

enviroparks	Ref No.	Type	Issue	Issue Date
	OMS2.3	Operations Management System	DRAFT	Jan 17
Odour Management Plan				

1. Introduction

This Odour Management Plan forms part of the Integrated Management Plan and associated management systems for Enviroparks (Wales) Limited (EWL). It has been based on the Environment Agency guidance document (H4 Odour Management). It identifies potential sources of odour and risks to receptors; actions to minimise the risk of pollution from odour and procedures to follow should odour be detected off site in order to prevent or minimise the odour.

The site Environmental Permit states that Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

The Plan also contains the following Appendices:

- Appendix A – Main Building Layout (includes details of waste processing and storage areas);
- Appendix B – Sensitive Receptors Map;
- Appendix C – Copy of Odour Assessment Form (Doc Ref: GMS1.5.3.2).

This plan will be reviewed and updated annually or following a significant odour release at site.

2. Overview of site activities

The Enviroparks (Wales) Limited site is located on Ninth Avenue, Hirwaun Industrial Estate, Hirwaun. It lies in an industrial area with industrial buildings to the south and east, and open land to the west. The Penderyn Reservoir is located to the north of the site.

The site will be permitted to pre-treat non-hazardous waste to produce a Refuse Derived Fuel (RDF) to a set specification. The RDF will be used at the site to fuel three gasifiers to produce renewable energy. All site activities, from the receipt of wastes to its treatment and storage will be included within the site Environmental Permit. Directly Associated activities include the discharge of potentially contaminated drainage to sewer, the storage and use of diesel fuel, oils and greases, and as required, the storage and use of dust and odour suppressant chemicals.

The site will principally be operated by Enviroparks (Wales) Limited, although operations and maintenance may be subcontracted if appropriate, and will treat mainly commercial and industrial wastes to extract ferrous metal, fines, and inert aggregate for recycling. The site will also receive other pre-treated wastes, such as RDF produced by third parties. Once recyclable materials have been removed, the residual material will be processed and prepared to a specified fuel for use in the three gasifier lines proposed for installation at the site. The site targets delivery of up to 97.5 % diversion from landfill of materials entering the site, and the energy produced by the waste processing will be traded to a high-energy demand commercial operation, co-located with the facility on suitable commercial terms, with excess energy being sold to the National Grid.

All incoming wastes will be unloaded, stored and treated within the Fuel Preparation Hall, and loose recyclates will be stored and loaded for dispatch from within the building. Incoming feedstocks will be separated into recyclates, gasifier fuel and aggregates. As far as practical, the building's roller shutter doors will be kept closed, except for when vehicles are entering or exiting the building, to contain any odour, dust or litter. Discharges to atmosphere from the gasification lines will be from a 45 m high chimney. There are no other point source emissions to air from the site apart from building ventilation. The only emission to surface water is from roofs and clean landscaped areas. All waste processing and plant wash down areas drain to the foul water system.

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As part of the Integrated Management Plan, the Company maintains a detailed Site Accident and Incident Management Plan which includes full consideration of the potential for accidents and incidents to occur at the site, the possible resultant impact of such incidents, and the control measures employed to guard against and deal with such incidents should they occur. Additionally, a Non-Conformance reporting and investigation procedure is used for all incidents and supports the continual review and development of the Accident and Incident Management Plan. The information collated and regularly reviewed through this system, results in relevant emergency procedures, which specify the actions to be taken in the event of any such incident, e.g. fire, spill, flooding etc. occurring.

3. Potential Sources of Odours and receptors at risk

The site is permitted to receive and store the following potentially odorous wastes:

- Wood / Plant Tissue Waste;
- Refuse Derived Fuel (RDF) / Solid Recovered Fuel (SRF);
- Biodegradable Waste.

The amounts of biodegradable wastes should be minimal due to the nature of the wastes being accepted at the site.

Other potential sources of odours:

- Fuels / Chemical storage;
- Leachate / contaminated run-off.

Off Site potential odour sources:

- Hirwaun Waste Water Treatment Works – located off Ninth Avenue approximately 50 metres from site boundary;
- Farms – As identified in receptors table below.

The map in Appendix B shows sensitive receptors within a 1.5 km radius of the site. Sensitive receptors are identified as residential dwellings, ecologically designated sites, and commercial buildings/businesses.

Sensitive receptors include:

- human: schools, hospitals, nursing and care homes, residential areas, workplaces;
- critical infrastructure: roads, railways, bus stations, pylons, utilities, airports;
- environmental: surface and groundwater, protected habitats and air quality management areas.

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Within the 1.5 km radius, the following receptors have been identified:

Receptor	Approximate distance from site boundary (m)	Direction
Eden Trading	10	E
Penderyn Reservoir	60	N
Businesses South of Fifth Avenue	40-100	S
Cors Bryn-Y-Gaer SSSI / SAC	135	ESE
Businesses on Hirwaun Ind. Est. (South of A465)	250-700	SW/S/SE
House at Penderyn Reservoir	375	NNE
Trebanog Uchaf Farm	380	NNE
Tai-Cwpla Farm	420	WNW
Ty Newydd Country Hotel	600	NE
Caradogs Restaurant	600	NE
Blaen Cynon Pontpren SSSI / SAC	710	ENE
Blaen Cynon Woodland Park 1 SSSI / SAC	740	NE
Castell Farm	820	SW
Blaen Cynon Woodland Park 2 SSSI / SAC	830	NE
Nearest residential properties at Pontbren Llwyd	1000	NE
Nearest residential properties at Hirwaun	1300	SE
Nearest residential properties at Rhigos	1350	SSW

The site will proactively engage with all sensitive receptors through their Community Interest Company, and encourage discussions should there be any concerns or issues with the site activity.

4. Waste Quantities and Storage

The currently permitted site capacity is for the receipt of up to 238,000 tonnes of waste per annum and this will comprise commercial and industrial (C and I) waste and pre-treated RDF. Acceptable C and I wastes will primarily be from commercial and industrial operations, along with some construction and demolition waste. The site will also accept pre-treated waste for use in the gasification process. There is no daily maximum throughput specified on the site Permit, however the site will receive no more than 550 tonnes of waste on any one day. The majority of wastes will be processed for use as gasifier fuel, once recyclates and aggregates are removed, with a minimal rate of rejection to landfill. An insignificant quantity of material may require returning to the waste producer via the quarantine procedure, where these are not acceptable to the process, e.g. gas bottles.

Waste delivery and dispatch is restricted to 08:00 to 18:00 Monday to Friday and 08:00 to 13:00 on Saturday. In accordance with the planning conditions on the site, there are no waste movements on Sundays or bank holidays. Waste will not be accepted if for any reason there is insufficient storage capacity available or if the site is inadequately staffed.

During operational hours, the main gates are open and the site is manned with sufficient staff for the operations. Outside of operational hours the gates are shut and locked, and the site employs a security guard and recorded CCTV surveillance.

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Waste and feedstocks arriving at site are checked visually for quality assurance purposes and unacceptable wastes / feedstocks will be refused entry if they fail this initial inspection and screening process. Acceptable wastes / feedstocks are then weighed on a weighbridge and directed to the delivery area.

All incoming wastes (including pre-processed Refuse Derived Fuel) are unloaded and stored within the Fuel Preparation Hall where they are screened and segregated before either being stored or loaded into the production process and primary shredder. Operations that occur once the waste has been received are:

- Sorting of incoming Waste to separate out recyclates (Ferrous and non-ferrous metals).
- Separation of fines and further processing to remove biogenic mater for the reintroduction of the organic fines fraction to gasifier fuel.
- Shredding of the RDF waste to a gasifier fuel specification.
- Storage of loose recyclates and landfill materials in bunkers prior to dispatch off-site. These are stored at the far end of the building from the reception area.

Waste delivery vehicles reverse into the building through fast acting roller shutter doors. In total, there are four delivery access doors, allowing more than one vehicle to enter the waste reception area simultaneously. The fast-acting roller shutter doors are automatically controlled, closing behind delivery vehicles wherever possible, whilst they discharge their loads. On entering the waste reception area, vehicles discharge their payload onto a flat impermeable reception slab surrounded by concrete push walls to a height of 5m. The building's roller shutter doors are, as far as practical, kept closed, except for when vehicles are entering or exiting the building, to contain any odour, dust or litter.

Upon tipping, a wheeled front end loader(s) and 360° grab(s) are employed to manage the incoming waste. The waste will be sorted into appropriate fractions as detailed above. Inerts, heavy residues and recyclates will be segregated and sorted. Segregated wastes are directed immediately into appropriate bunkers or containers ready for collection from site. The quantity of material in the bunkers and containers is monitored and they are emptied and exchanged as necessary to ensure adequate storage space for the incoming materials. The residual waste will be shredded to < 75 mm particle sizes and sent via conveyor to the fuel storage building where it will be stored in bunkers prior to being used in the gasification process.

The Fuel Preparation Hall has been designed to ensure ease of access and to allow the most efficient delivery of waste to the site. Sufficient space is available to store two day's waste inputs prior to processing. Because waste is only accepted between the hours of 08:00 and 18:00 Monday to Friday and on Saturday mornings, the reception area will be completely cleared before the end of each day's operations. The reception area will be inspected, and if necessary cleaned, prior to the start of the next day's deliveries. It is the intention that waste is not stored in the reception hall for more than 24 hours but that waste received each day will be processed by the end of the evening shift wherever possible. Sufficient capacity does exist within the reception area for three days' waste storage (approximately 2,800 tonnes) should this be required as a contingency. Once processed, the gasifier fuel is transported internally into the Fuel Storage Hall, which can store sufficient fuel for a maximum of five days' operation.

A safe and secure quarantine area will be used for the storage of any inadvertently received non-permitted or unsuitable waste, pending its collection and removal from the site to a suitably authorised facility. This will be within a designated quarantine bay inside the waste reception area. The Fuel Preparation building has distinct, clearly defined areas to ensure that incoming waste, recyclates and RDF are stored separately and cannot become cross contaminated.

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Waste is collected promptly following processing, generally within 24 hours. Maximum storage times of treated wastes will be as shown below:

Type of Product	Maximum Storage Time
Refuse Derived Fuel	5 Days
Metals and inert materials	1 Week
Fine organics	2 Days

Where operations stop for more than 24 hours, such as at weekends, waste will be turned prior to re-starting operations. This prevents hotspots from developing within the waste and reduces the potential for anaerobic and potentially odorous conditions to develop. It also ensures that material is processed on a first-in, first-out basis, and avoids fresh waste being stored on top of stored waste, as the waste is moved forwards within the bunker, enabling fresh waste to be stored behind.

Storage amounts at any one time are as follows:

Type of Product	Maximum Storage Volumes (m³)
Unsorted Commercial and Industrial Waste	784
Unsorted Municipal Solid Waste	448
Unsorted Carpets / Mattresses	336
Unsorted Construction and Demolition Waste	336
Ferrous	24
Non-Ferrous	27
Fines	140
Inert Landfill	72
Landfill Residue	72
Organic	216
Plastics / PVC	180

All materials are removed to specialist recyclers or landfill within the acceptable hours of transportation from the site, and thus some segregated materials may be retained on site until the next delivery and dispatch period.

As the hours for waste delivery and dispatch are limited by the planning permissions whilst waste treatment continues for up to 18 hours a day, trailers loaded with waste may be parked on site overnight, pending dispatch the following morning, or on a Monday following Saturday morning operations.

Waste receipt and processing takes place inside the building, thus keeping the waste dry and minimising the possibility of fugitive emissions. Waste is received in enclosed or covered vehicles and is unloaded inside the building. As far as practical, the doors to the building are kept closed, other than when vehicles are entering or exiting the site.

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5. Odour Prevention/Abatement

The main source of odours at the site is likely to be from waste receipt, and the storage and treatment areas. Elements of biodegradable / putrescible materials may be included with the waste, and these can lead to odour if not treated in a timely manner. The main odour prevention technique will be through management, with all wastes being deposited and treated in the Fuel Preparation Hall. The building doors will be kept closed at all times possible except for when vehicles are tipping. Systems of suitable and sufficient ventilation, coupled with fast acting roller shutter doors will minimise the potential release of odour.

Incoming waste will be checked and assessed upon delivery for any odorous materials and if found will be treated as a priority to minimise any potential impacts. Waste will be covered when arriving at site and again this will minimise odours.

Waste is dosed with a BeeFoam additive after shredding. BeeFoam can capture dust and floating airborne particles and thus is used to reduce potential dust and odour emissions at site. The foam adheres to the dust and makes it heavier, such that no further dust is created, and thereby also minimises the release of odours.

Wastes that are considered to have the potential to cause odours will be stored at the site for no longer than 2 days, and to avoid situations that favour anaerobic breakdown and odours, the waste will be frequently turned. Once separated, the waste is stored in bunkers within the building.

Air from the Fuel Storage hall will be extracted and used as a combustion gas in the gasification process. As such, the Fuel Storage Hall will be under negative pressure and thus will reduce the potential for fugitive odorous emissions.

Site staff will carry out odour assessments outside the operational buildings and during a walk around survey of the site boundary, as part of the daily checks, these will be recorded in the site diary and on the Daily / Weekly Check Sheet (Doc Ref: OMS2.6). If odours are detected, a senior Manager will be notified and an investigation will be carried out as detailed below. No active odour monitoring will be carried out at the site unless identified as necessary through a number of complaints being received or identifying persistent issues at site. Where persistent or repeated complaints are received, complainants will be asked to keep an odour diary in an attempt to identify the cause of the odour. If odour is found to be a problem at the site, further abatement techniques will be reviewed and considered for use in discussion with Natural Resources Wales.

There are no additional odour control measures in place at the site, however the daily noise, odour and housekeeping checks would identify any areas of concern where additional measures may be required. Any odour complaints received would be investigated comprehensively, with full consideration given to any additional control or abatement techniques necessary.

6. Odour Complaint Response

Enviroparks (Wales) Ltd operate a complaints reporting procedure, and all complaints are logged and investigated. This procedure applies to complaints of any nature, including those relating to odour issues.

See EWL Complaints Procedure (Document REF: GMS1.5.3) for further details. A summary of the procedure is below:

- Where a complaint is received, a record of the following details will be taken:
 - ❖ The name and contact details of the complainant;
 - ❖ The details of the complaint – nature, date, circumstances etc.
- Where sufficient detail can be obtained at the time of the complaint, any staff member receiving a complaint should complete a Complaint Form and these will be logged within the Complaints File.
- Once completed, the Complaint Form must be forwarded to the Manufacturing Manager who will investigate the issue.

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- The Manufacturing Manager will make an initial assessment of the nature of the complaint, and will pass details of the complaint on to the Managing Director where a significant incident has occurred or if there is a pattern of repeated complaints.
- The Manufacturing Manager or another trained member of staff will investigate each and every complaint.
- The investigation may include consideration of the nature of incoming or treated wastes at the time of the complaint, the vehicles attending site at the time, the weather during the day of the complaint, or any other site factors, e.g. plant breakdown etc. which may have impacted on the site's ability to operate without causing a nuisance or annoyance (see below for further details of investigation specific to odour)
- Where remedial actions are considered appropriate, the Manufacturing Manager must instigate them within the site operations, and ensure that the results of any action are monitored and recorded.
- No later than 10 working days from the initial complaint, the QSE Manager or the Managing Director will contact the complainant to advise of the results of the investigation and the action taken unless they have requested that the Company does not contact them.
- Where investigations are on-going, the QSE Manager should offer to contact the complainant again after an agreed period, to update them on the investigation, and such contact must continue until the complaint is closed out, or until the complainant confirms that they do not require any further correspondence regarding the issue.
- Once remedial action is completed, the QSE Manager will record this in the Complaints File and the incident is considered to be closed, with a summary of the remedial action being provided to the Managing Director as appropriate.
- The QSE Manager, the Manufacturing Manager and Managing Director will assess the complaints logged at least annually, to review trends and to ensure that operational procedures are revised where required.

Further details of investigation of odour complaints:

In order to investigate an odour complaint further, staff may need to complete off-site monitoring to confirm the presence of an odour, its impact and potential sources. If deemed necessary, a trained staff member will carry out olfactory assessments at dedicated locations off site as well as at the complainant's location. An Odour Assessment Form (see Appendix C) will be completed and reported to the QSE Manager. The site will reduce or stop the activities that are causing odour until either the circumstances have changed or other appropriate measures have been put in place to allow the operations to re-commence without causing offence. Where no evidence of odour can be found, or where it is determined not to be caused by the site processes, the QSE Manager will log their findings, and will report to the Local Authority / Natural Resources Wales / complainant as appropriate.

All complaints and investigations are recorded and are reported to the Site Manager, who is responsible for ensuring that any complaint is investigated and documented comprehensively.

A weather station is located on site to predict potential impacts on identified receptors. Neighbours are encouraged to contact the site directly to report any odour impacts from the site.



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Appendix C - Copy of Odour Assessment Form (Doc Ref: GMS1.5.3.2)

Enviroparks (Wales) Ltd. Odour Assessment Form

This form is to be completed when an Odour Assessment is carried out following a complaint of odour is received by the site.

Assessment will be carried out at the following receptors/locations:

- Perimeter of Operational Building / Site Entrance / Site Exit / Complainants Location / Other locations TBC

Name of person carrying out assessment:	
Company role:	
Date and time of assessment:	
Location of assessment - Address/NGR	
Weather conditions:	
Wind direction:	
Details of complaint - location, nature of odour detected etc:	
Time odour first detected:	
Description of odour:	
Intensity of odour (0 No odour 1 Very faint odour 2 Faint odour 3 Distinct odour 4 Strong odour 5 Very strong odour 6 Extremely strong odour)	
Odour intensity characteristics – Is the odour a consistent strength or does it vary?	
Time odour no longer detected:	
Comments (e.g. what does it smell like, is the source evident, is it constant or intermittent?):	
Signed:	
Date:	