

BESPOKE ENVIRONMENTAL PERMIT APPLICATION

Prepared for: Greenology (Teesside) Limited

Appendix 4 Site Operating Techniques



360 Ref: GRE_SOT

Aug 2021

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I INTRODUCTION

I.1 Report context

I.1.1 This section of the Environmental Permit application corresponds to Section 3 of Part C3 of the Environmental Permit application forms and specifically details the operating and management procedures that will be in place at the site.

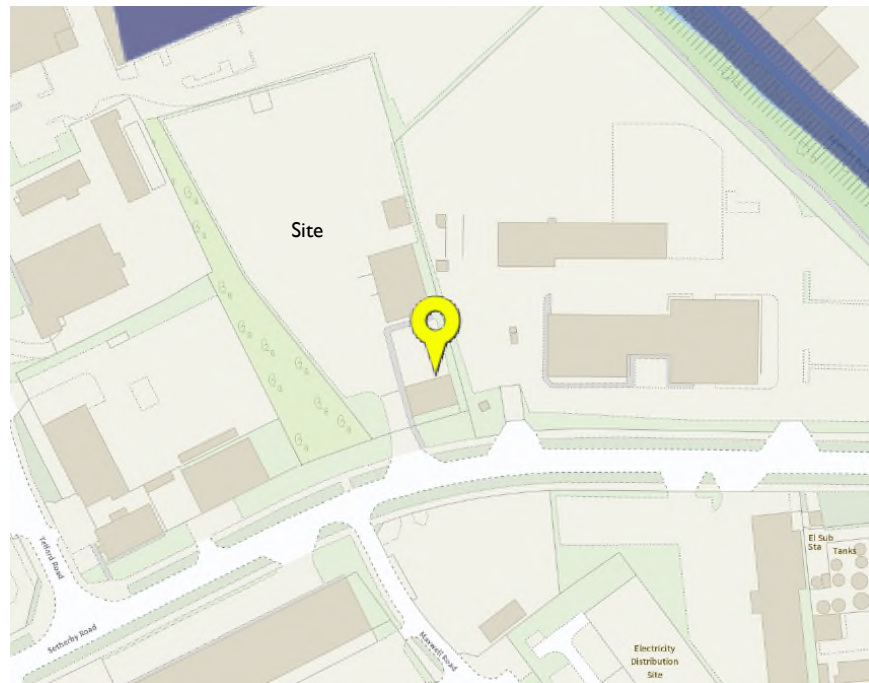
I.1.2 This Environmental Permit variation application has been prepared by 360 Environmental Ltd on behalf of the operator, Greenology (Teesside) Ltd.

I.2 Site setting

I.2.1 The site is located on the Skippers Lane Industrial Estate (also called the East Middlesbrough Industrial Estate) within a secure site consisting of a substantially constructed building housing the pyrolysis operation, a dedicated granulating building housing the granulation plant, a sealed surface, drainage system and a comprehensive CCTV system with intruder alert and thermal camera capabilities.

I.2.2 The site is in a built-up area and surrounded by both domestic, industrial and retail properties.

I.2.3 The site is accessed, via a security gate, directly from the public highway.



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2 OPERATING PROCEDURES

2.1 Operating hours

2.1.1 Initially the site will operate on a single 8 – hour shift basis. As the demand increases this may increase.

2.1.2 There are no restrictions from a planning perspective on operating hours.

2.2 Permitted activities

2.2.1 The site will only process whole End-of-Life Tyres (ELT) by the following means;

- Cutting
- Shredding
- Granulation

2.2.2 The granulate (crumb) will then either be;

- Pyrolysed at the site
- Despatched from site as a PAS107 compliant material for use in other processes

2.3 Waste types

2.3.1 The permit variation restricts the input waste types to a single waste stream, namely;

EWC	Description
16	WASTES NOT OTHERWISE SPECIFIED ON 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 maintenance (except 13, 14, 16 06 and 16 08)
16 01 03	End of life tyres (ELTs)

2.4 Waste quantities

2.4.1 The processing operation is based on accepting only sufficient material for its processing equipment. As such the maximum the site will receive annually will not exceed 22 500 tonnes.

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2.5 Waste pre- acceptance procedures

2.5.1 Waste materials will only be accepted onto the site if they comply with the list of wastes included in the permit.

2.5.2 All vehicles delivering waste will be registered waste carriers and each delivery will be accompanied by a relevant Waste Transfer Note (WTN), consistent with fulfilling the company's responsibilities under the provisions of the Duty of Care regulations.

2.5.3 Waste materials will only be accepted to the site that it is permitted to do so.

2.5.4 Material is not accepted that does not conform to the requirements of the permit.

2.5.5 Staff undertaking waste acceptance checks, including sampling and analysis of waste, are appropriately trained and competent to

- classify and characterise waste properly,
- identify whether it is suitable for the facility
- manage any loads that do not conform to waste acceptance criteria

2.5.6 The operator has implemented waste pre-acceptance procedures so that enough is known about the composition of the material before it arrives at the facility. This is carried out to assess and confirm that the waste is technically and legally suitable for processing at the facility. All records are kept that justify the decision to accept the material.

2.5.7 The pre-acceptance procedures follow a risk-based approach and consider:

- the source and nature of the waste
- potential risks to process safety, occupational safety and the environment (for example from odour and other emissions)
- knowledge about the previous waste holder(s)

2.5.8 When a customer query is received, and before the waste arrives at the facility, information is obtained from the waste producer to the technician that the waste material has been properly assessed and classified in accordance with WM3.

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2.5.9 As a minimum, the following information will be obtained in written or electronic form:

- details of the waste producer including their organisation name, address and contact details
- a description of the waste
- the waste's List of Wastes Regulations code (European Waste Classification code)
- the source of the waste (the process that gives rise to the waste)
- the waste's physical form
- the age of the waste, i.e., when it first became waste
- the type of packaging
- whether the waste is mixed or segregated by type of tyre, i.e., car, LGV, tractor etc
- an estimate of the quantity expected to arrive in each load

2.5.9 After the waste material has been properly assessed and classified, it will be technically assessed as to the waste's suitability for storage or treatment at the facility to make sure permit conditions are met.

2.5.10 Pre-acceptance records will be kept for at least 3 years, in a computerised waste tracking system, following receipt of the waste.

2.5.11 If an enquiry does not lead to receipt of the waste the records will be archived.

2.5.12 The information required at pre acceptance will be reassessed if the:

- waste changes
- process giving rise to the waste changes
- waste received does not conform to the pre acceptance information

2.5.13 In all cases the information required at pre-acceptance will be reassessed on an annual basis.

2.5.17 When agreement is reached that Greenology (Teesside) Ltd will accept ELT from a customer, it will be decided what parameters will be checked at the acceptance stage.

2.5.18 The criteria for non-conformance or rejection will also be recorded.

2.5.19 The person checking the waste for acceptance may also decide additional parameters.

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2.6 Waste acceptance procedures

2.6.1 Waste acceptance procedures will be implemented to check that the characteristics of the waste received matches the information obtained during waste pre-acceptance. This is to confirm the waste is as expected and that it can be accepted.

2.6.2 If the waste does not conform to the pre-acceptance information it will be rejected.

2.6.3 The procedures follow a risk-based approach, considering:

- the source, nature and age of the waste
- potential risks to process safety, occupational safety and the environment (for example, from odour and other emissions)
- the potential for self-heating
- knowledge about the previous waste holder(s)

2.6.4 Only pre-booked waste materials will be accepted onto site that have been adequately pre-accepted and that are consistent with the pre-acceptance information.

2.6.5 When deciding whether to accept waste, the following will also be checked;

- the relevant storage areas (quarantine, reception and general) and treatment processes in the facility have the physical capacity needed to handle the waste.

2.6.6 Where capacity is not available, or there would be a permit breach, the waste material will not be accepted.

2.6.7 All incoming waste materials will be visually checked and verified against pre acceptance information and transfer documentation before accepting them on site.

2.6.8 The extent of the initial visual check is determined by the waste type and how it is packaged.

2.6.9 All transfer documentation will be checked and validated and discrepancies resolved before the waste material is accepted.

2.6.10 Where the incoming waste material classification or description is incorrect or incomplete, then this will be addressed with the original waste producer during waste acceptance.

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2.6.11 Any non-conformances will be recorded.

2.6.12 Where the waste material is assessed as acceptable for on-site storage and treatment, it will be documented.

2.6.13 There are clear criteria used to identify non-conforming wastes and wastes to be rejected.

2.6.14 There are written procedures for recording, reporting and tracking non-conforming and rejected wastes. These include:

- using quarantine storage
- notifying the relevant customer or waste producer
- recording a summary of the justification for accepting non-conforming waste in the computerised waste tracking system

2.6.15 Where hazardous waste is rejected the requirements of the Hazardous Waste (England and Wales) Regulations 2005 will be followed.

2.6.16 The weight of each load will be checked:-

2.6.17 The calculation will be recorded in the computerised waste tracking system, so that the capacity available can be monitored.

2.6.18 The person carrying out waste acceptance checks will be trained to effectively identify and manage any non-conformances in the loads received, to ensure full compliance with Duty of Care for waste and permit conditions.

2.6.19 Offloading, reception and quarantine areas have an impermeable surface to prevent any potentially polluting liquid from escaping off site.

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3 REGULATED FACILITY INFRASTRUCTURE

3.1 Security

3.1.1 All vehicles delivering waste to the site will be required to report to the site office. Upon request, they may have to provide evidence of Waste Carrier Registration. All other visitors to the site must sign the Visitors Book before proceeding onto the site and sign out prior to leaving.

3.1.2 A sign will be located at the site entrance detailing the name, address and telephone numbers of the permit holder, emergency contact numbers, site operating hours and the contact details of the Environment Agency. Any permanent changes to these details will be updated within 30 days.

3.1.3 Signs will be erected at the site entrance giving warnings of operations at the site.

3.1.4 A notice board will be maintained in the site office. A copy of the Environmental Permit and a copy of the company's 'Health and Safety Policy' will be displayed, together with any other relevant notices. A copy of all documents accompanying this application, detailing all site procedures will be kept in the site office.

3.1.5 The site is secured from public access by substantial lockable gates/doors at the site entrances and all reasonable precautions will be taken to prevent the unauthorised entry of the general public.

3.1.6 The site is covered by CCTV system in operation 24/7 that has thermal and intruder alert capabilities.

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4 EMISSIONS CONTROL

4.1 Point source emissions to air

4.1.1 There are no point source emissions to air from the shredder or granulation equipment.

4.1.2 The point source emission from the pyrolysis plant is detailed within the SWIP permit.

4.1.3 All emission points pass through a filtration system prior to discharge to atmosphere.

4.1.4 The milling unit and filtration unit vent to atmosphere to relieve pressure build up within the equipment.

4.2 Point source emissions to groundwater

4.2.1 There will be no point source emissions to groundwater as a result of this operation.

4.3 Point source emissions to surface water and sewer

4.3.1 There will be no point source emissions to surface water or sewer as a result of this operation.

4.4 Fugitive emissions

4.4.1 Fugitive emissions have been identified as a potential environmental risk resulting from the proposal, as detailed in the Environmental Risk Assessment [**GRE_ERA**] that accompanies this application.

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5 ACCIDENT MANAGEMENT

5.0.1 All necessary measures will be taken to prevent the occurrence of accidents. The types of accidents and the potential environmental consequences associated with them have been identified in the Environmental Risk Assessment that accompanies this application.

5.0.2 It is considered that the most significant risk associated with the ELT treatment operation is from the incorrect processing of non-compliant waste types. The waste acceptance procedures listed in this document aim to control and minimise this risk.

5.1 Fire control

5.1.1 Fires from the acceptance of the ELT are considered unlikely due to the nature of the waste material. However, the operation and/or maintenance of plant do pose a potential fire hazard, if precautions are not taken.

5.1.2 Firefighting equipment of a suitable type is kept at appropriate locations as stated in the Fire Prevention Plan (FPP). Where appropriate, mobile plant is be fitted with firefighting equipment. All firefighting equipment will be kept in good condition, unobstructed and be serviced at least once a year by a competent person.

5.1.3 The site is designated as a “no smoking area” and signed accordingly.

5.1.3 Any fire on the site will be treated as an emergency and will be extinguished at the earliest opportunity. If necessary, the Fire Service will be summoned.

5.1.4 Any incidents of fire will be reported to the Environment Agency and recorded in the Site Diary.

5.2 Spillage procedure

5.2.1 The material accepted at the site is a non – liquid material. The most likely source for spillages will be from any fuels used.

5.2.2 In the event of a spill, the following procedures will be implements (also stated in the Spill Response Plan):

- clear the affected area immediately

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- contain the spill to prevent it from spreading
- use absorbents over the spill to soak up the spillage
- use PPE if required
- Once the liquid has all been absorbed use a shovel to clear up the waste, put it in a plastic sack and then place it in the container for disposal at a suitably permitted facility; and
- Make a record of the spill incident and remedial action taken.

5.2.3 Spillage kits will be maintained on site in order to respond to any spillage incident. The spillage kits will be kept securely at easily accessible locations.

5.3 Maintenance procedures

5.3.1 A Planned Preventative Maintenance programme (PPM) is in place to minimise the risk to safety, health and the environment by ensuring that all appropriate items and elements within the site are serviced and inspected on a regular basis or to the manufacturers' maintenance schedules.

5.3.2 Details of faults, breakdowns and repairs are documented and records are maintained. Faults and breakdowns will be investigated and the service schedule revised if necessary.

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6 SITE MANAGEMENT

6.1 Technical competence

6.1.2 The site will be audited according to the requirements of the Competence Management System (CMS).

6.2 Management system

6.2.1 The operator, Greenology (Teesside) Ltd., has an Environmental Management System (EMS) in place. The operator will update the EMS procedures from time to time to reflect any changes in working practice which will take precedent over the details contained within this document.

6.2.2 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.

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7 DOCUMENT MANAGEMENT

7.1 Record keeping

7.1.1 Greenology (Teesside) Ltd has an Environment Management System which compliments the requirements of CMS and this includes procedures for the management of documentation.

7.1.2 A record will be kept that provides details on all waste material deposited at the site. This will include details on waste types, quantities and the date of deposition. This will be provided to the Environment Agency at three-monthly intervals, within one month of the end of each period.

7.1.3 A record of waste characterisation and any compliance testing and/or on-site verification will be maintained.

7.1.3 A site diary will be kept in the site office which will be updated daily. The diary will be used to record any accidents, incidents or complaints.

7.1.4 The Environmental Permit and other documents containing information regarding the operation of the site will be kept in a convenient location, allowing access for any person that may be working at or visiting the site.

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8 INCIDENTS AND NON-CONFORMANCES

8.0.1 Greenology (Teesside) Ltd has procedures for investigating and recording any incidents and non-conformances at the site, and for taking any corrective action.

8.02 Greenology (Teesside) Ltd has an EMS which includes procedures for handling incidents and non-conformances.

8.0.3 The following types of incidents will require investigation:-

- Malfunction, breakdown or failure of plant and equipment;
- Deviation from site procedures and operating techniques;
- Near misses; and
- Complaints from external parties.

8.0.3 All staff will be trained to detect and report any such occurrences. Procedures will be taken to allow operations to resume and preventative measures may be put in place to ensure that the incident does not reoccur.

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9 WASTE PROCESS FLOW

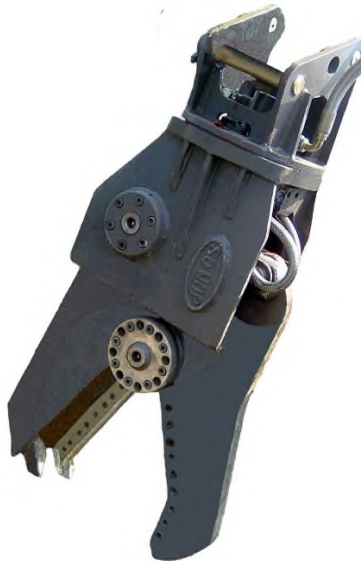
9.1 Acceptance

9.1.1 End-of-Life Tyres are accepted at the site from a range of suppliers and range in size from car tyres to large tractor and earth mover tyres.

9.1.2 Once checked in the ELT are stored within the bays.

9.2 Cutting

9.2.1 Large earth mover tyres are cut in to 'chunks' using a shear on the 360° as they are easier to feed in to the shredder and easier for the shredder to handle.



9.2.2 Once cut in to chunks they are placed in the bay ready for feeding in to the shredder.

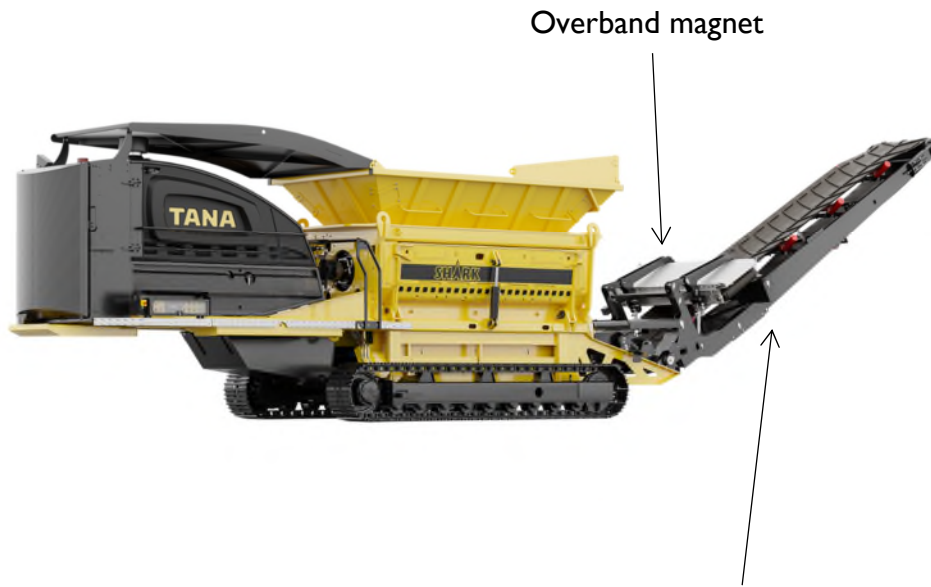
9.3 Shredding

9.3.1 The shredder, operated only within the covered shredding bay, then processes the ELT to produce a shredded tyre particle size of around 50mm.

9.3.2 The shredder output conveyor is fitted with an overband magnet that removes up to 80% of the tyre wire embedded within the tyre.

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9.3.3 The tyre wire is deposited in a separate stockpile and removed from site for further recycling at a separate facility.



9.3.2 To prevent dust emissions the shredder is fitted with sprayer nozzles that produce a fine water mist that prevents dust being generated by the shredding activity

9.3.3 Once a sufficient pile is created the shredder is tracked out of the bay and the pile back-bladed and spread out to release any trapped heat within the pile.

9.3.4 Once cooled the shred is then moved to a storage bay.

9.3.5 When sufficient capacity exists the shred is then moved to the granulator.

9.4 Granulation

9.4.1 The granulator is fed 50mm shred by continuous conveyor, shown below, at a rate of between 1 – 2 t/hr depending on output size requirement. A larger output particle size gives a higher throughput.

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9.4.2 The fire risk is reduced by the fitment of spark detection equipment and belt slip protection on conveyors to reduce the risk of fire if rotors jam and the motor continues to run.



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9.4.3 Once granulated the material is conveyed for final pelletising



9.4.4 Further tyre wire removal, <99%, is enhanced by the fitment of a overband magnet and a magnetic end roller separator.



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9.4.5 After final processing, 'fluff' removal, the material is then transported , via conveyor belt, to a double bag filling system.

9.4.6 The material is bagged according to customer requirements.

End user	Bag size
PAS107	25 kg
PAS107	1 000 kg
Pyrolysis	2 000 kg ¹

¹ The bags used for transportation to the pyrolysis building a reusable, bottom discharge bags.