Appendix 26 –BAT Tables

SITE DETAILS	
Name of the applicant	3R Technology UK Limited
Activity address	Unit 21-22 Roman Way, Longridge Road, Preston, PR2 5BB
National grid reference	SD 58148 32763

CONTENTS:

1. Introduction

1.1 This report describes how the techniques to be used for the site and the processes that are subject to the accompanying environmental permit application for a Hazardous, and non – hazardous waste treatment installation.

1.2 It outlines how the techniques represent BAT (Best Available Techniques) and justifies proposals against the indicative standards. Best Available Techniques are defined in the BAT Conclusions issued as Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council.

2. Best Available Techniques for Installation Activity

2.1 BAT Conclusions

2.1.1 Best available techniques (BAT) conclusions are the reference for setting permit conditions for installations covered by Chapter II of Directive 2010/75/EU and competent authorities should set emission limit values which ensure that, under normal operating conditions, emissions do not exceed the emission levels associated with the best available techniques as laid down in the BAT conclusions.

2.1.2 It is important to note that compliance with indicative BAT for raw materials, energy and accidents is provided through those individual reports, submitted with this application.

2.2 EA Additional Guidance

2.2.1 The Environment Agency Sector Guidance Note IPPC S5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste provides indicative environmental standards of operation and performance for the treatment of hazardous and non – hazardous wastes.

2.2.2 This additional guidance has not been considered as it has been superseded by the release of the BAT conclusions document in August 2018.

2.3 The proposed facility operations and management have been considered under the relevant sections of:

- BREF Waste Treatment (2018) and
- BAT Conclusions for Waste Treatment (CFWT)(August 2018)

3. Scope

3.1 These BAT conclusions concern the following activities specified in the Environmental Permitting Regulations 2016 SI.No.1154, namely:

3.2 5.3. Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities: physico-chemical treatment;

3.3 5.6. Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b) of this Section,

4. BAT Tables

Table 1 below sets out the site operations and references them to guidance which indicates whether that specific section of the guidance is applicable to this operation and if it is, indicates that they meet BAT requirements either general or sector specific.

TABLE 1 – How 3R Technology operations at Roman Way meet BAT plus reference to relevant guidance

BAT conclusion	Indicative BAT requirements	Compliance with indicative BAT requirements	Application reference
General BREF (WT2018) conclusions			
BREF (WT 2018)	Purpose of waste treatment pushing waste up the hierarchy.	The waste material upon receipt is mixed POPs and non-POPs WEEE plastic. Upon arrival the site does not know whether the plastic material is POPs contaminated and thus upon arrival all the material is viewed as POPs contaminated plastic. The operation on site is to separate POPs contaminated and non-POPs contaminated plastics with the aim to recycle as much non-POPs plastic as possible. All waste treatment and transfer will aim to maximise the amount of plastic which is suitable for onward recycling and thus the operation will aim to move the wastes as far up the waste hierarchy as possible.	EMS

1 General BAT conclusions			
1.1 Overall environmental performance			
BAT 1	*In order to improve the overall environmental performance, BAT is to implement and adhere to 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;*	In order to ensure that the environmental performance is maintained and improved, an EMS will be implemented upon permit issue that incorporates the following features; I. Senior management is fully committed to compliance with the permit through the EMS; II. An environmental policy will be developed that will continuously improve the environmental performance of the installation. This will form the basis for the EMS; III. All decisions will be fully costed prior to implementation so that best value is obtained without compromising on environmental performance. IV. All procedures are implemented with designated responsibilities for compliance. Regular training is performed to ensure that all procedures are fully and correctly understood by all members of staff that are responsible for permit compliance. All procedures are fully communicated to all relevant staff with	EMS

	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;* *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).*		regular training updates. Compliance with environmental legislation is designated to the plant manager, with specific roles delegated to nominated staff. V. Relevant parameters are measured and monitored to ensure compliance with the permit and plant performance is maintained to be as efficient as possible. Where necessary, corrective action is taken and recorded. Preventative maintenance takes place to ensure plant efficiency is maintained. The EMS will be audited on a continual basis to ensure that it remains fit for purpose. VI. The EMS, will be reviewed to ensure that it remains effective and suitable for continued compliance and effectiveness. VII. Cleaner technologies will be employed were cost effective and beneficial to do so; VIII. 3R Technology will ensure that the plant is able to be decommissioned in a manner consistent with protecting the environment; IX. Where possible, and relevant, plant performance will be benchmarked with available information; X. Please see BAT 2;	

		XI. Please see BAT 3; XII. Management of residues will take the form of securing sustainable outlets for the outputs. XIII. The accident management plan is part of the EMS and identifies hazards posed by the operation and the associated risks and defines measures to address these risks. It considers the inventory of pollutants present or likely to be present which could have environmental consequences if they escape. XIV. Please see BAT 12; XV. Please see BAT 17	
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*	The following techniques are employed to improve the environmental performance of the plant; (a) Pre-acceptance is designed to ensure on the correct material is accepted at site to avoid issues of adverse reactions or uncontrolled emissions. Robust procedures ensure only waste which is acceptable for the relevant treatment and is included on the allowable list of wastes under the permit will be accepted at the site. Prior to acceptance of any wastes onto the site the company attempts, where possible, to obtain a clear characterisation of the materials in advance which covers:	EMS

		• Process that the waste has come from • EWC code • Quantity of material • Composition (where possible) • Form of the material – solid • Collection details (b) Wastes assessed upon receipt to ensure suitable for treatment sort process and stored correctly upon arrival prior to treatment. All material received on the site must be appropriate for the treatment on site and the correct delivery of material is planned from the outset. (c) The waste tracking system and inventory tracks the location and quantity of waste in the facility. It holds all the information generated during waste pre-acceptance procedures (e.g. date of arrival at the plant and unique reference number of the waste, information on the previous waste holder(s), intended treatment route, nature and quantity of the waste held on site including all identified hazards), acceptance, storage, treatment and/or transfer off site. The waste tracking system is risk-based considering, for example, the hazardous properties of the waste, the risks posed by the waste in terms of process safety, occupational safety and environmental	

		impact, as well as the information provided by the previous waste holder(s). (d) The output quality management system is in place so as to ensure that the output of the waste treatment is in line with the expectations. This management system also allows the performance of the waste treatment to be monitored and optimised. The use of the material flow analysis is risk-based considering, for example, the hazardous properties of the waste, the risks posed by the waste in terms of process safety, occupational safety and environmental impact, as well as the information provided by the previous waste holder(s); (e) Waste is kept separated depending on its properties in order to enable easier and environmentally safer storage and treatment. Waste segregation relies on the physical separation of waste and on procedures that identify when and where wastes are stored; (f) Waste will arrive sorted and thus only a visual examination will be required to ensure the material is suitable for the waste treatment process.	
BAT 3	*In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas*	As part of the EMS for the site the waste inventory will be maintained to ensure that the waste streams remain consistent with the treatment capability of the plant.	EMS

	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 waste water/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:* *(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).*	Site staff will operate the site in accordance with the sites Environment Management System (EMS) and associated documents EMS describes wastes pre-acceptance and acceptance procedures. Material stored inside building which has an impermeable surface and no internal drains. Roof water drainage which comes down internal stanchions are sealed at the bottom and as such any spills or liquids will be retained in the building. The area for waste storage and treatment therefore has an impermeable pavement and sealed drainage system. The water used in the sink/float system is recirculated via a water storage and treatment facility back into the process. Any waste waters from this process will be disposed of as sludge. The process uses approximately 200 litres per day. The EMS specifies that the quantity of water stored is checked and recorded weekly and the quality of sludge is confirmed prior to removal off-site or every 12 months whichever is the more frequent. The EMS will ensure that the tracking system records the following information:	

		• record accurately the nature and quantity of wastes held on site, including all hazards and identification of primary hazards • where the waste is physically located in relation to a site plan • where the waste is in the designated disposal route • identification of operator's staff who have taken any decisions re acceptance or rejection of waste streams and decided upon recovery / disposal options	
BAT 4	*In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below.* *(a) Optimised storage location* *(b) Adequate storage capacity* *(c) Safe storage capacity* *Separate area for storage and handling of packaged hazardous waste*	The facility is proposing to have 5 bays to provide separate areas for receipt of materials prior to treatment and provide suitable storage for materials after the treatment process: 1. Input WEEE Plastic Shred 2. Output sorted heavy plastics 3. Output sorted light plastics 4. Output heavy (stones, glass and heavy metals) 5. Output mixed general waste In order to reduce the environmental risk associated with the storage of waste; a) No waste is stored externally. b) Site is a fully impermeable pavement and sealed drainage inside the building to prevent escape of spillages or	Site plan

		escape of hazardous wastes or wastes which could give rise to polluting run off. c) Roof rain water is directed to dedicated drainage system which is located in the building stanchions and which leaves the site via surface water systems without coming into contact with stored waste or the waste treatment process. d) Records of waste inventory held on site. Appropriate procedures and measures in EMS. e) located as far as technically and economically possible from sensitive receptors, watercourses, etc. within the confines of the site. f) located in such a way so that it eliminates the unnecessary handling of wastes. g) Storage capacities have been calculated to conform with the FPP. These storage capacities will not be exceeded. h) Defined storage areas in place at the site	
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.*	Where feedstock deliveries are required to be offloaded for inspection and acceptance prior to pre-treatment, the reception areas are segregated and managed to ensure waste is not stored for longer than specified in the FPP. All reception and storage areas on site are within a building which has an impermeable surface and no internal drainage.	EMS and FPP

		Storage of received materials is for a minimum time prior to treatment of the materials. The site is only receiving WEEE plastics and thus there is no requirement for separate areas to store different wastes and no risk of mixing of wastes. Materials will be managed carefully to both ensure adequate materials for the treatment process and to minimise potential for fire in accordance with the site's Fire Prevention Plan (FPP).	
1.2 Monitoring			
BAT 6	*For relevant emissions to water as identified by the inventory of waste water 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).*	Waste water is re-used on site for processes and will not be discharged to surface water.	N/A
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.*	Waste water is re-used on site for processes and will not be discharged to surface water.	N/A
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.*	N/A	N/A

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.*	N/A	N/A
BAT 10	*BAT is to periodically monitor odour emissions*	WEEE plastic is not odourous, therefore extremely low risk of odour emissions. No need for abatement measures.	N/A
BAT 11	*BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.*	EMS requires the completion of annual records of raw materials, water and energy use, volume of materials received and generation of materials from treatment process. Direct measurements, calculation or recording, will be undertaken using suitable meters or invoices to calculate the annual consumption of energy, water and any raw materials used. The monitoring will be carried out at the most relevant level (e.g. at process or plant/installation level) and will consider any significant changes in the plant/installation.	Meter Readings / Invoices
1.3 Emissions to air			
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;*	WEEE plastic is not odourous, therefore extremely low risk of odour emissions. No need for abatement measures.	N/A

	— 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.*	Complaint Procedure incorporated in EMS to investigate complaint via root cause analysis and implement response as required. If odour was the source of the complaint, an Odour Management Plan would be incorporated into the EMS.	
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 times* (b) *Using chemical treatment* (c) *Optimising aerobic treatment*	As part of the EMS for the site the waste inventory will be maintained to ensure that; (a) the waste streams remain consistent with the treatment capability and capacity of the plant. (b) Treatment processes will be maintained to ensure optimum levels of treatment occur at all times Complaint Procedure incorporated in EMS to investigate complaint via root cause analysis and implement response as required. If odour was the source of the complaint, an Odour Management Plan would be incorporated into the EMS.	EMS
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.* *Depending on the risk posed by the waste in terms of diffuse emissions to air, BAT 14d is especially relevant.* *(a) Minimise the number of potential diffuse emission sources* *(b) Selection and use of high- integrity equipment* *(c) Corrosion prevention*	No risk of dust from storage of material, assessment of material or plastic separation process. All storage inside the building. No need for abatement measures.	N/A

	(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 (LDAR) programme*		
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.* *(a) Correct plant design* *(b) Plant management*	N/A	N/A
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;* *(a) Correct design of flaring devices* *(b) Monitoring and recording as part of flare management*	N/A	N/A
1.4 Noise and vibrations			
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:* *(a) A protocol containing appropriate actions and timelines;* *(b) A protocol for conducting noise and vibration monitoring;* *(c) A protocol for response to identified noise and vibration events, e.g. complaints;*	No heavy machinery or heavy mechanical treatment processes. All treatment performed inside building. The equipment manufacturer testing has shown that the noise level of the equipment is low and as such it is assumed once commissioned the equipment shall not cause noise or vibration nuisance at sensitive receptors. No need for noise abatement measures.	N/A

	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.		
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*	Measures to be put in place at the installation will minimise the potential for noise and/or vibration emissions.	Risk Assessment
1.5 Emissions to water			
BAT 19	*In order to optimise water consumption, to reduce the volume of waste water 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*	EMS describes wastes pre-acceptance and acceptance procedures. Material stored inside building which has an impermeable surface and no internal drains. Roof water drainage which comes down internal stanchions are sealed at the bottom and as such an spills or liquids will be retained in the building. The area for waste storage and treatment therefore has an impermeable pavement and sealed drainage system. The water used in the sink/float system is recirculated via a water storage and treatment facility back	Site Drainage Plans

	(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*	into the process. Any waste waters from this process will be disposed of as sludge. The process uses approximately 200 litres per day. The EMS specifies that the quantity of water stored is checked and recorded weekly and the quality of sludge is confirmed prior to removal off-site or every 12 months whichever is the more frequent. Measures will be employed at the site to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water.	
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* *(c) Physical separation, e.g. screens, sieves, grit separators, grease separators, oil-water separation or primary settlement tanks* *(d) Adsorption* *(e) Distallation/rectification* *(f) Precipitation* *(g) Chemical oxidation* *(h) Chemical reduction* *(i) Evaporation* *(j) Ion exchange* *(k) Stripping* *(l) Activated sludge process* *(m) Membrane bioreactor* *(n) Nitrification/denitrification when the treatment includes a biological treatment* *(o) Coagulation and flocculation*	See Hermion Technical Booklet which details the water treatment section of the equipment, "Brings clean water to Sink Float tank and Watertable in a closed loop system, waste is discharged to a big bag". Any waste waters from this process will be disposed of as sludge.	Hermion Technical Booklet

	(p) Sedimentation *(q) Filtration (e.g. sand filtration, microfiltration, ultrafiltration)* *(r) Flotation*		
1.6 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 part of the Accident Management Plan (AMP) for the site the following measures are utilised; (a) The site is surrounded by a 6ft high palisade fence with lockable gates, entry control barrier and CCTV in operation 24/7. (b) Established procedures and technical provisions are in place to manage (in terms of possible containment) emissions from accidents and incidents such as emissions from spillages, firefighting water, or safety valves. (c) The EMS includes written procedures for handling, investigating, communicating and reporting environmental complaints. This also details the EA notification procedure. The EMS includes written procedures for investigating incidents, (including near misses) as well as identifying suitable corrective action and following up. The EMS provides for investigation and remediation of environmental incidents.	AMP
1.7 Material efficiency			
BAT 22	*In order to use materials efficiently, BAT is to substitute materials with waste.*	Not applicable at this site.	N/A

1.8 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*	Energy usage is monitored and reported on an annual basis in accordance with permit conditions.	EMS
1.9 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).*	No acceptance of packaged wastes, material will predominately be delivered in bulk containers.	N/A
2 GENERAL BAT CONCLUSIONS FOR THE MECHANICAL TREATMENT OF WASTE			
2.1.1 Emissions to air			
BAT 25	*In order to reduce emissions to air of dust, and of particulate-bound metals, PCDD/F and dioxin-like PCBs, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Cyclone* *(b) Fabric filter* *(c) Wet scrubbing* *(d) Water injection in to the shredder*	Not applicable at this site.	N/A

2.2 BAT conclusions for the mechanical treatment in shredders of metal waste			
2.2.1 Overall environmental performance			
BAT 26	*In order to improve the overall environmental performance, and to prevent emissions due to accidents and incidents, BAT is to use BAT 14g and all of the techniques given below:* *(a) Implementation of a detailed inspection procedure for baled waste before shredding;* *(b) removal of dangerous items from the waste input stream and their safe disposal (e.g. gas cylinders, non- depolluted ELVs, non-depolluted WEEE, items contaminated with PCBs or mercury, radioactive items);* *(c) treatment of containers only when accompanied by a declaration of cleanliness.*	Not applicable at this site.	N/A
2.2.2 Overall environmental performance			
BAT 27	*In order to prevent deflagrations and to reduce emissions when deflagrations occur, BAT is to use technique a. and one or both of the techniques b. and c. given below;* *(a) Deflagration management plan* *(b) Pressure relief dampers* *(c) Pre-shredding*	Not applicable at this site.	N/A
2.2.3 Energy efficiency			
BAT 28	*In order to use energy efficiently, BAT is to keep the shredder feed stable.*	No shredder at this site. All operatives trained in energy efficient use of equipment, including loading the bunker to achieve stable feed rate for the plastic sortation process.	EMS

2.3 BAT conclusions for the treatment of WEEE containing VFCs and/or VHCs			
2.3.1 Emissions to air			
BAT 29	*In order to prevent or, where that is not practicable, to reduce emissions of organic compounds to air, BAT is to apply BAT 14d, BAT 14h and to use technique a. and one or both of the techniques b. and c. given below;* *(a) Optimised removal and capture of refrigerants and oils* *(b) Cryogenic condensation* *(c) Adsorption*	Not applicable at this site.	N/A
2.3.2 Explosions			
BAT 30	*In order to prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs, BAT is to use either of the techniques given below;* *(a) Inert atmosphere* *(b) Forced ventilation*	Not applicable at this site.	N/A
2.4 BAT conclusions for the mechanical treatment of waste with calorific value			
2.4.1 Emissions to air			
BAT 31	*In order to reduce emissions to air of organic compounds, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Adsorption* *(b) Biofilter* *(c) Thermal oxidation* *(d) Wet scrubbing*	Not applicable at this site.	N/A

2.5 BAT conclusions for the mechanical treatment of WEEE containing mercury			
2.5.1 Emissions to air			
BAT 32	*In order to reduce mercury emissions to air, BAT is to collect mercury emissions at source, to send them to abatement and to carry out adequate monitoring.*	Not applicable at this site.	N/A
3 General BAT conclusions for the biological treatment of waste			
3.1.1 Overall environmental performance			
BAT 33	*In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input.*	No biological treatment applicable at this site.	N/A
3.1.2 Emissions to air			
BAT 34	*In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H_2S and NH_3, BAT is to use one or a combination of the techniques given below;* *(a) Adsorption* *(b) Biofilter* *(c) Fabric filter* *(d) Thermal oxidation* *(e) Wet scrubbing*	No stack or emissions to air	N/A
3.1.3 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*	See BAT3 reference storage. See Hermion Technical Booklet which details the water treatment section of the equipment, "Brings clean water to	EMS

	(b) Water recirculation *(c) Minimisation of the generation of leachate*	Sink Float tank and Watertable in a closed loop system, waste is discharged to a big bag". Any waste waters from this process will be disposed of as sludge.	Hermion Technical Booklet
3.2 BAT conclusions for the aerobic treatment of waste *(Unless otherwise stated, the BAT conclusions presented in this section apply to the aerobic treatment of waste, and in addition to the general BAT conclusions for the biological treatment of waste)*			
3.2.1 Overall environmental performance			
BAT 36	*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.*	No aerobic treatment of waste on site	N/A
3.2.2 Odour and diffuse emissions to air			
BAT 37	*In order to reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps, BAT is to use one or both of the techniques given below;* *(a) Use of semipermeable membrane covers* *(b) Adaptation of operations to the meteorological conditions*	No aerobic treatment of waste on site	N/A
3.3 BAT conclusions for the anaerobic treatment of waste - *Unless otherwise stated, the BAT conclusions presented in this section apply to the anaerobic treatment of waste, and in addition to the general BAT conclusions for the biological treatment of waste in Section 3.1.*			
3.3.1 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.*	No aerobic treatment of waste on site	N/A

3.4 BAT conclusions for the mechanical biological treatment (MBT) of waste – *Unless otherwise stated, the BAT conclusions presented in this section apply to MBT, and in addition to the general BAT conclusions for the biological treatment of waste in Section 3.1. The BAT conclusions for the aerobic treatment (Section 3.2) and anaerobic treatment (Section 3.3) of waste apply, when relevant, to the mechanical biological treatment of waste.*			
3.4.1 Emissions to air			
BAT 39	*In order to reduce emissions to air, BAT is to use both of the techniques given below;* *(a) Segregation of the waste gas streams* *(b) Recirculation of waste gas*	No mechanical biological treatment of waste on site	N/A
4 BAT CONCLUSIONS FOR THE PHYSICO-CHEMICAL TREATMENT OF WASTE			
4.1 BAT conclusions for the physico-chemical treatment of solid and/or pasty waste			
4.1.1 Overall environmental performance			
BAT 40	*In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2).*	See BAT2	EMS
4.1.2. Emissions to air			
BAT 41	*In order to reduce emissions of dust, organic compounds and NH_3 to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Adsorption* *(b) Biofilter* *(c) Fabric filter* *(d) Wet scrubbing*	See BAT14 and see Hermion Technical Booklet	Hermion Technical Booklet

4.2. BAT conclusions for the re-refining of waste oil			
4.2.1. Overall environmental performance			
BAT 42	*In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2).*	Not applicable at this site.	N/A
BAT 43	*In order to reduce the quantity of waste sent for disposal, BAT is to use one or both of the techniques given below;* *(a) Material recovery* *(b) Energy recovery*	Not applicable at this site.	N/A
4.2.2. Emissions to air			
BAT 44	*In order to reduce emissions of organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Adsorption* *(b) Thermal oxidation* *(c) Wet scrubbing*	Not applicable at this site.	N/A
4.3. BAT conclusions for the physico-chemical treatment of waste with calorific value			
4.3.1. Emissions to air			
BAT 45	*In order to reduce emissions of organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Adsorption* *(b) Cryogenic condensation* *(c) Thermal oxidation* *(d) Wet scrubbing*	Not applicable at this site.	N/A

4.4. BAT conclusions for the regeneration of spent solvents			
4.4.1. Overall environmental performance			
BAT 46	*In order to improve the overall environmental performance of the regeneration of spent solvents, BAT is to use one or both of the techniques given below;* *(a) Material recovery* *(b) Energy recovery*	Not applicable at this site.	N/A
4.4.2. Emissions to air			
BAT 47	*In order to reduce emissions of organic compounds to air, BAT is to apply BAT 14d and to use a combination of the techniques given below;* *(a) Recirculation of process off-gases in a steam boiler* *(b) Adsorption* *(c) Thermal oxidation* *(d) Condensation or cryogenic condensation* *(e) Wet scrubbing*	Not applicable at this site.	N/A
4.6. BAT conclusions for the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil			
4.6.1. Overall environmental performance			
BAT 48	*In order to improve the overall environmental performance of the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil, BAT is to use all of the techniques given below;* *(a) Heat recovery from the furnace off-gas* *(b) Indirectly fired furnace* *(c) Process-integrated techniques to reduce emissions to air*	Not applicable at this site.	N/A

4.6.2. Emissions to air			
BAT 49	*In order to reduce emissions of HCl, HF, dust and organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Cyclone* *(b) Electrostatic precipitator (ESP)* *(c) Fabric filter* *(d) Wet scrubbing* *(e) Adsorption* *(f) Condensation* *(g) Thermal oxidation*	Not applicable at this site.	N/A
4.7. BAT conclusions for the water washing of excavated contaminated soil			
4.7.1. Emissions to air			
BAT 50	*In order to reduce emissions of dust and organic compounds to air from the storage, handling, and washing steps, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Adsorption* *(b) Fabric filter* *(c) Wet scrubbing*	Not applicable at this site.	N/A

4.8. BAT conclusions for the decontamination of equipment containing PCBs			
4.8.1. Overall environmental performance			
BAT 51	*In order to improve the overall environmental performance and to reduce channelled emissions of PCBs and organic compounds to air, BAT is to use all of the techniques given below;* *(a) Coating of the storage and treatment areas* *(b) Implementation of staff access rules to prevent dispersion of contamination* *(c) Optimised equipment cleaning and drainage* *(d) Control and monitoring of emissions to air* *(e) Disposal of waste treatment residues* *(f) Recovery of solvent when solvent washing is used*	Not applicable at this site.	N/A
5. BAT CONCLUSIONS FOR THE TREATMENT OF WATER-BASED LIQUID WASTE			
5.1. Overall environmental performance			
BAT 52	*In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2).*	Not applicable at this site.	N/A
5.2. Emissions to air			
BAT 53	*In order to reduce emissions of HCl, NH_3 and organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques given below;* *(a) Adsorption* *(b) Biofilter* *(c) Thermal oxidation* *(d) Wet scrubbing*	Not applicable at this site.	N/A