



Best Available Techniques Assessment

Sheffield IBA Facility

Blue Phoenix Limited

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Basis of Report

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1.0 INTRODUCTION

SLR Consulting Limited (SLR) has been instructed by Blue Phoenix Limited (BPL) to prepare an environmental permit variation application for their Sheffield IBA Processing Facility, Beeley Wood Recycling Village, 2 Beeley Wood Lane, Sheffield, South Yorkshire, S6 1QT (hereafter referred to as 'the Site').

This BAT Assessment describes how the design and operation of the facility, where changed to facilitate the expansion to the Site, will conform to the requirements of the Best Available Technique Reference (BREF) Note for Waste Treatment¹, Waste Incineration² and Emissions from Storage³. This document also describes how the design and operation of the facility, where changed to facilitate the expansion to the Site, will conform to the requirements of the Appropriate Measures for 'Non-hazardous and inert waste: appropriate measures for permitted facilities'⁴ and draft EA guidance 'Storing and treating incinerator bottom ash'⁵.

2.0 PROPOSED DEVELOPMENT

BPL propose to extend Site boundary to expand the existing storage area and increase storage capacity at the Site.

To enable this, BPL are applying to vary the Site's environmental permit (EP) (EPR/ZP3492EG/V005) as follows;

- Extension of the current environmental permit boundary to incorporate additional storage space;
- Increase the permitted annual throughput at the site by 100,000tpa, increasing the sites annual throughput to 300,000tpa;
- Addition of a second attenuation lagoon for attenuation of surface water runoff from the Site's extension area; and
- Incorporate a point source discharge to sewer from the new attenuation lagoon.

3.0 APPROPRIATE MEASURES GUIDANCE

3.1 General Management

3.1.1 Management System

BPL are committed to managing and continually improving environmental performance and have an existing Environmental Management System (EMS) which covers all existing Site operations and change management.

BPL's existing EMS has dedicated procedures which ensure that the environmental performance of the Site is maintained, monitored, recorded, and continuously developed, these include;

- Weekly Environmental Checks;

¹ Best Available Techniques (BAT) Reference Document for Waste Treatment (2018)

² BAT Reference document for Waste Incineration (2019)

³ BAT Reference Document Emissions from Storage (2006)

⁴ EA Guidance, Non-hazardous and inert waste: appropriate measures for permitted facilities (July 2021)

⁵ Draft EA Guidance, Storing and treating incinerator bottom ash (February 2023)



- Daily Environmental Checks;
- Monitoring and Measurement;
- Internal Audit;
- Internal Audit Schedule;
- External Audit;
- External Audit Schedule;
- Audit Responses;
- Production Site Documentation Requirements;
- Document Control Procedure; and
- Document & Data Retention.

During internal audits, the facility's performance will be assessed against relevant sector guidance and standards.

External audits are carried out to ensure continued compliance with relevant ISO Standard Accreditations.

The existing EMS has a number of procedures in place which when applied, facilitate the effective implementation of the facility's environmental performance procedures. These include procedures which focus on staff training and development, effective process control and emergency preparedness, all of which facilitate the Site to implement their environmental performance procedures. These dedicated section of the EMS are as follows;

- Roles & Responsibilities;
- Technical Competence Policy;
- Production Site Documentation Requirements;
- Document Control Procedure;
- Document & Data Retention;
- Communication Procedure;
- Communication Record Sheet;
- Weekly Environmental Check;
- Daily Environmental Check;
- Management of Change Process;
- Emergency Preparedness; and
- Legal Matrix (Compliance Matrix).

Documentation is kept within the EMS which relate to the ongoing upkeep of environmental performance, including documentations pertaining to emissions from Site and individual environmental management plans. These include;

- Aspects & Impacts Procedure;
- Accident Management Plan;
- Aspects & Impacts Matrix/Accident Management Plan;
- Dust Management Plan;



- Noise Management Plan;
- Site Condition Report;
- Lagoon Water Discharge Monitoring (Sheffield);
- Lagoon Discharge Monitoring – Sheffield; and
- Procedure for General Spillage;

A Site Layout Plan for the Site will also be kept within the EMS.

Inspection and maintenance schedules for the Site are kept within the EMS within *the Weekly Environmental Check* and the *Daily Environmental Check* documentation.

All changes on Site, proposed for existing procedures or infrastructure, are approved through the *Management of Change Process*, as outlined within the existing EMS.

The EMS has management commitment and is approved by senior management for the wider company. Senior management review the EMS at least annually to ensure the contents of the EMS is sufficient, as well as review if any newer cleaner technologies can be incorporated to Site operations. This is demonstrated within the EMS documents *Management Review Protocol* and *Management Review Document*. Any amendments required to the EMS following a management review are done so as soon as practically possible and recorded within the *Amendments* document within the EMS.

The existing EMS clearly sets out the physical capacity of the Site, outlining the capacities of the Site for storing and handling waste. These sections of the EMS will be updated accordingly to incorporate the new capacities of the Site following the expansion.

The EMS will be updated accordingly to incorporate the modifications associated with expansion of the Site where necessary. BPL's EMS is certified to ISO 14001 standard. A copy of the Site's ISO 14001 certification and an index of the EMS documents, procedures and forms can be found in Appendix A to the application forms in Section 2 of the application.

3.1.2 Staff Competence

BPL have developed a Training Matrix that outline the skills and competencies necessary for key posts within their facilities. This was part of the accreditation process to the Competence Management System (CMS) that was completed during 2015. As such, all staff are appropriately and adequately trained in the position they hold within the facility. The facility is operated at all times by an adequate number of staff to ensure safe operation of the Site.

The design, installation and construction of the expansion of the Site will be conducted by competent contractors under a Construction Quality Assurance scheme.

3.1.3 Accident Management Plan

There are no changes proposed to the manner in which accidents will be managed at the facility. BPL have an existing EMS which covers all existing Site operations, including how accidents are managed on Site. BPL also have the following dedicated documents which will be followed for reporting and investigating incidents on Site:

- Accidents / Incidents Reporting Procedure;
- Procedure for Non-Conformance & Corrective Action;
- Emergency Preparedness Procedure;
- Procedure for General Spillage.



The EMS and associated documents will be updated accordingly to incorporate the modifications to the Site associated with expansion, where necessary.

3.1.4 Contingency Plan and Procedures

BPL have an existing EMS which covers all existing Site operations, including contingency measures in the event of breakdowns, enforced shutdowns and / or any other changes to normal Site operations. BPL also have a dedicated document, *Procedure for Non-Conformance & Corrective Action*, which will be followed when necessary. The EMS and associated documents will be updated accordingly to incorporate the modifications to the Site associated with the expansion, where necessary.

3.1.5 Facility Decommissioning

Eventual decommissioning of the facility and surrender of the Site's environmental permit will be taken into consideration during the detailed design stage, to ensure suitable plans are in place to minimise risks during decommissioning.

3.2 Waste Pre-acceptance, Acceptance, and Tracking

3.2.1 Waste Pre-Acceptance

BPL have an existing pre-acceptance procedure which outlines how a waste stream is assessed at the enquiry stage for its suitability for acceptance at the Site.

No changes are proposed to the manner in which enquiries from waste producers are assessed at the pre-acceptance stage. No additional EWC codes are proposed for acceptance to the Site.

3.2.2 Waste Acceptance

BPL have an existing waste acceptance procedure which outlines how waste is handled and checked upon delivery for acceptance to the facility.

No changes are proposed to waste acceptance checks undertaken on Site.

3.2.3 Quarantine

BPL have an existing waste acceptance and storage procedure which outlines how BPL manage loads not meeting the Site's Waste Acceptance Criteria.

No changes are proposed to waste quarantine procedures employed at the Site.

3.2.4 Waste Tracking

BPL have existing waste acceptance and storage procedures for the tracking of waste throughout its lifetime on the Site.

No changes are proposed to the waste tracking system employed on the Site.

3.3 Waste Storage

3.3.1 Storage

Waste is stored in designated storage areas. The extension area will add additional storage capacity for storage of IBAA in normal circumstances. There may also be a need to utilise the area for storage of IBA if there is not storage capacity within the existing Site area.



Storage of ferrous and non-ferrous metal will continue as currently undertaken within storage bays surrounding the processing building as illustrated on Drawing EP2 Site Layout and Environmental Permit Boundary.

All stockpiles will be clearly labelled and segregated to avoid cross-contamination of feedstock materials and process materials. Hazardous materials such as maintenance fluids and fuel will be stored in the maintenance area in 'fit for purpose' containers with secondary containment to ensure compliance with regulatory requirements.

Drawing EP3 Environmental Site Setting defines the location of the installation in relation to sensitive receptors. Drawing EP2 Environmental Permit Boundary and Site Layout Plan illustrates the proposed location of storage areas on Site.

The location of the storage areas has been designed to minimise unnecessary handling of waste whilst also being concentrated towards the north of the Site away from more sensitive receptors such as the River Don and residential properties located to the south of the Site. For example, the raw IBA stockpile is located adjacent to the loading hopper of the processing building to avoid transferring it across the Site prior to feeding into the process. Similarly, the storage bays for metals are located adjacent to the process plant building so that they can be fed by conveyors.

Waste will continue to be treated and removed from Site as quickly as possible. Waste will be prioritised for treatment based on its age, date of arrival and duration on Site using first-in-first-out principles.

Storage areas and storage infrastructure, such as surfacing and drainage, will be inspected regularly to ensure there is no loss of containment. Where an issue is identified it will be dealt with as soon as immediately practicable. Records of such inspections will be retained. Any leaks or spills will be cleaned up and logged.

3.3.2 Segregation

The incoming IBA will not require engineered separation for the purposes of environmental control, as there will be no concerns relating to incompatibility; any separation implemented will be for purposes of optimising recovery and where contractual obligations demand separation of material sources.

Processed materials including processed IBA, ferrous and non-ferrous metals will all be kept separate to avoid contamination.

3.4 Waste Treatment

3.4.1 Treatment

No changes are proposed to waste treatment processes undertaken on Site.

3.4.2 Waste Treatment Outputs

The waste treatment operations result in a number of outputs which are classified as follows in accordance with the methodology outlined in WM3⁶:

- IBAA – EWC code 19 12 12 for other wastes (including mixtures of materials) from mechanical treatment of waste other than those mentioned in 19 12 11;
- Ferrous metals – EWC code 19 12 02; and

⁶ EA – Guidance on the classification and the assessment of waste (1st edition v1.2 GB) October 2021.



- Non-Ferrous metals – EWC code 19 12 03.

IBA is tested prior to arriving to Site, by the EfW operator, to confirm its classification as non-hazardous in accordance with the requirements of WM3.

IBAA product is produced to meet specifications such as those outlined in Regulatory Position Statement 206, BS EN 13242, BS EN 13295, Specification for Highways Works Series 600, 800 and 801, depending on the customer's requirements.

BPL have existing dedicated procedures for sampling, testing, and classifying waste treatment outputs from the site. No changes are proposed to the permitted waste types or outputs from the Site, as such these procedures will continue to be adhered to, following the expansion of the Site.

3.4.3 Waste Treatment for Landfill

No waste is sent to landfill from the Site.

3.5 Emissions Control

3.5.1 Enclosure within Buildings

All waste treatment activities on Site are currently conducted within a building. No changes are proposed to the waste treatment activities on Site.

3.5.2 Point Source Emissions to Air (Channelled Emissions)

There are no point source channelled emissions to air from the Site.

3.5.3 Fugitive Emissions to Air

Appropriate measures will be taken on Site to prevent and minimise the potential for fugitive emissions to air, including dust, mud and litter, odour and noise and vibration.

The nature of the IBA accepted and stored at the Site mean that fugitive emissions of dust and noise and vibration are those of concern to the Site. By its nature, IBA is not a source of mud, litter, or odour.

BPL's waste pre-acceptance, waste acceptance and Site inspection checks and procedures will be used to prevent the acceptance of non-compliant waste for which the Site will not be designed to handle. Any non-compliant waste which is delivered to Site will be rejected as described in Section 3.2.3.

The following measures will be employed to prevent fugitive emissions to air from the proposed extension area:

- A dust suppression system will be used to dampen materials;
- Drop heights will be minimised; and
- Traffic speeds will be limited to 11mph on site.

A regular maintenance programme will be employed on Site covering all plant, infrastructure and equipment. This will include:

- Regular inspections and cleaning of the waste storage areas; and
- Monitoring corrosion of plant and equipment.

Weather conditions will be logged and monitored on Site. This information will be used to identify when dispersion conditions are poor and inform the approach to emissions



management. Emissions will be prevented and reduced at source however with dispersion and wind direction representing a last resort to prevent impacts to sensitive receptors.

For further information on how dust emissions will be prevented and managed at the Site, refer to the Dust Assessment and Dust and Emissions Management Plan in Sections 6 & 7 of this application.

3.5.4 Point Source Emissions to Water (including sewer)

There will be one new point source emissions to sewer following the expansion to the Site.

A new attenuation lagoon will be constructed to serve the extension area housing IBAA product storage and the maintenance area. Surface water runoff from the extension area of the Site will enter the lagoon via a primary catchpit which is designed to trap silt.

Water will then flow through three further chambers as follows:

- A secondary catchpit designed to trap any silt that is not trapped by the primary catchpit.
- An oil interceptor, designed with a baffle arrangement, to trap hydrocarbons.
- A chamber from which water outfalls to the main lagoon and will be used to abstract water for dust suppression.

The attenuation lagoon has been sized to accommodate a 1:100 year rainfall event plus 40% climate change with a capacity in excess of 3,800m³.

Surface water run-off will be held in the attenuation lagoon and used for dust suppression. The Site uses more water than it can attenuate for dust suppression purposes, however, to cover extended periods of wet weather, Blue Phoenix are applying for a trade effluent discharge consent to allow it to discharge surface water run-off from the attenuation lagoon in to the sewer.

Water in the lagoon will be discharged via a pump, discharging from the Site into Beeley Wood Recycling Village's existing Yorkshire Water combined sewer system. Water from the new lagoon is proposed to be discharged at a maximum rate of 1.75 l/s into the combined sewer.

As a measure of last resort, if for any reason the attenuation lagoon did overtop (for example in a rainfall event greater than 1 in 100 + 40%), water could back up on to the site surfacing while it is drawn down via pumping to sewer. This would provide an approximate 10 to 15% more storage than the 1 in 100 + 40% rainfall event.

3.5.5 Fugitive Emissions to Land and Water

The extension area will be constructed in such a way that controls and prevents fugitive emission to land and water from the Site.

The Site surface will be a concrete pavement with kerbing that will contain surface water run-off and direct it the new surface water attenuation lagoon serving the expansion area.

The Site surfacing will be constructed from Roller Compacted Concrete (RCC). RCC provides the strength and reinforcement required to withstand heavy tracking by mobile plant and heavy goods vehicles upon the Site and is resistant to chemical attack.

The Site surfacing and its specification has been developed on the basis of the Site setting and the characteristics required of the surfacing.

- The RCC surface will have a very low permeability of approximately 1 x10⁻⁹m/s;
- The surface of the RCC will channel surface drainage towards the attenuation lagoons on a slope exceeding 1%;



- The surface will have sealed construction joints; and
- The majority of water to be managed on Site is either rainwater or mains water (from dust suppression).

The new attenuation lagoon to be constructed will be designed to collect all surface water run-off via settlement catchpits and oil interceptors as described in Section 3.5.4. The lagoon will be sized to accommodate storage of surface water run-off based on a 1 in 100 year storm event + 40% to allow for climate change.

This will include the following;

- A sealed drainage system will be installed within the new storage area to capture Site surface run off;
- All tanks and containers within the proposed new storage area will be fitted with appropriate measures to ensure the potential for leaks and spillages are controlled and minimised;
- While the attenuation lagoon will be sub-surface there will be no covered underground components associated with the expansion of the Site;
- Appropriate measures will be taken during cleaning and washing activities which will ensure that the potential for emissions from these activities are minimised;
- All staff will be trained in what to do in the event of a spill or leak on Site;
- Spill kits will be located appropriately throughout the proposed new storage area, and suitable measures will be in place on Site to ensure that in the event of a spill or leak, the pollution is prevented from entering the surrounding drains, channels, gullies, watercourses, and unmade ground; and
- The integrity of impermeable surfacing and containment facilities within the proposed new storage area will be regularly inspected as part of the maintenance programme.

Potentially polluting liquids stored within the proposed new storage area for the purpose of fuelling mobile plant and maintenance activities will be stored within above-ground tanks / containers on an impermeable concrete surface and provided with secondary containment.

These will:

- be impermeable, stable, and resistant to the stored materials;
- have no outlet (that is, no drains or taps) and drain to a blind collection point;
- have pipework routed within bunded areas with no penetration of contained surfaces;
- be designed to catch leaks from tanks or fittings;
- have a capacity exceeding 110% of the largest vessel or 25% of the total volume of liquids being contained whichever is largest;
- be stored in accordance with Oil Storage Regulations in the case of oil storage containers with a capacity of 201 litres or more;
- have regular visual inspections;
- be fitted with a high level probe and an alarm (as appropriate) if not frequently inspected;
- have tanker connection points within the bund (in the case of fuel storage);
- have programmed engineering inspections; and
- be emptied of rainwater regularly to maintain the containment capacity where this is a possibility.



There will be no subsurface equipment and infrastructure on Site.

Washing and cleaning activities within the proposed new storage area will be limited to use of dry techniques or using clean water only.

BPL have existing dedicated procedures which employ techniques on Site to prevent and minimise fugitive emissions to land and water including spillage response. The spill response procedure includes information on how BPL recovery handle and correctly dispose of waste from a spillage.

Spill kits will be located in areas where a spillage could occur including within and around the proposed new storage areas of the Site. The spill kits will include sorbent materials, sand, booms to stop spillages from entering channels leading to the surface water attenuation lagoons.

BPL will update the Site's inspection and maintenance programme to incorporate the changes made to the Site surfacing and containment facilities as a result of the expansion. Record keeping of inspection and maintenance activities will continue in accordance with BPL's existing procedures.

3.5.6 Pests

It is not considered that the waste stored within the proposed new storage area will attract any pests or scavengers. Due to having been incinerated, IBA has very low organic content and only in the form of carbon. It does not contain food or soil matter for example. Pests have never been an issue for the Site and BPL have yet to receive feedback or complaints to suggest that these might be an issue.

3.6 Emissions Monitoring and Limits

3.6.1 Point Source Emissions to air

There are no point source emissions to air from the Site.

3.6.2 Fugitive Emissions

Monitoring of fugitive dust and particulate emissions will be undertaken as described in the Site's Dust and Emissions Management Plan provided in Section 6 of this application.

3.6.3 Medium Combustion Plant Directive

There will be no medium combustion plant located upon the Site.

3.6.4 Emissions to water and sewer

There will be one new point source emissions to water following the expansion of the Site.

Water not used for dust suppression from the new attenuation lagoon will be discharged via a pump, discharging from the Site into Beeley Wood Recycling Village's existing Yorkshire Water combined sewer system. Water from the new lagoon is proposed to be discharged at a maximum rate of 1.75 l/s into the combined sewer.

Monitoring of this emission point will be undertaken in accordance with the Trade Effluent Discharge Consent yet to be obtained from Yorkshire Water. For the purposes of the environmental permit, monitoring as outlined in Table 1 is proposed.



Table 1 Proposed Monitoring on Discharge to Sewer

Parameter	Frequency	Compliance Limit
Flow	Continuous	None
pH		
Conductivity		
Lead	Monthly	0.06 mg/l

3.7 Process Efficiency Appropriate Measures

3.7.1 Energy Efficiency

No changes are proposed to the treatment processes undertaken on the Site.

3.7.2 Raw Materials

There will be no changes to consumption of raw materials on the Site as a result of the Site's extension.

3.7.3 Water Use

Water will be used for dust suppression and general sanitary requirements e.g. staff welfare, toilets etc. Roof water (grey water) is harvested and stored in tanks on Site, and surface water run-off will be collected at the Site and directed to the lagoons. It will be used for dust suppression, where required, to minimise mains supplied water use. The quantity of water to be used cannot be determined at this stage but will be recorded during operations via a water meter.

A Water Saving Plan will be implemented, and water use will be optimised for example by using dry cleaning instead of hosing down and using trigger control on washing equipment.

Water use will be reviewed at least every 4 years in accordance with environmental permit conditions.

3.8 Waste Minimisation, Recovery, and Disposal

BPL ensures that no waste goes to landfill across its operations, and it currently recycles all materials entering the Site.

IBA is processed to create IBAA for use in construction projects. All metals reclaimed in the process are sent for reprocessing and re-use. Any materials that are not suitable for processing or recycling are returned to the energy from waste operator for reprocessing.

Other waste generated at the Site will be waste from the office and amenities. All waste generated will be appropriately stored and removed off-Site to a suitably permitted facility for recycling where possible.



4.0 BAT CONCLUSIONS ASSESSMENT

4.1 Waste Treatment BAT Conclusions

Table 2 BAT Conclusions for Waste Treatment BREF

BATc Requirement	BATc Details	Specific Measure
<p>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:</p>	I. commitment of the management, including senior management;	<p>BPL are committed to managing and continually improving environmental performance and have an existing Environmental Management System (EMS) which covers all existing Site operations and change management. The EMS will be updated accordingly to incorporate the modifications associated with expansion of the Site where necessary. BPL's EMS is certified to ISO 14001 standard. A copy of the Site's ISO 14001 certification and an index of the EMS documents, procedures and forms can be found in Appendix A to the application forms in Section 2 of the application.</p>
	II. definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the installation;	
	III. planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment;	
	IV. implementation of procedures paying particular attention to: (a) structure and responsibility, (b) recruitment, training, awareness and competence, (c) communication, (d) employee involvement, (e) documentation, (f) effective process control, (g) maintenance programmes, (h) emergency preparedness and response, (i) safeguarding compliance with environmental legislation;	
	V. checking performance and taking corrective action, paying particular attention to: (a) monitoring and measurement (see also the JRC Reference Report on Monitoring of emissions to air and water from IED installations – ROM), (b) corrective and preventive action, (c) maintenance of records, (d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained;	
	VI. review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness;	
	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 wastewater 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).	
<p>BAT 2. In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below.</p>	(a) Set up and implement waste characterisation and pre-acceptance procedures	<p>Please refer to Sections 3.2, 3.3 and 3.4.2 for information on how the site improves environmental performance through control of waste acceptance, storage, and output quality.</p>
	(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	



BATc Requirement	BATc Details	Specific Measure
<p>BAT 3. In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of wastewater and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features:</p>	<p>(i) information about the characteristics of the waste to be treated and the waste treatment processes, including:</p> <p>(a) simplified process flow sheets that show the origin of the emissions;</p> <p>(b) descriptions of process-integrated techniques and wastewater/waste gas treatment at source including their performances;</p>	<p>Following expansion of the Site, there will continue to be no point source emissions to air from the Site.</p> <p>There will be one new point source emissions to sewer following the expansion of the Site.</p> <p>A new attenuation lagoon will be constructed to serve the extension area housing IBAA product storage and the maintenance area.</p>
	<p>(ii) information about the characteristics of the wastewater streams, such as:</p> <p>(a) average values and variability of flow, pH, temperature, and conductivity;</p> <p>(b) average concentration and load values of relevant substances and their variability (e.g. COD/TOC, nitrogen species, phosphorus, metals, priority substances/micropollutants);</p> <p>(c) data on bio-eliminability (e.g. BOD, BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. inhibition of activated sludge)) (see BAT 52);</p>	<p>Water in the lagoon will be discharged via a pump, discharging from the Site into Beeley Wood Recycling Village's existing Yorkshire Water combined sewer system. Water from the new lagoon is proposed to be discharged at a maximum rate of 1.75 l/s into the combined sewer.</p> <p>The existing point source discharge to surface water comprising overflow from the surface water attenuation lagoon serving the existing environmental permit boundary area will remain unchanged. Monitoring of this will continue to be undertaken in accordance with the requirements of its discharge consent. Records of monitoring undertaken in accordance with the discharge consent requirements are retained by BPL.</p>
	<p>(iii) information about the characteristics of the waste gas streams, such as:</p> <p>(a) average values and variability of flow and temperature;</p> <p>(b) average concentration and load values of relevant substances and their variability (e.g. organic compounds, POPs such as PCBs);</p> <p>(c) flammability, lower and higher explosive limits, reactivity;</p> <p>(d) presence of other substances that may affect the waste gas treatment system or plant safety (e.g. oxygen, nitrogen, water vapour, dust).</p>	
<p>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</p>	<p>(a) Optimised storage location</p>	<p>The location of the new storage areas has been designed to minimise unnecessary handling of waste whilst also being concentrated towards the north of the Site away from more sensitive receptors such as the River Don and residential properties located to the south of the Site. For example, the raw IBA stockpile is located adjacent to the loading hopper of the processing building to avoid transferring it across the Site prior to feeding into the process. Similarly, the storage bays for metals are located adjacent to the process plant building so that they can be fed by conveyors.</p>
	<p>(b) Adequate storage capacity</p>	<p>The Site expansion has been designed to provide more than sufficient storage (up to 175,000 tonnes at any one time) to serve BPL's requirements based on a 300,000 tpa maximum capacity throughput. In practice, incoming IBA and output materials will not be stored for as long as this, however. Typically, incoming IBA is stockpiled for approximately 3 weeks before processing for example.</p> <p>The maximum waste storage capacity will be established based on containment of stockpiles within their designated areas and intermediate storage bays. Daily inspections will be undertaken to assess the Site's remaining storage capacity and the flow of materials through the Site to manage this within limits.</p>
	<p>(c) Safe storage operation</p>	<p>Equipment to be used for loading, unloading and storing waste within the proposed new storage area will be clearly labelled to identify their use or contents.</p>
	<p>(d) Separate area for storage and handling of packaged hazardous waste</p>	<p>This BATc is not considered applicable as no hazardous waste is accepted to the Site.</p>
<p>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.</p>		<p>BPL have an existing dedicated waste handling and transfer procedures which outlines how waste is handled and transferred around the facility. These procedures will be updated to ensure that they cover the changes proposed associated with the expansion of the Site.</p> <p>These procedures include:</p> <ul style="list-style-type: none"> • Ensuring that handling and transfer of waste are carried out by competent staff; • The documentation of waste transfers and implementation of BPL's Waste Duty of Care Code of Practice requirements; • Measures to prevent, detect and mitigate spills.



BATc Requirement	BATc Details					Specific Measure
<p>BAT 6. For relevant emissions to water as identified by the inventory of wastewater streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).</p>						<p>There will be one new point source emissions to sewer following the expansion of the Site.</p> <p>A new attenuation lagoon will be constructed to serve the extension area housing IBAA product storage and the maintenance area.</p> <p>Water in the lagoon will be discharged via a pump, discharging from the Site into Beeley Wood Recycling Village's existing Yorkshire Water combined sewer system. Water from the new lagoon is proposed to be discharged at a maximum rate of 1.75 l/s into the combined sewer.</p> <p>Monitoring of this emission point will be undertaken in accordance with the Trade Effluent Discharge Consent yet to be obtained from Yorkshire Water. For the purposes of the environmental permit, monitoring as outlined in Table 1 in Section 3.6.4 is proposed.</p>
<p>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.</p>						<p>The existing point source discharge to surface water comprising overflow from the surface water attenuation lagoon serving the existing environmental permit boundary area will remain unchanged. Monitoring of this will continue to be undertaken in accordance with the requirements of its environmental permit (ref. EPR/AP3224XA). Records of monitoring undertaken in accordance with the environmental permit's requirements are retained by BPL.</p>
<p>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.</p>	Substance / parameter	Standard (s)	Waste treatment process	Minimum monitoring frequency ^{(1) (2)}	Monitoring associated with	<p>Following the expansion of the Site, there will continue to be no point source emissions to air from the Site.</p>
	Dust	EN 13284-1	Mechanical treatment of waste	Once every six months	BAT 25	
<p>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.</p>						<p>Not applicable. BPL will not be undertaking activities involving use of solvents.</p>
<p>BAT 10. BAT is to periodically monitor odour emissions.</p>						<p>The applicability for BATc 10 is stated as being 'restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated'.</p> <p>IBA is not malodorous, odour has never been an issue for the Site and BPL have yet to receive feedback or complaints to suggest that odour might be an issue. If any (non-IBA) malodorous material</p>



BATc Requirement	BATc Details	Specific Measure
		is discovered upon delivery, the material will be isolated and rejected as per the non-conformance and rejection procedure.
BAT 11. BAT is to monitor the annual consumption of water, energy, and raw materials as well as the annual generation of residues and wastewater, with a frequency of at least once per year.		BPL will continue to conduct monitoring of the annual consumption of water, energy, and raw materials by recording all input and usage of the relevant factors associated with the facility. To aid this, an inventory and tracking system will be kept of all inputs and outputs.
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;	The applicability for BATc 12 is stated as being ‘restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated’. IBA is not malodorous, odour has never been an issue for the Site and BPL have yet to receive feedback or complaints to suggest that odour might be an issue. If any (non-IBA) malodorous material is discovered upon delivery, the material will be isolated and rejected as per the non-conformance and rejection procedure.
	— 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.	
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	IBA is not malodorous, as such it is not considered to be required to apply techniques to reduce odour. If any (non-IBA) malodorous material is discovered upon delivery, the material will be isolated and rejected as per the non-conformance and rejection procedure.
	(b) Using chemical treatment	
	(c) Optimising aerobic treatment	
BAT 14. In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques given below.	(a) Minimising the number of potential diffuse emission sources	Please refer to Section 3.5.3 for a summary of how BPL will minimise the number of potential diffuse emission sources from the expanded facility.
	(b) Selection and use of high integrity equipment	Not applicable – no changes to the on-site treatment processes are proposed.
	(c) Corrosion prevention	All construction materials for the proposed new storage area are resistant to corrosion.
	(d) Containment, collection, and treatment of diffuse emissions	Please refer to Section 3.5.3 for a summary of how BPL will prevent and contain diffuse emissions from the proposed new storage area.
	(e) Dampening	Dampening from on Site dust suppression will be used on the stockpiles within the new storage area to reduce the potential for dust generation. Further details regarding the dust suppression system are provided in the Dust and Emissions Management Plan in Section 6 of this application.
	(f) Maintenance	Maintenance regimes are included with the Site’s existing EMS. This will be updated to include maintenance for the new storage areas associated with this variation application.
	(g) Cleaning of waste treatment and storage areas	The proposed new storage area will benefit from good housekeeping and maintenance. Waste storage and treatment areas will be kept in good order and any spillages cleaned as soon as they occur.
	(h) Leak detection and repair (LDAR) programme	No emissions or organic compounds are expected given the nature of IBA.
	(a) Correct plant design	Not applicable – no flaring will be undertaken on Site.



BATc Requirement	BATc Details	Specific Measure
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	(b) Plant management	Not applicable – no flaring will be undertaken on Site.
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	Not applicable – no flaring will be undertaken on Site.
	(b) Monitoring and recording as part of flare management	Not applicable – no flaring will be undertaken on Site.
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 or / has been substantiated. The Site has not previously been the subject of noise complaints. The extension of the Site area is not anticipated to result in an increase in noise levels from the Site. As such, it is not considered that a Noise and Vibration Management Plan is required.
	II. a protocol for conducting noise and vibration monitoring;	
	II. a protocol for response to identified noise and vibration events, e.g. complaints;	
	IV. a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures.	
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	Not applicable – no changes to the on-site treatment processes or buildings on Site are proposed.
	(b) Operational measures	
	(c) Low-noise equipment	
	(d) Noise and vibration control equipment	
	(e) Noise attenuation	
BAT 19. In order to optimise water consumption, to reduce the volume of wastewater generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given below.	(a) Water management	Water consumption will be optimised within the proposed new storage area using the following measures: <ul style="list-style-type: none"> • Re-use of water collected in the surface water lagoon; • Water-saving plans; and • Optimising the use of washing water for example employing dry cleaning techniques instead of hosing down areas where possible and using trigger control on all washing equipment. The design of the Site has considered water efficiency in mind and includes site surface water for use in the Site's dust suppression system.
	(b) Water recirculation	Water used in dust suppression will drain back to the Site's attenuation lagoons for reuse.
	(c) Impermeable surface	The new expansion area will be provided with a concrete surface draining to an attenuation lagoon.
	(d) Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels	Please refer to Section 3.5.5 for details of techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels.
	(e) Roofing of waste storage and treatment areas	Roofing of the outside storage areas is not applicable due to the large volume of waste stored on Site at any one time. No changes are proposed to the treatment processes with this EP variation application.
	(f) Segregation of water streams	Uncontaminated site surface waters from the proposed new storage area will be collected and re-used on Site.
	(g) Adequate drainage infrastructure	Please refer to Section 3.5.5 for a description of the expanded Site's drainage arrangements.
	(h) Design and maintenance provisions to allow detection and repair of leaks	Regular monitoring for potential leakages will be undertaken according to a risk-based schedule, and, when necessary, surfacing will be repaired.



BATc Requirement	BATc Details	Specific Measure
		No underground components will be employed.
	(i) Appropriate buffer storage capacity	The new attenuation lagoon to be constructed will be designed to collect all surface water run-off from the expansion area via settlement catch pits. The lagoon will be sized to accommodate storage of surface water run-off based on a 1 in 100 year storm event + 40% to allow for climate change.
BAT 20. In order to reduce emissions to water, BAT is to treat wastewater 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 (l) Activated sludge process (m) Membrane bioreactor	Physical separation techniques will be employed within the new lagoon to separate suspended solids and hydrocarbons from water. When necessary, surface water run-off will be discharged to sewer,
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	There are no changes proposed to the manner in which accidents will be managed at the facility. BPL have an existing Accident Management Plan which covers all existing Site operations. BPL also have the following dedicated documents which will be followed for reporting and investigating incidents on Site; <ul style="list-style-type: none"> • Accidents / Incidents Reporting Procedure; • Procedure for Non-Conformance & Corrective Action; • Emergency Preparedness Procedure; • Procedure for General Spillage. The EMS and associated documents will be updated accordingly to incorporate the modifications to the Site associated with expansion, where necessary. The Site will be protected from malevolent acts by use of security fencing and lockable gates. The process building will be provided with fire and explosion protection systems. Access to and operability of emergency control equipment will be maintained.
BAT 22. In order to use materials efficiently, BAT is to substitute materials with waste.		Raw materials used within the proposed new storage area will be limited to fuel (diesel) to power the plant and machinery and water. While there are limited opportunities to replace fuel use with waste, rainwater falling on the Site will be reused on Site for dust suppression to minimise use of raw water.
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	Not applicable – no changes to the on-site treatment processes on Site are proposed.
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).		BPL aim to recycle all the material that is delivered to Site. BPL minimise use of packaging. IBA is received in bulk loads and therefore there is no packaging materials directly associated with the waste treatment activities. Any packaging waste generated at the Site is primarily from the office and amenities. Packaging waste generated is reused where possible and if not appropriately stored and removed off-Site to a suitably permitted facility with preference given to recycling where possible.
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 into the shredder	Not applicable. There will be no point source emissions to air from the facility or shredding undertaken on Site.



4.2 Waste Incineration BAT Conclusions

Table 3 BAT Conclusions for Waste Incineration BREF

BATc Requirement	BATc Details	Specific Measure
BAT 1. Specifically for incineration plants and, where relevant, bottom ash treatment plants, BAT is also to incorporate the following features in the EMS:	xxii) for bottom ash treatment plants, output quality management (see BAT 10); (xxvi) for bottom ash treatment plants, diffuse dust emissions management (see BAT 23)	IBA is tested prior to arriving to Site, by the EfW operator, to confirm its classification as non-hazardous in accordance with the requirements of WM3. IBAA product is produced to meet specifications such as those outlined in Regulatory Position Statement 206, BS EN 13242, BS EN 13295, Specification for Highways Works Series 600, 800 and 801, depending on the customer's requirements. BPL have existing dedicated procedures for sampling, testing, and classifying waste treatment outputs from the site. No changes are proposed to the permitted waste types or outputs from the Site, as such these procedures will continue to be adhered to, following the expansion of the Site. The Site's Dust and Emissions Management Plan has been updated and is submitted in Section 7 of this application.
BAT 10. In order to improve the overall environmental performance of the bottom ash treatment plant, BAT is to include output quality management features in the EMS (see BAT 1).	Output quality management features are included in the EMS, so as to ensure that the output of the bottom ash treatment is in line with expectations, using existing EN standards where available. This also allows the performance of the bottom ash treatment to be monitored and optimised.	IBA is tested prior to arriving to Site, by the EfW operator, to confirm its classification as non-hazardous in accordance with the requirements of WM3. IBAA product is produced to meet specifications such as those outlined in Regulatory Position Statement 206, BS EN 13242, BS EN 13295, Specification for Highways Works Series 600, 800 and 801, depending on the customer's requirements. BPL have existing dedicated procedures for sampling, testing, and classifying waste treatment outputs from the site. No changes are proposed to the permitted waste types or outputs from the Site, as such these procedures will continue to be adhered to, following the expansion of the Site.
BAT 24. In order to prevent or reduce diffuse dust emissions to air from the treatment of slags and bottom ashes, BAT is to use an appropriate combination of the techniques given below	a) Enclose and cover equipment b) Limit height of discharge c) Protect stockpiles against prevailing winds d) Use water sprays e) Optimise moisture content f) Operate under sub atmospheric pressure	No changes are proposed to the treatment processes in association with this EP variation application.
BAT 26. In order to reduce channelled dust emissions to air from the enclosed treatment of slags and bottom ashes with extraction of air (see BAT 24(f)), BAT is to treat the extracted air with a bag filter (see Section 2.2).		No changes are proposed to the treatment processes in association with this EP variation application.
BAT 32. In order to prevent the contamination of uncontaminated water, to reduce emissions to water, and to increase resource efficiency, BAT is to segregate waste water streams and to treat them separately, depending on their characteristics.	Waste water streams (e.g. surface run-off water and waste water from bottom ash treatment) are segregated to be treated separately based on their characteristics and on the combination of treatment techniques required. Uncontaminated water streams are segregated from waste water streams that require treatment.	Surface water falling on the new expansion area site surfaces will be stored separately to surface water runoff collected elsewhere on the Site.
BAT 34. In order to reduce emissions to water from the storage and treatment of slags and bottom ashes, BAT is to use an appropriate combination of the techniques given below, and to use secondary techniques as	Preliminary and primary treatment a) Equalisation b) Neutralisation c) Physical separation Physico-chemical treatment d) Adsorption on activated carbon e) Precipitation	A new attenuation lagoon will be constructed to serve the extension area housing IBAA product storage and the maintenance area. Surface water runoff from the extension area of the Site will enter the lagoon via a primary catchpit which is designed to trap silt. Water will then flow through three further chambers as follows: <ul style="list-style-type: none"> • A secondary catchpit designed to trap any silt that is not trapped by the primary catchpit. • An oil interceptor, designed with a baffle arrangement, to trap hydrocarbons.



BATc Requirement	BATc Details	Specific Measure
close as possible to the source in order to avoid dilution.	f) Oxidation g) Ion exchange h) Stripping i) Reverse osmosis Final solids removal j) coagulation and flocculation k) sedimentation l) filtration m) flotation BAT-AEL of 0.02-0.06 mg/l for lead for indirect emissions to a receiving water body.	Thereafter it will be discharge to sewer where it will undergo physico-chemical treatment and final solids removal at a waste water treatment works. The Site will comply with the BAT-AEL of 0.02-0.06 mg/l of lead in the discharge to sewer.
BAT 36. In order to increase resource efficiency for the treatment of slags and bottom ashes, BAT is to use an appropriate combination of the techniques given below based on a risk assessment depending on the hazardous properties of the slags and bottom ashes.	A) Screening and sieving B) Crushing C) Aeraulic separation D) Recovery of ferrous and non-ferrous metals E) Ageing F) washing	No changes are proposed to the treatment processes in association with this EP variation application.

4.3 Emissions from Storage BAT Conclusions Review

Table 4 BAT Conclusions for Emissions from Storage BREF

BATc	BATc Requirement	BATc Details	Specific Measure
Storage of solids	Open Storage	BAT for open storage is to carry out regular or continuous visual inspections to see if dust emissions occur and check preventative measures are in good working order	Regular visual inspections of the proposed new storage area will be conducted for dust emissions, and in response to any complaints. If dust is deemed a nuisance from any of these inspections, mitigation measures will be enforced to reduce any dust emissions. Dust suppression measures in place across the proposed new storage area will also be regularly inspected to ensure they are operating in good working order. Weather forecasts will be monitored by Site Operatives to identify when weather conditions may require additional dust suppression measures to be in place (e.g. additional dust suppression in high winds).
		BAT for long-term open storage is one, or a proper combination, of the following techniques; <ul style="list-style-type: none"> - Moistening the surface using durable dust-binding substances - Covering the surface - Solidification of the surface - Grassing-over of the surface 	Please refer to the Dust and Emissions Management Plan in Section 6 of this application for details of how intermediate storage and stockpiles of waste materials on Site will be managed to prevent and minimise fugitive emissions from the proposed new storage area.



BATc	BATc Requirement	BATc Details	Specific Measure
		<p>BAT for short-term open storage is one, or a proper combination, of the following techniques:</p> <ul style="list-style-type: none"> - moistening the surface using durable dust-binding substances - moistening the surface with water - covering the surface, e.g. with tarpaulins 	
		<p>Additional measures to reduce dust emissions from both long and short-term open storage are:</p> <ul style="list-style-type: none"> - placing longitudinal axis of the heap parallel with the prevailing wind - applying protective plantings, windbreak fences or upwind mounds to lower the wind velocity - applying only one heap instead of several heaps as far as possible; with two heaps storing the same amount as one, the free surface increases with 26% - applying storage with retaining walls reduces the free surface, leading to a reduction of diffuse dust emissions; this reduction is maximised if the wall is placed upwind of the heap - placing retaining walls close together. 	
	Preventing incidents and (major) accidents	Safety and risk management	<p>There are no changes proposed to the manner in which accidents will be managed at the facility. BPL have an existing Accident Management Plan which covers all existing Site operations. BPL also have the following dedicated documents which will be followed for reporting and investigating incidents on Site;</p> <ul style="list-style-type: none"> • Accidents / Incidents Reporting Procedure; • Procedure for Non-Conformance & Corrective Action; • Emergency Preparedness Procedure; • Procedure for General Spillage. <p>The EMS and associated documents will be updated accordingly to incorporate the modifications to the Site associated with expansion, where necessary.</p>
Transfer and handling of solids	General principles to minimise dust from transfer and handling	Schedule the transfer as much as possible when the wind speed is low.	Weather forecasts will be monitored daily on Site and transfer of IBA and IBAA materials will be limited during period of high wind speed.
		BAT is to make transport distances as short as possible and to apply, wherever possible, continuous transport modes. For existing plants, this might be a very expensive measure. See Section 4.4.3.5.1.	Transport distances will be kept as short as practically possible across the Site, to reduce the likelihood of fugitive dust emissions when handling of materials.
		When applying a mechanical shovel, BAT is to reduce the drop height and to choose the best position during discharging into a truck; see Section 4.4.3.4.	Drop heights will be minimised as much as practically possible to minimise the potential of dust emissions from handling of materials. Consideration will also be taken when discharging into a truck of the timing and height, to minimise the potential of dust emissions during transfer to vehicles.
		While driving, vehicles might swirl up dust from solids spread on the ground. BAT then is to adjust the speed of vehicles on-site to avoid or minimise dust being swirled up; see Section 4.4.3.5.2.	A speed limit of 11mph will be in place on the proposed new storage area to minimise the potential of dust emissions from vehicles travelling around the Site.
		BAT for roads that are used by trucks and cars only, is applying hard surfaces to the roads of, for example, concrete or asphalt, because these can be cleaned easily to avoid dust being swirled up by vehicles, see Section 4.4.3.5.3.	All roads on the proposed new storage area will be concreted and therefore easy to clean.
		BAT is to clean roads that are fitted with hard surfaces according to Section 4.4.6.12	Roads on the proposed new storage area will be cleaned as and when necessary to reduce the potential for dust emissions.



BATc	BATc Requirement	BATc Details	Specific Measure
		<p>Cleaning of vehicle tyres is BAT. The frequency of cleaning and type of cleaning facility applied (see Section 4.4.6.13) has to be decided on a case-by-case basis.</p> <p>Where it neither compromises product quality, plant safety, nor water resources, BAT for loading/unloading drift sensitive, wettable products is to moisten the product as described in Sections 4.4.6.8, 4.4.6.9 and 4.3.6.1. Risk of freezing of the product, risk of slippery situations because of ice forming or wet product on the road and shortage of water are examples when this BAT might not be applicable.</p> <p>For loading/unloading activities, BAT is to minimise the speed of descent and the free fall height of the product; see Sections 4.4.5.6 and 4.4.5.7 respectively. Minimising the speed of descent can be achieved by the following techniques that are BAT:</p> <ul style="list-style-type: none"> - installing baffles inside fill pipes - applying a loading head at the end of the pipe or tube to regulate the output speed - applying a cascade (e.g. cascade tube or hopper) - applying a minimum slope angle with, e.g. chutes. <p>To minimise the free fall height of the product, the outlet of the discharger should reach down onto the bottom of the cargo space or onto the material already piled up. Loading techniques that can achieve this, and that are BAT, are:</p> <ul style="list-style-type: none"> - height adjustable fill pipes - height adjustable fill tubes, and - height adjustable cascade tubes. <p>These techniques are BAT, except when loading/unloading non drift sensitive products, for which the free fall height is not that critical.</p>	<p>Vehicle tyres will be cleaned as they track around the Site due to the dust suppression system to be employed on Site.</p> <p>Despite the nature of the material entering Site not being considered to be drift sensitive material, dampening of material during loading and unloading to the Site will still occur to ensure any potential fugitive emissions from the activities are reduced.</p> <p>The speed of descent and free fall height of product during unloading will be minimised and managed, to ensure any potential fugitive emissions from the activities are reduced.</p>
	<p>Considerations on transfer techniques</p>	<p>Conveyors and transfer chutes;</p> <p>For non or very slightly drift sensitive products (S5) and moderately drift sensitive, wettable products (S4), BAT is to apply an open belt conveyor and additionally, depending on the local circumstances, one or a proper combination of the following techniques:</p> <ul style="list-style-type: none"> - lateral wind protection, see Section 4.4.6.1 - spraying water and jet spraying at the transfer points, see Sections 4.4.6.8 and 4.4.6.9, and/or - belt cleaning, see Section 4.4.6.10 <p>To reduce energy consumption for conveyor belts (see Section 4.4.5.2), BAT is to apply:</p> <ul style="list-style-type: none"> - a good conveyor design, including idlers and idler spacing - an accurate installation tolerance, and - a belt with low rolling resistance. 	<p>There will be no new conveyors or transfer chutes associated with the proposed new storage area.</p>



5.0 CONCLUSION

This BAT Assessment demonstrates how the design and operation of the facility, where changed to facilitate the expansion of the Site, will conform to the requirements of the Best Available Technique Reference (BREF) Note for Waste Treatment, Waste Incineration and Emissions from Storage. This document also describes how the design and operation of how the expansion of the Site will conform to the requirements of 'Non-hazardous and inert waste: appropriate measures for permitted facilities' and the EA's draft 'Storing and treating incinerator bottom ash' guidance.

It is considered that with the techniques employed on Site, the facility will be compliant with BAT following the proposed expansion.



