, which increases their weight and makes them sink to the ground.

As soon as they come into contact with the fog they begin to sink. Provided the fog is in the air before the dust is formed it cannot become airborne or move from the place it was formed in.

Mist-Air create the fog and then the fans spoil the air, separating the particles over a wide area, producing an ever-increasing fog cloud, rather than blowing it in a tight cone.

For hydrophobic material, **Mist-Air wetting agent** can be automatically added to the fog to make it even more absorbent.

www.mist-air.eu

The Misting System

The **mist-air®** Base Unit, is housed in a free-standing lockable steel cabinet which provides all the power for the system, this can be positioned anywhere convenient indoors or outside.
All wetted parts throughout the system are stainless or non-ferrous materials

Mist Air Base Unit

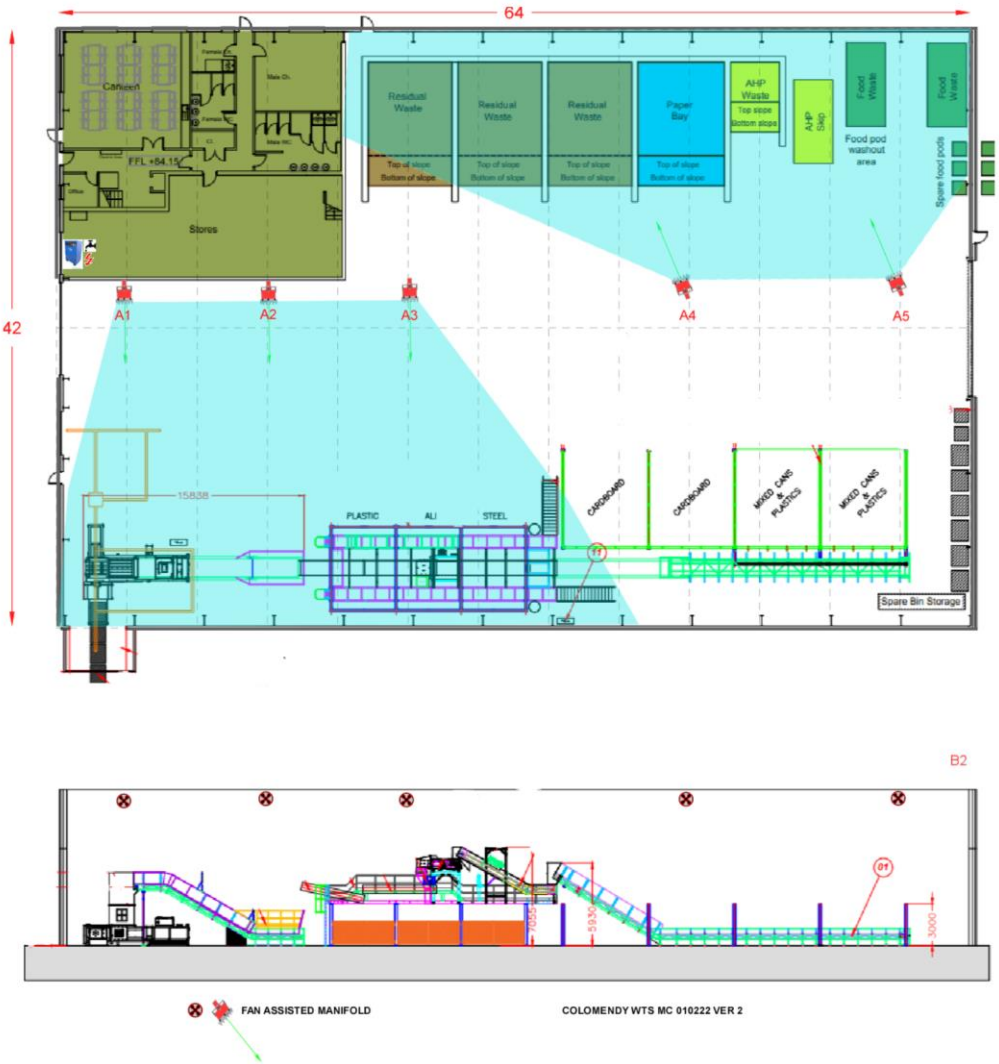
Dimensions 1200mm h x 900mm w x 600 mm d. Weight 120 kg
There are various models available to providing sufficient fog for any size of building or buildings simultaneously.
The Base Unit has up to 6 independent circuits, allowing each area to be treated separately or simultaneously.
Each circuit could be on or off or operated by timers to operate intermittently at times set by the operator.

Methods of switching available.

- Switches on the control panel (standard)
- Remote hard-wired switches.
- Radio controlled
- No volt Signal from machinery i.e., conveyor motors, doors, etc.
- PIRs proximity switches.
- Humidistats.
- Wind vanes.

Reinforced circulation hose and SY armoured cable is then fed from the base unit to the various circuits required around the site, which can be either Fan Assisted Manifolds or Static Stainless-Steel Manifolds.

Site drawing



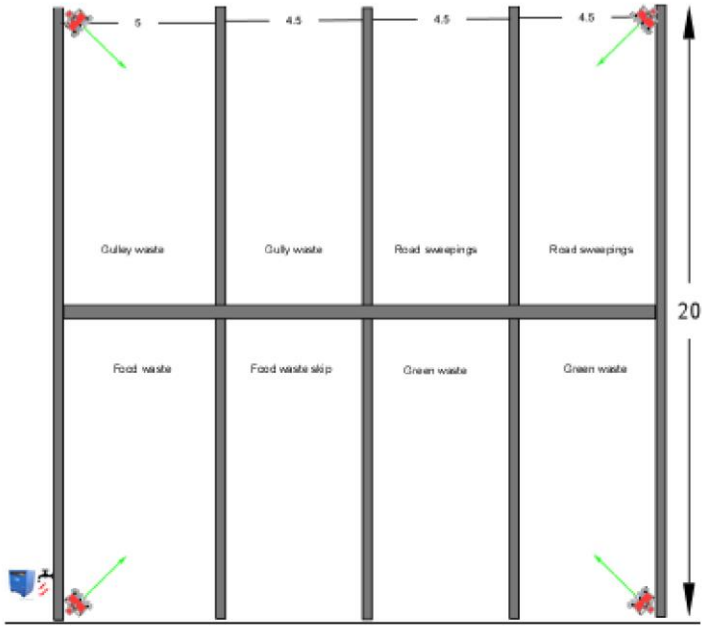
This system prevents fine dust staying in the air, but without causing dampness or wetting to floors, machinery, or stock. Even an efficient extraction system doesn't have a hope of achieving this, as there are so many possible dust forming points on a layout like this.
Hoods over dust forming points are fine but then it is impossible to cater for every point.
Negative pressure extraction continuously drags contaminants through the air, past the operatives, to the extraction points, whereas Mist-Air doesn't allow the dust to travel at all.

To supply and install

Base Unit Comprising of:

Positive displacement 3 plunger 13 lpm. pump unit
415v 4 pole 2.2 kw motor. Inverter to ramp up and down the motor and govern pump speeds
Electronic safety systems for each circuit. Smart wire circuitry.
Filtration system. Phosphate water softener system
Heater and frost thermostat
Chemical dosing pump for odours and flies
A single circuit A will be used to reduce costs with auto pause intermittent timer system
18 litre header tank with low level switch and Type A airgap
Inlet water pressure regulator.

Highway Bays



If the Base Unit in the main recycling building can be accessed a new Base Unit may not be required.

Customer to supply

Power

415v 3 phase and neutral 16 amps per phase to an isolator within 1 meter of the base unit.

Water

Clean Potable water to a 25mm poly-pipe and a ¼ turn inline poly-tap within 1 meter of the Base Unit.
3 bar pressure, 13 lpm flow.

We require no other wiring or water supplies, but additional expenses incurred by these above facilities not being provided on the agreed installation date are chargeable as it entails additional travelling time, hotels, etc.

Payment 50% deposit with order. 50% after commissioning.

Delivery Approximately 28 days from date of written order and deposit

Warranty

2-year parts warranty excluding general maintenance and mechanical damage or abuse.
20-year corrosion warranty.

Maintenance

The system requires little maintenance and has a life expectancy in excess of 30 years.
mist-air® offer a service to clean and check the system to ensure 100% efficiency or your own engineers can be instructed to do this.

Health & Safety.

Safety information, insurance cover, risk assessment, and method statements are provided, prior to installation. All staff are fully qualified to undertake their respective tasks.
We have a 35-year unblemished record of satisfaction and safety for all our products and services.

The system has been fitted to over 5500 recycling sites throughout Europe over the last 20 years and has been systematically improved and updated as technology improved to make this system the most reliable and advanced dust suppression system on the market anywhere today.

If you require any further information, please do not hesitate to contact me.

Kind regards

Mike Carter.

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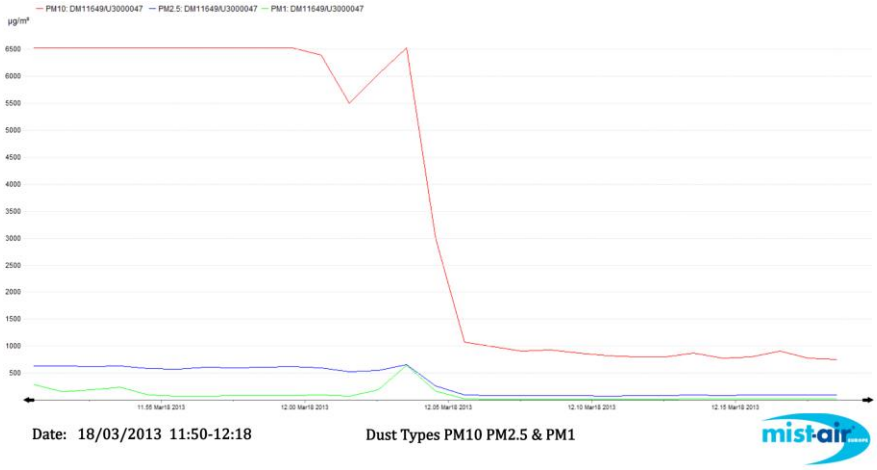
Dust Monitoring Results.

The below graph is of dust levels in a Material Recycling Facility. The Dust monitor was left to run continually for 30mins. 15mins with the **mist-air®** system switched **off** and 15mins with our system **on**.



Date: 18/03/2013 11:50-12:18 Dust Types PM10 PM2.5 & PM1

PM10s particles (ug/m^3) Reduced by 88.5%

PM2.5s particles(ug/m^3) Reduced by 88.3%

PM1s particles (ug/m^3) Reduced by 97.6%

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Just a sample of some of the thousands of customers using Mist-Air

The advantage of the mist-air® system is that:

- One Base Unit controls the whole system
- It uses very little water
- Does not need a water storage tank
- Requires no compressor
- Helps Prevents the risk of Flash explosions in contaminated air
- Everything stays dry, stock, machinery and floors so no slip hazards
- Independent circuits which are infinitely controllable
- Timed intermittent operation when required on any circuit
- Additive's dosing system to control odours and flies
- Sanitizing system to purge the whole system against Legionella etc.
- Life expectancy 25 + years
- Corrosion warranty 20 years
- All wetted parts are manufactured from stainless steel or non-ferrous materials so there can be no corrosion within the system
- All electronics controlled by Smart Wire SWD state of the art solid state electronics
- The whole system can be trace heated and insulated for protection down to -27° Celsius.
- There is ***no other system available*** offering this fineness of fog particles with this degree of reliability, flexibility, and effectiveness!!

Air sampling results

Independently replicated and confirmed by the Environment Agency

Measured in milligrams per cubic meter.

TOTAL DUST

	Mist-Air OFF	Mist-Air ON	Difference	Improvement
Position 1	2.4	0.5	1.9	79 % reduction
Position 2	2.5	0.2	2.3	92 % reduction
Position 3	4.2	0.5	3.7	88 % reduction

RESPIRABLE DUST

	Mist-Air OFF	Mist-Air ON	Difference	Improvement
Position 1	0.6	0.2	0.4	66 % reduction
Position 2	0.4	0.1	0.3	75 % reduction
Position 3	0.9	0.5	0.4	44 % reduction

RESPIRIBLE SILICA

	Mist-Air OFF	Mist-Air ON	Difference	Improvement
Position 1	0.23	0.04	0.19	83 % reduction
Position 2	0.56	0.03	0.53	94 % reduction
Position 3	0.76	0.04	0.72	95 % reduction
Position 4	0.17	0.07	0.1	89 % reduction
Position 5	0.31	0.11	0.2	64 % reduction
Position 6	0.17	0.02	0.15	88 % reduction

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mist-air® Fan cable NYY J PVC 0.6/1 KV.

APPLICATION
Power and control cable for fixed installation. Can be used indoors, outdoors, underground, in concrete and in water.

STANDARDS
IEC 60502-1 Flame retardant according to IEC/EN 60332-1-2

SO/IEC 17025 LABORATORY TESTED
This product is subject to the Quality Assurance protocols of The Cable Lab®, an ISO/IEC 17025 accredited cable testing laboratory. Testing includes vertical flame, conductor resistance, tensile & elongation, and dimensional consistency, verified to published standards and approved product drawings.

CHARACTERISTICS
Voltage Rating Uo/U 0.6/1kV Temperature Rating Fixed: -15ºC to +70ºC Flexed: -5ºC to +50ºC
Minimum Bending Radius Fixed: 12 x overall diameter

CONSTRUCTION
Conductor RM: Class 1 Solid copper conductor **Insulation** PVC (Polyvinyl Chloride)
Filler PVC (Polyvinyl Chloride) **Sheath** PVC (Polyvinyl Chloride)
Core Identification 3 core: Green/Yellow Blue Brown **Sheath Colour** Black

REGULATORY COMPLIANCE
This cable is compliant with European Regulation EN 50575, the Construction Products Regulation.
This cable meets the requirements of the Low Voltage Directive 2014/35/EU and the RoHS Directive 2011/65/EU. RoHS compliance has been tested and confirmed by The Cable Lab® as meeting the requirements of the BSI RoHS Trusted Kitemark ™.

ELECTRICAL CHARACTERISTICS
Current Carrying Capacity # A9N3925 Cores 3 Nominal cross section area mm^2 2.5 **Conductor type** RE
Nominal Sheath thickness 1.8mm . **Overall diameter** 11.3 mm. **Nominal weight** 212 Kg/km.
Current carrying capacity in duct 34 amps. **Current carrying capacity in air** 25 amps.

UNDERGROUND Ambient temp. 30 degrees C. Depth of laying 0.5m. Ground temp 15 deg. C. Thermal resistance of soil 12 km/w

DE-RATING FACTORS

AIR TEMPERATURE	20ºC	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC
DE-RATING FACTOR	1.12	1.07	1.00	0.94	0.87	0.79	0.71

mist-air® High-Pressure Thermoplastic Hose

Technical

Polyamide is a thermoplastic polyester, reinforced in polyester fibre exterior covering in marine anti-abrasion polyurethane, stabilized to UV rays and resistant to micro-organisms.

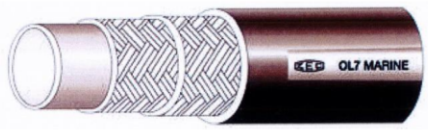
Applications

Mist-Air hose marine hose is designed for hydraulic applications in marine environments at high pressure, with exceptional mechanical, thermal and chemical resistant properties.

Its high strength, exceptional high heat capability, and broad chemical resistance put polyamide-imides at the top of performance pyramid.

High and low temperature and chemical resistance together with good mechanical stability makes polyamide especially suitable for high-pressure and demanding applications.

Diameter	6.4mm inside diameter. 11.8mm o/d
Weight	90 grams per meter
Minimum bend curvature	35mm / 1.38"
Minimum burst pressure	800 bar / 11,600psi
Maximum working pressure	200 bar / 2900 psi
Actual working pressure	100 bar / 1450 psi
Safe working ratio	8:1



This hose is approved for Marine use by Lloyds Register and meets or exceeds the following standards:

SAE J517 sec. SAE 100R7- EN 855-ISO 3949

mist-air® Misting jets

FINE FOG NORMAL FOG COURSE MIST

MATERIAL

NOZZLE-BODY: Polyamide

Polyamide is a thermoplastic amorphous polymer that has exceptional mechanical, thermal and chemical resistant properties.

Melting point: 180 ~ 280 ° C Density: 1.05 ~ 1.15.

Its high strength, exceptional high heat capability, and broad chemical resistance put polyamide-imides at the top of performance pyramid.

High temperature and chemical resistance together with good mechanical stability makes polyamide especially suitable for high-pressure and demanding applications.

Polyamide can resist plasticization because of the strong intermolecular interactions arising from the polyimide functions as well as the ability of the polymer chains to hydrogen bond with one another because of the amide bond.

NOZZLE-TIP: One shot moulded ceramic orifice.

Ceramics offer many advantages compared to other materials. They are harder and stiffer than steel, more heat and corrosion resistant than metals or polymers and are less dense than most metals and their alloys.

mist-air® Fan assisted manifolds

mist-air® Stainless steel fan assisted manifolds are normally mounted on the roof beams to produce an extremely fine fog which is blown towards the dust creating area, expanding the fog cloud and separating the fog particles, which bombard the dust particles and prevent them from becoming airborne.

Specifications

- Fan assisted manifolds IP54 fitted with up to 20 Ceramic tipped nozzles.
- Cowls and manifolds manufactured from stainless steel
- Rated Fans 450mm diameter.
- Weight with brackets 10 kg.
- 270-Watt motor. 1.3 amps.
- 64 dB at 1 meter
- 3mm.galvanised steel brackets.
- Brackets mounted on to roof beams with steel clamp bolts.
- No drilling or hot work required.

Deviation

Mist Air Dust Suppression System is a Commercial Packaged off the Shelf Solutions (COTS) which is then adapted to satisfy the needs of the purchasing organisation, rather than the commissioning of a custom-made solution. This reduces time and cost required in designing and building bespoke systems. Standard components of the product cannot be changed to a custom-made solution.

Mist-Air prevents dust issues effectively using the minimum amount of water in the form of Dry Fog which is controllable along the whole length of the building.

The standard system is well proven over 40 years and installed in over 5500 sites Worldwide for the control of dust and odours in sites as varied as EFW, waste recycling sites, brick factories, power stations, mining, quarries. etc.

The customer must satisfy himself that the product as offered satisfies his requirements.

mist-air® Terms and conditions

This quotation is submitted and valid only subject to the following conditions. By ordering this system it is understood by the purchaser, that their own terms do not override these terms stated in this quotation.

Layout of equipment

The layout of the fans and manifolds as shown on the sketches in the quotation form the basis of this quotation. Any deviations requested by the customer after the order has been place, which involves extra time and materials to install will be additionally charged for.

Alterations requested by the customer to the layout as agreed , will not be undertaken without a signed variance form signed by the customer.

Installation

Every effort is made by our installation engineers to work flexibly and in harmony with your organization, However, this quotation does not include working at weekends or working before 7am or later than 8pm.in the evening, unless by prior written agreement.

The customer *must stop machinery and operations when* necessary, during the installation to enable our Engineers to safely install the equipment as agreed during normal working hours.

Our engineers must not be prevented from working on the agreed installation dates. The work will be completed much faster if access is granted to the areas they need to get to.

Pipe and cable runs are securely attached to *existing* cable trays, girders, beams or suitable machine structures, using steel beam clips and plastic cable ties. These have proved durable and secure on over 5000 installations over a 20-year period.

Different fastenings or cable tray requested by the customer will be additionally charged for and must be specified prior to installation to allow enough time for delivery to site.

After the system has been commissioned, return calls for alterations, swapping jets, or general maintenance other than failures due to faulty materials or poor workmanship will be additionally charged for.

If we are unable to test and commission the system when the system has been installed because of failure to provide access, or have water or power available, the return call to test and commission will incur an additional charge.

Electrical

Our electrical equipment is tested prior to delivery to site, and cable runs, and connections are subsequently Tested during installation.

All our tests are done after the isolator supplied which must be installed by your own electrician, who will have carried out relevant electrical testing to the required standards from your main supply to that isolator.

Your electrician must do the final connection from the Base Unit cable to the isolator box during installation so that our engineers can commission the system before leaving site...

Mist-Air Engineers are trained and competent to install, test and commission the pre-manufactured equipment, having competently installed thousands of installations, assemblies and systems, complying with the electrical installation act BS 7671 Amendment 2 Amended to 03/04 and have been trained to use
Calibrated MEGA test equipment to ensure the system is tested and complies with the required standards.

Should your site or electrician wish to impose additional electrical tests or not supply an electrician to do the final connection from the isolator to the Base Unit, then an electrician will be hired at your cost to do this final connection and test.
Additional site rules in variance with EU standards involving fitting additional electrical control equipment must be done by the customer at their own cost. If this causes damage to the Mist-Air equipment or causes irregular operation the warranty will be null and void.

Any delays in commissioning, caused by carrying out these additional procedures, will result in additional charges for waiting time, hired in equipment, and additional expenses, for hotels, food etc.

Wiring is SY sheathed cables unless alternative specification is requested prior to installation to allow time for delivery to site.

Fans fitted in the roof areas, do not have finger guards fitted unless specifically specified by the customer prior to ordering the system. Finger guards are fitted as standard only where they can be reached without the aid of a cherry picker. Fans are not isolated from the Base Unit unless specifically requested as an optional extra.

Services to be provided by the customer
The services below must be provided as requested in the quotation, ***prior*** to the installation engineers arriving on site.

Delays caused by these services not being provided on time will result in additional charges, particularly if it requires them to return to site later to connect and commission the system, as this is very disruptive, time consuming, and involves the re-hiring of access equipment and almost doubles our costs.

Power
The customer must provide a wall mounted electrical isolator next to where the Base Unit will be sited.
380- 415v three phase and neutral 16 amp per phase.

Water:
The customer must provide a potable water supply to the Base Unit, not less than 3 bar pressure .
Low pressure will necessitate a booster pump to be fitted, otherwise there will be insufficient pressure of water to the header tank, and this will keep running dry.

Dirty or contaminated water
This will require an additional UV filter to protect against Weill's Diseases plus a self-cleaning media filter at extra cost to remove the solids from the water.

Hard water
If the water supply is unusually hard , the customer must inform us prior to installation, then a salt-based water softener can be fitted. Mist-Air can supply and install this at additional cost.

We can provide all of these at additional cost, but this must be specified when ordering the system as additional components will need to be bought to site and return visits are chargeable.

Drain
It is wise to install the Base Unit in a position where it will not damage anything in the unlikely event of a leak or when changing filters.

Documentation
Prior to each installation Mist-Air shall provide to the Customer, the following documents:

- Standard Mist-Air Company health and Safety policy.
- Standard Risk Assessment
- Standard Method statement
- Insurance details
- Copies of CSCA & IPAF & PAL certificates
- There will always be at least one trained First Aider on site during installation and servicing.

After installation a USB memory stick will be supplied, containing

- A generic wiring diagram of the base unit,
- Base unit layout
- Exploded parts diagrams,
- Part list
- CE certificate,
- Servicing procedures.
- Legionella prevention measures.
- Details of odour control and Insecticide Chemicals including COSHH sheets
- Service contract

CE The system as supplied to yourselves comprising of the Base Unit and Fans assemblies which have been designed, built, and tested in our factory to the following standards: -

According to the following directives:

2000/95/CE 27/01/2003. Restriction on the use of hazardous substances (RoSH)
2002/96/CE 27/01/2003. On the waste from electrical and electronic equipment (WEEE)
2003/11/CE06/02/2003. relating to restrictions on the marketing and use of certain dangerous substances and preparations, and conforms in accordance with EEC health and safety standards as follows: -

✓ PLC Software	EN 61131
✓ Electrical switchgear	EN 61439-1, EN 61439-2 and EN 61010
✓ Relay safety circuits	EN 62061
✓ Panel build	EN60204-1
✓ Pumps	UNI-EN 29001 1988
✓ Design Construction & testing	BS7671, (EU) No 305/2011
✓ Machinery Directive	2006/42/EU
✓ Energy related products ErP	2009/125/EC
✓ Electromagnetic compatibility guidelines	1992-(S.1.1992/2372) EC-electrical.89/363/CE. 2001 ETS 300 683,1997 EN 301 489-03 V1.31 : EN 55022 EN61000-4-2. EN61000-4-3
✓ Chemical dosing pump	(EMC) 2014/30/EU Electromagnetic compatibility. 93/68/CEE Variation of electromagnetic compatibility. 2014/35/EU Low voltage directive.
✓ Solenoid coils	2002/95/EC (RoSH) 2002/96/EC (WEEE)
Insulation material	BS EN ISO 14001:2015
✓ Electrical motors	IP65. 2002/95/EC (RoSH). 2002/96/EC (WEEE)
✓ Circulation hose	DIN 20 022 Pt.1 DNC Cert # P-9789 Min burst press. 17,980 psi
✓ Fan units	EN 60335-1, EN 50366, EN 55014-1, EN 61000-3-2
✓ Heaters	EN 55041-2, EN 61000-3-3, EN55014, EN60555-2, EN60555-3
✓ Power isolation device	IEC 60364-4-41
✓ Electric cables	SY/NR ECC # 23400. RoSH (2002/95/EC) Compliant Min. 2.5mm^2 2000/95/CE 27/01/2003. Restriction on the use of hazardous substances (RoSH) 2002/96/CE 27/01/2003. On the waste from electrical and electronic equipment (WEEE) 2003/11/CE 06/02/2003. relating to restrictions on the marketing and use of certain dangerous substances and preparations. EN 50575

All components are over engineered rather than built to a cost.
E.g. Circulation hoses are tested to 17,000psi. Whilst operating at a much lower pressure.

All wetted parts are 316 or 304 stainless steel or nonferrous material to prevent any corrosion developing within the entire system.

HEALTH & SAFETY REGULATIONS (UK)
The construction (design & management) regulations 2015
Lifting operations and lifting equipment regulations 1998
Control of substances hazardous to health regulations 2002 COSHH
Manual handling operations regulations 1992
The provision and use of work equipment regulations 1998

System description and operating limitations...

Dust control.
Mist-Air is designed to remove respirable dust from the air space and help prevent flash explosions. It achieves this by meeting the fine dust particles as they form and make them sink so they don't stay in the air. These sinking particles will of course land on the first obstruction the meet.
Large quantities of dust forming quickly, i.e. tipping biomass etc. into hoppers, will require more space and time to achieve this.

Mist-Air is not a total panacea. It doesn't make large dust clouds disappear or clean up mechanical spills but acts like an invisible barrier, preventing the movement of fine dust away from the working area and preventing it migrating from buildings.

Detrimental effects on the fog due to extraction fans and negative pressure systems operating is the same area, is the responsibility of the customer and is not in the remit of Mist-Air, as we have no control over systems installed by others.

This quotation contains a drawing showing the approximate layout of the plant, to which we add the position of fan assisted manifolds and static manifolds based on experience of what we consider will achieve best dust suppression for the customer.

The customer has the opportunity at this point to ask for changes if he doesn't think the layout is correct or feels that extraction fans will have a negative effect, so that the drawing and the quotation can be altered to reflect these changes. Movement of manifolds after the installation is chargeable.

After installation, the customer my want to decrease or increase the number of nozzles in a manifold to produce the desired amount of fog for each area, this is the responsibility of the customer as is the replacement of dirty or broken nozzles. This is not covered under warranty.

Humidity
During operation, this system does not normally cause any wetting to floors or stock, but during times of high humidity, i.e. Precipitation, early mornings, thunderstorms, the air can reach up to 98%, humidity therefore adding mist to this saturated air may cause dampness and condensation to floors, and cold metalwork in un-heated buildings.
The system is fitted with intermittent timers for each circuit, so in times of high humidity it makes sense to set the system to deliver fog intermittently to keep just enough humidity in the air without causing dampness.

Fog suppression is not a precise art, and its effect can be altered from day to day by the fluctuations in dust volumes, temperature, humidity, and wind speed / direction.
It may be necessary to increase or decrease the number of nozzles fitted in the fans as the seasons change.
If static manifolds are fitted at conveyor transfer points, the belt may become wet if there is no material travelling on the belt, this can be an issue if the conveyor signals are used to turn the misting manifolds on automatically.

Cooling

In hot weather the mist absorbs latent heat and gases within the building, which then rises to the eaves. Suitable ventilation must be provided in the eves, to allow the hot mist to escape and evaporate, thereby Allowing evaporative cooling. Failure to do this may turn the building into a Sauna bath and causing the air to become heavy and contaminated, particularly if there are heavy fumes in the air from machinery, or brick kilns etc. *This is only applicable to fume laden air i.e. brick factories and foundries.*

Frost protection

The Base Unit is frost protected However the pipe work and misting manifolds can be_trace heated and insulated at additional cost, unless already included in this quotation.

Warranty

The system carries a parts warranty for 2 years, also a 20-year corrosion warranty.

The system requires servicing which Mist-Air can provide. Which includes flushing the complete system with biocide to help prevent water borne diseases such as Legionella or Weils disease

Fans and manifolds may need regular cleaning in dirty conditions, failure to do so may result in poor performance and dripping causing damp patches directly below the fans.
Failures or poor performance caused by lack of maintenance is not covered by warranty. Unless the customer maintains the system to keep it clean, failures will inevitably occur which are not covered by warranty.

Warranty excludes: - Mechanical damage, blocked and broken nozzles, broken fan blades, frost damage, failure caused by blocked water filters, lack of servicing.

No guarantee is given or implied regarding specific levels of dust or odour suppression achieved or achievable, as day to day variation of materials, humidity, wind, operating procedures, i.e. doors left open, are outside our control can influence the operation of the system.

By ordering a system from Mist-Air it is understood that you have agreed to the above terms and conditions.

www.wrapcymru.org.uk/ccp

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