Darwen Resource Recovery Park

784-B043732

Best Available Techniques and Operating Techniques

Environmental Permit Variation Application

SUEZ Recycling and Recovery UK Ltd

May 2024

Document prepared on behalf of Tetra Tech Limited. Registered in England number: 01959704

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1.0 INTRODUCTION

1.1 REPORT CONTEXT

1.1.1 This Environmental Permit Application has been prepared by Tetra Tech on behalf of the Operator, SUEZ Recycling & Recovery UK Ltd (SUEZ) Darwen Resource Recovery Park (the site), Lower Eccleshill Road, Darwen, Lancashire BB3 0RPat approximate National Grid Reference (NGR) SD 69375 23967. The site location and permit boundary are presented on Drawing Number SUEZ/B043732/PER/01.

1.1.2 SUEZ currently hold a bespoke environmental permit (reference EPR/BB3609KA) at the site which allows the operation of a Material Recycling Facility (MRF), Plastics Physical Treatment Facility, Glass Bulking Facility and Household, Commercial & Industrial (HCI) Waste Transfer Station.

1.1.3 SUEZ are now seeking to vary the environmental permit to allow the operation of a new Anaerobic Digestion (AD) Facility that will process food waste from household waste collections as well as industrial and commercial customers. The process will generate biogas which will mainly be processed by two Combined Heat and Power (CHP) engines to generate heat and electricity that would be used by the AD plant. Once the parasitic load has been met, any excess biogas will be processed by a gas upgrading plant to National Gas Grid criteria and injected into the gas grid via a gas main situated to the southeast corner of the site. Alternatively, excess biogas will be processed by the CHP engines to generate electricity that will be exported to the National Grid. Each of the CHP will have a capacity of 1.2MW and therefore it's considered that the CHP engines will be subject to the Medium Combustion Plant Directive (MCPD) and therefore will comprise 2 x 1.2MW MCPs with a specified generator (SG).

1.1.4 To facilitate the installation and operation of the AD facility, SUEZ are seeking to demolish the existing buildings and site infrastructure and redevelop the whole site.

1.1.5 In addition to the AD Facility, SUEZ will continue to operate a waste transfer station as well as maintain the Material Recycling Facility as per the original environmental permit, there is currently no intention to operate MRF and therefore has not been included as part of the new site layout. Nevertheless, SUEZ would like to keep this activity within the environmental permit for future proofing purposes. These activities will be situated across both the Waste Transfer Station building and canopy building according to their suitability. The waste transfer station building will be used for the acceptance, bulking and treatment of general municipal/residual black bag and bulky waste prior to treatment via shredding. The canopy building will be used solely for the bulking of non-hazardous waste prior to transfer off site for recovery and/or disposal.

1.1.6 It is the intention of SUEZ to remove the Plastics Physical Treatment Facility, Glass Bulking Facility from the permit.

1.1.7 This Best Available Techniques and Operating Techniques (BATOT) document is an integrated document which describes both the operating techniques that will be implemented at the site to ensure compliance with the conditions of the Environmental Permit and also demonstrate that BAT will be employed.

1.1.8 This report has been prepared to satisfy the requirements of the following: -

- Environment Agency - Develop a management system: environmental permits (August 2022);
- Environment Agency - Control and monitor emissions for your environmental permit (May 2021);
- Environment Agency – Non hazardous and inert waste: appropriate measures for permitted facilities (August 2023)

- Environment Agency - Biological waste treatment: appropriate measures for permitted facilities (September 2022);
- Environment Agency - Best available techniques: environmental permits (February 2016);
- European Commission's BAT Reference (BREF) Document for Waste Treatment (August 2018);
- European Commission's BAT Conclusion for Waste Treatment (August 2018);
- European Commission – Industrial Emissions Directive (Directive 2010/75/EU); and,
- European Commission – Medium Combustion Plant Directive (Directive 2015/2193).

2.0 SITE DESCRIPTION

2.1 OVERVIEW OF SITE ACTIVITIES

AD Facility

2.1.1 As mentioned in Section 1.1.3, SUEZ are seeking to operate an AD facility at the site.

2.1.2 The AD facility would provide the treatment of organic food waste (initially from municipal waste streams only, although this is likely to be expanded to include some commercial food wastes as further facilities are developed). The process will generate biogas which will mainly be processed by two CHP engines to generate heat and electricity that would be used by the AD plant. Once the parasitic load has been met, any excess biogas will be processed by a gas upgrading plant to National Gas Grid criteria and injected into the gas grid via a gas main situated to the southeast of the site. Alternatively, excess biogas will be processed by the CHP engines to generate electricity that will be exported to the National Grid.

2.1.3 It is considered that the AD facility will fall under following Schedule 1 activity of the Environmental Permitting (England and Wales) Regulations 2016 (as amended): -

- Section 5.4 A(1)(b)(i) - Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.

2.1.4 In addition to the above, the AD facility will have the following Directly Associated Activities (DAAs): -

- Storage of waste pending recovery or disposal;
- Physical treatment for the purpose of recovery;
- Heat and electricity power supply (i.e. CHP);
- Emergency flare operation;
- Gas upgrading;
- Raw material storage;
- Gas storage; and,
- Digestate storage.

2.1.5 Details of the process description are provided in Section 4 of this document.

Waste Transfer Station

2.1.6 The waste transfer station will comprise a building located to the west of the site and a canopy building to the south. The main transfer building will be used to process general municipal/residual black bag and bulky waste via manual and mechanical sorting/separation, screening, shredding, baling, compaction and crushing. The building will also be used for the bulking of non-hazardous recyclable waste materials prior to transfer off site for recovery or disposal.

2.1.7 In addition to the transfer station building, there will be a canopy building located to the south of the site which will be used for the bulking of road sweepings, wood, hardcore/rubble, dry mixed recyclables, and green waste prior to transfer off site for recovery or disposal.

2.1.8 In accordance with Table 1 of the environmental permit, the operation of the waste transfer station will fall under the following Recovery and Disposal codes (R and D codes) shown in Table 1, provided for in Annex II to Directive 2008/98/EC of the European Parliament and The Council of 19th November 2008 Waste.

Table 1: R/D Codes for the Household, Commercial and Industrial Waste Transfer Station Facility

R/D Code	Activity Description
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 waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)
D14	Repackaging prior to submission to any of the operations numbered D1 to D13
D9	Physico-chemical treatment not specified elsewhere in Annex IIA 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

Material Recycling Facility

2.1.9 Under the current environmental permit SUEZ is allowed to operate a Materials Recycling Facility at the site. It is the intention of SUEZ to retain this activity on site under the varied permit. Whilst there is currently no intention to operate Material Recycling should SUEZ opt to operate the MRF in the future then activities pertaining to the materials recycling facility will occur within both the waste transfer station building and the canopy building on site.

2.1.10 In accordance with Table S1.1 of the environmental permit, the operation of the materials recycling facility will fall under the following Recovery and Disposal codes (R and D codes) shown in Table 2, provided for in Annex II to Directive 2008/98/EC of the European Parliament and The Council of 19th November 2008 Waste.

Table 2: R/D Codes for the Materials Recycling Facility

R/D Code	Activity Description
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 waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)

2.2 OPERATING HOURS

Anaerobic Digestion Facility

2.2.1 The proposed operational hours of the AD plant will be 24 hours per day and seven days a week, with the reception of waste restricted between 07:00 – 19:00 Monday-Sunday, excluding bank holidays.

Waste Transfer Station

2.2.2 The operation of the waste transfer station will operate in accordance with the hours that are stipulated under the existing planning permissions which are as follows: -

- Waste processing: 06:00 - 23:00 Monday to Sunday
- Waste Reception: 07.00 – 19:00 Monday to Saturday
- Waste Reception: 07:00 – 13:00 Sundays and Bank Holidays

2.3 WASTE TYPES

2.3.1 A complete list of waste codes for the AD facility, Waste Transfer Station, and Materials Recycling Facility are provided in Appendix A.

2.4 WASTE QUANTITIES

Anaerobic Digestion Facility

2.4.1 The proposed annual throughput for the AD facility is 100,000 tonnes.

Waste Transfer Station and Materials Recycling Facility

2.4.2 The Waste Transfer Station and MRF will have a combined annual throughput of 110,000 tonnes.

2.5 SITE LAYOUT

2.5.1 An indicative site layout plan of the site is provided on Drawing Number 1446_PL101_B.

3.0 WASTE ACCEPTANCE PROCEDURES

3.1 PRE-ACCEPTANCE

3.1.1 Prior to accepting waste from new customers, SUEZ obtain and record information on the types of wastes to be accepted, the process producing the waste, predicted quantities, the form of the waste and any potential hazards associated with the wastes.

3.1.2 The information provided is reviewed against the site permit and the site-specific requirements relating to incoming waste and discussed with the Site Manager.

3.1.3 If the waste is confirmed to be acceptable at the site, a contractual arrangement is made with the waste supplier. The contract details the criteria for acceptance/rejection of loads delivered to the site for processing.

3.1.4 Regular feedback on the quality of waste delivered to the site is provided verbally to each waste supplier.

3.1.5 If the waste is deemed unacceptable at any of the three facilities on site, the customer will be notified, and the waste will not be accepted at the site.

3.1.6 The AD facility will accept organic food waste from Waste Collection Authorities (WCAs) as well as industrial and commercial customers. As such, in accordance with Section 6.1 of the Appropriate Measures Guidance, it's not considered appropriate to undertake a chemical analysis of the waste.

3.1.7 The waste transfer station and materials recycling facility will require the following information in written or electronic form prior to acceptance:

- Details of the waste producer including their organisation name, address and contact details;
- A description of the waste;
- The waste classification code (also referred to as a list of waste (low) or European Waste Classification code;
- The source of the waste (the producer's business and the specific process that has created the waste);
- Information on the nature and variability of the waste production process;
- Information about the history of the producer site if it may be relevant to the classification of the waste (for example soils and other construction and demolition arisings from a site contaminated by previous industrial uses);
- The waste's physical form;
- The waste's composition (based on representative samples if necessary);
- A description of the waste's odour and whether it is likely to be odorous; and,
- An estimate of the quantity you expect to receive in each load and in a year.

3.1.8 Following the assessment and classification of waste for the WTS and MRF, the site operators will technically assess the suitability of waste with regard to the treatment and storage facilities on site to ensure the conditions of the permit are met. Should the waste comply, the WTS and MRF are permitted to accept the waste.

3.1.9 All records relating to the pre-acceptance will be kept for cross-reference a verification at the waste acceptance stage. These records will be kept for a minimum of 3 years.

3.1.10 SUEZ will reassess the information required at pre-acceptance on an annual basis or if the following apply:

- Waste changes;
- Process giving rise to the waste changes; and,
- Waste received does not to conform to the pre-acceptance information.

3.2 ACCEPTANCE PROCEDURES

3.2.1 All loads delivered to the site are weighed at the weighbridge on arrival. The weighbridge is calibrated at least annually, and the site is always manned during the hours outlined in Section 2.2. The storage capacity of the site is assessed on a daily basis and waste will only be accepted if there is sufficient capacity.

3.2.2 All documentation accompanying a load will be checked on arrival at the weighbridge. If it is incorrect or the waste does not match the written description, then it will be rejected from the site. When a commercial/trade/council vehicle arrives at a weighbridge with no Waste Transfer Note (WTN), the following steps are to be taken by the weighbridge operator: -

- Advise the driver that a WTN is required for legal purposes;
- Provide a blank WTN for the driver to complete. This is their responsibility, and the weighbridge operative should not input the information for them;
- Assess the load against the information provided by the driver and discuss with the Site Manager (or equivalent);
- If waste is acceptable then it can be weighed in and recorded. A note must be made on the weighbridge software that a WTN was not present, and the commercial team should be informed so that the customer can be informed;
- If waste is not acceptable then it should be rejected, and a Load Rejection Form should be completed; and,
- All loads that are not initially accompanied by a WTN must have a note made against the accompanying entry on the weighbridge software.

3.2.3 The only exception to this approach is for vehicles that are covered by an annual WTN. In these circumstances, a copy is to be retained in the weighbridge office for reference. However, it is still the responsibility of the waste carrier to ensure that the waste is accompanied by a written description of the material.

3.2.4 Hazardous waste is not accepted at the Anaerobic Digestion Facility.

3.2.5 Should the documentation be correct, the weighbridge operator shall then notify the driver to proceed to the relevant facility on site.

3.2.6 A site operative will visually inspect each load deposited. The outcome of the inspection is recorded on the Weighbridge Input Information Sheet. A copy of the relevant part(s) input load inspection record sheet should be provided once per month to each waste supplier.

3.2.7 Once tipped, if waste is as described on the documentation provided at the weighbridge, it can then be accepted and processed as specified in Section 4.0. Particular scrutiny will be paid towards loads that have been accepted at the weighbridge but were accompanied by poor documentation.

3.2.8 If tipped waste is not as described, then the load will be queried with the customer and raised with the weighbridge. A load may be contaminated with other waste types, or completely different to the description provided.

3.2.9 In either case, it will be discussed with the Site Manager (or equivalent) and the ‘new’ waste type reviewed against the Environmental Permit. Photos of any contamination or misdescription of waste should be taken

and filed as supporting evidence. At this point, the commercial team (or equivalent) will be informed so that they can discuss with the customer.

3.2.10 If it is acceptable, then it can continue to be accepted, however, the weighbridge record must be amended to show the actual waste type accepted. An admin amendment may be required if the transaction has been completed.

3.2.11 The incident must be recorded on the weighbridge software and the commercial informed so that the customer can be contacted.

3.2.12 If tipped waste is not accepted, the waste rejection procedures in Section 3.3 will be adhered to.

All loads received at the site are recorded on SUEZ electronic weighbridge system. These records can be reviewed to provide details of all wastes present on the site at any one time and assess available storage capacity.

3.2.13 Materials for the waste transfer station and materials recycling facility will be tipped directly into the appropriate bays or stockpiles or deposited on the hardstanding in front of the bays or stockpiles, where a loading shovel will be operated to move the material into bays or stockpiles.

3.2.14 Materials for the AD facility will be directed to the AD process building where vehicles would reverse into the building via fast-acting door. Once the door is closed, the driver will deposit the waste into a waste pit that is situated within the reception hall.

3.3 WASTE REJECTION

3.3.1 Any non-conforming loads will either be rejected from the site and redirected to an appropriate permitted facility or placed in quarantine prior to removal from site. A record will be made in the Site Diary.

3.3.2 Any non-conforming waste identified following tipping will either be reloaded into the delivering vehicle and rejected from the site or placed in quarantine prior to removal from site.

3.3.3 Whenever site specific acceptance criteria detailed in the contract are not met, this will be clearly communicated to the waste supplier and records of the communication shall be kept.

3.3.4 The site may cease accepting loads from a particular supplier if contamination has occurred repeatedly and the supplier has not attempted corrective action or, in the operator's opinion, the action taken has been ineffective.

3.3.5 The AD facility does not benefit from a dedicated quarantine area. A temporary quarantine area can be provided within the AD building for any loads of non-conforming waste. This area will depend upon current waste storage on site. The quarantined waste will be kept segregated from all other waste.

3.3.6 It is noted here that the digester tanks and buffer tanks will be fitted with lightning rods. Digester tanks will be off-set by 6m from one another to mitigate spread of fire in the unlikely event that the gas membrane ignites.

4.0 WASTE TREATMENT

4.0.1 The following sections detail the waste treatment processes that will be undertaken in connection to the AD facility, the waste transfer station, and the materials recycling facility.

4.1 ANAEROBIC DIGESTION

4.1.1 The AD process can be summarised as the conversion of biodegradable material into methane (CH_4), carbon dioxide (CO_2), and water through microbial action in the absence of oxygen. Biogas consisting of mainly CH_4 and CO_2, will mainly be processed by two CHP engines to generate heat and electricity that would be used by the AD plant. Once the parasitic load has been met, any excess biogas will be processed by a gas upgrading plant to National Gas Grid criteria and injected into the gas grid via a gas main situated to the southeast corner of the site. Alternatively, excess biogas will be processed by the CHP engines to generate electricity that will be exported to the National Grid. The process is described below.

4.1.2 The AD facility can be separated into six general areas: reception, separation, anaerobic digestion, liquor treatment, biogas handling (including electricity generation) and odour control.

Reception

4.1.3 Delivery vehicles would reverse into the reception hall via a fast-acting door. Once the doors are closed, the driver would directly deposit the waste into a waste pit that is situated within the reception hall. The pit will be designed to push the waste into the pre-treatment area. This will ensure that waste is processed in the order it is received (first-in, first-out) and therefore ensure that the waste is not stored for more than 72 hours which will be the maximum residency time that waste will be stored in the reception hall prior to treatment.

Separation

4.1.4 Waste will be fed into a de-packaging plant which is situated within the reception hall. The plant will be designed to remove unwanted packaging and contamination (e.g., stones, glass, seeds, pips, and bones). Any packaging and contaminants which is recovered from the plant will be discharged into skips/RoRos where they will be transferred to an appropriate permitted facility for further treatment. It's envisaged that a maximum of 48 tonnes of packaging and contaminants will be stored on site prior to transfer and will be stored for no longer than 7 days.

4.1.5 The waste will also be diluted with recovered water from the process, towns water and liquid waste from the food industry (as detailed in Appendix A) in order to achieve the required dry solids concentration to feed into the digestion process.

Anaerobic Digestion

4.1.6 The residual organic waste will be pumped into the hydrolysis buffer tank located to the East of the main AD process building. The tank acts as a buffer between the intermittently working reception and processing halls and the continuously operating AD plant as well as providing residence time for the enzymatic hydrolysis of fats and proteins.

4.1.7 Slurry is then pumped from the hydrolysis buffer tank to the anaerobic digesters. Five 6,000m^3 (total 30,000m^3) AD tanks would convert organic material to biogas (methane and carbon dioxide) by the fermentation of organic material in the absence of oxygen. The retention time of the digester is up to 60 days to maximise the biogas production and biogas is collected within the roof space, which is connected to the biogas system. To ensure process efficiency of the AD process, each digester tank will be monitored for parameters such as temperature, flow rates, liquid and foam levels, pH, gas quality and header pressure.

4.1.8 As part of the process, SUEZ intend to install pasteuriser tanks which may be used to heat the slurry to 70 °C before it is pumped into the anaerobic digesters. Alternatively, the pasteuriser tanks may be incorporated at a later stage of the AD process where it will be used to heat the material 'digestate' to 70°C for a minimum 1 hour before being pumped into the post digestion buffer tank.

4.1.9 The material left from the process (digestate) will still be in slurry form and can be used as a fertiliser, compost, or soil improver. To achieve this, the digestate will be subject to the specifications outlined in PAS 110 'Specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-segregated biodegradable materials.'

4.1.10 At this stage, SUEZ are considering the potential options to process the digestate. The main process is to process the digestate slurry through a centrifuge where solids are dewatered to a dry solid concentration of approximately 25%. The centrifuges will be located within the main AD process building. Digested material falls by gravity into articulated trailers where it can be periodically collected and subsequently transferred off site. The trailers will have a total storage capacity of 50 tonnes. Under normal operating conditions, the maximum residence time for the digestate cake will be no longer than 24 hours before it is transferred off site.

4.1.11 The facility would provide approximately 8,000 tonnes of digested cake per annum which would be spread to agricultural land as a soil enhancer.

4.1.12 In the event that the digestate does not meet the required specifications, the material will be stored within designated RoRos/skips inside the AD building and disposed of accordingly.

4.1.13 Alternatively, SUEZ are considering the potential to export the digestate in a PAS110 slurry form and therefore would not be processed by the centrifuge. Should SUEZ be exporting the slurry in this form, rather than separating it, it is anticipated that approximately 95,000t of slurry per annum will be produced.

Liquor Treatment

4.1.14 Liquor extracted during the dewatering process will be tankered offsite as a liquid fertiliser.

4.1.15 Finally, SUEZ are considering the potential to utilise the digestate in a slurry form and therefore this would not be processed by the centrifuge.

Biogas Handling

4.1.16 The biogas is captured from the AD tanks and then will mainly be processed by the two CHP engines to generate heat and electricity that would be used by the AD plant. Once the parasitic load has been met, any excess biogas will be processed by a gas upgrading plant to National Gas Grid criteria and injected into the gas grid via a gas main situated to the southeast corner of the site. Alternatively, excess biogas will be processed by the CHP engines to generate electricity that will be exported to the National Grid.

Odour Control

4.1.17 Processes will be fully enclosed with an odour abatement system comprising the following: -

- The air within the building shall be treated by incorporating a local extract ventilation system above and around the reception pit and other point sources of odour within the building at a rate of 3 air changes per hour. All of the collected air shall pass through a dust filter then deep beds of activated carbon, designed with sufficient contact time to prevent the release of odorous air. The inclusion of a dust filter enhances the effectiveness of the activated carbon.
- Air from some of the process equipment (e.g. buffer tanks, pasteurisation, and storage tanks) shall also be collected and pass through an enclosed biofilter, then the dust filter and activated carbon filter. The treated air from the carbon filters will be discharged to atmosphere via an elevated vent stack.

4.2 WASTE TRANSFER STATION

Transfer Station Building

4.2.1 General municipal/residual black bag and bulky waste will be tipped within the unshredded area of the main transfer station building before being pushed up by a loading shovel or suitable alternative mobile plant into the stockpile, prior to shredding.

4.2.2 Waste loaded into the shredder will be visually checked for non-conforming items (i.e. gas bottles etc) and any evidence of combustion before being placed into the plant. This will be carried out by the plant operative.

4.2.3 The shredding process will be undertaken within the main transfer station building and will produce an RDF type product which will be stockpiled in a designated area prior to despatch off site to a permitted EfW facility.

4.2.4 At the eastern end of the waste transfer station building, recyclable waste will be either tipped directly into the bays or stockpiles or deposited on the hardstanding in front of the bays or stockpiles, where a loading shovel will be operated to move the material into bays or stockpiles. These waste materials will be stored and bulked on site prior to transfer off site for recovery or disposal. The materials in the bays will be removed from the site using bulk haulage vehicles. These vehicles will be loaded using site mobile plant and will be undertaken within the waste transfer station building.

Canopy Building

4.2.5 In addition to the waste transfer station building, there will be bulking bays located to the south of the site. The bays will be situated within a canopy building that's enclosed on three sides. Materials will be delivered to the site in RCV's or tipping vehicles and either end tipped directly into the bays or deposited on the hardstanding in front of the bays, where a loading shovel will be operated to move the material into bays.

4.2.6 These waste materials will be stored and bulked on site prior to transfer off site for recovery or disposal. The materials in the bays will be removed from the site using bulk haulage vehicles. These vehicles will be loaded using site mobile plant.

4.3 MATERIALS RECYCLING FACILITY

4.3.1 The Materials Recycling Facility will involve the physical treatment of non-hazardous wastes for recovery and involves the sorting and segregation of a variety of mixed recyclates including textiles, paper, cardboard, and other packaging.

4.3.2 These waste materials will then be stored and bulked on site prior to transfer off site for recovery or disposal. The materials in the bays will be removed from the site using bulking haulage vehicles. These vehicles will be loaded using site mobile plant.

4.3.3 Activities pertaining to the materials recycling facility will occur within both the waste transfer station building and the canopy building on site.

5.0 EMISSIONS CONTROL

5.1 ENCLOSURE WITHIN BUILDING

5.1.1 According to the EA's 'Non-hazardous and inert waste: appropriate measures for permitted facilities' guidance, enclosing activities within buildings can be an appropriate measure for preventing and minimising emissions of pollution, given that an appropriately designed building will reduce a range of types of pollutants, in particular, noise, dust and odour. In addition, the guidance indicates that a partially enclosed building may be an appropriate measure on its own, or together with other appropriate measures, depending on the site-specific circumstances.

5.1.2 For the AD facility, the pre-treatment process and storage of waste outputs will be undertaken within the confines of a building. Although the digester tanks for the AD process will be located outside, they will be contained within enclosed containers with the gas piped within a sealed network to a biogas upgrading plant to National Gas Grid criteria and injected into the gas grid. Alternatively, the biogas may be processed by the CHP engines to generate heat and electricity that would be used by the AD plant.

5.1.3 As mentioned in Section 4.2, the waste transfer station will comprise a building which will be used for the storage and processing of general municipal/residual black bag and bulky waste. The building will also be used for the bulking of recyclable materials.

5.1.4 The site will also comprise bulking bays which will be situated within a canopy building which is enclosed on three sides. Although the bays will be used to store waste materials that have the potential to create a nuisance such as green and road sweepings, measures will be in place to minimise the risk. Such measures are provided in the following management plans: -

- Dust Management Plan (Appendix E of the Environmental Permit Application); and,
- Odour Management Plan (Appendix H of the Environmental Permit Application).

5.2 POINT SOURCE EMISSIONS TO AIR

5.2.1 The operation of the AD facility will result in new emission points to air. The location of these emission points is shown on Drawing Number SUEZ/B043732/ASE/01.

5.2.2 An Air Quality Assessment of each of these point sources, and their respective impacts, is provided within Appendix G of the environmental permit application.

5.2.3 SUEZ propose to monitor the emission points in accordance with the details provided in Table 3 below.

Table 3: Summary of Techniques for Monitoring Emissions to Air

Parameter	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring standard or method
Enclosed Biofilter Stack Emission (A1)				
Hydrogen Sulphide	No limit set	Average over sample period	Once every 6 months	CEN TS 13649 for Sampling NIOSH 6013 for analysis

Ammonia	20 mg/m³	Average over sample period	Once every 6 months	EN ISO 21877
CHP engine stack (A2)				
Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500 mg/Nm³	Periodic over minimum 4-hour period	Quarterly in first year then annual	BS EN 14792
Sulphur dioxide	107 mg/Nm³	Periodic over minimum 4-hour period	Quarterly in first year then annual	BS EN 14791
Carbon monoxide	1,400 mg/m³	Periodic over minimum 4-hour period	Quarterly in first year then annual	BS EN 15058
Total VOCs	1,000 mg/m³	Hourly Average	Quarterly in first year then annual	BS EN 12619:2013
CHP engine stack (A3)				
Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500 mg/Nm³	Periodic over minimum 4-hour period	Quarterly in first year then annual	BS EN 14792
Sulphur dioxide	107 mg/Nm³	Periodic over minimum 4-hour period	Quarterly in first year then annual	BS EN 14791
Carbon monoxide	1,400 mg/m³	Periodic over minimum 4-hour period	Quarterly in first year then annual	BS EN 15058
Total VOCs	1,000 mg/m³	Hourly Average	Quarterly in first year then annual	BS EN 12619:2013
Emergency Flare Stack (A4)				
Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150 mg/m³	Hourly Average	Annual	BS EN 14792
Carbon monoxide	50 mg/m³	Hourly Average	Annual	BS EN 15058
Total VOCs	10 mg/m³	Hourly Average	Annual	BS EN 12619:2013 Or BS EN 1356:2002 depending on concentration
Vents on Storage Tanks and silos				
No parameters set.	No limit set	-	-	-
Vent/open roof from aeration tank in wastewater treatment plant				
No parameters set.	No limit set	-	-	-

5.3 METEOROLOGICAL CONDITIONS

5.3.1 Details on meteorological conditions will be recorded in the Site Diary on a daily basis.

5.4 BIOAEROSOLS

5.4.1 Section 11.4 of the of the EA's "Biological waste treatment: appropriate measures for permitted facilities (2022)" Guidance indicates that monitoring of bioaerosols is required if the facility is within 250m of a sensitive receptor. The nearest sensitive, residential, receptor is a residential caravan park located 400m southwest of the site.

5.4.2 In accordance with the EA's 'Biological waste treatment: appropriate measures for permitted facilities', a site specific Bioaerosol Risk Assessment has been prepared and is provided as Appendix F of the Environmental Permit Application.

5.5 ODOUR

5.5.1 Odour from the site will be managed in accordance with an Odour Management Plan (OMP). A copy of the OMP is provided as Appendix G of the Environmental Permit Application.

5.6 PESTS

5.6.1 In accordance with the pre-application advice received from the EA (Appendix B), a Pest Management Plan (PMP) has not been provided as part of this Environmental Permit Application.

5.6.2 The risk of pests from the site will be managed in accordance with the Environmental Risk Assessment (Appendix D of the Environmental Permit Application).

5.7 NOISE AND VIBRATION

5.7.1 A basic noise screening assessment was carried out through the EA during Pre-application discussions (Appendix B), this determined that a noise impact assessment and/or management plan was not required to be submitted as part of this Environmental Permit application.

5.8 POINT SOURCE EMISSIONS TO LAND AND WATER (INCLUDING INDIRECT DISCHARGE TO SEWER)

5.8.1 As mentioned in Section 4.1.14, the AD process will result in a liquor that will be transferred off site for use as a soil enhancer.

5.9 FUGITIVE EMISSIONS

5.9.1 Fugitive emissions have been identified as a potential environmental risk resulting from the site, as detailed in the Environmental Risk Assessment that accompanies this application as Appendix D.

6.0 PROCESS EFFICIENCY

6.1 ENERGY EFFICIENCY

6.1.1 In accordance with Best Available Techniques, SUEZ will have a documented Energy Efficiency Plan which will detail the energy consumption of the site's permitted activities and measures to ensure energy efficient operations. This plan will form part of the site's Integrated Management System (IMS).

6.2 RAW MATERIALS

6.2.1 SUEZ will have a documented Inventory of Raw Materials that will be used as part of the site's permitted activities. This document will form part of the site's management system.

6.3 WATER USE

6.3.1 SUEZ will have a documented Water Savings Plan which details the water consumption of the site's permitted activities and measures to promote recirculation. This document will form part of the site's management system.

6.4 WASTE MINIMISATION, RECOVERY AND DISPOSAL

6.4.1 SUEZ will have a documented Residues Management Plan for the site's permitted activities and will aim to achieve the following: -

- Minimise the generation of residues, that is solid waste arising from the treatment of waste;
- Optimises the reuse, regeneration, recycling, or energy recovery of residues, including packaging; and,
- Ensures the proper disposal of residues where recovery is technically or economically impractical.

6.4.2 This document will form part of the site's management system.

7.0 WASTE OUTPUTS

7.1 ANAEROBIC DIGESTION FACILITY

7.1.1 There will be three outputs associated with the proposed AD facility.

7.1.2 The first output will comprise unwanted packaging and contaminants which are removed from the food waste as part of the pre-treatment process. This waste will be stored within a skip and bulked up within the pre-treatment area prior to transfer off site to an appropriate permitted facility for further treatment.

7.1.3 The second output will be the biogas which will mainly be processed by two CHP engines to generate heat and electricity that would be used by the AD plant. Once the parasitic load has been met, any excess biogas will be processed by a gas upgrading plant to National Gas Grid criteria and injected into the gas grid. Alternatively, excess biogas will be processed by the CHP engines to generate electricity that will be exported to the National Grid. According to the guidance provided in the Quality Protocol 'Biomethane from Waste', it's considered that the biogas will be fully recovered and therefore ceases to be waste for each end use.

7.1.4 The third output relates to the digestate that's generated from the main AD process. As mentioned in Section 4.1, SUEZ are seeking to utilise the digestate in a slurry, solid and liquid form which can be used as a fertiliser, compost, or soil improver. To achieve this, the digestate will be subject to the specifications outlined in PAS 110. If the digestate complies with PAS 110, it's considered that the digestate meets the end of waste criteria.

7.1.5 In the event that the digestate does not meet the specifications of PAS 110, it's considered that the digestate is waste and therefore will need to be disposed of accordingly.

7.1.6 According to the EA's 'Select a Waste Recovery or Disposal Method for your Environmental Permit', an assessment must be undertaken to determine the environmental impact of the proposed disposal/recovery methods for the waste that's produced on site. This assessment forms part of the Environmental Risk Assessment which is provided as Appendix D of the Environmental Permit application.

7.1.7 This assessment specifically focuses on the following waste outputs that will be generated from the proposed AD facility: -

- Unwanted packaging and contaminants;
- Non-compliant/poor quality digestate; and,
- Waste effluent.

7.1.8 In addition to the AD facility, SUEZ propose to operate a waste transfer station at the site. However, SUEZ do not anticipate that this activity will produce any waste. As such, the waste transfer station was not considered as part of the assessment.

7.1.9 The results of this assessment conclude that the proposed disposal/recovery method of the above waste streams represent the lowest impact scores that may be achieved. As such, it is considered that the risk of the proposed disposal/recovery methods are low and that there is little potential to further minimise the impact of these waste streams. Consideration will be given to seeking alternative treatment and disposal routes in the future where new technologies are brought online.

7.2 WASTE TRANSFER STATION

7.2.1 The shredding process that will be undertaken as part of the WTS will produce an RDF type product which will be stockpiled in a designated area prior to despatch off site to a permitted EfW facility.

7.2.2 Wastes that are not shredded will be sorted on site prior to being stored and bulked for transfer off site for recovery at a suitable facility.

7.3 MATERIALS RECYCLING FACILITY

7.3.1 The Materials Recycling Facility involves the physical treatment of non-hazardous wastes for recovery and involves the sorting and segregation of a variety of mixed recyclates, including textiles, paper, cardboard, and other packaging.

7.3.2 These waste materials will then be stored and bulked on site prior to transfer off site for recovery or disposal.

8.0 GENERAL MANAGEMENT

8.1 ENVIRONMENTAL MANAGEMENT SYSTEM

8.1.1 As noted in the EA's 'Develop a Management System: Environmental Permits' guidance, all permitted facilities are required to have an Environmental Management System (EMS) to describe the procedures in place to minimise the risk of pollution from the activities covered in the environmental permit. In addition, the BAT conclusion for Waste Treatment includes a requirement for an EMS.

8.1.2 All SUEZ operations are controlled by an (IMS) comprising quality, environmental and health and safety requirements which are certified to ISO 14001, ISO 9001, and ISO 45001 standards.

8.1.3 The site operations have been certified to ISO14001, ISO 9001 and ISO 45001 and operate under documented management procedures.

8.2 INSPECTION, MAINTENANCE AND MONITORING

8.2.1 SUEZ currently have a documented Site Equipment and Maintenance Plan for the site's permitted activities. This document forms part of the site's management system and will be updated to incorporate the AD facility.

8.3 ACCIDENT MANAGEMENT PLAN

8.3.1 SUEZ currently have a documented Accident Management Plan for the site's permitted activities. This document forms part of the site's management system and will be updated to incorporate the AD facility.

8.4 STAFF COMPETENCE

8.4.1 The facility will be managed by a Site Manager who holds a valid and relevant Certificate of Technical Competence. Certificates of Technical Competence have been provided in Appendix A of this application.

8.4.2 All site operatives will be adequately trained in health, safety, and environmental issues. Staff will only be permitted to undertake activities that they have been trained for. They will be made aware of the procedures they must follow in the event of an accident or incident and will be able to access any relevant documentation that they may require. All training, experience and qualifications of staff will be noted, and these records will be maintained and kept up to date.

8.4.3 Staff competence at the wider facility is current managed in accordance with the Staff Competency and Training Plan that forms part of the site's management system. This document will be updated to incorporate the competency requirements for the AD facility.

8.5 FIRE AND EXPLOSION PREVENTION

8.5.1 In accordance with the EA's 'Fire prevention plans: environmental permits' guidance, a Fire Prevention Plan (FPP) has been prepared in accordance with EA's guidance 'Fire Prevention Plans: Environmental Permits' updated in January 2021. The report identifies the potential causes and effects of a fire and describes the measures that will be in place to prevent occurrence of a fire at the site. This document solely relates to activities in connection to the waste transfer station.

8.5.2 According to Section 3 of the guidance, a Fire Prevention Plan is only required for dry AD processes. The proposed AD process at the site will comprise a wet process and therefore it's considered that the EA's FPP

guidance does not apply to the proposed AD facility and therefore a revised FPP has not been produced for the site.

8.5.3 Nevertheless, the risk of fire from the AD process has been addressed as part of the Environmental Risk Assessment (Appendix D of the Environmental Permit Application).

8.5.4 In addition to the above, a Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) assessment will be undertaken for the AD facility and will form part of the site's management system.

8.6 RECORD KEEPING

8.6.1 As mentioned above, all SUEZ operations are controlled by an IMS which includes procedures for the management of documentation.

9.0 BAT ASSESSMENT

9.1.1 The following table sets out the BAT requirements as set out in the European Commission's BAT Conclusion for Waste Treatment and demonstrates how SUEZ will meet these requirements for the AD facility.

Table 4: BAT Assessment

BAT Conclusion	BAT Justification
Environmental Management System	
BAT 1 – In order to improve the overall environmental performance, BAT is to elaborate and implement an environmental management system (EMS) that incorporates all of the following features: i. commitment of the management, including senior management; ii. definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the installation iii. planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment iv. implementation of procedures paying particular attention to: a) structure and responsibility, b) recruitment, training, awareness and competence c) communication d) employee involvement e) documentation f) effective process control g) maintenance programmes h) emergency preparedness and response i) safeguarding compliance with environmental legislation; v. checking performance and taking corrective action, paying particular attention to: a) monitoring and measurement (see also the JRC Reference Report on Monitoring of emissions to air and water from IED installations – ROM) b) corrective and preventive action c) maintenance of records d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained; vi. review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness	As mentioned in Section 8.1, all SUEZ operations are controlled by an IMS comprising quality, environmental and health and safety requirements which are certified to ISO 14001, ISO 9001, and ISO 45001 standards.

vii. following the development of cleaner technologies; viii. consideration for the environmental impacts from the eventual decommissioning of the plant at the stage of designing a new plant, and throughout its operating life; ix. application of sectoral benchmarking on a regular basis; x. waste stream management (see BAT 2); xi. an inventory of waste water and waste gas streams (see BAT 3); xii. residues management plan (see description in Section 6.5); xiii. accident management plan (see description in Section 6.5); xiv. odour management plan (see BAT 12); xv. noise and vibration management plan (see BAT 17)	
Environmental Performance	
BAT 2 – In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below. a) Set up and implement waste characterisation and pre-acceptance procedures; b) Set up and implement waste acceptance procedures c) Set up and implement a waste tracking system and inventory d) Set up and implement an output quality management system e) Ensure waste segregation f) Ensure waste compatibility prior to mixing or blending of waste g) Sort incoming solid waste	For points a) to c), please refer to Section 3 of this document which details the waste acceptance procedures for the AD facility, Waste Transfer Station, and Materials Recycling Facility. For Point d), some of the outputs will be subject to specific end uses and therefore will be required to meet specific criterion. For example, the biogas will be processed by the upgrading plant to meet the National Grid Gas Criteria before it is injected into the gas grid via the gas main situated to the southeast of the site. In addition, it is proposed that the digestate cake will be used as a soil enhancer and therefore will be subject to the requirements of PAS 110:2014 titled 'Specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-segregated biodegradable materials.' As mentioned

	above, all SUEZ operations are controlled by an accredited IMS which meets the requirements of ISO 9001. As such, quality control of the outputs will be managed in accordance with the documented procedures of the IMS. For points e), f) and g), all incoming waste will be subject to pre-treatment which will comprise a de-packaging plant remove unwanted packaging and contamination (e.g., stones, glass) from the waste.
BAT 3 – In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of wastewater and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features: (i) information about the characteristics of the waste to be treated and the waste treatment processes, including: (a) simplified process flow sheets that show the origin of the emissions; (b) descriptions of process-integrated techniques and wastewater/waste gas treatment at source including their performances; (ii) information about the characteristics of the waste water streams, such as: (a) average values and variability of flow, pH, temperature, and conductivity; (b) average concentration and load values of relevant substances and their variability (e.g. COD/TOC, nitrogen species, phosphorus, metals, priority substances/micropollutants); (c) data on bioeliminability (e.g. BOD, BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. inhibition of activated sludge)) (see BAT 52); (iii) information about the characteristics of the waste gas streams, such as	All SUEZ operations are controlled by an accredited IMS which meets the requirements of ISO 14001. Based on the requirements of the ISO 14001 standard, SUEZ are required to monitor and review their environmental performance which includes aspects such as water, energy, raw material consumption and waste generation. Furthermore, there is a requirement under the Environmental Permit for the reporting of key indicators such as discharge to sewer, water usage and energy usage. Activities associated with the proposed AD facility will be reported with these forms which allows year on year monitoring of key performance indicators.

(a) average values and variability of flow and temperature; (b) average concentration and load values of relevant substances and their variability (e.g. organic compounds, POPs such as PCBs); (c) flammability, lower and higher explosive limits, reactivity; (d) presence of other substances that may affect the waste gas treatment system or plant safety (e.g. oxygen, nitrogen, water vapour, dust).	
Storage of Waste	
BAT 4 – In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of techniques given below. a) Optimised storage location b) Adequate storage capacity c) Safe storage operation d) Separate area for storage and handling of packaged hazardous waste	SUEZ will have a documented Waste Storage Plan for the site's permitted activities. This document will form part of the site's management system.
Handling and Transfer of Waste	
BAT 5 - In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures.	Waste for the AD facility will be tipped directly into the reception pit. The pit will be designed to push the waste into the pre-treatment area. This will minimise the handling and transfer of waste. The whole AD process will be undertaken within an enclosed building which benefits from a fast-acting doors which will be kept closed when not in use (i.e., arrival or departure of vehicles). In addition, pedestrian doors are also closed when not in direct use. This will minimise the potential for any odour, noise and dust generated on site to impact

	receptors beyond the site boundary. Any gases that are produced from the AD process will be produced within a sealed network and piped to the gas upgrading plant or CHP engines. The building will also benefit from an odour control system which will be designed to extract and treat any odour emissions that may be generated from the AD process. Details regarding the odour control system are provided in the OMP (Appendix F of the Environmental Permit Application).
Monitoring	
BAT 6 - For relevant emissions to water as identified by the inventory of wastewater streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).	As mentioned in Section 4.1.14, the AD process will result in a liquor that will be transferred off site for use as a soil enhancer. Furthermore, SUEZ are considering the potential to utilise the digestate in a slurry form and therefore this would not be processed by the centrifuge.
BAT 7 - BAT is to monitor emissions to water with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	
BAT 8 - BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	Please refer to Section 5.2 of this document which details the proposed monitoring arrangements for all emission points to air from the proposed AD facility.
BAT 9 - BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical treatment of solvents for the recovery of their calorific value, at least once per year using one or a combination of the techniques given below.	
BAT 10 - BAT is to periodically monitor odour emissions	

BAT 11 - BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and wastewater, with a frequency of at least once per year.	As mentioned above, SUEZ hold an accredited IMS which meets the requirements of ISO 14001. Based on the requirements of the ISO 14001 standard, SUEZ are required to monitor and review their environmental performance which includes aspects such as water, energy, raw material consumption and waste generation. Furthermore, there is a requirement under the Environmental Permit for the reporting of key indicators such as discharge to sewer, water usage and energy usage. Activities associated with the proposed SUEZ facility will be reported with these forms which allows year on year monitoring of key performance indicators.
Emissions	
BAT 12 - In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements: - a protocol containing actions and timelines; - a protocol for conducting odour monitoring as set out in BAT 10; - a protocol for response to identified odour incidents, e.g. complaints; - an odour prevention and reduction programme designed to identify the source(s); to characterise the contributions of the sources; and to implement prevention and/or reduction measures.	As mentioned in Section 5.5, odour from the AD facility will be managed in accordance with an OMP. A copy of the OMP is provided as Appendix F of the Environmental Permit Application. Processes will be fully enclosed with an odour abatement system comprising the following: • Biogas scrubber to treat ammonia and H2S; • Ionisation system in the digestate out area; and, • Activated carbon for extracted air in tipping hall and pre-treatment area.
BAT 13 - In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given below. a) Minimising residence time b) Using chemical treatment c) Optimising aerobic treatment	

BAT 14. In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques given below. a) Minimising the number of potential diffuse emissions sources b) Selection and use of high integrity equipment c) Corrosion Prevention d) Containment, collection and treatment of diffuse emissions e) Dampening f) Maintenance g) Cleaning of waste treatment and storage areas h) Leak detection and repair programme	Fugitive emissions have been identified as a potential environmental risk resulting from the proposed waste activities, as detailed in the Environmental Risk Assessment that accompanies this application as Appendix D. Plant and equipment on site will be designed to allow cleaning and maintenance.
BAT 15 – BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below.	Biogas which is generated from the AD process which will mainly be processed by two CHP engines to generate heat and electricity that would be used by the AD plant. Once the parasitic load has been met, any excess biogas will be processed by a gas upgrading plant to National Gas Grid criteria and injected into the gas grid. Alternatively, excess biogas will be processed by the CHP engines to generate electricity that will be exported to the National Grid. Flaring will only be used for emergencies.
BAT 16. In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below.	
Noise	
BAT 17 - In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements: i. a protocol containing appropriate actions and timelines; ii. a protocol for conducting noise and vibration monitoring;	As mentioned in Section 5.7, a basic noise screening assessment was carried out during Pre-application discussions (Appendix B). This screening determined that a noise impact assessment and/or management plan was not required for submission at this stage of the

iii. a protocol for response to identified noise and vibration events, e.g. complaints; iv. a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures	Environmental Permit Application. It is noted that all noise generating processes associated with the Waste Transfer Station and AD Facility will be undertaken within buildings.
BAT 18 - In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below. a) Appropriate location of equipment and buildings b) Operational measures c) Low noise equipment d) Noise and vibration control equipment e) Noise attenuation	
Emissions to Water	
BAT 19. In order to optimise water consumption, to reduce the volume of wastewater generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given below. a) Water Management b) Water Recirculation c) Impermeable Surface d) Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels e) Roofing of waste storage and treatment areas f) Segregation of water streams g) Adequate drainage infrastructure h) Design and maintenance provisions to allow detection and repair of leaks i) Appropriate buffer storage capacity	As mentioned in Section 6.3, SUEZ will have a documented Water Savings Plan for the site's permitted activities. This document will form part of the site's management system.
BAT 20. In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given below. a) Equalisation b) Neutralisation	As mentioned in Section 4.1.14, liquor extracted during the dewatering process will be tankered off site as a liquid fertiliser

c) Physical separation, e.g. screens, sieves, grit separators, grease separators, oil-water separation or primary settlement tanks d) Adsorption e) Distillation/rectification f) Precipitation g) Chemical oxidation h) Chemical reduction i) Evaporation j) Ion exchange k) Stripping l) Activated sludge process m) Nitrification/denitrification when the treatment includes a biological treatment n) Coagulation and flocculation o) Sedimentation p) Filtration (e.g. sand filtration, microfiltration, ultrafiltration) q) Flotation	
Emissions from Accidents and Incidents	
BAT 21 - In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below, as part of the accident management plan (see BAT 1). a) Protection measures b) Management of incidental/accidental emissions c) Incident/accident registration and assessment system	As mentioned in Section 8.3, SUEZ have a documented Accident Management Plan for the site's permitted activities. This document forms part of the site's management system and will be updated to incorporate the AD facility.
Material Efficiency	
BAT 22. In order to use materials efficiently, BAT is to substitute materials with waste.	It is proposed that the digestate produce from the AD process will be used as fertiliser in order to facilitate the efficient use of materials and reduce waste materials produced from the facility.
Energy Efficiency	

BAT 23 - In order to use energy efficiently, BAT is to use both of the techniques given below. a) Energy efficiency plan b) Energy balance record	As mentioned in Section 6.1, SUEZ will have a documented Energy Efficiency Plan for the site's permitted activities. This document will form part of the site's IMS.
Reuse of Packaging	
BAT 24 - In order to reduce the quantity of waste sent for disposal, BAT is to maximise the reuse of packaging, as part of the residues management plan (see BAT 1).	The AD facility will predominantly treat organic food waste which may contain fractions of packaging that are not suitable for AD. As such, the waste will be subject to a pre-treatment process, which includes a de-packaging plant to remove unwanted packaging and contamination from the waste. As such, the potential to maximise reuse of packaging at the AD facility is considered to be low. Nevertheless, SUEZ will have a documented Residues Management Plan. This document will form part of the site's management system.
BAT Conclusions for the Biological Treatment of Waste	
Emissions to Air	
BAT 34 - . In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H2S and NH3, BAT is to use one or a combination of the techniques given below. a) Biofilter b) Fabric filter c) Thermal Oxidation d) Wet scrubbing	The AD facility will benefit from an odour control system. Details regarding the odour control system are provided in Section 4.1.17.
Emissions to Water and Water Usage	

BAT 35. In order to reduce the generation of waste water and to reduce water usage, BAT is to use all of the techniques given below. a) Segregation of water streams b) Water recirculation c) Minimisation of the generation of leachate	As mentioned in Section 6.3, SUEZ will have a documented Water Savings Plan for the site's permitted activities. This document will form part of the site's management system.
BAT Conclusions for the Anaerobic Treatment of Waste	
Emissions to Air	
BAT 38. In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters.	The AD plant will benefit from an appropriate process monitoring system that supports effective operational management and minimises operational difficulties.

DRAWINGS

Proposed Site Layout –1446_PL101_B

Site Location - SUEZ/B043732/PER/01

Location of Emission Points to Air - SUEZ/B043732/ASE/01

NOTE

1. THIS DRAWING IS COPYRIGHT GSDA LTD.
2. THE CONTRACTOR MUST NOT SCALE FROM THE DRAWING ALL DIMENSIONS TO BE TAKEN FROM DIMENSION STRINGS.
3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DIMENSIONS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PREFERENCE.

KEY

- Ownership Boundary
- **Existing** Permit Boundary
- Fence Line
- Buildings
- Concrete and tarmac hardstanding and maintenance areas
- Demarcated pedestrian route area on hardstanding
- Permeable block paving
- Area of proposed landscaping
- Existing trees retained
- **Proposed Permit Boundary**

N

0 10 50 100m

PROJECT: Darwen AD

DRAWING: Proposed Wider Site Plan

FOR PLANNING

-	22/08/10	Issued for planning			
A	22/08/12	Issued for planning			
B	22/08/16	Issued for planning, bin store amended			

1:1000@A1 SCALE

22/08/16 DATE

1446 PL100 DWG. NO.

B REVISION

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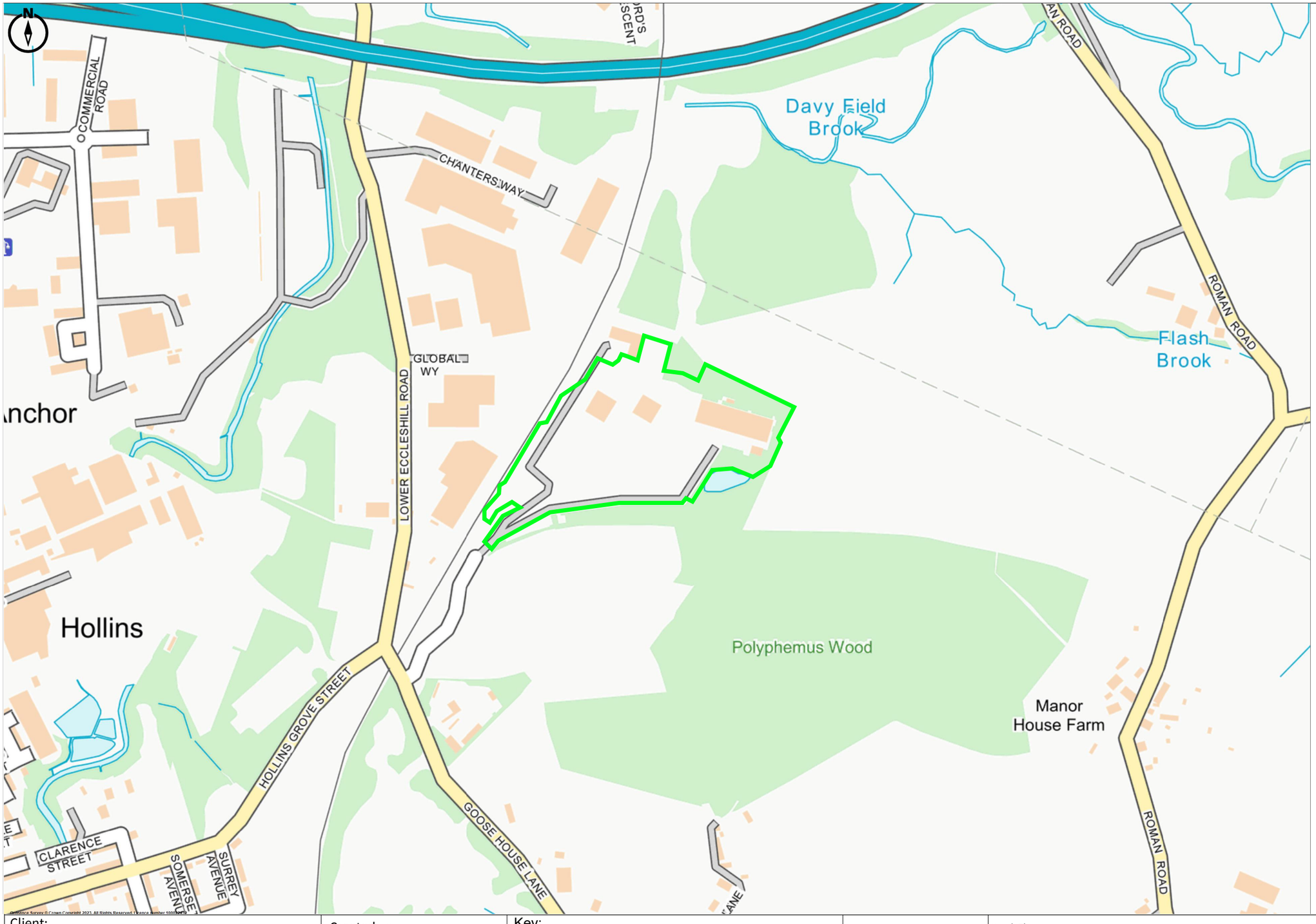
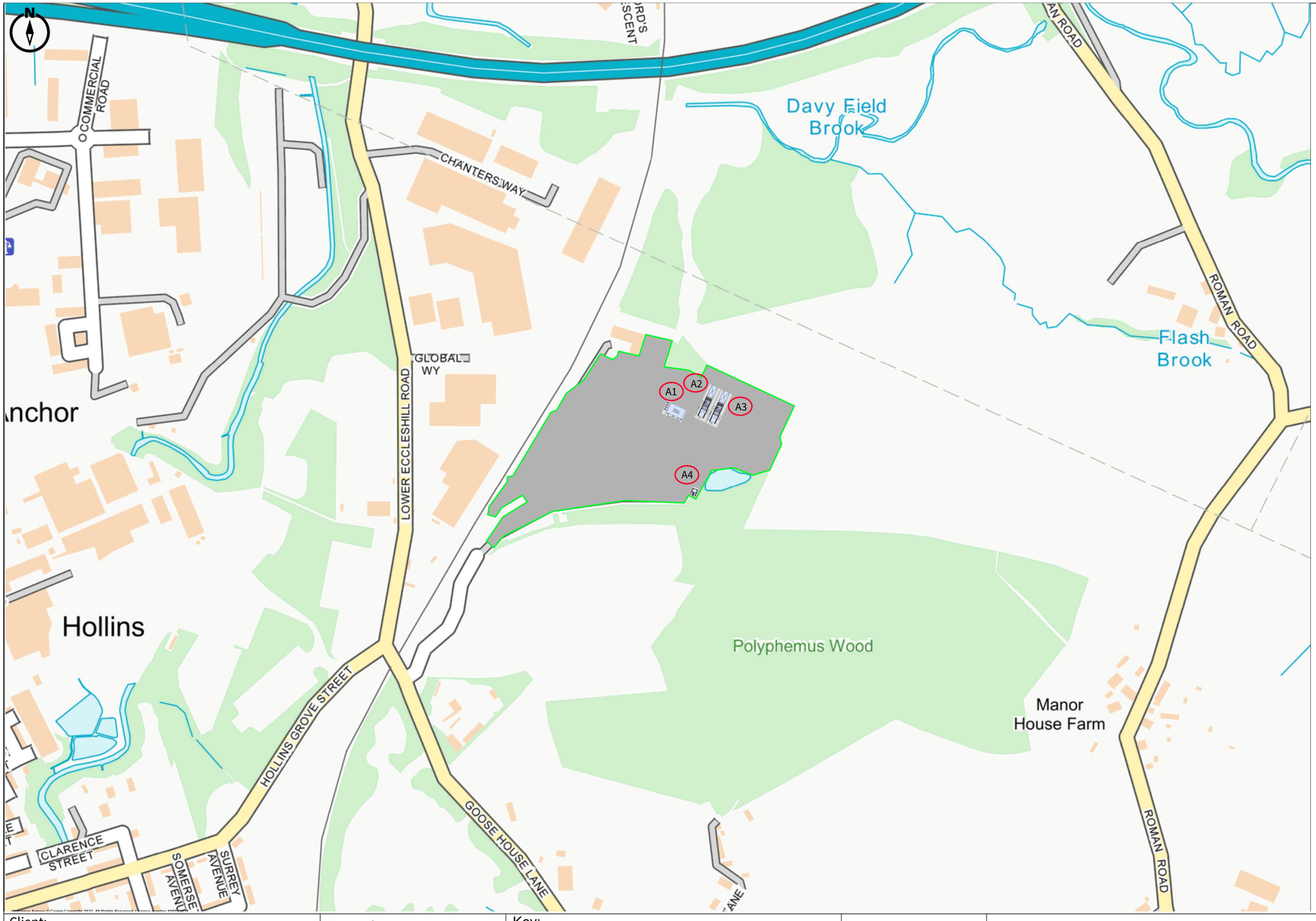


Client: SUEZ Recycling and Recovery UK Ltd	Created: GA	Key: ENVIRONMENTAL PERMIT BOUNDARY	2nd Floor, 11 York Street, Manchester, M2 2AW
	Checked: AB		+44 161 874 4659
Project: Darwen Resource Recovery Park	Date: 09/05/2024		TETRA TECH
Title: Permit Boundary Plan	Version: 1		
Drawing No: SUEZ/B043732/PER/01	Scale: 1:25,000		



Client: SUEZ Recycling and Recovery UK Ltd:	Created: GA Checked: AB	Key: ENVIRONMENTAL PERMIT BOUNDARY A1 Enclosed Biofilter Stack A2 CHP Engine Stack A3 CHP Engine Stack A4 Emergency Flare Stack	N W E S
Project: Darwen AD Facility	Date: 12/01/2024		
Title: Air Source Emissions Plan	Version: 1		
Drawing No: SUEZ/B043732/ASE/01	Scale: 1:25,000		

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TETRA TECH

APPENDIX A - WASTE TYPES

Table A1: Waste Types for Anaerobic Digestion Plant

Waste Code	Description
02	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing.**
02 01	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**
02 01 01	Sludges from washing and cleaning – vegetables, fruit and other crops
02 01 02	Animal tissue waste
02 01 03	Plant tissue waste
02 01 06	Animal faeces, urine and manure (including spoiled straw) only
02 01 07	Wastes from forestry
02 01 99	Wastes not otherwise specified – spent mushroom compost from commercial mushroom growing only
02 02	**Wastes from the preparation and processing of meat, fish and other foods of animal origin**
02 02 01	Sludges from washing and cleaning
02 02 02	Animal tissue waste
02 02 03	Materials unsuitable for consumption or processing
02 02 04	Sludges from on-site effluent treatment
02 02 99	Sludges from gelatine production and animal gut contents only
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation**
02 03 01	Sludges from washing, cleaning peeling, centrifuging and separation (including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)
02 03 04	Materials unsuitable for consumption or processing
02 03 05	Sludges from on-site effluent treatment
02 04	**Wastes from sugar processing**
02 04 01	Soils from washing and cleaning beet
02 04 03	Sludges from on-site effluent treatment
02 04 99	Other biodegradable wastes, allowed only if no chemical agents added and no toxin residues
02 05	**Wastes from the dairy products industry**
02 05 01	Wastes from the dairy products industry
02 05 02	Sludges from on-site effluent treatment
02 06	**Wastes from the baking and confectionery industry**
02 06 01	Materials unsuitable for consumption or processing

02 06 03	Sludges from on-site effluent treatment
02 07	**Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
02 07 01	Wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	Wastes from spirits distillation
02 07 04	Materials unsuitable for consumption or processing
02 07 05	Sludges from on-site effluent treatment – sludges from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)
02 07 99	• Malt husks, malt sprouts, malt dust • Spent and sludge from breweries • Sludge from wine making Waste types in this section allowed if biodegradable material only, no chemical agents added
04	**WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES**
04 02	**Waste from the textile industry**
04 02 10	Organic matter from natural products such as grease and wax
07	**WASTE FROM ORGANIC CHEMICAL PROCESSES**
07 01	**Wastes from the manufacture, formulation, supply and use of basic organic chemicals**
07 01 08	Glycerol waste from bio-diesel manufacture from non-waste vegetable oils
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**Waste packaging, absorbents, filter materials, wiping cloths and protective clothing**
15 01 01	Paper and cardboard packaging (excluding veneers, plastic coatings or laminates) certified to EN 13432 or equivalent certified compostable standard
15 01 02	Plastic packaging – compostable plastics only certified to EN 13432 or equivalent certified compostable or digestible standard
15 01 03	Wooden packaging – virgin timber only
15 01 05	Composite packaging meeting EN 13432 or equivalent certified compostable or digestible standard
15 02	**Absorbents, filter materials, wiping cloths and protective clothing**
15 02 03	Absorbents, filter materials and cloths from the production of alcoholic and non-alcoholic beverages other than those mentioned in 15 02 02 made from compostable material only
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 10	**Aqueous liquid waste destined for off-site treatment**
16 10 02	Untreated wash waters from cleaning fruit and vegetables on farm only
16 10 02	Milk and dairy waste milk from agricultural premises only
16 10 02	Liquor or leachate from a composting process that accepts waste input types listed in these standard rules or composting and anaerobic digestion standard rules only and in compliance with Animal By Products Regulations

19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use
19 02	**Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation**
19 02 03	Premixed wastes composed from waste listed within these standard rules only
19 02 06	Sludge types from waste listed within this table that have been heat treated only
19 02 06	Sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge which has been previously pasteurised and stabilised only)
19 02 10	Glycerol not designated as hazardous – excludes 19 02 08
19 05	**Wastes from anaerobic treatment of solid wastes**
19 05 99	Waste types in this section are allowed only if derived from input types allowed by the Anaerobic Digestion Quality Protocol
19 06	**Wastes from anaerobic treatment of waste**
19 06 03	Liquor from anaerobic treatment of municipal waste (from a process that treats wastes which are listed in this table only)
19 06 04	Digestate from anaerobic treatment of source segregated biodegradable waste (from a process that treats wastes which are listed in this table only)
19 06 05	Liquor from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 08	**Wastes from wastewater treatment works**
19 08 09	Grease and oil mixture from oil and water separation containing only edible oils and fats
19 08 12	Sludges from biological treatment of industrial waste water (from a process that treats wastes which are listed in these standard rules only)
19 12	**Waste from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions**
20 01	**separately collected fractions (except 15 01)**
20 01 01	Paper and cardboard (excluding veneers, plastic coatings or laminates) meeting EN 13432 or equivalent certified compostable or digestible packaging only
20 01 08	Biodegradable kitchen and canteen waste
20 01 25	Edible oil and fat
20 02	**Garden and park wastes (including cemetery waste)**
20 02 01	Biodegradable waste
20 03	**Other municipal wastes**

20 03 01	Mixed municipal waste
20 03 02	Waste from markets

Table A2: Waste Types for Waste Transfer Station

EWC Code	Description
01	**WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS**
01 01	**Wastes from mineral excavation**
01 01 01	Wastes from mineral metalliferous excavation
01 01 02	Wastes from mineral non-metalliferous excavation
01 03	**Wastes from physical and chemical processing of metalliferous minerals**
01 03 06	Tailings other than those mentioned in 01 03 04 and 01 03 05
01 03 09	Red mud from alumina production other than the wastes mentioned in 01 03 07
01 04	**Wastes from physical and chemical processing of non-metalliferous minerals**
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	Waste sand and clays
01 04 11	Wastes from potash and rock salt processing other than those mentioned in 01 04 07
01 04 12	Tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11
01 04 13	Wastes from stone cutting and sawing other than those mentioned in 01 04 07
02	**WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING**
02 01	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**
02 01 02	Animal-tissue waste
02 01 03	Plant-tissue waste
02 01 04	Waste plastics (except packaging)
02 01 06	Animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site
02 01 07	Wastes from forestry
02 01 09	Agrochemical waste other than those mentioned in 02 01 08 (waste sands and clays)
02 01 10	Waste metal
02 02	**Wastes from the preparation and processing of meat, fish and other foods of animal origin**
02 02 02	Animal-tissue waste
02 02 03	Materials unsuitable for consumption or processing
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation**
02 03 02	Wastes from preserving agents
02 03 04	Materials unsuitable for consumption or processing
02 04	**Wastes from sugar processing**

02 04 01	Soil from cleaning and washing beet
02 04 02	Off-specification calcium carbonate
02 05	**Wastes from the dairy products industry**
02 05 01	Materials unsuitable for consumption or processing
02 06	**Wastes from the baking and confectionery industry**
02 06 01	Materials unsuitable for consumption or processing
02 06 02	Wastes from preserving agents
02 07	**Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
02 07 01	Wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	Wastes from spirits distillation
02 07 04	Materials unsuitable for consumption or processing
03	**WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD**
03 01	**Wastes from wood processing and the production of panels and furniture**
03 01 01	Waste bark and cork
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	**Wastes from pulp, paper and cardboard production and processing**
03 03 01	Waste bark and wood
03 03 07	Mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	Wastes from sorting of paper and cardboard destined for recycling
03 03 10	Fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
04	**WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES**
04 01	**Wastes from the leather and fur industry**
04 01 08	Waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium
04 01 09	Wastes from dressing and finishing
04 02	**Wastes from the textile industry**
04 02 09	Wastes from composite materials (impregnated textile, elastomer, plastomer)
04 02 10	Organic matter from natural products (for example grease, wax)
04 02 15	Wastes from finishing other than those mentioned in 04 02 14
04 02 22	Wastes from processed textile fibres
06	**WASTES FROM INORGANIC CHEMICAL PROCESSES**
06 09	**Wastes from the MSFU of phosphorous chemicals and phosphorous chemical processes**
06 09 02	Phosphorous slag
06 09 04	Calcium-based reaction wastes other than those mentioned in 06 09 03
06 11	**Wastes from the manufacture of inorganic pigments and opacificiers**
06 11 01	Calcium-based reaction wastes from titanium dioxide production
07	**WASTES FROM ORGANIC CHEMICAL PROCESSES**
07 02	**Wastes from the MFSU of plastics, synthetic rubber and man-made fibres**

07 02 13	Waste plastic
08	**WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS**
08 01	**Wastes from MFSU and removal of paint and varnish**
08 01 12	Waste paint and varnish other than those mentioned in 08 01 11
09	**WASTES FROM THE PHOTOGRAPHIC INDUSTRY**
09 01	**Wastes from the photographic industry**
09 01 07	Photographic film and paper containing silver or silver compounds
09 01 08	Photographic film and paper free of silver or silver compounds
09 01 10	Single-use cameras without batteries
09 01 12	Single-use cameras containing batteries other than those mentioned in 09 01 11
10	**WASTES FROM THERMAL PROCESSES**
10 01	**Wastes from power stations and other combustion plants (except 19)**
10 01 01	Bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 01 05	Calcium-based reaction wastes from flue-gas desulphurisation in solid form
10 01 07	Calcium-based reaction wastes from flue-gas desulphurisation in sludge form
10 01 15	Bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14
10 01 19	Wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18
10 01 24	Sands from fluidised beds
10 02	**Wastes from the iron and steel industry**
10 02 01	Wastes from the processing of slag
10 02 02	Unprocessed slag
10 02 08	Solid wastes from gas treatment other than those mentioned in 10 02 07
10 02 10	Mill scales
10 02 14	Sludges and filter cakes from gas treatment other than those mentioned in 10 02 13
10 02 15	Other sludges and filter cakes
10 03	**Wastes from aluminium thermal metallurgy**
10 03 02	Anode scraps
10 03 05	Waste alumina
10 03 16	Skimmings other than those mentioned in 10 03 15
10 03 18	Carbon-containing wastes from anode manufacture other than those mentioned in 10 03 17
10 03 24	Solid wastes from gas treatment other than those mentioned in 10 03 23
10 03 26	Sludges and filter cakes from gas treatment other than those mentioned in 10 03 25
10 03 28	Wastes from cooling-water treatment other than those mentioned in 10 03 27
10 03 30	Wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29
10 04	**Wastes from lead thermal metallurgy**
10 04 10	Wastes from cooling-water treatment other than those mentioned in 10 04 09
10 05	**Wastes from zinc thermal metallurgy**
10 05 01	Slags from primary and secondary production
10 05 09	Wastes from cooling-water treatment other than those mentioned in 10 05 08

10 05 11	Dross and skimmings other than those mentioned in 10 05 10
10 06	**Wastes from copper thermal metallurgy**
10 06 01	Slags from primary and secondary production
10 06 02	Dross and skimmings from primary and secondary production
10 06 10	Wastes from cooling-water treatment other than those mentioned in 10 06 09
10 07	**Wastes from silver, gold and platinum thermal metallurgy**
10 07 01	Slags from primary and secondary production
10 07 02	Dross and skimmings from primary and secondary production
10 07 03	Solid wastes from gas treatment
10 07 05	Sludges and filter cakes from gas treatment
10 07 08	Wastes from cooling-water treatment other than those mentioned in 10 07 07
10 08	**Wastes from other non-ferrous thermal metallurgy**
10 08 09	Other slags
10 08 11	Dross and skimmings other than those mentioned in 10 08 10
10 08 13	Carbon-containing wastes from anode manufacture other than those mentioned in 10 08 12
10 08 14	Anode scrap
10 08 18	Sludges and filter cakes from flue-gas treatment other than those mentioned in 10 08 17
10 08 20	Wastes from cooling-water treatment other than those mentioned in 10 08 19
10 09	**Wastes from casting of ferrous pieces**
10 09 03	Furnace slag
10 09 06	Casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05
10 09 08	Casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07
10 09 14	Waste binders other than those mentioned in 10 09 13
10 09 16	Waste crack-indicating agent other than those mentioned in 10 09 15
10 10	**Wastes from casting of non-ferrous pieces**
10 10 03	Furnace slag
10 10 06	Casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05
10 10 08	Casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07
10 10 14	Waste binders other than those mentioned in 10 10 13
10 10 16	Waste crack-indicating agent other than those mentioned in 10 10 15
10 11	**Wastes from manufacture of glass and glass products**
10 11 03	Waste glass-based fibrous materials
10 11 10	Waste preparation mixture before thermal processing, other than those mentioned in 10 11 09
10 11 12	Waste glass other than those mentioned in 10 11 11
10 11 14	Glass-polishing and -grinding sludge other than those mentioned in 10 11 13
10 11 16	Solid wastes from flue-gas treatment other than those mentioned in 10 11 15
10 11 18	Sludges and filter cakes from flue-gas treatment other than those mentioned in 10 11 17

10 12	**Wastes from manufacture of ceramic goods, bricks, tiles and construction products**
10 12 01	Waste preparation mixture before thermal processing
10 12 05	Sludges and filter cakes from gas treatment
10 12 06	Discarded moulds
10 12 08	Waste ceramics, bricks, tiles and construction products (after thermal processing)
10 12 10	Solid wastes from gas treatment other than those mentioned in 10 12 09
10 12 12	Wastes from glazing other than those mentioned in 10 12 11
10 13	**Wastes from manufacture of cement, lime and plaster and articles and products made from them**
10 13 01	Waste preparation mixture before thermal processing
10 13 04	Wastes from calcination and hydration of lime
10 13 07	Sludges and filter cakes from gas treatment
10 13 10	Wastes from asbestos-cement manufacture other than those mentioned in 10 13 09
10 13 11	Wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10
10 13 13	Solid wastes from gas treatment other than those mentioned in 10 13 12
10 13 14	Waste concrete and concrete sludge
11	**WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO METALLURGY**
11 01	**Wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)**
11 01 10	Sludges and filter cakes other than those mentioned in 11 01 09
11 01 14	Degreasing wastes other than those mentioned in 11 01 13
11 02	**Wastes from non-ferrous hydrometallurgical processes**
11 02 03	Wastes from the production of anodes for aqueous electrolytical processes
11 02 06	Wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05
11 05	**Wastes from hot galvanising processes**
11 05 01	Hard zinc
11 05 02	Zinc ash
12	**WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS**
12 01	**Wastes from shaping and physical and mechanical surface treatment of metals and plastics**
12 01 01	Ferrous metal filings and turnings
12 01 03	Non-ferrous metal filings and turnings
12 01 05	Plastics shavings and turnings
12 01 13	Welding wastes
12 01 17	Waste blasting material other than those mentioned in 12 01 16
12 01 21	Spent grinding bodies and grinding materials other than those mentioned in 12 01 20
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**

15 01	**Packaging (including separately collected municipal packaging waste)**
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 03	Wooden packaging
15 01 04	Metallic packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging
15 01 07	Glass packaging
15 01 09	Textile packaging
15 02	**Absorbents, filter materials, wiping cloths and protective clothing**
15 02 03	Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 01	**End-of-life vehicles from different means of transport [including off-road machinery] and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)**
16 01 03	End-of-life tyres
16 01 12	Brake pads other than those mentioned in 16 01 11
16 01 15	Antifreeze fluids other than those mentioned in 16 01 14
16 01 17	Ferrous metal
16 01 18	Non-ferrous metal
16 01 19	Plastic
16 01 20	Glass
16 01 22	Components not otherwise specified
16 02	**Wastes from electrical and electronic equipment**
16 02 09*	Transformers and capacitors containing pcbs
16 02 10*	Discarded equipment containing or contaminated by pcbs other than those mentioned in 16 02 09
16 02 11*	Discarded equipment containing chlorofluorocarbons, HCFC, HFC
16 02 13*	Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12
16 02 14	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 15*	Hazardous components removed from discarded equipment
16 02 16	Components removed from discarded equipment other than those mentioned in 16 02 15
16 03	**Off-specification batches and unused products**
16 03 04	Inorganic wastes other than those mentioned in 16 03 03
16 03 06	Organic wastes other than those mentioned in 16 03 05
16 05	**Gases in pressure containers and discarded chemicals**
16 05 05	Gases in pressure containers other than those mentioned in 16 05 04
16 06	**Batteries and accumulators**

16 06 04	Alkaline batteries (except 16 06 03)
16 06 05	Other batteries and accumulators
16 11	**Waste linings and refractories**
16 11 02	Carbon-based linings and refractories from metallurgical processes others than those mentioned in 16 11 01
16 11 04	Other linings and refractories from metallurgical processes other than those mentioned in 16 11 03
16 11 06	Linings and refractories from non-metallurgical processes others than those mentioned in 16 11 05
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**
17 01	**Concrete, bricks, tiles and ceramics**
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	**Wood, glass and plastic**
17 02 01	Wood
17 02 02	Glass
17 02 03	Plastic
17 03	**Bituminous mixtures, coal tar and tarred products**
17 03 02	Bituminous mixtures other than those mentioned in 17 03 01
17 04	**Metals (including their alloys)**
17 04 01	Copper, bronze, brass
17 04 02	Aluminium
17 04 03	Lead
17 04 04	Zinc
17 04 05	Iron and steel
17 04 06	Tin
17 04 07	Mixed metals
17 04 11	Cables other than those mentioned in 17 04 10
17 05	**Soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 04	Soil and stones other than those mentioned in 17 05 03
17 05 06	Dredging spoil other than those mentioned in 17 05 05
17 05 08	Track ballast other than those mentioned in 17 05 07
17 06	**Insulation materials and asbestos-containing construction materials**
17 06 01*	Insulation materials containing asbestos
17 06 04	Insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05*	Construction materials containing asbestos
17 08	**Gypsum-based construction material**
17 08 02	Gypsum-based construction materials other than those mentioned in 17 08 01

17 09	**Other construction and demolition wastes**
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
18	**WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)**
18 01	**Wastes from natal care, diagnosis, treatment or prevention of disease in humans**
18 01 01	Sharps (except 18 01 03)
18 01 02	Body parts and organs including blood bags and blood preserves (except 18 01 03)
18 01 04	Wastes whose collection and disposal is not subject to special requirements in order to prevent infection(for example dressings, plaster casts, linen, disposable clothing, diapers)
18 01 07	Chemicals other than those mentioned in 18 01 06
18 01 09	Medicines other than those mentioned in 18 01 08
18 02	**Wastes from research, diagnosis, treatment or prevention of disease involving animals**
18 02 01	Sharps (except 18 02 02)
18 02 03	Wastes whose collection and disposal is not subject to special requirements in order to prevent infection
18 02 06	Chemicals other than those mentioned in 18 02 05
18 02 08	Medicines other than those mentioned in 18 02 07
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE**
19 01	**Wastes from incineration or pyrolysis of waste**
19 01 02	Ferrous materials removed from bottom ash
19 01 12	Bottom ash and slag other than those mentioned in 19 01 11
19 01 14	Fly ash other than those mentioned in 19 01 13
19 01 18	Pyrolysis wastes other than those mentioned in 19 01 17
19 01 19	Sands from fluidised beds
19 02	**Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**
19 02 03	Premixed wastes composed only of non-hazardous wastes
19 02 10	Combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 03	**Stabilised/solidified wastes**
19 03 05	Stabilised wastes other than those mentioned in 19 03 04
19 04	**Vitrified waste and wastes from vitrification**
19 04 01	Vitrified waste
19 05	**Wastes from aerobic treatment of solid wastes**
19 05 01	Non-composted fraction of municipal and similar wastes
19 05 02	Non-composted fraction of animal and vegetable waste
19 05 03	Off-specification compost
19 08	**Wastes from waste water treatment plants not otherwise specified**
19 08 01	Screenings

19 08 02	Waste from desanding
19 08 05	Sludges from treatment of urban waste water
19 09	**Wastes from the preparation of water intended for human consumption or water for industrial use**
19 09 01	Solid waste from primary filtration and screenings
19 09 02	Sludges from water clarification
19 09 03	Sludges from decarbonation
19 09 04	Spent activated carbon
19 09 05	Saturated or spent ion exchange resins
19 10	**Wastes from shredding of metal-containing wastes**
19 10 01	Iron and steel waste
19 10 02	Non-ferrous waste
19 10 04	Fluff-light fraction and dust other than those mentioned in 19 10 03
19 10 06	Other fractions other than those mentioned in 19 10 05
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 01	Paper and cardboard
19 12 02	Ferrous metal
19 12 03	Non-ferrous metal
19 12 04	Plastic and rubber
19 12 05	Glass
19 12 07	Wood other than that mentioned in 19 12 06
19 12 08	Textiles
19 12 09	Minerals (for example sand, stones)
19 12 10	Combustible waste (refuse derived fuel)
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
19 13	**Wastes from soil and groundwater remediation**
19 13 02	Solid wastes from soil remediation other than those mentioned in 19 13 01
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**Separately collected fractions (except 15 01)**
20 01 01	Paper and cardboard
20 01 02	Glass
20 01 08	Biodegradable kitchen and canteen waste
20 01 10	Clothes
20 01 11	Textiles
20 01 25	Edible oil and fat
20 01 28	Paint, inks, adhesives and resins other than those mentioned in 20 01 27
20 01 30	Detergents other than those mentioned in 20 01 29
20 01 32	Medicines other than those mentioned in 20 01 31

20 01 34	Batteries and accumulators other than those mentioned in 20 01 33
20 01 36	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35
20 01 38	Wood other than that mentioned in 20 01 37
20 01 39	Plastics
20 01 40	Metals
20 01 41	Wastes from chimney sweeping
20 02	**Garden and park wastes (including cemetery waste)**
20 02 01	Biodegradable waste
20 02 02	Soil and stones
20 02 03	Other non-biodegradable wastes
20 03	**Other municipal wastes**
20 03 01	Mixed municipal waste
20 03 02	Waste from markets
20 03 03	Street-cleaning residues
20 03 07	Bulky waste

Table A3: Waste Types for Materials Recycling Facility

EWC Code	Description
02	**WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING**
02 01	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**
02 01 04	Waste plastics (except packaging)
03	**WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER, AND CARDBOARD**
03 01	**Wastes from wood processing and the production of panels and furniture**
03 01 01	Waste bark and cork
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	**Wastes from pulp, paper and cardboard production and processing**
03 03 01	Waste bark and wood
03 03 07	Mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	Wastes from sorting of paper and cardboard destined for recycling
04	**WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES**
04 02	**Wastes from the textile industry**
04 02 22	Wastes from processed textile fibres
07	**WASTES FROM ORGANIC CHEMICAL PROCESSES**
07 02	**Wastes from the MFSU of plastics, synthetic rubber and man-made fibres**

07 02 13	Waste plastic
12	**WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS**
12 01	**Wastes from shaping and physical and mechanical surface treatment of metals and plastics**
12 01 05	Plastics shavings and turnings
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**Packaging (including separately collected municipal packaging waste)**
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 03	Wooden packaging
15 01 04	Metallic packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging
15 01 07	Glass packaging
15 01 09	Textile packaging
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 01	**End-of-life vehicles from different means of transport [including off-road machinery] and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)**
16 01 19	Plastic
16 01 20	Glass
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**
17 02	**Wood, glass and plastic**
17 02 01	Wood
17 02 02	Glass
17 02 03	Plastic
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE**
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 01	Paper and cardboard
19 12 04	Plastic and rubber
19 12 05	Glass
19 12 07	Wood other than that mentioned in 19 12 06
19 12 08	Textiles
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**

20 01	**Separately collected fractions (except 15 01)**
20 01 01	Paper and cardboard
20 01 02	Glass
20 01 08	Biodegradable kitchen and canteen waste
20 01 10	Clothes
20 01 11	Textiles
20 01 38	Wood other than that mentioned in 20 01 37
20 01 39	Plastics
20 01 40	Metals
20 03	**Other municipal wastes**
20 03 01	Mixed municipal waste
20 03 02	Waste from markets