

Section 10





OLIVE
Compliance

BEST AVAILABLE TECHNIQUES REVIEW

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BAT ASSESSMENT

Issue and Revision Record

Revision	Date	Originator	Description of Change
V1	29/12/2025	Olive Compliance Ltd	Draft for Permit Application

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BASIS OF REPORT

This report has been prepared by Olive Compliance Ltd with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

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This report comprises a review of but not limited to the operations, activities, infrastructure, and management systems, in comparison to the requirements of indicative BAT as stated in the Best Available Techniques Reference Document.

This document has been prepared by Olive Compliance Ltd on behalf of SAR Metals Ltd in support of their Bespoke Permit Application.

The aim of this report is to provide confidence to the Environment Agency that the Operator has both considered the requirements of BAT and will operate the site in compliance with the requirements of indicative BAT and the Environment Agency's Appropriate Measures which is an overlap of best available techniques (BAT) for waste installations and necessary measures for waste operations to meet the Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste.

The report is structured in a table format in the same order as set out in the guidance notes to ensure site operational procedures are reviewed in relation of the requirements of indicative BAT.

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1. General BAT Conclusions		
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;	SAR Management are committed to the implementation and use of BAT techniques over all aspects of the business with particular focus on the Environment. Management strives to continually improve by developing and committing to the establishment and further development of an Environment Management System (EMS), EMS Manual. Senior Management of SAR strives to: • Operating in compliance with all permit requirements and relevant legislation • Considering the environmental impacts of all operations • Striving to minimise waste and energy where possible The company is ISO accredited with the EMS Manual and Quality, Environmental and Safety policies setting out company philosophies and responsibilities.
II	Definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the installation;	The integrated company policies which includes Environmental Performance, includes a commitment to measure, record and monitor environmental performance in order to continually improve the Environmental Management System. Environmental Policy Statement.
III	Planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment by the management;	The EMS has been developed and approved by senior management who are also responsible for financial planning and investment decisions. The EMS documents are detailed within the Master List of Documents and includes Standard Operating Procedures and Environmental Objectives. Environmental objectives and targets are set in the accordance with the Target & Objective Setting Procedure. Environmental Policy is set in accordance with the Policy Setting Procedure.

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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	Environment Management System documents and procedures covering all of these elements are in place and are summarised within the EMS Manual and the Master List of Documents. These procedures will be reviewed to ensure that they reflect activities at the operational site. There is an ongoing focus for continual improvement of the existing documentation to ensure that these elements are incorporated. The EMS Manual describes how all of these elements are incorporated into the EMS. • Staff structure, relevant roles and responsibilities are detailed within the EMS Manual • Staff training, awareness and competence • The Environmental Policy Statement is communicated to all staff and interested parties via induction, emails, meetings and presentations. • Communication of performance measures and targets to staff • Document control is in place and all documents benefit from version control which is managed through the Document Control and recorded in the Master List of Documents. • All plant and equipment are subject to a planned preventative maintenance programme in accordance with the Maintenance Procedure Plan for the site and as detailed under BAT 14 • There is a site-specific Emergency Action Plan and Accident and Incident Plan. • Daily, weekly and monthly checks to inspect the site and process making sure compliance with environment legislation is maintained
V	Checking performance and taking corrective action, paying particular attention to: (a) monitoring and measurement (b) corrective and preventive action (c) maintenance of records	The Environment Management System incorporates: • Checking performance through a planned audit and inspection schedule. Monitoring and Control Management Procedure. • By investigating and learning from incidents, near misses and mistakes including those of other organisations all non- conformances are reported and reviewed, resulting with corrective and preventive actions. Corrective and Preventative Action Procedure. • All plant and equipment are subject to a planned preventative maintenance programme in accordance with the maintenance planner for the site and as detailed under BAT 14. Daily/weekly/monthly inspections are carried out and recorded.

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	(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	Internal auditing where records of audits and non-conformances are held electronically on a shared drive which is backed up onto the cloud. Auditing Procedure BMS refers.
VI	Review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness;	SAR carry out Management Review Meetings at least annually in accordance with the Management Review Procedure to check that the Management System is still suitable, adequate and effective (Management Review Procedure_v1).
VII	Following the development of cleaner technologies;	SAR are a member of the BMRA (British Metal Recycling Association). BMRA support the sector in relation to: - The BMRA's Carbon Calculator - A bespoke tool to measure scope 1 and 2 emissions. - Carbon reduction services from Tunley Environmental - Measure scope 3 emissions and carbon reduction methods. - Carbon offsetting from Climate Partner - Learn more about carbon offsetting your emissions. - Grid connection and upgrades from Eclipse Power- Offering businesses a way to save time and money when securing new or upgraded electrical grid connections. - Carbon literacy training from Positive Planet - Training opportunities for specialists and beginners - Energy management from Enexus Energy - Save time, money, and meet business objectives with a smart, simple, sustainable approach to energy management.

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		SAR have a network of contacts within the sector to keep updated with industry developments. The Environmental Policy Statement includes an objective to continually review operational practices and technologies employed.
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	The EMS includes a Closure Plan Procedure which meets the requirements of BAT. SAR Closure and Decommissioning Plan.
IX	Application of sectoral benchmarking on a regular basis;	The Environmental Policy includes an objective to 'protect the local environment where SAR operates by adhering to all compliance obligations set by interested parties.' SAR strives to protect the local environment by continuing to remain compliant with their permit conditions and adhere to all associated regulations. SAR will compare their environmental performance against members of the BMRA and operators within the sector. Through industry connections and networking EA will make every effort to improve their performance through environmental objective setting.
X	Waste stream management (see BAT 2);	Refer to BAT 2.
XI	An inventory of wastewater and waste gas streams (see BAT 3)	Refer to BAT 3.
XII	Residues Management Plan - A residues management plan is part of the EMS and is a set of measures aiming to: • minimise the generation of residues arising from the treatment of waste • optimise the reuse, regeneration, recycling and/or recovery of energy of the residues	There are minimal residues will result from the treatment of waste. A residues management procedure is written for the site. SAR_Residues Management Plan

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	ensure the proper disposal of residues.	
XIII	Accident Management Plan - An Accident Management Plan is part of the EMS and is a set of measures aiming to: - identifies hazards posed by plant and the associated risks - defines measures to address these risks - considers the inventory of pollutants present or likely to be present which could have environmental consequences if they escape	Investigating incidents, (and near misses) including identifying suitable corrective action and following up is included in the Accident Management Procedure as part of the Environment Management System. The Risk Assessment within the Accident Management Plan identifies the likelihood and consequence of accidents and appropriate actions and considers the risk and impact of flooding and fires. The Environmental Management System includes a number of Emergency Response Procedures including but not limited to: - Spillage Response Procedure - Fire Prevention, Fire Detection and Fire Fighting Procedure - Accident Management Plan (AMP) - Accident & Incident Reporting and Investigation Management procedure - Dust and Emissions Plan SAR_ Accident Management Plan SAR_Emergency Response Plan
XIV	Odour management plan	Refer to BAT 12 – Not applicable
XV	Noise and vibration management	Refer to 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.	

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Waste pre-acceptance		
a	Set up and implement waste characterisation and pre-acceptance procedures	All waste will be assessed for suitability of acceptance by an appropriately trained member of staff. In order to ensure that wastes which arrive at the site are acceptable under the permit, waste enquiry/contract forms will be completed by the customer for each new waste stream. • Producer and customer contact details; • Waste type; • Composition of the waste • List of wastes to code waste (European Waste Catalogue (EWC)) code of the waste; • Waste quantity. Wastes acceptable at the site are detailed in the NTS and throughout all key operational procedures.
b	Set up and implement waste acceptance procedures	The waste types to be accepted on site are both hazardous and non-hazardous waste streams. Wastes will come from waste facilities, commercial, industrial and household sources. Other suppliers may be required to provide representative samples/or analysis and assessment before SAR confirm acceptance ensuring that their composition is known and that they are appropriate for acceptance then treatment if required. SAR staff will require that samples of waste are representative, i.e. taking into account any variation in waste. Waste samples will be obtained by a person who is technically competent to undertake the sampling process. Through the pre-application procedures, set out in the EMS, SAR is able to confirm whether waste delivered to site falls within the permitted waste types and quantities and is suitable for acceptance and treatment at the site.

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c	Set up and implement a waste tracking system and inventory. A waste tracking system and inventory aims to track the location and quantity of waste in the plant. 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), pre-acceptance and acceptance analysis results, intended treatment route, nature and quantity of the waste held on site including all identified hazards), acceptance, storage, treatment and/or transfer off site.	Waste types, volumes received, date and time of acceptance, reference number, storage location and resident timescales will be recorded on the tracking system. The waste tracking system is capable of recording all key information about the waste. It will also allow generation of reports showing total volumes of waste stored on site at any time. Weighbridge data is also collated to support all inputs and outputs of waste. All waste reception and tracking data is available on site and will be retained for a minimum of three years. The waste tracking system allows reporting against these criteria. waste will be held on site for storage and treatment, that arrive on site will pass through the process unless rejected and quarantined. With the outputs of all recovered waste /materials area also tracked and recorded. Compositional analysis test results shall be maintained with the Waste Transfer Notes (WTN). All WTN's shall be maintained for a minimum of 2 years in a secure place in the site office. Hazardous Consignment Notes (WTN) for all hazardous wastes accepted shall be retained for a minimum of 3 years in a secure place in the site office.

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d	Set up and implement an output quality management system	The Site is operated in accordance with an ISO Management Systems. This includes procedures to ensure that the separation processes are monitored and adjusted to ensure hazardous and non hazardous wastes are segregated at all times, and treated to the correct specification. Quality control and material is managed by the Operations Manager reporting to the SAR sales team to ensure wastes are suitable for onward recovery within the UK or export.

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e	Ensure waste segregation. 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.	SAR processes include visual examination at the acceptance stage, sorting and segregating is then undertaken once waste streams accepted then are located in the appropriate storage area. Waste treatment procedures and process flows cover the sorting and segregation of waste. The site FPP covers designated storage areas along with supporting process flows. The Site Layout Plans also denotes all storage areas. <table><tr><td>Fire Prevention Plan</td></tr><tr><td>Odour Management Plan</td></tr><tr><td>Dust & Emissions Management Plan</td></tr><tr><td>Waste Treatment Process</td></tr></table>	Fire Prevention Plan	Odour Management Plan	Dust & Emissions Management Plan	Waste Treatment Process
Fire Prevention Plan						
Odour Management Plan						
Dust & Emissions Management Plan						
Waste Treatment Process						
f	Ensure waste compatibility prior to mixing or blending of waste	Not applicable to site activities				
g	Sort incoming solid waste	SAR processes include visual examination at the acceptance stage, sorting and segregating is then undertaken once waste streams accepted then are located in the appropriate storage area. Waste treatment procedures and process flows cover the sorting and segregation of waste. The site FPP covers designated storage areas along with supporting process flows. The Site Layout Plan also denotes all storage areas.				
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 streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features:					

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(i)	Information about the characteristics of the waste to be treated and the waste treatment processes, including: • simplified process flow sheets that show the origin of the emissions. • descriptions of process-integrated techniques and wastewater/waste gas treatment at source including their performances.	There is no wastewater treatment on site or water used in on site processes. Waste gas treatment is also not applicable to site activities. The only emissions to water are uncontaminated surface water. The only emissions to water are uncontaminated surface water drainage from the drainage system arising from the buildings only. The majority of waste is stored under cover in buildings or banded areas at all times and as such, virtually eliminates the possibility of contaminating the rainwater. There are no anticipated sources of dust. All waste streams and treatment processes that could arise in dust arising are conducted in fully enclosed buildings.
(ii) (iii)	Information about the characteristics of the wastewater streams Information about the characteristics of the waste gas streams, such as: • average values and variability of flow and temperature. • average concentration and load values of relevant substances and their variability (e.g., organic compounds, POPs such as PCBs); • flammability, lower and higher explosive limits, reactivity. • presence of other substances that may affect the waste gas treatment system or plant safety (e.g., oxygen, nitrogen, water vapour, dust).	
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.	

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	Optimised storage location. This includes techniques such as: - the storage is located as far as technically and economically possible from sensitive receptors, watercourses, etc. - the storage is located in such a way so as to eliminate or minimise the unnecessary handling of wastes within the plant (e.g., the same wastes are handled twice or more or the transport distances on site are unnecessarily long). Adequate storage capacity. Measures are taken to avoid accumulation of waste, such as: - the maximum waste storage capacity is clearly established and not exceeded taking into account the characteristics of the wastes (e.g., regarding the risk of fire) and the treatment capacity. - the quantity of waste stored is regularly monitored against the maximum allowed storage capacity. - the maximum residence time of waste is clearly established Safe storage operation. This includes measures such as: - equipment used for loading, unloading and storing waste is clearly documented and labelled. - wastes known to be sensitive to heat, light, air, water, etc. are protected from such ambient conditions. - containers and drums are fit for purpose and stored securely. - Separate area for storage and handling	SAR trained personnel are responsible for supervising the offloading of each waste delivery into the reception area. All deliveries will be supervised by SAR personnel. Further information is provided in the EMS. All site operations with exception to eternal storage of metals , bulk batteries and waste created on site will take place in areas provided with impermeable concrete flooring and sealed drainage system. No emissions can leave these storage areas. External areas of the site are made up of concrete and hard standing for the storage of plant and equipment, and vehicle use. Records and waste inputs will be maintained within an electronic tracking and recording system for capacity purposes. Regular site inspections are in place to ensure capacity capability is available, this is communicated to the SAR management team who manage waste inputs and outputs. Waste deposited in the waste reception area will be transferred for temporary storage or treatment within the timescales detailed in the FPP. No waste is stored for 3 months. Hazardous wastes will be stored within clearly labelled storage areas separately from non-hazardous wastes. All containment systems / controls will be inspected daily to ensure integrity. This includes surfacing, container and buildings.
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	of packaged hazardous waste. When relevant, a dedicated area is used for storage and handling of packaged hazardous waste.	
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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.	
	Handling and transfer of waste are carried out by competent staff. Handling and transfer of waste are duly documented, validated prior to execution and verified after execution; Measures are taken to prevent, detect and mitigate spills; Operation and design precautions are taken when mixing or blending wastes (e.g., vacuuming dusty/powdery wastes).	All waste handling and transfer activities are carried out by trained staff in accordance with Standard Operating Procedures. Training needs are recorded and reviewed annually. Waste is only accepted in line with a supplier agreement. Products delivered to site are prebooked by the SAR Management Team. All waste coming into site are recorded and the data stored on the electronic system. This includes waste type, tonnage, date, and time. The Company Waste Acceptance and Rejection Procedures includes measures for spillage prevention. Spillages are managed in accordance with the Emergency Plan and Spillage Procedure. All new starters are trained on the plan and refresher training is provided as required and includes spill response scenarios. Not applicable to site activities.
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).	

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Not applicable	There are no emissions to water from onsite activities. No open drainage systems within buildings or located in operational areas externally.
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.
Not applicable	No activity will involve an emission to water. Waste is stored under cover or is fully contained at all times.
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.
	Air quality and dust monitoring of the site abatement systems will take place on a Quarterly basis in accordance with the manufacturers recommendations, PPM systems and the Emission Management Procedure. In addition, visual inspections as per the sites Dust Management Plan will be undertaken on a daily basis.
BAT 9	BAT is to monitor diffused 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
Not applicable	
1.2 Monitoring Odour Emissions	

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BAT 10	BAT is to periodically monitor odour emissions.	
	N/A to Not relevant: the applicability for monitoring odour is stated in the BREF document as being 'restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated' In respect to wastes accepted for storage or treatment, including wastes and potential emissions produced by the process, are not expected to be odorous in nature. If significant odours were to be detected, investigations would be undertaken to determine the cause and appropriate remedial action taken. Daily odour checks are made as part of the routine management of the site, with an Odour Management Procedure in place within the EMS.	
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.	
	Monitoring includes direct measurements, calculation or recording, e.g., using suitable meters or invoices. The monitoring is broken down at the most appropriate level (e.g., at process or plant/installation level) and considers any significant changes in the plant/installation	SAR maintains a log of: Wastes accepted for treatment accompanied with Waste Transfer Notes/Consignment Notes. Any residual waste removed off site (Waste Transfer Notes / Quarterly Waste Returns). Recorded on electronically for internal review. There is no wastewater produced on site. Water usage is measured via a flow meter. Energy used is measured via a meter which measures mains electricity imports. This is recorded weekly from the meter. An Energy Efficiency plan is in place as part of the BMS system. Raw materials (fuel/oils) are recorded and monitored. Gas is used on site and is monitored as part of the Energy Efficiency Plan and Monitoring and Measuring Procedure. Electricity and water usage is monitored by way of meters and will be reported annually via permit.

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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:	

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Not applicable	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.	N/A Not relevant: the wastes accepted on site, wastes produced by the process and emissions, are not expected to be odorous in nature. The applicability of BAT12 is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.
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.	

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a	Minimising residence times	N/A
b	Using chemical treatment	Not relevant: the wastes accepted on site, wastes produced by the process and emissions, are not expected to be odorous in nature.
c	Optimising aerobic treatment	

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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 emission sources. This includes techniques such as: • appropriate design of piping layout (e.g., minimising pipe run length, reducing the number of flanges and valves, using welded fittings and pipes); • favouring the use of gravity transfer rather than using pumps. • limiting the drop height of material. • limiting traffic speed; and • using wind barriers.	Vehicles are restricted to speed limits on site as a health and safety measure; this also reduces potential noise and dust emissions. Fugitive emissions of odour/litter/dust are monitored daily in accordance with the Site Inspection regime and Dust and Emissions Plan (DEMP) and recorded on the Daily Record Sheet. BAT 14 will be met through the use of the LEV systems for shredding and catalytic convertor recycling. The majority of all waste is accepted and handled internally reducing the risk of fugitive emissions. Waste is not stored externally with the exception of two skips that contain waste created on site. These are contained secured and covered in poor weather conditions. Drivers on site follow company dust procedures such as complying with drop heights, tipping areas, covered and secured loads, site speed limits. External surfaces are well maintained to prevent potholes, damage and the suspension of dust offsite. All equipment and systems on site are supplied as per vendors original specification and are maintained to that standard thereafter when replacing. There are examples within the site infrastructure of all of the techniques listed.
b	Selection and use of high- integrity equipment. This includes techniques such as:	High integrity equipment has been selected

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	• valves with double packing seals or equally efficient equipment. • high-integrity gaskets (such as spiral wound, ring joints) for critical applications. • pumps/compressors/agitators fitted with mechanical seals instead of packing. • magnetically driven pumps/compressors/agitators.	
c	Corrosion prevention	Materials are selected for suitability and longevity. Not applicable

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d	Containment, collection and treatment of diffuse emissions	Not applicable
e	Dampening	DEMP in place. In the event of emissions of dust observed as part of daily site inspections then dampening would be carried out.
f	Maintenance	All plant and equipment are subject to a planned preventative maintenance programme in accordance with: • Daily Check Record Sheet • Daily Checks for mobile plant • Daily Maintenance Schedule • PPM Maintenance system – includes Fixed Operational Processing Plant
g	Cleaning of waste treatment and storage areas	Cleaning of the Yard and Buildings is carried out in accordance with the housekeeping and infrastructure plan. If required vehicle can be cleaned wash off the back and wheels of the vehicle using the hose or dry brushing to prevent any dust/mud emission arising off site. Vehicles entering and exiting site are secure and covered.
h	Leak detection and repair (LDAR) programme	N/A
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.	

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a	Correct plant design. This includes the provision of a gas recovery system with sufficient capacity and the use of high-integrity relief valve	SAR do not use flaring. Not applicable.
b	Plant management. This includes balancing the gas system and using advanced process control.	SAR do not use flaring. Not applicable.
1.3 Reducing Emissions from Flares		
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. Optimisation of height and pressure, assistance by steam, air or gas, type of flare tips, etc., to enable smokeless and reliable operation and to ensure the efficient combustion of excess gases.	SAR do not use flaring. Not applicable.
b	Monitoring and recording as part of flare management. This includes continuous monitoring of the quantity of gas sent to flaring. It may include estimations of other parameters (e.g., composition of gas flow, heat content, ratio of assistance, velocity, purge gas flow rate, pollutant emissions (e.g., NOX, CO, hydrocarbons), noise). The recording of flaring events usually includes the duration and number of events and allows for the quantification of emissions and the potential prevention of future flaring events.	SAR do not use flaring. Not applicable.
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;	The applicability of BAT 17 is restricted to cases where a noise or vibration nuisance at sensitive receptors is expected and/or has been substantiated. The Operator has confirmed that no noise complaints have been received, and noise nuisance has not been detected.

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		A Noise and Vibration Management Plan was not required at the Pre application stage. A NVMP will be developed if noise and/or vibration become a nuisance.
II	A protocol for conducting noise and vibration monitoring;	As above. However daily auditory checks are conducted as part of the site inspections and recorded. SAR Daily Inspection Check sheet
III	A protocol for response to identified noise and vibration events, e.g., complaints;	As above. However, the site does have a Complaints Procedure to log and investigate any complaints. SAR Complaint Management Procedure
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.	The applicability of BAT 17 is restricted to cases where a noise or vibration nuisance at sensitive receptors is expected and/or has been substantiated. The Operator has confirmed that no noise complaints have been received, and noise nuisance has not been detected. A Noise and Vibration Management Plan was not required at the Pre application stage. A NVMP will be developed if noise and/or vibration become a nuisance.
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.	

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a	Appropriate location of equipment and buildings. Noise levels can be reduced by increasing the distance between the emitter and the receiver, by using buildings as noise screens and by relocating building exits or entrances	
b	Operational measures. This includes techniques such as: inspection and maintenance of equipment. closing of doors and windows of enclosed areas, if possible. equipment operation by experienced staff. avoidance of noisy activities at night, if possible. provisions for noise control during maintenance, traffic, handling and treatment activities. Low-noise equipment. This may include direct drive motors, compressors, pumps and flares Noise and vibration control equipment. This includes techniques such as:	
c		
d	• noise reducers • acoustic and vibrational insulation of equipment • enclosure of noisy equipment • soundproofing of buildings.	

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e	Noise attenuation. Noise propagation can be reduced by inserting obstacles between emitters and receivers (e.g., protection walls, embankments and buildings).	
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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.
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a	Water management. Water consumption is optimised by using measures which may include:	Water is only used for essential functions such as welfare, hygiene and housekeeping requirements.
b	water-saving plans (e.g., establishment of water efficiency objectives, flow diagrams and water mass balances);	The site diesel stocks are contained a tank, fully bunded and with drip trays to prevent spillage.
c	optimising the use of washing water (e.g., dry cleaning instead of hosing down, using trigger control on all washing equipment)	Minimal waste is stored outside. Water arises from: 1. Water from building roofs. 2. Water from site surfaces (external)
d	Water recirculation	N/A.
e	Impermeable surface. Depending on the risks posed by the waste in terms of soil and/or water contamination, the surface of the whole waste treatment area (e.g., waste reception, handling, storage, treatment and dispatch areas) is made impermeable to the liquids concerned.	All buildings and external areas benefit from an impermeable concrete surface.
f		Secure skips stored waste externally (waste created on site).

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	Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels. Depending on the risks posed by the liquids contained in tanks and vessels in terms of soil and/or water contamination, this includes techniques such as: • overflow detectors. • overflow pipes that are directed to a contained drainage system (i.e., the relevant secondary containment or another vessel). • tanks for liquids that are located in a suitable secondary containment; the volume is normally sized to accommodate the loss of containment of the largest tank within the secondary containment. • isolation of tanks, vessels and secondary containment (e.g., closing of valves). Roofing of waste storage and treatment areas Maintenance Adequate drainage infrastructure. The waste treatment area is connected to drainage infrastructure. Rainwater falling on the treatment and storage areas is collected in the drainage infrastructure along with washing water, occasional spillages, etc. and, depending on the pollutant content, recirculated or sent for further treatment.	Not applicable. The majority of waste storage and treatment are carried out in specific site buildings. This is enclosed infrastructure thus reducing production of dirty water. Externally stored wastes are clean and uncontaminated metals (no cutting oils/swarf). Batteries are bulked in a secure shipping steel container and smaller fractions of metals/general waste are stored in secure containers reducing the risk of polluting water on site. All plant and equipment are subject to a planned preventative maintenance program in accordance with: • SAR Daily Record Sheet • Daily Checks for mobile plant • Daily Maintenance Schedule • PPM System Cleaning of all Buildings is carried out in accordance with the Housekeeping programme.
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h i	Design and maintenance provisions to allow detection and repair of leaks. Regular monitoring for potential leaks is risk- based, and, when necessary, equipment is repaired. The use of underground components is minimised. When underground components are used, and depending on the risks posed by the waste contained in those components in terms of soil and/or water contamination, secondary containment of underground components is put in place. Appropriate buffer storage capacity is provided for wastewater generated during other than normal operating conditions using a risk-based approach (e.g. taking into account the nature of the pollutants, the effects of downstream wastewater treatment, and the receiving environment). The discharge of wastewater from this buffer storage is only possible after appropriate measures are taken (e.g., monitor, treat, reuse).	Site drainage is inspected by operating personnel daily and on-site quality and compliance audits. Internal Audit & Compliance Procedure Internal Audit Matrix Internal Audit_Template Report Drainage and Site Surfacing Procedure Daily Inspection Check sheet Water storage capacity is available and adequate in case of a fire.
BAT 20	In order to reduce emissions to water, BAT is to treat wastewater using an appropriate combination of the techniques below	
Not applicable	No treatment of wastewater is undertaken.	
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)	

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a	Protection measures. These include measures such as: protection of the plant against malevolent acts; fire and explosion protection system, containing equipment for prevention, detection, and extinction; and accessibility and operability of relevant control equipment in emergency situations.	The site operates with an Emergency Plan and an Accident Management Plan. SAR have a 24hr monitoring programme on site, through as combination of onsite presence, monitored alarm systems, and CCTV cameras. Buildings are protected by a fire detection system; personnel are trained in the fire procedure and firefighting equipment is provided throughout the facility. Spill kits are available in relevant locations throughout the facility. - Any emissions from accidents / spillages etc are cleared by trained staff, using spill kits which are available throughout the site. - Incidents and accidents are reported through the relevant reporting system and investigated by the management team. Results are discussed at regular meetings and any necessary improvements to procedures or equipment are agreed and implemented. Necessary changes are made and communicated to the workforce. EA Approved Fire Prevention Plan is in place.
b	Management of incidental/accidental emissions. Procedures are established 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	The Emergency Action Plan contains Standard Operating Procedures for emergency situations: - Fire/Explosion. - Tank Failure. - Electrical Failure. - Mechanical Failure. - Oil/Fuel/Chemical Spillage. - External flood. - Serious Injury. - Lightning Strike. EA Approved Fire Prevention Plan is in place.

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c	Incident/accident registration and assessment system. This includes techniques such as: a log/diary to record all accidents, incidents, changes to procedures and the findings of inspections; and procedures to identify, respond to and learn from such incidents and accidents.	In accordance with the Accident Management Procedure, it is the responsibility of all staff to report incidents, including near misses to their line of report or the Ops Team/Ops Manager as soon as possible. Team Leaders and Line Managers are responsible (with support from the Tech EHS Manager) for undertaking investigations following incidents. The level of investigation will be determined by the severity or potential of the incident, in accordance with the details in the Accident and Incident Reporting and Investigation Management Procedure. Any changes to procedures are made in accordance with Document Control Procedure.
BAT 22	In order to use materials efficiently, BAT is to substitute materials with waste.	
Not applicable	Waste is used instead of other materials for the treatment of wastes (e.g., waste alkalis or waste acids are used for pH adjustment, fly ashes are used as binders).	No activity on site can be substituted with waste; therefore we cannot assess against this conclusion.
BAT 23	In order to use energy efficiently, BAT is to use both of the techniques given below.	
a	Energy efficiency plan. An energy efficiency plan entails defining and calculating the specific energy consumption of the activity (or activities), setting key performance indicators on an annual basis (for example, specific energy consumption expressed in kWh/tonne of waste processed) and planning periodic improvement targets and related actions.	An Energy Efficiency Plan forms part of the ISO management system. Energy usage is monitored and reviewed annually. Records of primary energy used, energy generated, and energy exported are maintained and an annual return will be made to the EA in accordance with permit requirements under an Installation permit.

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	The plan is adapted to the specificities of the waste treatment in terms of process(es) carried out, waste stream(s) treated, etc.	
b	Energy balance record. An energy balance record provides a breakdown of the energy consumption and generation (including exportation) by the type of source (i.e., electricity, gas, conventional liquid fuels, conventional solid fuels, and waste). This includes: information on energy consumption in terms of delivered energy; - information on energy exported from the installation; - energy flow information (e.g., Sankey diagrams or energy balances) showing how the energy is used throughout the process. The energy balance record is adapted to the specificities of the waste treatment in terms of process(es) carried out, waste stream(s) treated, etc.	Portable appliances and fixed wiring installations are inspected and tested as required and any defects rectified. Energy efficiency is reviewed annually and where electrical items are in need of replacement, consideration is given to the procurement of low energy alternatives if available. Site operatives are trained to ensure high maintenance standards.
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).	
	Packaging (drums, containers, IBCs, pallets, etc.) is reused for containing waste, when it is in good condition and sufficiently clean, depending on a compatibility check between the substances contained (in consecutive uses). If necessary, packaging is sent for appropriate treatment prior to reuse (e.g., reconditioning, cleaning).	Packaging arising from incoming waste. Packing in good condition such as pallets, metals or cardboard will be reused where possible. Process wastes are reprocessed on or off site to maximise recovery. Damaged packaging (pallets) will be sent off for recycling and recovery. Used metal parts and packaging can be recycled on site.

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		The resulting packaging material from waste created on site or wrapping/film will be managed in accordance as per the Site Residue Management Plan.
BAT CONCLUSIONS FOR THE MECHANICAL TREATMENT OF WASTE		
	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.	
	• Cyclone • Fabric filter • Wet scrubbing • Water injection into the shredder BAT associated emission levels for channelled dust emissions to air from mechanical treatment of waste is 2-5 mg/Nm³ (average over the sampling period).	There are no point source emissions to air from the extraction system, the local exhaust ventilation (LEV) systems captures all the particulates via a HEPA filter and these particulates are reintroduced back into the process. The treatment process is fully enclosed and connected to this LEV system. The above system covers the catalytic convertor process and is proposed for installation for the shredding process in Building 5..

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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, no depolluted EoLVs, non depolluted WEEE, items contaminated with PCBs or mercury, radioactive items); c. treatment of containers only when accompanied by a declaration of cleanliness;	Not relevant for battery wastes (no treatment) There are no point source emissions to air from the extraction system, the local exhaust ventilation (LEV) systems captures all the particulates via a HEPA filter and these particulates are reintroduced back into the process. The treatment process is fully enclosed and connected to this LEV system. The above system covers the catalytic convertor process and is proposed for installation for the shredding process in Building 5.
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;	Pre shredding is used during the processing operation to refine the residual WEEE components (metal and plastics/glass) for optical sorting and further recovery.

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BAT 28	In order to use energy efficiently, BAT is to keep the shredder feed stable.	The shredder only treats feedstock arising from WEEE residuals once any hazardous components have been removed. The stream is expected to be relatively homogenous continuing metals and plastics to be shredded for further recovery at low levels (4-5 tonnes per day). The shredder has been selected and designed specifically for the treatment of this type of feedstock.
BAT 29	BAT conclusions for the treatment of WEEE containing VFCs and /or VHC 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 s	There are no point source emissions to air from the extraction system, the local exhaust ventilation (LEV) systems captures all the particulates via a HEPA filter and these particulates are reintroduced back into the process. The treatment process is fully enclosed and connected to this LEV system. The above system covers the catalytic convertor process and is proposed for installation for the shredding process in Building 5.

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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	There are no point source emissions to air from the extraction system, the local exhaust ventilation (LEV) systems captures all the particulates via a HEPA filter and these particulates are reintroduced back into the process. The treatment process is fully enclosed and connected to this LEV system.
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: • Adsorption • Biofilter • Thermal oxidation • Wet scrubbing BAT associated emission levels for channelled TVOC emissions to air from mechanical treatment of waste with calorific value is 10 - 30 mg/Nm³ (average over the sampling period). Note: this only applies when organic compounds are identified as relevant in the waste gas stream.	Organic compounds are not identified to be relevant in the waste stream and therefore the BAT – AEL does not apply.
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 relevant - the site does not treat WEEE containing mercury.
BAT 33-53	Not Applicable to site processes	