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ENVIRONMENTAL MANAGEMENT SYSTEM

Environmental and sustainability solutions provided to
BIRCH AIRFIELD COMPOSTING SERVICES LIMITED

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2.1	Draft update for increased throughput and site expansion	20/03/2024
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3.0	Third Issue	17/04/2024

CONTENTS

1.0 INTRODUCTION

This Management System sets out the considerations and operational details that are relevant to the operation of the resource recovery facility at Birch Airfield Composting Services Limited (hereon referred to as BACS). This management system details the nature of the site, relevant site and infrastructure works, methods of operation and environmental controls. It has been prepared in accordance with the following documents:

- The Environmental Permitting (England and Wales) Regulations 2016, and
- The Industrial Emissions Directive 2010.

This management system has been produced in conjunction with the following documents:

- BACS- Non-Technical Summary
- BACS– Environmental Risk Assessment
- BACS – Dust Management Plan
- BACS – Drainage Management Plan
- BACS – Fugitive Emissions Management Plan
- BACS – Noise and Vibration Management Plan
- BACS – Accident Management Plan
- BACS – Energy Efficiency Plan
- BACS – Odour Management Plan
- BACS – Site Layout Plan

BACS is currently permitted to treat up to 75,000 tonnes per year of organic waste via open windrow composting and for the treatment of inert waste soil for blending under a bespoke installation permit. In line with the planned variation BACS are increasing treatment throughput at the site to 100,000 tonnes per year of organic waste. Permitted activities are stated below:

- Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving biological treatment.
- R3: Recycling or reclamation of organic substances, which are not used as solvents which consists of composting, including sanitisation, stabilisation and maturation of the waste.
- Physical treatment for recovery of Non-Hazardous Waste: conditioning and screening of imported soil wastes (for blending into composts produced through the open windrow composting system to produce a BS 3882 certified topsoil).

2.0 SITE DETAILS

2.1 Site Address

Birch Airfield,
Birch,
Blind Lane,
Colchester, Essex
CO5 9XE

Grid Reference: 591122 (easting), 219697 (northing)

2.2 Description

The site is located on an old RAF airfield situated approximately 3km northeast of Tiptree and 10km southwest of Colchester. The site comprises three areas:

- The reception area where waste is tipped and inspected.
- The operational area where the waste is shredded, windrows formed and aerated.
- The storage area where the composted material is stored, awaiting final use off-site.

There is a weighbridge port-a-cabin site office in the permitted site area providing a mess room and hot and cold water. In addition, there is a separate port-a-cabin office located by the lagoon which contains a kitchen and a toilet and wash facilities.

2.3 Site plan

Reference Drawing: BAC - Site Layout Plan
BAC - Site Drainage Plan

2.4 Permits and Licenses

The permit application which this Management System supports has been identified as the sole permit or license required for the operation of an Open Windrow Composting (OWC) treatment facility and for the treatment of inert waste soil for blending.

2.5 Permitted Activities

Birch Airfield possess a bespoke environmental permit, reference EPR/HP3294NJ, to operate an Open Windrow Composting (OWC) and inert waste soil treatment facility.

2.6 Exempt Activities

Birch Airfield do not currently undertake any exempt activities on the site.

2.7 Planning Permission

The site has full planning permission for the current operations from Essex County Council, reference ESS/11/04/COL.

2.8 Directly Associated Activities

The associated activities with the open windrow composting and soil treatment activities are:

- Storage – R13: Storage of waste pending any of the operations numbers R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).
- Physical treatment of waste – R3: Recycling/reclamation of organic substances which are not to be used as solvents (physical treatment includes shredding and screening).

3.0 OPERATIONAL OVERVIEW

3.1 Waste Management Operations

The site is permitted to perform composting in open systems and inert waste soil treatment under a bespoke environmental permit, reference EPR/HP3294NJ. The permitted waste treatment and recovery activities include:

- Recovery of biodegradable green wastes through open windrow composting system; and
- Physical treatment for recovery of Non-Hazardous Waste: conditioning and screening of imported soil wastes (for blending into composts produced through the open windrow composting system to produce a BS 3882 certified topsoil).

The permit allows for the recovery of non-hazardous waste exceeding 75 tonnes per day, as well as associated storage of waste pending treatment, the recycling/reclamation of organic substances and treatment of inert waste soil.

3.2 Permitted Wastes

Waste shall only be accepted if it is a type and quantity specified in the permitted list of wastes, and if it conforms to the description in the documentation supplied by the producer and holder. The permitted list of wastes is available in Appendix A.

Any wastes that are not categorised as permitted materials should be considered contrary/non-conforming and dealt with appropriately. The site shall only accept non-hazardous wastes.

3.3 Hours of Operation

The facility is open 7 days a week, 362 days per year. The facility is only closed on Christmas Day, Boxing Day and New Year's Day. The facility's operational hours for the facility will be typically as identified below. The site is not open to the general public.

Table 1 - Site Operational Hours.

Weekday	Waste Acceptance	Waste Treatment	Maintenance
Monday to Friday	07:00 - 18:30	07:00 – 18:30	As required
Saturday	07:00 -17:00	07:00 – 13:00	As required
Sunday	09:00 – 16:00	NIL	As required
Bank Holidays	09:00 – 16:00	NIL	As required

3.4 Staffing and Technical Competence

BACS has approximately 9 staff members at any one time. This is a combination of site managers, plant operators, weighbridge operators and litter pickers. BACS are also able to employ staff members on a temporary basis during particularly busy periods.

Whenever the site is open to receive or dispatch waste, or is carrying out any of the specified waste management operations, it shall be supervised by at least one member of staff who is suitably trained and fully conversant with the requirements of the licence regarding:

- Waste acceptance control procedures.
- Operational controls.
- Maintenance record-keeping.
- Emergency action plans.
- Notifications to the agency.

A designated person will hold a suitable qualification in order to operate the site compliantly (see Table 2 below). The suitably qualified person's actual attendance hours on site will be recorded in the Site Diary.

Table 2 - Technical Competence Qualifications.

Name	Qualification
Angela Morton	WAMITAB Level 4 Medium Risk Operator Competence for Aerobic Composting and Land Spreading.

3.5 Site Identification Board

In conformance with permitting regulations BACS shall display a clear, all-weather, easily readable Site Notice at or near the entrance to the site. The Site Sign/Notice shall contain the following information:

- Company Name
- The Permit Number
- Emergency Contact Name
- Permit Holder's Telephone Number
- Statement that the site is permitted by the Environment Agency (EA)
- EA National Telephone Numbers

The Identification Board shall be inspected at least once per week. In the event of damage or defect, the board shall be repaired or replaced within three working days.

3.6 Site Security

The site is in a relatively rural location and security is aimed primarily at preventing accidental access by humans and livestock and unauthorised out of hours fly-tipping. The rural location of this site means the standard licence condition for fencing the site is not necessary to prevent accidental incursions by humans or animals. The site is 800m from the nearest road and over 500m from the nearest house.

In the event of an accidental incursion by humans or animals the risk to the integrity of the sites environmental protection measures is extremely low or non-existent (see BACS - Environmental Risk Assessment).

The site has been designed to prevent unauthorised access to the operational area. All access points will be gated and locked when the site is not staffed.

The entrance will be kept locked outside operating hours. Gates will be inspected on a weekly basis and any defects will be rectified within a reasonable period of discovery, although

temporary repair will be made before the end of the working day. Full repairs will be undertaken within 21 days.

The site is monitored by 6 CCTV cameras. The following areas of site are covered by CCTV:

1. ANPR on weighbridge.
2. Weighbridge and Site Office entrance.
3. Site entrance track.
4. Rear of weighbridge track.
5. Machinery storage area at the rear of site by the lagoon.
6. The fuel tank.

3.7 Relevant Convictions

There are no existing convictions in place. In the unlikely event of the permit holder or a relevant employee being convicted of any relevant offence, full details of the conviction shall be provided to the local authority within 14 days. Details of any appeals shall also be reported to the authority.

3.8 Change of Operator's or Holders Details

The following information shall be notified in writing within 5 working days to the local authority:

- Any change to the Permit holders trading name;
- Any steps taken with a view to the Permit holder going into administration; and,
- Any change in the operators trading name, address registered name or registered office address.

3.9 Maintenance of Financial Provision

The company (Birch Airfield Composting Services Ltd) will make financial provisions to meet the obligations of the Permit.

3.10 Notifications and Submissions to the Environment Agency

Except where otherwise specified, all submissions to the EA shall be in writing. These correspondences shall include the reference number and the name of the Permit holder. The following reporting requirements shall be met:

Within one month of the end of each quarter, BACS shall submit quarterly waste returns to the EA.

1. In the event that the site's activities cause an incident or accident, the EA shall be informed.
2. Should any permit condition be breached, the EA shall be informed.
3. The EA shall be notified within 14 days should any of the following occur:
    a) Birch Airfield change the name under which they operate
    b) Birch Airfield change their registered address
    c) Birch Airfield take steps towards administration or bankruptcy
4. The EA shall be notified if any cessation of operations for a period in excess of 4-weeks occurs.

4.0 SITE INFASTRUCTURE

4.1 Access and Parking

The site is accessed via Blind Lane, which can be accessed from the B1022. The site has a parking area situated to the east of the composting pad, next to the weighbridge, which is suitable for cars, vans, and motorcycles. There is sufficient parking for staff and for visitors.

4.2 Concrete Surfacing

The entire surface of the site is covered in 160mm thick, impermeable concrete. Beneath this surface is 300mm of crushed mainly concrete hardcore. The geology beneath the concrete surface is Heavy Clay Subsoil. All waste storage, including storage of quarantined waste, and composting related activities take place on this impermeable concrete surface. A new area of concrete surfacing, with the same specification as the original has been constructed to the southwest of the original site boundary. This represents the extended site area.

All areas of impermeable concrete, drainage system, buildings and storage tanks shall be inspected on a regular basis. This shall be further detailed in the Site Fugitive Emissions Management Plan.

4.3 Soil Bunds

The waste processing area is within impermeable bunded clay walls and have storage areas to either side of a section of runway on Birch Airfield. The runway is approximately 5 metres wide. The original OWC area is predominantly surrounded with soil bunds approximately 4m wide at the base and 1m high with a 2m wide top. The aspect adjacent to the lagoon features a piped ditch covered with stones. The OWC extension area features a perimeter bund that runs south-westerly along the southern edge of the windrows and then north-easterly along the eastern edge of the concrete area. This bund will be 3m wide at the base, 0.5m wide at

the top and 1m high. A further perimeter bund is located on the edge of the field adjacent to OWC extension area to the southwest of the site. This bund will run north-westerly and then northerly to the west of the new lagoon. It will be 5m wide at the base, 1m at the top and 2m high. This will also be planted with native trees and shrub. The bunds are formed from excavated clay subsoil from the site and consolidated by tracking in with a tracklayer tractor. The bank slopes are 1 in 1.5 which will hold firm on this soil type.

The site slopes broadly from southwest to northeast by between 0.6m and 1.0m, giving general natural site falls of about 1 in 200. The soil bunds are covered in a 100mm layer of topsoil and grassed down. The bunds are built on the subsoil and not on the edge of the prepared composting surface. As such they are keyed into the subsoil forming a liquid seal. These bunds will not be used as retaining walls for the compost but more as a demarcation of the site edges and also to usefully utilise the soil excavated to form the lagoon. At the northern exit there is a shallow 100mm x 500mm wide sleeping policeman along the whole side to make sure any liquids are contained within the working area. The slopes on the approaching runways mean that little if any road water will enter the site from outside the composting area. Most of it will run off to either side of the runways. The whole area is surrounded by a belt of trees indigenous to the area to improve the appearance.

The windrows of composting material are orientated west to east. The final prepared compost is stored at the southern end of the western side of the runway.

4.4 Lagoon System

4.4.1 Original Primary Lagoon

This lagoon is a triangular shape with equal sides of 45m x 45m x 45m at ground level with a freeboard of 0.75m and sloping sides of 1 in 2. The lagoon has the following dimensions:

- Area at ground level= 877m^2
- Area at top water level= 756m^2
- Water storage depth= 3m
- Freeboard to ground level= 0.75m
- Base area= 375m^2
- Storage capacity to top water level= 1,696m^3

The lagoon is surrounded by soil bunds with the following dimensions: 1m x 4m x 2m (height x base width x top width).

4.4.2 New Lagoon

The new lagoon is rectangular in shape (20m l x 28m w) with a 0.75m freeboard. The lagoon has the following dimensions:

- Area = 560m^2
- Water Stroage Depth = 4.1m
- Storage capacity to top water level = 2,296m^3

The lagoon has a bund along the western edge with the following dimensions: 2m x 5m x 1m (height x base width x top width).

4.5 Drainage System

Falls are constructed in the original pad to direct leachate to four silt traps/gullies on site running along the track in the middle of the site for the original OWC area. Each silt trap/gully is attached to a drain which runs into the original leachate lagoon. For the site extension, falls are constructed into the concrete pad directing leachate to five silt traps attached to underground pipework that runs north-westerly along the base of the windrows and then northerly into the new lagoon. Please see Drainage Management Plan for further details.

4.6 Weighbridge facility

The weighbridge will be maintained in accordance with the manufacturer's recommendations and will be calibrated annually by a competent third party as per the Weights and Measures Act.

4.7 Plant and Equipment

Waste will be handled using the plant listed in Table 3. Where required, additional plant will be hired in to cover breakdowns or very busy periods. Only trained operators will be allowed to drive/operate machines on-site.

Table 3 - Plant on Site Used in OWC Process.

Plant	Function
EP5500 Shark shredder SN 5500 1121 466Engine MAN 520hp	Shredding raw material to provide volume reduction
JCB 535-95 tele-loader	Moving waste skips Brushing yard.

Plant	Function
Edge TRT 620 Trommel Screen	Compost and soil screening
Neuenhauser 2010 M21 Sternsiet Star Trommel Screen	Grading compost (10-20mm)
Edge TRT 620 Trommel Screen	Screening of inert waste
Case CX210E Excavator Hyundai 360 Excavator	Turning windrows
Komptech Hurrikan windsifter	Sifting material
Case 721GXR wheeled loader CAT 924H wheeled loading shovel CAT 930H wheeled loading shovel CAT 930K wheeled loading shovel Hyundai wheeled loading shovel HL760 Hyundai wheeled loading shovel HL760 7A	Loading material

4.8 Site Office

A hard copy of the Permit and Management System will be kept in the site office for reference. Toilets and washroom facilities are provided. Additional welfare facilities such as a changing room, mess room, control room and reception will also be provided.

The following documents and equipment will be kept in the site office:

- Environmental Permit;
- Management System:
- Emissions Management and Monitoring Plan;
- Environmental Risk Assessment;
- Current Site Diary;
- First aid kit;
- Conditions of site use for employees, visitors and contractors;
- Internal inspection sheets/monitoring forms;
- Accident book.

5.0 OPERATIONAL PROCEDURES

5.1 Waste Acceptance

5.1.1 All Waste Materials

All operatives will be advised of a procedure for handling waste materials entering the site.

All vehicles entering or leaving site will be weighed on the site's weighbridge. The following details will be recorded:

- The full address where the waste was produced;
- The identity of the producer;
- Delivery vehicle registration no.;
- Date and time of vehicle depositing waste;
- Description of waste material; and,
- Weight of deposited material.

The weighbridge data is emailed to the Site Manager daily and the information is stored in spreadsheets for deliveries and customer information. Paper waste transfer notes are stored in the office.

On entering the site, waste carrying vehicles will initially be visually inspected to ensure that the wastes are as described on the waste transfer note and comply with the waste management licence. If visual inspection of waste prior to tipping identifies unsuitable wastes, the vehicle will not be allowed to unload.

On arrival, vehicles are weighed on the site weighbridge and directed to the reception area on the site where they unload into the specified tipping area. Once offloaded, material is inspected by site staff for contamination and any gross contamination removed by hand (i.e. large objects, plastic etc).

At the same time, for green waste material, the operator undertakes a visual assessment of the likely carbon to nitrogen balance and the likely moisture content to identify the need for the incorporation of other materials i.e. woody material, water. Sufficient stocks of oversize, straw and woody materials will be kept onsite to adjust the feedstock. Should the stock of amendments run low the site will either screen some compost to replenish the supply or shred some appropriate clean wood waste. Should the site exhaust all supplies of amendment materials, and not be able to obtain any further suppliers, deliveries of feedstock needing amendment will cease.

5.1.2 Inert Waste Soil

At all times, the waste acceptance procedure described in Section 5.1.1 will be adhered to. Additionally, the site manager/director will undertake site visits of the inert soil waste production facilities of our core suppliers prior to the acceptance of any waste soil, with the aim to visually inspect the source of the inert soil waste, review their operational standards and ensure that these align with the BACS sites strict waste acceptance criteria. The site visits will also be used to educate suppliers on our expectations regarding contamination. Soil contamination could include (not limited to) exceedances of oil, fuel, hardcore, concrete, green waste, sub soil, clay and excess quantities of stones. Customer responses confirming no contamination are electronically stored on the office computer.

The following waste codes are accepted onto site for inert soil processing:

- 17 05 04 soil and stones other than those mentioned in 17 05 03 (non-hazardous from construction sites)
- 20 02 02 soils and stones (garden and park waste)

All new suppliers will receive an inert waste acceptance leaflet containing details of permitted and non-permitted waste and will include our contact information should a supplier have any queries regarding what waste is accepted on site. Additionally, suppliers are required to sign a formal agreement to say that the soil does not contain such contamination. Any load that is identified as being contaminated on arrival at the BACS site will be rejected as per Section 5.2.2 below.

In accordance with best practice guidelines stated within *BS3882: Specification for topsoil* guidance document, lab testing will be undertaken on samples of topsoil produced at BACS at a frequency of every 2,500 tonnes of screened topsoil that is produced. Each batch of topsoil produced by BACS has traceability. Moreover, an accurate record of weighbridge tickets associated with input material used within each specific batch is maintained digitally on our internal database. Additionally, the database contains details of the customers/buyers of the outgoing topsoil product following treatment at BACS. This process enables full transparency of our supply chain from source to market.

5.2 Waste Rejection

5.2.1 Green Waste

Non-targeted waste materials for recovery through the composting facility shall include:

- Dog and cat waste;
- Wood and paper ash;
- Non-organic materials;
- Cardboard;
- Liquid wastes;
- Powders or dusts;
- Highly decomposed wastes e.g. non-stackable;
- Highly odorous wastes, as determined by experienced site operatives.

Any load containing 1% or more non-targeted materials by weight shall be considered above the acceptable contamination threshold and would result in rejection, based on existing contractual arrangements at this percentage level. Percentage contamination will be obtained by visual inspection of the load by a trained operative in line with industry bet practice techniques. Any rejected load will be placed in quarantine, clearly segregated from all other materials and removed from site as soon as possible and in any case within 24 hours of receipt. A waste rejection form will be completed for any such load and the waste produced unformed immediately.

5.2.2 Inert Waste Soil

Non-targeted waste materials for recovery through the waste soil treatment facility shall include:

- Oil;
- Fuel;
- Hardcore;
- Concrete;
- Green Waste;
- Sub soil;
- Clay; and
- Excess quantities of stones.

Any load containing 1% or more non-targeted materials by weight shall be considered above the acceptable contamination threshold and would result in rejection. Percentage contamination will be obtained by visual inspection of the load by a trained operative in line with industry bet practice techniques. Any rejected load will be placed in quarantine, clearly segregated from all other materials and removed from site as soon as possible and in any

case within 24 hours of receipt. A waste rejection form will be completed for any such load and the waste produced unformed immediately.

5.3 Treatment Process for the Composting of Green waste Material

After waste acceptance procedures have been followed and completed, the waste will be stockpiled to await shredding.

5.3.1 Shredding

Material is shredded prior to the composting phase. The material is continually moved from the shredding area into the active composting area to limit incidental storage. Shredded material is formed into windrows. Any odorous material, which may need to be stored overnight prior to shredding, is covered with oversize material.

5.3.2 Open Windrow Formation

After shredding green waste is formed into windrows on the composting pad. The dimensions of each windrow will be 50m x 5m x 3m (length x width x height). Gaps of suitable width to provide a walkway and enable turning/monitoring and litter picking will be left between the windrows.

5.3.3 Sanitisation

The sanitisation phase is a minimum of 7 days at 60°C during which time monitoring equipment will be used for temperature monitoring. Moisture levels will be assessed by both Compost Manager and a grip test to ensure critical limits for composting are being met and over watering does not occur. Oxygen monitoring will also be undertaken to directly monitor oxygen levels within the windrow, using Compost Manager. During this period a minimum of 1 turn is made to fully incorporate the compost 360 excavator or sometimes a loading shovel.

5.3.4 Stabilisation

Following completion of the 7-day sanitisation phase, materials are further process to mature. Stabilisation of these material us undertaken in open windrows on the external composting pad.

The stabilisation phase is a minimum 7-week process during which time monitoring equipment will be used for temperature monitoring and assessing moisture levels to ensure critical limits for composting are being met. Oxygen monitoring undertaken to directly monitor oxygen levels within the windrow. Temperature, moisture, and oxygen are measured using

Compost Manager. During this period a minimum of 2 turns are made to fully incorporate the compost by loading shovel.

5.3.5 Screening

Screening of the compost following the active composting phase shall be carried out with a trommel of vibrating screen to create a soil improver, certified to PAS 100 & CP. The date(s) on which each batch is screened, and its batch code shall be recorded on the CM PAS100 record sheet. Oversize material coming off the screener shall inly be re-composted if visual assessment confirms that physical contaminants will not adversely affect the composting process or prevent effective control of compost quality (as stated in the quality policy). Addition of oversize material to a batch of composting material shall only be carried out when it is being formed. If the oversize material is too heavily contaminated for composting, shall be rejected and disposed of.

5.4 Treatment Process for Inert Soil Waste

After waste acceptance procedures (as described above in section 5.1) have been followed and completed, the inert soil waste material shall be tipped onto a designed reception area which is located next to the 0-10mm compost on site to await screening. Once the inert soil material has been tipped, it shall undergo an initial screening using the Edge TRT 620 (2021) trommel screen.

Once screened, the inert soil waste shall be conditioned and blended with 0-10mm compost (produced through the OWC system). The 0-10mm compost is stored in the western corner of the site (as shown on Site Layout Plan) and a batch of 0-10mm compost is moved up when it is 8 weeks old next to the 10mm screener (Edge TRT 620 Trommel Screen). Some of this 0-10mm compost is then blended with the screened inert soil material to form the final topsoil product (BS 3882 certified). Once it has been screened, conditioned and blended with the 0-10mm compost, it is stockpiled in the finished compost area.

At the end of the blending process, the topsoil product will be screened and sampled. On achieving all of the criteria for the BS3882, the soil will be moved to the product sales bay prior to dispatch.

5.5 Product Storage

Following screening, products are stored on the storage area to the north of the OWC site in the product storage area ready for dispatch to the end markets. Each product batch is

identifiable in its storage location by a marker that displays its unique product batch code and may be stored for a maximum of 12-months before dispatch to the customer.

Products will be stored no higher than 3m to ensure that the centre of the pile does not become too high in temperature with minimal levels of oxygen. The length of time screened compost is stored on site varies depending on customer demand.

Up to 1,500 tonnes of 0-20mm compost and 500 tonnes of 0-10mm compost could be stored on site.

5.6 Waste Dispatch

All outgoing wastes and compost dispatched from the site will be inspected to confirm its description and characterisation. Details of the dispatch will be recorded in the site diary, including:

- Date & time of dispatch.
- Description of materials.
- Registration no. of vehicle.
- Location of disposal site that materials are sent to.

6.0 POLLUTION CONTROL

6.1 Plant Maintenance

All plant specified in Table 3 will be maintained in accordance with manufacturer's recommendations and daily checks are carried out prior to machinery being used.

6.2 Meteorological Monitoring

BACS undertake meteorological monitoring using an onsite weather station which records wind direction and speed, amongst other variables. A data logger will record and store meteorological conditions at regular intervals. The purpose of monitoring the meteorological conditions is to provide weather data which could be of immediate use for managing the day-to-day operational activities. The rainfall data is of value in predicting the impact on the lagoon.

6.3 Noise and Vibration

The machinery is designed to work efficiently and not produce excessive noise. All machinery will be switched off when not in use. The nearest property is over 500m away which mitigates

the potential for noise to be a nuisance. This is also stated in the Environmental Risk Assessment and the Noise and Vibration Management Plan. The site has never received any noise complaints.

6.4 Site Engineering

For the existing the soil bunds and the lagoon banks are covered in 100mm of topsoil and grassed with a slow growing mix. A mixture of poplar, hazel, sweet chestnut, oak, silver birch and hawthorn have been planted in staggered rows to give a 5m belt of trees around the development. The spacing is varied but averages overall 2m x 2m which is equivalent to 2,500 plants per ha. The trees were planted randomly to avoid looking unnatural.

The proposed bunding a lagoon banks will feature a similar construction of being covered in 100mm of topsoil and grassed with a slow grow mix. The new bunding will be planted with trees native to the area and shrub, this will be done in a manner that will avoid it looking unnatural.

6.5 Dust

The greatest risk of dust is associated with screening materials. Therefore, screening will not take place during excessively windy conditions. Monitoring will take place during screening to ensure the nearest receptor is not affected. In order to minimise the generation of dust from the operations, material and hard surfaces will be dampened with water sprays when conditions require. The Dust Management Plan provides further details on this.

6.6 Bioaerosols

There are no sensitive receptors (SR) within 250m of the composting activity. The EA requires that bioaerosols monitoring take place at composting sites if there is a SR within 250m of the site boundary. Therefore, BACS are not required by the EA to undertake bioaerosols monitoring.

BACS operates an open windrow composting and soil blending facility and processes all waste material in open air, so there are no channelled emissions to air. BACS will continue to optimise their composting activities in order to mitigate the release of bioaerosols. The generation of dust will be minimised via the methods specified. Epstein (2001)[1] found that the

[1] Epstein, E., Wu, N., Youngberg, C., Croteau, G. 2001. “Dust and bioaerosols at a biosolids composting facility”, *Compost Science & Utilization.* 9 (3), 250-255.

effective management of dust significantly reduces the release of *A. fumigatus* from a composting facility during the construction of windrows, turning and screening process.

All composting will take place on a hardcore based, concrete surface which will allow Birch Airfield to keep the site free of loose dust and soil, by keeping the surface clean. In addition to the general tidiness at the site, in especially dry conditions, water can be sprayed from a tanker directly onto the windrows and the working surfaces to further reduce the risk of dust and bioaerosol release into the air.

6.7 Mud and Debris

In order to ensure that no problems arise the following inspection regime will be followed:

- All vehicles leaving the site will be visually inspected, before leaving, to ensure that they are clear of loose waste, and that any material being exported from the site is secure.
- All loaded vehicles entering or leaving the site will be covered to prevent spillage
- the delivery area will be kept clear of processed material and separate from the operational area.
- Daily checks will be undertaken of the access to Blind Lane. In the event that mud or debris from the composting operation is carried onto the road, then these areas will be cleaned, either that working day or immediately the following day.
- Any mud or debris found on the access road from Blind Lane to the composting site will be cleaned either that working day or immediately the following day.
- Mitigation measures include isolating traffic from the source of mud & debris within the site to prevent further tracking of mud & debris and measures taken to clear any such sources will be done on either that working day or immediately the following day.
- Vehicles do not have to pass over any unmetalled surfaces. The distance between the Composting Site and access point at Blind Lane is in excess of 800m and there will be negligible risk of mud and debris being carried onto the public highway.
- In the unlikely event of mud or debris accumulating on vehicle's wheels a manual wheel washing facility will also be provided just after the weighbridge. Any liquid falling onto this facility will runoff into the sealed drainage system.
- The track used by the lorries from the Composting Site to Blind Lane is in excess of 800m this will ensure the public road is kept free of mud or debris.

6.8 Litter

To ensure that any stray litter does not affect visual amenity, a daily inspection of the site will be undertaken during which such materials will be collected from the operational areas and the perimeter fencing. Operatives will also be instructed to retrieve any windblown or vehicle transported litter.

In addition, the adoption and implementation of the following best practice will minimise litter dispersal:

- The removal of litter from windrows on site following the shredding of input material.
- Any litter beyond the site boundary will be collect as soon as notified.
- Waste and compost carried to and from site shall be covered.
- Daily checks for and removal or windblown debris.
- Litter fencing has been erected on parts of the site boundary.

6.9 Pests

The site is situated in a rural location and the occasional sighting of rodents is to be expected. The composting site, due to frequent human presence, machinery movements, frequent turning and the high temperatures within the compost windrows is not a hospitable environment for rodents.

The site manager shall perform daily checks to identify any obvious signs of pest infestation. If such signs are found, then a professional pest controller shall be consulted. A professional pest controller visits the site on a quarterly basis to inspect and renew the rodent bait traps. Fly paper is used on site as an additional form of pest control.

6.10 Spillages

All vehicles used on site by the operator and all plant & equipment used on the site in connection with the waste management operation shall be operated & maintained with the objective of preventing potentially polluting leaks & spillages of wastes (or other polluting materials which are to be used in combination with those wastes in the specified waste management operations).

In the event of any potentially polluting leak or spillage occurring on site, remediation procedures (i.e. oil sponges) will be implemented immediately and recorded in the Site Diary.

6.11 Odour

The site employs myriad active measures to minimise odour generation from its activities. BACS currently have an Odour Management Plan (OMP) and associated Risk Assessment developed as part of their original permit application. This is written in line with the EA's Technical Guidance Note H4 standard. Due to the nature and location of the site, odour is not a significant risk to the site. Aspects covered within the OMP include:

- Feedstock Inventory
- Odour Release Points
- Odour Inventory
- Process Management
- Evaporation
- Containment and Abatement
- Dispersion
- Sensitive Receptors
- Incidents and Emergencies

A full account of how BACS actively manage their odour generation potential is available in the Odour Management Plan (see BACS- Odour Management Plan).

6.12 Leachate

The site utilises two leachate lagoons to prevent the fugitive releases of leachate from site. The dimensions and design of the lagoons are detailed in section 4.4 and in Appendix C. All leachate drains into the two lagoons. Leachate is then re-circulated through the composting process only during the first seven days of the composting process and on the green waste prior to shredding. It cannot be used during the remaining seven weeks of the composting process.

Should the lagoons reach >75% capacity, appropriate measures suitable at the time will be investigated. This includes spreading the leachate onto designated agricultural land under an EA approved deployment or using a suitably qualified liquid waste disposal contractor if required.

6.13 Storage of Wastes

A maximum of approximately 33,000 tonnes of material can be stored on site at any one time. This is broken down into approximately 20,500 tonnes of green waste material undergoing active composting in windrows and approximately 12,500 tonnes of waste being stored

consisting of waste in the reception area, shredded waste, screened waste, waste soils and amendment material.

All waste will be stored on impermeable concrete surfacing and within the site's contained drainage system. This includes the inert soils delivered to site, which will be stored on a designated area next to the 0-10mm compost, in the western corner of the site.

6.14 Fire Prevention

The site employs a number of mitigation/reactive measures to prevent a fire and in the event a fire occurs at site. These measures are as follows:

- All machinery is switched off when not in use.
- No highly flammable materials will be accepted onto site.
- No wastes shall be burned on site.
- In the event of a fire, a flexible quarantine area shall be maintained on site and vehicles will remove smouldering heaps or piles at risk of catching fire to the quarantine area, if safe to do so.

7.0 CONTINGENCY MEASURES

7.1 Fires on Site

If a major incident occurs on site, that prevents the treatment of waste from occurring, the site will put the following procedures in place:

- The EA shall be notified of the incident.
- If required, all incoming loads will be diverted and the site will be closed until implications from the incident have been resolved.
- If required, a full clean down of the site will occur to decontaminate any areas affected.
- If material cannot be processed within 2 weeks, then it must be removed off site and be disposed of in the most appropriate manner.

In the event that a fire is discovered or suspected, on any part of the site, the following procedure will be followed:

- Raise the alarm, alerting others on the site;
- Inform the site manager;
- Evacuate all buildings;

- Place a call to the Fire and Rescue Service. If the fire is of a minor nature attempt to extinguish it with the fire extinguisher provided, but only if this can be achieved without jeopardising the safety of those involved;
- Place a call to the to the EA;
- If the fire does not appear to be readily controllable or where initial control attempts are unsuccessful, staff will leave the site and inform users of nearby buildings. The fire will be left to the attention of the Fire and Rescue Service;
- Assemble adjacent to the gates to the site (see BACS_SiteLayoutPlan_001), or such other more distant point as may be required, until the fire has been extinguished and take roll-call of employees; and
- As soon as practical, site staff shall notify the site owner of the event. once the situation has been brought under control, details of occurrence will be recorded and kept with other records.

8.0 RECORDS

8.1 Monitoring

BACS undertake meteorological monitoring using an onsite weather station which records wind direction and speed, amongst other variables. A data logger will record and store meteorological conditions at regular intervals. The following weather conditions shall be monitored and recorded daily on the weather station:

- Temperature;
- Description of weather conditions, including any precipitation (drizzle, rain, sleet, hail, snow); and
- Wind direction.

8.2 Site Diary

A site diary will be maintained at the site in a port-a-cabin and will be used to record:

- Name of the Site Manager.
- Details of all visitors including status and times of arrival and departure.
- Details of maintenance, repair, replacement, delivery and return, and breakdown of any plant and machinery. This includes the inspection of the impermeable site surface on a regular basis.
- Details of damage to vehicles, fences, gates, etc., and incident of trespass.

8.3 Waste Records

Records of all materials entering and the leaving the site shall be recorded. All records will be made as soon as reasonably practicable and retained securely for a minimum of three years. Records will be clear, legible and available for viewing (on site). Records must be kept of all incoming wastes, and all outgoing products. The following records will be retained:

- Tickets inputs on spreadsheet for Essex County Council (ECC).
- Green waste totals by day, month & year.
- Inert soils waste material totals by day, month & year.
- Compost manager PAS100 records.
- Compost Lab analysis results.
- ECC monthly KPI reports, including contaminated loads.
- Spreadsheet of every batch formation date, screened date & customers sold to.
- Spreadsheet of all tickets of compost sold, date and customer.
- Odour complaints.

The inert soil waste entering and leaving the site shall be recorded separately to the green waste. This shall be done using the weighbridge indicator which will have inert soil waste as an additional waste type to print on customer tickets and for the invoicing spreadsheet. A separate record book spreadsheet for inert soil wastes (received and sold) shall be maintained for traceability purposes.

8.4 Training Records

BACS maintain a training matrix which logs all current raining certificates as well as the expiry dates of each training certificate.

8.5 Site Waste Returns

Quarterly returns shall be provided and stored at the site office in line with EA regulations.

8.6 Complaints

A record of any complaints received, together with details of action taken will be kept in the main office. BACS will address each complaint and investigate the cause. BACS will attempt to minimise further complaints by addressing the cause of the problem.

8.7 Site Processing/Operations

Records should be maintained such that all materials are traceable. The following records will be kept as and when required:

- Process steps e.g. Shredding, screening, storage.
- Dispatch information.

8.8 Calibration

The weighbridge will be maintained and calibrated according to the current Weights and Measures legislation enforced by Trading Standards.

All monitoring equipment such as temperature probes will be regularly calibrated (annually as a minimum) by an externally verified company.

APPENDIX A – ALLOWABLE EWC CODES

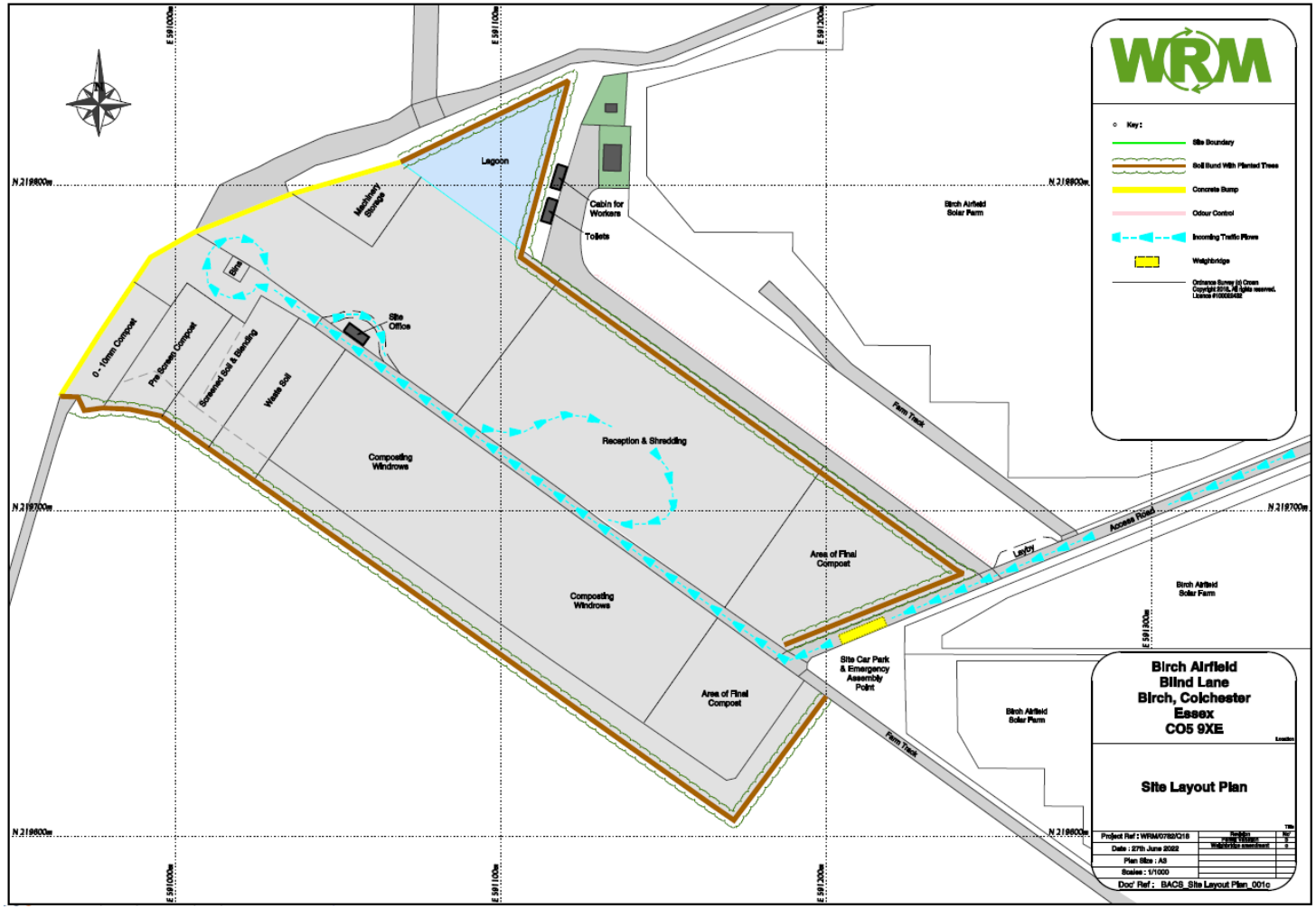
Waste Code	Description
02 01	**Waste from agriculture, horticulture, aquaculture, forestry, hunting and fishing.**
02 01 03	Plant-tissue waste.
02 01 06	Animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site.
02 01 07	Wastes from forestry.
02 01 99	Waste not otherwise specified.
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation.**
02 03 04	Biodegradable materials unsuitable for consumption or processing.
02 07	**Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa).**
02 07 01	Wastes from washing, cleaning and mechanical reduction of raw materials.
02 07 02	Wastes from spirits distillation.
02 07 04	Materials unsuitable for consumption or processing.
03 01	**Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard.**
03 01 01	Waste bark and cork.
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer.
03 03	**Wastes from pulp, paper, and cardboard production and processing.**
03 03 01	Waste bark and wood.

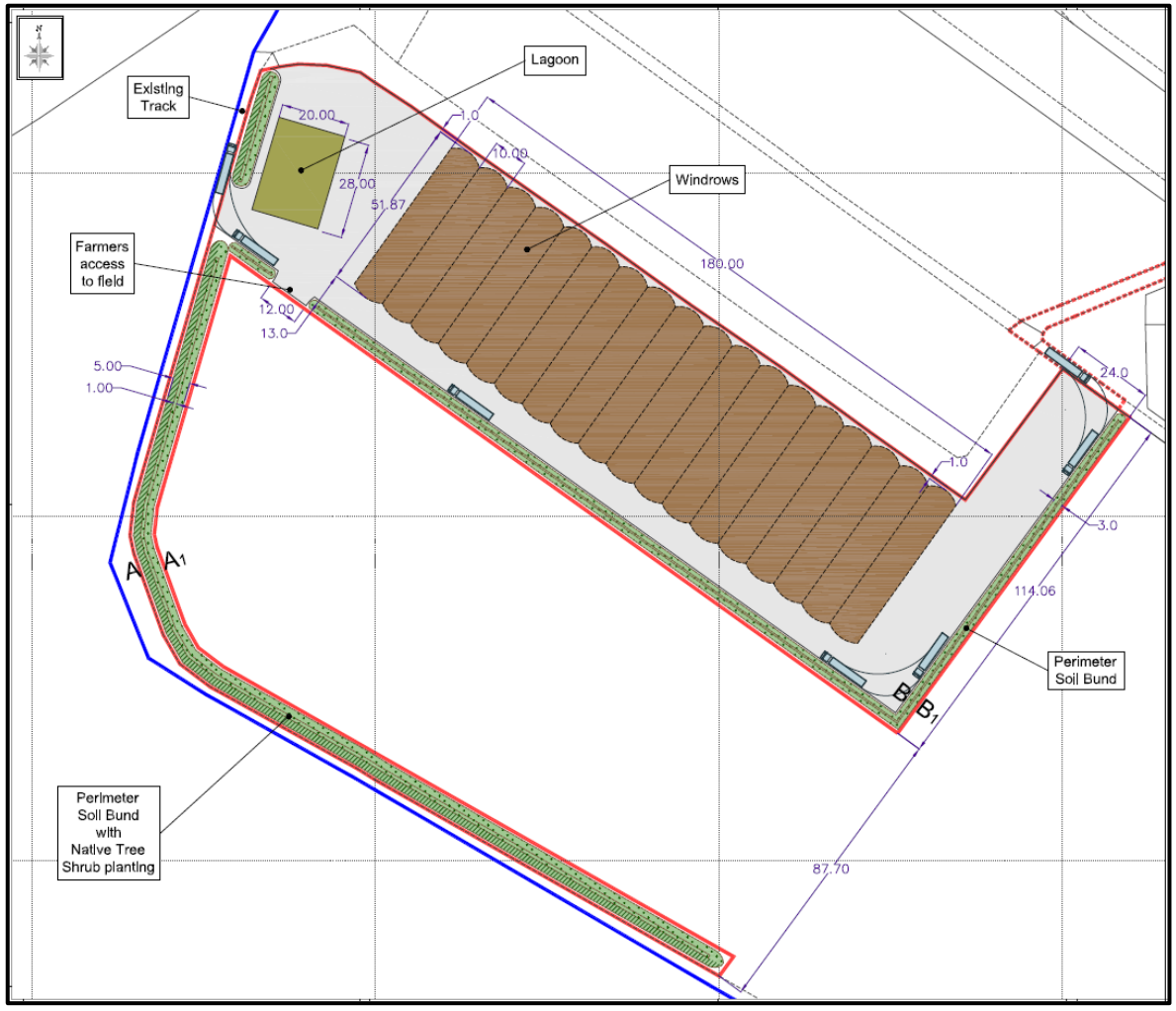
Waste Code	Description
03 03 10	Fibre rejects.
15 01	**Packaging (including separately collected municipal packaging waste).**
15 01 01	Paper and cardboard packaging.
15 01 02	Plastic packaging – compostable plastics only certified to EN 13432 or equivalent certified compostable standard
15 01 03	Wooden packaging.
15 01 05	Composite packaging.
15 01 09	Textile packaging.
15 02	**Absorbents, filter materials, wiping cloths and protective clothing**
15 02 03	Absorbents, filter materials or cloths from the production of alcoholic and non-alcoholic beverages other than those mentioned in 15 02 02
16 03	**Off-specification batches and unused product**
16 03 06	Organic wastes other than those mentioned in 16 03 05 – untreated wool fleece only
16 10	**Aqueous liquid waste destined for off-site treatment**
16 10 02	Untreated wash waters from cleaning fruit and vegetables on farm only
17 05	**Soil (including excavated soil from contaminated sites), stones and dredging spoil.**
17 05 04	Soils and Stones other than those mentioned in 17 05 03
17 05 06	Dewatered dredging spoil and plant tissue waste from inland waters.

Waste Code	Description
19 02	**Wastes from physical/chemical treatments of waste (including dechroimation, decyanidation, neutralisation)**
19 02 03	premixed wastes composed only of non-hazardous wastes (waste types listed within these standard rules only)
19 02 06	Sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 05	**Wastes from the aerobic treatment of solid wastes.**
19 05 01	Non-composted fraction of municipal and similar wastes from a composting process that accepts the waste types listed in SR2021 No.1 and made up of previously sanitised batches only.
19 05 03	Off-specification compost.
19 06	**Wastes from the anaerobic treatment of waste**
19 06 04	Digestate from anaerobic treatment of municipal waste, separated fibre from a process that accepts waste types listed in SR2021 No.1 or AD standard rules only, made up of previously pasteurised and stabilised batches only and in compliance with APHA authorisation.
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste, separated fibre from a process that accepts waste types listed in SR2021 No.1 or AD standard rules only, made up of previously pasteurised and stabilised batches only and in compliance with APHA authorisation.
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste (previously digestate sewage sludge only).
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified.**
19 12 01	Paper and cardboard.
19 12 12	other wastes (including mixtures and materials) from mechanical treatment of wastes others than those mentioned in 19 12 11

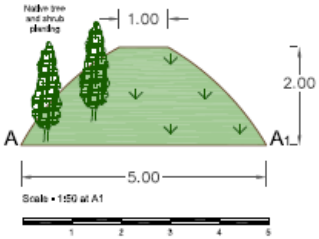
Waste Code	Description
20 01	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions.**
20 01 01	Paper and cardboard.
20 01 39	Plastics.
20 02	**Garden and park waste (including cemetery waste).**
20 02 01	Biodegradable waste.
20 02 02	Soil and stones (garden and park waste)
20 03	**Other municipal wastes.**
20 03 01	Municipal household waste – separately collected garden waste only
20 03 02	Waste from markets.

APPENDIX B - SITE LAYOUT

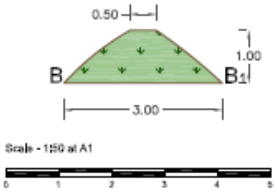




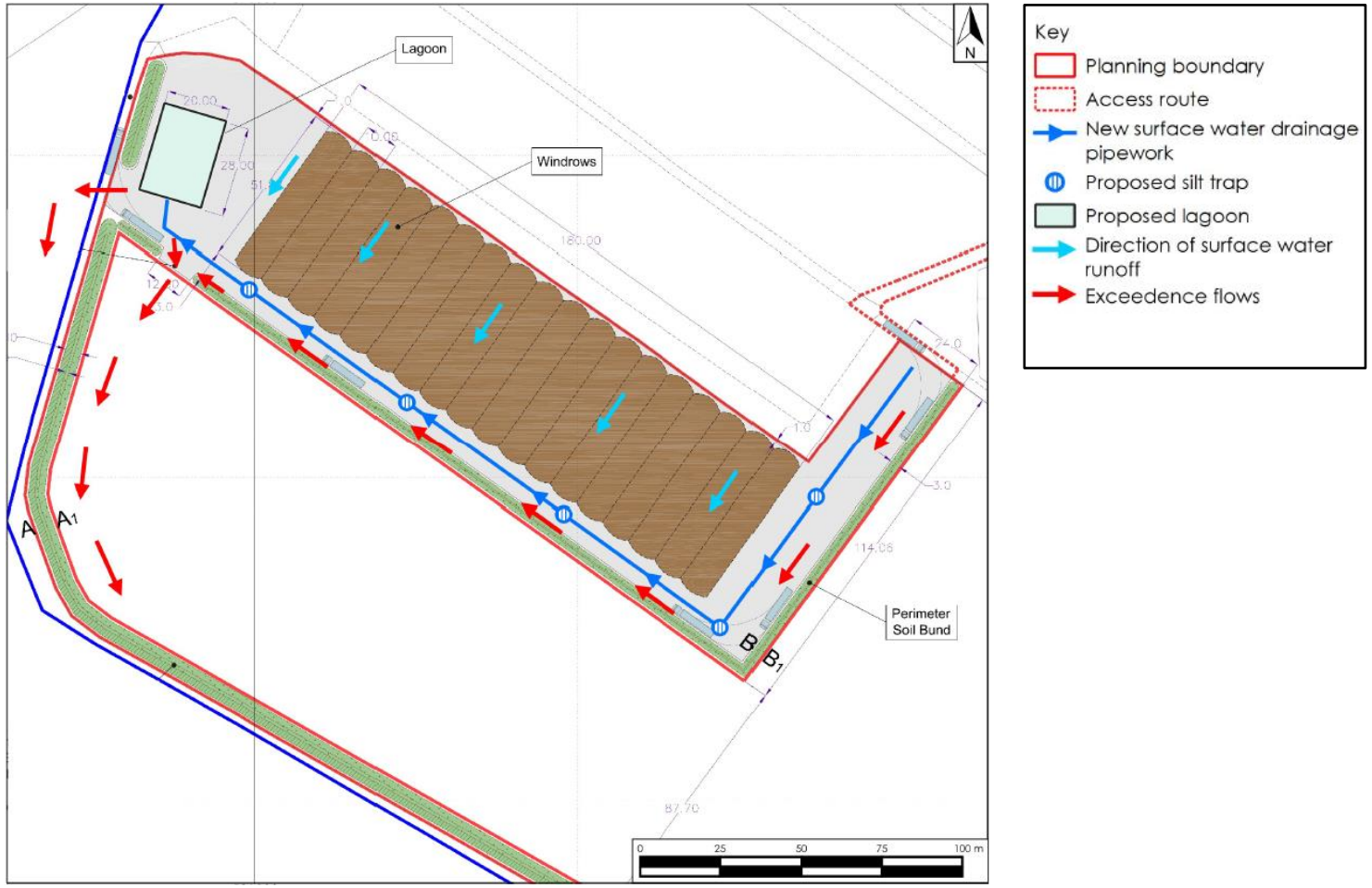
INDICATIVE PERIMETER SOIL BUND WITH NATIVE TREE AND SHRUB PLANTING CROSS SECTION



INDICATIVE PERIMETER SOIL BUND CROSS SECTION



APPENDIX C – SITE DRAINAGE PLAN


Lagoon
Windrows
Perimeter Soil Bund
A
A1
B
B1
N
0
25
50
75
100 m
Key
Planning boundary
Access route
New surface water drainage pipework
Proposed silt trap
Proposed lagoon
Direction of surface water runoff
Exceedence flows