

Polyethylene Terephthalate Plastics Recycling Facility (PETPRF) Odour Management Plan

Client: Enviroo Project Company Ltd

Ref No.: K0419-AYE-R-ENV-00004

Date: November 2025

Document control

Revision	Revision/ Review Date	Details of Issue	Authorised		
			Prepared By	Checked By	Approved By
00	July 2024	Issued	Claire Finney	Claire Finney	John Baxter
01	November 2025	Issued	Claire Heward	Claire Heward	John Baxter

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Revision List

Revision number / Report Reference	Revision authorised by	Date submitted to Environment Agency	Revision owner

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[1] Introduction

[1.1] Overview

This Odour Management Plan (OMP) supports an application by Enviroo Project Company Limited (Enviroo) to prepare an application to operate a Plastic Recycling Facility (PRF).

This OMP will form part of the Sites Operating Techniques to control and manage odour. This presents the potential odour emissions, the pathways and receptors sensitive to odour. Section 5 contains odour controls and section 6 provides community engagement, reporting and contingency measures.

[1.2] Site Location and Description

The Site is located at Plot 13 of Protos Ince Resource Recovery Park located at Ince Marshes developed by Peel Environmental. This covers an area of approximately 58 hectares with various waste and energy industries occupying plots. Adjacent plots comprise a bottle manufacturing plant, resource recovery facility and biomass facility.

The Site occupies an area of approximately 2.3 hectares and is located approximately 1.6km east of the town of Ince, and 1.1km northeast to the town of Elton, within a mixed industrial and semi-rural setting. The facility is located at Plot 13 of Protos Resource Recovery Park at Enviroo Project Co., Marsh Lane, Ince, CH2 4FP at approximate National Grid Reference 346508 376458.

The Site lies at circa 8m AOD. There is a fall from west to east with the western boundary at approximately 9m AOD and the eastern boundary at 4.5m AOD. The northern boundary of the Site is formed by Marsh Lane, to the northwest is Protos Plot 10b and to the south a restricted byway (public right of way), which runs adjacent to Grinsome Road. The eastern boundary of the Site is located approximately 20m from the restricted byway which links to Marsh Lane to the northeast of the Site.

The Site proposes to operate as a PRF accepting up to 35,000 tonnes per annum of plastic bales for processing comprising sorting, shredding, grinding, heating, washing and drying to create a plastic pellet product which meets end of waste criteria specifically food grade recycled Polyethylene terephthalate (rPET) for the plastic manufacturing sector. Annual production of recycled plastic pellets is estimated at 17,500 tonnes. All activities will be confined within a portal framed modular build warehouse located on Site. The Site layout is shown on drawing reference 210070-WDK-00-SI-DR-C-10C.

The Site will be accessed via Marsh Lane to the north of the Site. The PRF will comprise a portal framed modular build warehouse building with a pitched roof approximately 170 m in length, 45 m in width and 14 – 16 m in height (PRF Building).

The building will have three vehicular access doors on the northern aspect and one on the western aspect to allow delivery of waste plastic and the export of rPET and waste materials. The internal layout of the process building is shown on drawing reference 210070-WDK-00-SI-DR-C-10C entitled Proposed Site Layout dated 13 December 2022. The PRF building will be separated into three separate areas comprising the wash plant hall, extrusion hall and chemical storage area. A feedstock area is to be located in a separate building to the northwest of the PRF building.

A weighbridge and weighbridge office will be located adjacent to the Site entrance to the north off Marsh Lane. To the west of the Site will be the Wastewater Treatment Plant (WwTP).

The Site layout is shown on drawing reference 210070-WDK-00-SI-DR-C-10C.

The purpose of this OMP is to address the proposed activities at the PRF which have the potential to cause emissions of odour and how these emissions will be minimised and managed.

[1.3] Maintenance and review of the OMP

The Chief Operating Officer (COO) and General Manager are responsible for the OMP and ensuring staff are suitability trained in the content of the OMP. A copy of this OMP will be included in the Site Management System held at the Site Office and all members of staff will have access to this document.

[1.4] Relevant sector guidance

Reference has been made to the following guidance documents:

- H4 Odour Management: How to comply with your environmental permit (Environment Agency, March 2011).
- Environment Agency. Appropriate measures for permitted facilities: non-hazardous and inert waste. 18 November 2020.
- Environment Agency. Odour Management Plan Template, Final V2. 5 May 2021.
- Best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council. 10 August 2018.

[2] Odour Source Term Characterisation

[2.1] Odour Sources and materials

The activities associated with the PRF that have the potential to produce odorous emissions are:

- Delivery of waste to site.
- Transfer of plastic bales to appropriate storage area (internal).
- Treatment of plastic bottles (internal).
- Storage and transfer of residual material.
- Removal of contaminated residues from treatment process.
- Storage and treatment of process water.

Plastic bales are the only waste stream to be accepted for treatment at the PRF.

The plastic bales used in the process will be purchased from PRFs pre-sorted to ensure high PET content and minimum contamination. The material will be subject to sorting, either at source or at the facility.

The recycling process involves the following main processes:

- Delivery of baled plastic to Site.
- Screening and delabelling.

- Sorting and segregation by type and colour.
- Reduction in size of plastic waste and washing.
- Flaking of PET material and drying.
- Extrusion involving blending and heating of flakes to create a PET product.

Plastic wastes are not malodorous. Plastic bottles may contain organic residues which could have the potential for odour. All incoming waste is subject to strict waste acceptance procedures. Non-target materials are removed during the sorting and washing process. Intermediary storage is provided within the PRF building and extrusion hall prior to transfer externally for storage pending removal off site. This excludes fines and labels removed from the trommel and during pre-wash which are conveyed directly to an external storage skip. Non-target materials will be stored for a maximum of 28 days however maximum storage times will be considerably reduced by the volume per day and storage capacity as well as the customer or onward recipient of the material. Bales will be processed continually however a maximum storage time of 14 days is proposed in the event of plant maintenance and/or repairs.

Due to the design of the building structure, the enclosed processing activities and the nature of the waste feedstock materials stored and processed on site, there is very little potential for offsite odour emissions and impacts to arise from the site.

The waste plastic material is stored in waste storage bays within the feedstock store.

[\[2.1.1\] Wastewater Treatment Plant \(WwTP\)](#)

The process water to be treated will contain high biological components as a result of the washing process.

The treatment to be undertaken includes both physico-chemical and biological treatment. The Dissolved Air Flotation (DAF) water treatment process is a physical and chemical technology for the effective removal of biological solids from a wide range of industrial wastewaters to maintain environmental compliance and reduce trade effluent charges. Biological treatment will comprise of the membrane bioreactor (MBR).

The treatment is based on aerobic treatment which it is utilised for the control of odour. All treatment plant will be enclosed to minimise the potential for odour release.

The main odour control of the WwTP is ensuring the WwTP is operating as designed and to ensure anaerobic conditions do not occur. During the DAF aeration process some solids will settle on the bottom of the tank which will require frequent removal. Careful management of pH and temperature will be required through the treatment process. Probes will enable continual monitoring of pH and temperature and allow correction where required.

Failure to adequately inspect and maintain plant and equipment is also a contributory cause to fugitive emissions, e.g. leaks from pumps or damage to enclosed containers.

The sludge storage tank and may pose a risk of odour. The storage tank is fully enclosed. The sludge will be dewatered within 48 hours and the dry filter cake stored in an enclosed skip prior to transfer off-site.

As a result of the treatment technologies to be employed comprising aerobic treatment it is considered that the odour source from the WwTP will be limited subject to appropriate controls as detailed in Section 5.5.

[3] Receptors

[3.1] Receptor List

When choosing the receptors, the closest or the most sensitive (if different from the closest) have been considered in each direction from the Site. The most sensitive receptors are within 500 m radius of the Site making the assessment conservative for other potential receptors located further away (up to 1 km) Receptors are considered sensitive where people have the potential to be adversely affected by the odour emissions. The nearest sensitive receptors to the Site are identified in drawing referenced Sensitive Receptor Plan drawing reference K0419.1.002.

The probability of exposure is determined by the distance of the receptor to the Site and the likelihood of the hazard reaching the receptor (e.g. frequency of prevailing wind in that direction). This stage of the assessment assumes that exposure has resulted from an uncontrolled emission i.e. without mitigation.

The distance of these receptors to the Site boundary, their direction relative to the Site and the frequency the wind blows in the direction of the receptor is detailed in Table 1 below. The sensitivity to odour of the individual receptor types identified in the third column of Table 1 is further detailed in Table 2.

Table 1 Potential Sensitive Receptors

No.	Receptor Description	Receptor Type	Direction from Site	Distance from Site (m)	Frequency Downwind (%)
1	Protos Ince Marsh Recovery Park Industrial Estate Adjacent plots. Including Standardkessel Baumgarte GmbH, Ince Park Renewables, Ince Park Biomass Energy Plant, CF Fertilisers UK.	Industrial / Commercial / Road	NW to ESE	10	5.39 to 18.67
2	Ince Marshes/Goldfinch Meadow	Surface Water / Recreational / Footpath	WNW to E	10	6.99 to 18.67
3	Farmland	Industrial / Commercial	NE to SE	220 to 535	2.52 to 10.09
4	Encirc Glass	Surface Water / Commercial / Industrial	S to WNW	230	1.36 to 10.04
5	Railway/Ince and Elton Train Station	Commercial / Recreational	SE to SW	630	1.35 to 2.52
6	Residential properties located off Orchard Park Lane/Ash Road	Residential / Recreational / Road	S to SW	750	1.36 to 2.47
7	Holme Farm/JH Willis & Son	Industrial / Commercial / Surface Water	NW	785	18.67
8	Manchester Ship Canal	Industrial / Commercial / Recreational / Surface Water	N to NNE	795	7.09 to 7.8
9	Waste Water Pumping Station	Industrial / Commercial	SSW	880	2.47
10	Mersey Estuary (Ramsar/SSSI/SPA)	Surface Water and sensitive habitat	N	880	7.09
11	Hoolpool Gutter	Surface Water	ENE to E	980	6.99 to 10.09

No.	Receptor Description	Receptor Type	Direction from Site	Distance from Site (m)	Frequency Downwind (%)
12	Surface water drainage network – Protos SWMP	Surface Water and sensitive habitats	E, N and S	10	1.36 to 7.09
13	Protos Habitat Mitigation Scheme	Sensitive habitats	W to E	100	2.22 to 18.67
14	On-site priority habitat – Woodland Management Plan	Sensitive Habitat	On-site – N	On-site	7.09
15	Marsh Lane	Road	NE to W	10	1.36 to 10.09
16	Ash Road	Road	SW	100	1.89
17	Residential Properties off Station Road / Ince Orchards	Residential	SW	990	1.89

Table 2 Types of Receptors Sensitive to Odour

Receptor Type	Sensitivity to Odour
Residential	High
Recreational	High
Commercial	High
Industrial	High
Highway	Low
Habitat	Low
Surface water	Low

[3.1.1] Residential, recreational, industrial, commercial, and educational premises

The potential emissions from the Site are likely to have a similar impact on persons occupying residential, recreations, commercial or educational premises. Exposure of emissions to persons in industrial or commercial premises may be lower as they are more likely to be inside during the working day or they may be transient visitors to the premises. Certain industrial activities may generate similar emissions to the Site, and the employees may be desensitised as a result.

The Site is located at Plot 13 of Protos Plastic Park part of the wider Protos Recovery Park located at Ince Marshes developed by Peel Environmental. This covers an area of approximately 54 hectares with various waste and energy industries occupying plots. Adjacent plots comprise a bottle manufacturing plant, resource recovery facility and biomass facility. The plastic park will comprise various plastic recycling and recovery facilities and a plastic to hydrogen facility.

[3.1.2] Highways and footpaths

The transitory nature of highways means receptors using those locations will be exposed to potential emissions from the Site for shorter (albeit variable) periods of time than residences or businesses. Pedestrians will have longer and more direct exposure to emissions compared to vehicle users.

Marsh and Pool Lane run adjacent to the north and south boundary of the Site respectively and form the main access roads to the Resource Recovery Park.

[3.2] Meteorological Conditions

The principal mechanism for the transit of odorous emissions from site operations to adjacent sensitive receptors is via ambient air. The distance and direction that these emissions will be carried is determined by the following factors:

- Source Related Pathways

- Meteorological Conditions; and
- Topography

[3.2.1] Wind Direction

The prevailing wind direction will determine which receptors will be affected and at what frequency. The main controlling factor in determining the pathway of odour is the ambient meteorological conditions. This is fundamental to the transportation of odour to sensitive receptors.

[3.2.2] Wind Velocity

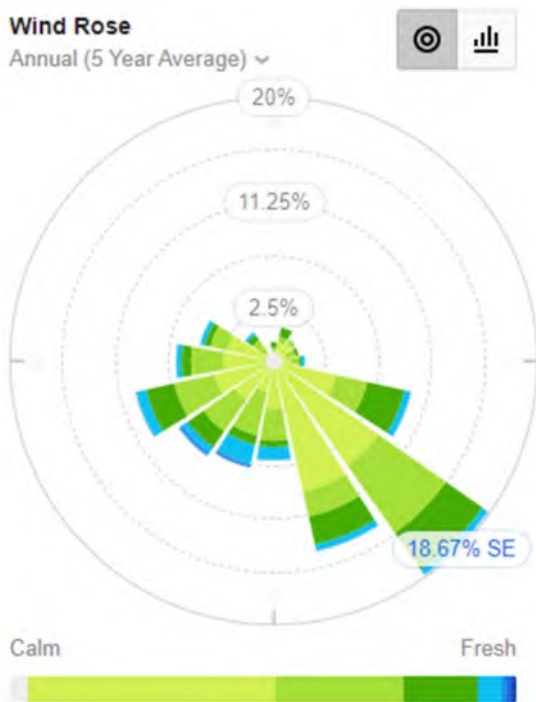
Wind velocity will affect the distance an odour emission will travel. Conversely, increased wind speed could also beneficially improve dispersal. Those receptors closest to the Site are still at the highest risk of a potential negative impact. Meteorological data from Ince¹ is expected to provide representative meteorological data for the area. The Windrose reproduced as Figure 1 indicates a prevailing wind direction from the south-east. The percentage the wind blows from each direction is presented in Table 3 below.

Table 3 Wind Direction Data Ince (5-year average)

Wind direction	5-year average percentage	Wind direction	5-year average percentage
North	1.36%	South	7.09%
North-northeast	2.47%	South-southwest	7.80%
Northeast	1.89%	Southwest	8.27%
East-northeast	1.83%	West-southwest	10.09%
East	2.22%	West	6.99%
East south-east	10.04%	West-northwest	5.39%
Southeast	18.67%	Northwest	2.52%
South-southeast	13.90%	North northwest	0.00%

¹ <https://wind.willyweather.co.uk/nw/cheshire/ince.html>

Figure 1 Windrose from Ince



[3.2.3] Air Temperature

Warm air may carry odours upwards by convection for their dispersal away from the site. However, warm weather will encourage the onset of biodegradation of exposed or temporarily stored wastes and therefore increase odour potential. Cold air has less ability for dispersion which can result in localising the potential odours. Temperature inversion in which warm odorous air trapped beneath a layer of cold air under still conditions can also influence potential odour emissions by effectively trapping odour emissions closer to the ground and inhibiting dispersion but potentially localising the potential odours.

[3.2.4] Adverse Weather Conditions

Unusual weather conditions may increase the risk of odour emissions from the site. Site staff will be vigilant to unusual trends in the meteorological data or forecasts which may indicate strong winds or extremes of temperature which may cause a potential problem. The types of weather conditions that may impact on odour generation and emissions and appropriate contingency actions are detailed in section 6.5 below.

[4] Odour Risk Assessment

[4.1] Site Odour Emissions

The risk potential to each receptor from odour generated at the Site is presented in Table 4 below. This table evaluates the nuisance to sensitive receptors from odour emissions and the control measures to be implemented at the Site in order to minimise this risk, producing a revised residual risk to receptors.

Table 4 Odour Risk Assessment and Management Plan

Hazard / Pathway	Receptor				Probability of exposure	Unmitigated Consequence	Initial Risk / Reason	Risk Management	Mitigated Risk
	No.	Direc.	Dist. (m)	Freq.					
Odour through the Air from: Waste storage. PRF and WwTP	1	NW to ESE	10	5.39 to 18.67	High - close proximity to the site, frequently downwind	Medium - staff/users sensitive to odour.	Medium	<p>Strict waste acceptance procedures are in place to ensure that no non-conforming materials are accepted which may contain malodorous waste.</p> <p>Regular olfactory monitoring will be conducted and will take account of meteorological conditions.</p> <p>Plastic bales will be stored within a separate building (feedstock store) with storage times limited to 14 days prior to treatment.</p> <p>All waste storage and treatment will be undertaken within enclosed buildings with the access doors remaining shut pending entry and exit for pedestrian and/or vehicular access.</p> <p>Regular olfactory monitoring will be conducted and will take account of meteorological conditions and potential impacts of odour (however unlikely) on receptors</p>	Low
	2	WNW to E	10	6.99 to 18.67	High - close proximity to the site, frequently downwind	Medium - users sensitive to odour. Surface water not sensitive to odour.	Medium		
	3	NE to SE	220 to 535	2.52 to 10.09	High - moderate proximity to the site, frequently downwind	Medium - staff/users sensitive to odour.	Medium		
	4	S to WNW	230	1.36 to 10.04	High - moderate proximity to the site, frequently downwind	Medium - staff/users sensitive to odour. Surface water not sensitive to odour.	Medium		
	5	SE to SW	630	1.35 to 2.52	Low - distant from the site, infrequently downwind	Medium - staff/users sensitive to odour.	Low		
	6	S to SW	750	1.36 to 2.47	Low - distant from the site, infrequently downwind	High - odour nuisance to residents	Medium		
	7	NW	785	18.67	Medium - distant from the site, frequently downwind odour.	Medium - staff/users sensitive to odour. Surface water not sensitive to odour.	Medium		
	8	N to NNE	795	7.09 to 7.8	Medium - distant from the site, moderately downwind	Medium - users sensitive to odour. Surface water not sensitive to odour.	Medium		
	9	SSW	880	2.47	Low - distant from site, infrequently downwind	Medium - staff sensitive to odour.	Low		
	10	N	880	7.09	Low - distant from the site, moderately downwind	Low - not a nuisance to habitats	Low		
	11	ENE to E	980	6.99 to 10.09	Medium - distant from site, frequently downwind	Low - surface water not sensitive to odour	Low		
	12	E, N and S	10	1.36 to 7.09	High - close proximity to the site, moderately downwind	Low - surface water and habitats not sensitive to odour	Medium		
	13	W to E	100	2.22 to 18.67	High - close proximity to the site, frequently downwind	Low - not a nuisance to habitats	Medium		
	14	On-site – N	On-site	7.09	High - close proximity to the site, moderately downwind	Low - not a nuisance to habitats	Medium		

Hazard / Pathway	Receptor				Probability of exposure	Unmitigated Consequence	Initial Risk / Reason	Risk Management	Mitigated Risk
	No.	Direc.	Dist. (m)	Freq.					
	15	NE to W	10	1.36 to 10.09	High - close proximity to the site, frequently downwind	Medium - users sensitive to odour.	Medium		
	16	SW	100	1.89	Medium - close proximity to the site, infrequently downwind	Medium - users sensitive to odour.	Medium		
	17	SW	990	1.89	Low - distant from site, infrequently downwind	High - odour nuisance to residents	Medium		

[5] Control measures and process monitoring

[5.1] Waste Pre-Acceptance and Acceptance

The Technical Standards Report (Document referenced: K0419-AYE-R-ENV-00003) details the waste acceptance procedures for the Site. Strict waste acceptance procedures are in place to ensure that no non-conforming materials are accepted which may contain malodorous waste not suited for treatment at the facility.

[5.1.1] Waste Acceptance

The site will follow strict waste acceptance and rejection procedures ensuring that no non-conforming waste is accepted on site. All waste is accepted via the weighbridge. All wastes are weighed on arrival and duty of care documentation is inspected. A visual inspection of all waste is made at the weighbridge prior to acceptance to ensure it is consistent with duty of care documentation and permitted waste types.

Vigilance will be exercised to ensure waste accepted is suitable, a more careful inspection of the load (for example because of a smell of solvents is detected) would be required. In such an instance the vehicle shall be directed to the designated quarantine area, where the driver shall uncover their load to allow for inspection.

All inspections shall be conducted by trained and competent staff adhering to site specific procedures and risk assessments.

If the load is found to contain non-conforming waste the Production and Quality Manager shall decide whether non-conforming waste can be removed without posing a risk to health and safety of staff and visitors and can be readily and safely separated. If this is the case, the portion of non-conforming waste shall be segregated from the load, and the remainder of the load shall be processed.

As a further measure of quality compliance, an Enviroo appointed sampling technician will on a routine basis attend all suppliers. The technician will take representative fuel samples from waste streams bound for the PRF and ensure that the waste being sent is of the correct composition. Any issues found will be investigated. Any actions decided upon will be tracked by the EHS Manager.

All duty of care documentation is assessed and is to be stored electronically.

In the event that any highly odorous waste is identified during the waste acceptance process the Site Manager will be notified and the waste load will be segregated in the quarantine area for a maximum of 24 hours or immediately rejected. The rejection procedure for waste is detailed in Waste Acceptance Procedures (WAP) in the Environmental Management System (EMS).

[5.1.2] Waste handling and storage

The plastic bales accepted at the Site after weighing in are delivered to the feedstock store comprising a purpose-built enclosed building.

The covered feedstock store will be located to the northwest of the PRF building. Six bays are to be located in the building. These will be 3-sided and constructed from 80 cm thick Legioblock walls. Bales are to be stacked pending treatment in a designated storage bay. The bays will be constructed from pre-cast concrete blocks up to 3.5 m. Bays 3 to 6 are to be used for feedstock. Bays 1 and 2

will be used for waste bale storage and for storage of other waste such as flake reject bags, caps and labels bags, extruder waste.

The plastic bales would then be transferred by forklift truck to the PRF Building for processing.

Bales will be processed based on operational requirements and will be stored no longer than 14 days.

[5.2] PRF Building Controls

The plastic recycling process will be undertaken in a fully enclosed building with abatement system. The building will have fast acting roller shutter doors to allow delivery of waste and the export of waste materials only. The vehicular access doors will be closed when not in use.

Air extraction is to be installed within the PRF building to contain and abate fugitive emissions of dust. Processes that have the potential to create dust therefore are to be contained and extracted via designated air extraction systems. Local Exhaust Ventilation (LEV) systems are to be installed. The proposed design comprises LEV1 serving the mechanical dust generation points of the shredder and sorting plant, and LEV2 a second system which includes the rPET melt and evaporate from the screen changer process areas. The extracted air will be drawn into a centralised ducting system and passed through a baghouse filter system prior to discharge to atmosphere. Both systems would minimise the emission of dust and particulates. There would also be two flues from the natural gas boilers used to heat the process water. The enclosed buildings are also ventilated to provide a safe working environment.

A daily inspection of all recycling plant will be undertaken to ensure the plant is operating as designed. The recycling plant will be subject to a routine maintenance programme.

As stated previously all waste storage and treatment is to be undertaken within an enclosed building with an air extraction system.

[5.3] Housekeeping Practices

The PRF building will be subject to regular housekeeping and cleaning of waste storage and treatment areas. Cleaning will be undertaken as necessary if identified during daily inspections to prevent the build-up of any waste residues.

Scheduled cleaning is done periodically, including hoovering dusts, litter picking, sweeping, and general tidying. The importance of housekeeping is communicated out to all employees / contractors prior to starting work. Routine weekly site safety walks are done by each departmental manager, who will monitor and check housekeeping standards and report any defects. Records of Planned Preventative Management (PPM) and safety walks are retained on Site. Jet wash facilities will be available if necessary for cleaning of waste storage / treatment areas.

The housekeeping practices to be utilised will minimise fugitive release or vehicles tracking any material outside of the PRF building.

[5.4] Drainage

Water is reused on site where possible with any surplus disposed to surface water after treatment in an onsite WwTP. All surfaces used to treat or store waste comprise impermeable hardstanding. There are no direct releases off-site other than via the engineered surface water management system or from the WwTP.

The site surface will comprise impermeable concrete hardstanding with sealed drainage and will be kerbed. Externally all surface water will be drained via appropriate falls in the site surfacing and collected in a sealed drainage system. Surface water will pass through via silt chambers designed to capture sediment and other pollutants and finally through a Full Retention Separator prior to discharge of-site. Isolating chambers and penstock valves will be in place to enable the surface water system to be isolated in the event of a pollution incident or fire. Surface water will be discharged into the surface water ditch which runs around the north, east and southern boundary of the Site. This ditch is part of the larger drainage network developed by Protos as part of the Ince Resource Recovery Park. The drainage ditches form part of a network of main rivers and ordinary watercourses that form part of the Ince Marshes catchment and are drained by the Environment Agency (Agency) operated surface water pumping station to the north of the site. The water in the drainage ditches eventually flow into the Mersey Estuary.

All drainage infrastructures will be inspected, maintained and repaired as necessary. In the highly unlikely event that odour should become an issue as a result of the on-site drainage system and/or the WwTP, a full review of the infrastructure will be conducted and cleaning and inspection frequencies adjusted accordingly.

[5.5] WwTP Controls

In the PRF building all drainage will be collected via drainage channels and sump pits. A pumping station will pump the collected sump pits and process water to the WwTP. The WwTP is a closed and contained process. The following controls will be in place to control odour associated with the WwTP.

- All tanks and pipework to be enclosed and regularly inspected for integrity.
- Effluent monitoring of process parameters pH, temperature, oxygen to ensure WwTP is operating as designed to ensure aerobic treatment.
- WwTP fully automated and controlled via SCADA control system with manual override controls. The control system will auto-control dosing pumps to adjust based on control parameters.
- SCADA monitoring of treatment plant able to monitor and record all potential faults and errors instantaneously to allow immediate solutions to be actioned.
- Sludges are to be stored within a container for no longer than 48 hours and will be dewatered as soon as possible.
- All infrastructure used on site including vessels, pipes, tanks and connections will be resistant to materials used and stored on the site. Furthermore, they will not be used in a manner other than for which they designed, nor will they be used for a duration exceeding the specified design life.
- If odour is detected via off-site olfactory monitoring or from a complaint a review of the WwTP process will be undertaken.

[6] Odour Reporting

[6.1] Overview

Prevention will be viewed as the most effective means of controlling odour before an impact occurs. The Source → Pathway → Receptor model determined above allows for the identification of the critical control points where odour can arise, how it can travel to a receptor and the likely impact.

The performance of an odour management system will ultimately be judged by the impact of the site on the receptors. Should complaints be received, a procedure will be in place to effectively deal with the issue in a sensitive, efficient and auditable manner.

The controls are detailed in previous sections of this report. The management of those controls will be based on the on-going monitoring regime on Site. The monitoring regime can work as an early warning system against potential problems (e.g. meteorological monitoring) or a diagnostic tool to establish the cause of an odour event (e.g. perimeter monitoring).

[6.2] Complaints reporting

[6.2.1] Complaints procedure

Any complaints received at the Site or via the Regulatory bodies including the Agency and Local Authority, will be recorded using the Odour Compliant Report Form contained in the Site Management System. This will instigate further olfactory monitoring at the location of the complaint and on site to determine the extent of the odour and whether a mobile mister should be employed. Where possible, as much information and detail about the complaint will be recorded, whether this is from the relevant authority or complaint direct to site. This information will assist in the investigation and determining the source of the odour e.g. differentiating between potential off-site odours.

All complaints and queries will be logged in accordance with the management system as soon as is practicably possible. All complaints logged will be subject to investigation and complainants responded to within 48 hours of receipt, where possible.

In the event that a substantiated odour complaint is received arising from the site, additional monitoring will be undertaken at the nearest sensitive receptors to determine any off-site odour emissions.

Complaints regarding odour from the Site will be investigated in accordance with the protocol, and appropriate records maintained which may include:

- Complaints received including name and contact details of complainant (if known), and complainants' description of the odour;
- Nature of problem including date, time, duration, prevailing weather conditions and cause of the problem;
- Onsite activities and operational condition at the time of the complaint;
- Records of the likely source of the odour even if it is clearly not from the Site;
- Details on the corrective action taken, and any subsequent changes to monitoring and operational procedures;

The Agency will be informed by Enviroo of the complaint and Enviroo will confirm to the best of its knowledge the information described above.

Enviroo will ensure that the complainant has all the relevant contact details of the site (i.e. the Site Manager) and the officer responsible at the Agency. Enviroo will be in regular contact with the complainant and the Agency whilst the cause of the odour is being investigated and remediated.

An evaluation of the effectiveness of the techniques used will be carried out on completion of any remedial measures or if the complaints persist. Records of the above will be retained by site for future reference.

[6.2.2] Complaints Investigation

As part of each odour complaint received, these will be objectively assessed against the wider environment to ensure that the source of the emission is traced back to the correct source. As discussed earlier in this OMP, it is essential that the source is correctly identified in order that mitigating measures can be applied effectively and correctly. The complaint will also be assessed against previous records to place the nature of the complaint into context.

[6.3] Community engagement

The Site will be readily contactable to outside organisations and to members of the public. The Site signage board (placed in a readily visible location) will contain the necessary contact details for both the Site operations and Agency. The company website also contains the necessary contact details for each individual Site.

Any complaints received directly to Site will be notified to the Agency. Should an off-site issue arise, therefore, the complainant has a readily available means of getting in touch with Enviroo.

[6.4] Monitoring

[6.4.1] Off-Site Olfactory

The General Manager will be responsible for ensuring that daily odour monitoring is undertaken at the Site and its perimeter in order to identify any sources of odour and to establish whether any odours are discernible. Due to the potential for de-sensitisation to odours, odour monitoring will only be carried out by personnel who do not regularly work at the site. These personnel will be the most suitable to detect any fugitive odour outside the Site.

Off-site olfactory monitoring will also be carried out with reference to the protocol in Appendix 1 of the Agency H4 Odour Management Guidance. All site operatives will be responsible for reporting any odour problems as soon as practicable to the Site Manager or the next level of management if the manager is not available.

The following locations will be targeted for odour monitoring by the nominated site personnel:

- Weighbridge (continuous monitoring of vehicles);
- Feedstock store.
- PRF Building.
- WwTP

- Subject to prevailing wind direction (i.e. up and down wind), appropriate areas of the site perimeter.

The following information will be recorded during each round of monitoring:

- Name and job position of assessor;
- Nature of any problem identified including location / source, date, time, duration, prevailing weather conditions and likely cause;
- The intensity of the odour based on the VDI 3882 Part 1 Odour intensity scale which provides intensity levels 0 to 6.

• Intensity	4 Strong odour
0 No odour	5 Very strong odour
1 Very faint odour	6 Extremely strong odour
2 Faint odour	• Ref: German Standard VDI 3882, Part 14
3 Distinct odour	

- On-site activities and operational condition at the time of the monitoring visit (this should include any abnormal events);
- Records of the likely source of any odour even if it is not from the Site;
- Details on the corrective action taken, realistic timeframes for remedial works and any subsequent changes to monitoring and operational procedures.

The General Manager will be informed immediately of any findings of odour attributed to the Site and will authorise remedial measures to be taken.

Control and trigger levels are applied as shown in Table 5.

[6.4.2] Control and Trigger Levels

Control and trigger levels for odour are presented in Table 5.

Table 5 Control and trigger levels for odour

Parameter	Monitoring Technique	Control Levels
Odour	Olfactory monitoring	Odour Intensity ≥ 3 Distinct odour recorded at any monitoring location (Actions detailed in Section 6.3)
	Complaint	Complaint received (Actions detailed in Section 6.4)

[6.5] Odour investigation

[6.5.1] Odour investigation procedure

Any exceedance of the trigger levels identified in Table 5 related to a distinct odour will trigger an internal investigation into the source of any odour and efficacy of current control measures.

The following procedure will be undertaken:

- Identification of source of odour during the monitoring visit or type of odour identified in a complaint.
- On-site activities and operational condition at the time of the monitoring visit or complaint (this should include any abnormal events, quarantined waste loads for example).
- Nature of any problem identified including location / source, date, time, duration, prevailing weather conditions and likely cause.
- If odour continues to breach trigger levels the activities will temporarily cease until actions can be undertaken and effective controls are in place.

[6.5.2] Corrective Actions

Corrective actions may require the adoption of additional control measures at the PRF.

Corrective actions may comprise but are not limited to the following:

- Additional olfactory monitoring.
- Review of all processes on site.
- Review of odour control measures.
- Adoption of additional odour abatement equipment which may include the addition of odour surfactant to the dust suppression systems if required.

[6.6] Abnormal Events and Contingency Procedures

[6.6.1] Temperature Inversions

All waste storage and treatment will be undertaken within purpose-built buildings reducing the impact of external temperature changes on waste storage and limit the potential of temperature inversions on the potential for causing odour. The air extraction system effectively controls odour emissions by capturing and treating volatile compounds to reduce the potential for any odour emissions.

[6.6.2] Strong Winds

The feedstock store and PRF building provide a physical barrier against strong winds and transmission of odour. Daily visual inspection of the site infrastructure will be undertaken and recorded. Additional inspection for damage resulting from high wind events will also be undertaken and appropriate contingency actions undertaken including removal of waste from feedstock store or PRF Building until repairs can be undertaken. The PRF is to be located within a wider plastics park

which will be able to potentially accept diverted waste streams where possible in the event site operations are required to be temporarily suspended or cease.

[6.6.3] Snow / Ice

Severe cold weather may result in disruption to waste deliveries and removal of materials from site however due to the nature of the waste stream limited to plastic bales to be treated it is unlikely to cause an increase in odour. The PRF is to be located within a wider plastics park which will be able to potentially accept diverted waste streams where possible in the event site operations are required to be temporarily suspended or cease.

[6.6.4] Hot Conditions

The warmer the waste the greater the potential to generate odour therefore an increase in ambient air temperature may result in increased odour due to the promotion of the biodegradation process. The buildings will be ventilated to reduce building temperatures. The air extraction system in the PRF building will limit the potential odour from the building.

[6.6.5] Unscheduled unavailability

Unscheduled unavailability should only take place due to unscheduled maintenance, emergency situations and for Health and Safety reasons such as a fire at the site. In such cases the site operative will initially inform the General Manager who will in turn inform the COO and the Agency. Enviroo will implement measures to store or divert waste streams as necessary. The PRF is to be located within a wider plastics park which will be able to potentially accept diverted waste streams where possible in the event site operations are required to be temporarily suspended or cease.

[6.7] Records and Review

A daily record relating to the management and monitoring of odour will be maintained. It will include the following details:

- The results of inspections and olfactory monitoring carried out by personnel;
- Weather conditions including atmospheric pressure, wind speed and wind direction;
- Problems including date, time, duration, prevailing weather conditions and cause of the problem;
- Complaints received including address of complainant; and
- Details of the corrective action taken, and any subsequent changes to operational procedures.

The OMP will be reviewed on an annual basis with the scheduled review of the site management system or with every major increase, or alteration to the odour generated at site (i.e. a change to odour source term, pathways or receptors).



Appendix A – Daily Record Log

Daily Site Inspection Report

SITE: _____

WEEK COMMENCING: _____

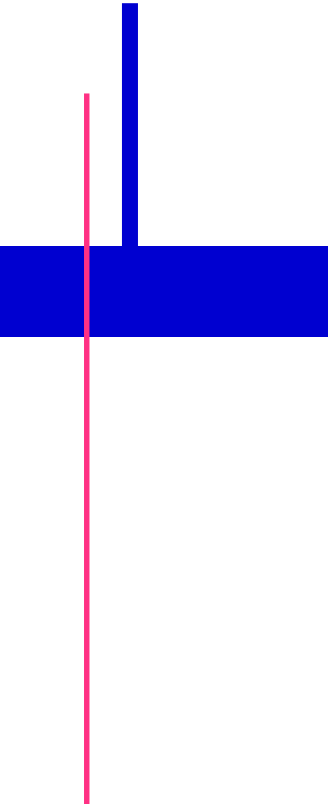
ITEM NO.	ITEM DESCRIPTION.	SUN	MON	TUE	WED	THUR	FRI	SAT
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COMMENTS BELOW (Please insert number)

NO.	DATE	COMMENT

INSPECTED BY: _____ **DATE:** _____

CHECKED BY: _____ **DATE:** _____



Appendix B- Complaints Form

Details	
Name	
Address	
Postcode	
Contact Details	
Tel	
Email	
Date	
Complaint Ref Number	
Complaint Details	
Investigation Details	
Investigation carried out by	
Position	
Date & Time investigation carried out	
Weather conditions	
Wind direction and speed	
Investigation findings	
Feedback given to Environment Agency and / or local authority	
Date feedback given	
Feedback given to public	
Date feedback given	
Review and Improve	
Improvements needed to prevent a reoccurrence	
Proposed date for completion of the improvements	
Actual date for completion	
If different insert reason for delay	
Does the dust and emissions management plan need to be updated	
Date that the dust and emissions management plan was updated	
Closure	
Site Manager review date	
Site Manager signature to confirm no further action required	