

Albus Environmental Limited  
Non- technical Summary to support environmental permit application

Albus Environmental Limited  
212 Kingsnorth Industrial Estate  
Hoo  
Rochester  
Kent  
ME3 9NZ

Non-technical Summary NTS 003

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## **Background**

Albus Environmental Limited is an established clinical waste company that operates collections and transfers from its site in Dartford, Kent (Permit number EPR-CB3606SY). The company predominantly collects from small producers in the private sector including small hospitals, dentists, doctors, and nursing homes. In the last 2 years Albus has been helping market leaders in the collection from NHS contracts, and most recently with the COVID-19 pandemic.

The application site is centred on TQ 80920 72953 and is located centrally within the Kingsnorth Industrial Estate, post code ME3 9NZ, some 6 miles distant from Rochester Medway.

The industrial estate is located within a rural setting and is bordered on all sides by farmland. At a distance under 1,000 metres to the south lies the River Medway estuary. To the immediate south east, is Damhead Creek Power Station, an active gas fuelled power station. Boundary to boundary these two operations are some 40 metres apart and separated by the estate arterial road. The estate is enclosed by a security fence and benefits from 24-hour security presence and a gated main entrance.

Albus Environmental Limited has recently opened a non-hazardous treatment site at Kingsnorth Industrial Estate, Hoo which operates on a shift pattern 24 hours per day, 7 days per week. The site mechanically shreds offensive waste from nursing homes into refuse derived fuel, (RDF) that enables the company to divert waste away from landfill and into an energy from waste (EfW) plant to produce electricity. This operation consists of an area covering approximately half the overall footprint of the existing permitted site, which is fully enclosed and will contain the new plant and equipment. The whole site is on an impermeable surface with sealed drainage to interceptor tanks.

Albus Environmental Limited wishes to expand further and include a treatment plant at the Kingsnorth site to treat 18 01 03\* infectious waste and also transfer other wastes from the clinical waste sector that the site is unable to treat through either the shredding plant or the Alternative Treatment (AT) plant. The site will also accept a small amount of hazardous waste from dental practitioners which will be transferred for suitable recovery or disposal.

## **Application details**

The application is to vary the Kingsnorth permit, number EPR/JB3604FF, to include the treatment and transfer of clinical hazardous and non-hazardous waste, along with a small amount of hazardous waste produced by dental practitioners including mercury containing waste and chemicals from X-ray - the EWC 09 codes.

**The existing treatment of non-hazardous offensive waste is to remain on the permit, and the process for that is as follows:**

- Pre- acceptance audits submitted by customers and reviewed by competent staff prior to the first load from each customer.
- Driver to report to Site Supervisor and present paperwork for inspection before tipping waste;
- Once documentation is checked the driver will be directed to the tipping area;
- The waste will be inspected during tipping to ensure there are no non-conforming wastes. If none are found the waste is accepted;

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- If non-conformances are found then the waste will be quarantined and a non-conformance report will be completed and the customer informed;
- Once the waste is accepted the waste will be loaded onto a conveyor by a telehandler;
- The conveyor will take the waste to the shredder;
- Once shredded the waste will fall onto a further conveyor and then into an enclosed screw conveyor;
- The enclosed screw conveyor then takes the waste outside to a sealed static compactor;
- The compactor compacts the waste in an enclosed 40yrd container and once full, (compaction pressures are met) the process will automatically stop;
- The container bin is then swapped for a clean empty container and transported off site to the energy from waste plant for burning to produce electricity;
- The existing permit is for 7000 tonnes per annum which needs to be increased to 19000 tonnes per annum.

The permitted EWC waste codes for this process are:

<b>18</b>	<b>WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)</b>	
18 01	wastes from natal care, diagnosis, treatment or prevention of disease in humans	
18 01 04	Wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)	AN
<b>18 02</b>	<b>wastes from research, diagnosis, treatment or prevention of disease involving animals</b>	
18 02 03	Wastes whose collection and disposal is not subject to special requirements in order to prevent infection	AN
<b>20</b>	<b>MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS</b>	
20 01 99	Other fractions not otherwise specified - non-clinical human and animal offensive/hygiene waste only (not arising from healthcare and/or related research) which is not subject to special requirements in order to prevent infection	AN

### **Proposed New Treatment Technology: D9**

Albus Environmental Limited has conducted extensive research into available technologies capable of meeting the stringent legislative requirements to meet the Waste Framework Directive; sector guidance, Healthcare waste: appropriate measures for permitted facilities; and also in conjunction with best available techniques (BAT).

Before accepting waste for treatment, the following procedures will be carried out:

- Pre- acceptance audits submitted by customers and reviewed by competent staff prior to the first load from each customer.
- Driver to report to site supervisor to check paperwork and that the waste can be accepted onto the site;
- If the waste is loose in a van/bulk then the waste is loaded into 770ltr bins;

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- Unloading checks are made to ensure the waste corresponds to the paperwork and no non-conformances are found, (if so, the non-conformance procedure is followed);
- Bin is then weighed and put into relevant holding area ready for treatment;
- This continues until all waste is emptied. The paperwork is then signed and a copy given to the driver. Site copies are retained for reporting and handed into the office;
- Each bin will then be tracked into the bin tipper and tipped for treatment;
- Waste will be treated and expelled into the compactor
- This will continue until the compactor bin is full, then the compactor bin will be removed for disposal.

Permitted waste types for the proposed treatment process are;

18 01 03*	wastes whose collection and disposal is subject to special requirements in order to prevent infection	AH
18 02 02*	wastes whose collection and disposal is subject to special requirements in order to prevent infection	AH
20 01 99	Other fractions not otherwise specified - non-clinical human and animal offensive/hygiene waste only (not arising from healthcare and/or related research) which is not subject to special requirements in order to prevent infection	AN

**The proposed technology is steam sterilisation with the use of steam auger widely used in the clinical waste industry. The proposed treatment process is as follows;**

The objective of the hazardous waste treatment process proposed by Albus Environmental Limited is to disinfect clinical waste with heat to render it safe and unrecognisable in order to produce a waste floc (processing residues) which meets a specification suitable for use in an energy from waste plant.

It is proposed that the installation will handle 9000 tonnes of waste per annum.  
The principal processes applied for are:

- Infectious clinical waste – orange bag - shredding
- Treatment of clinical waste via thermal screw auger
- Compaction of post treated waste
- Waste storage areas for the purpose of waste transfer.

Waste accepted at site for treatment will be tipped into a shredder hopper. The waste will be fully enclosed by the shredder unit. The shredded waste will then be routed via a screen into the thermal screw auger system. An air extraction system maintains a negative pressure in the shredder system with the exhaust air being filtered to remove dust and odour prior to discharge at elevation outside the process building.

The thermal screw auger system consists of a rotating screw system to move the shredded waste through on a continuous basis. Steam is supplied via the boiler plant in a steam jacket on the thermal screw auger and via “live” steam injection to disinfect the waste. Steam is provided at a temperature of 122°C for 80 minutes to disinfect the waste and ‘render it safe’. Steam will be injected both directly into the waste at the bottom of the steam auger and into the auger shaft at the top to ensure exposure to heat as the waste travels. The steam auger length is 14m long to ensure sufficient residence time. Again, air extraction fans maintain a negative pressure in the system to prevent fugitive emissions. The exhaust air is treated through a panel filter to removed dust and debris, then through a HEPA filter to remove smaller particles and finally a carbon filter to remove odours, prior to being discharged at

elevation outside the building. All filtration is measured and monitored through a differential pressure gauge and to H14 standard.

From the thermal screw system, the waste is then transported by screw outside the main building into 'deep push' waste compactors located on the impermeable surface and sealed drainage system.

### **Waste transfer process D15**

The waste transfer process D15 will be used for any waste that is unsuitable for either treatment process; this transfer process could also be used for instances where one of the processes fail, so all of the waste codes below would be included in the transfer.

<b>09</b>	<b>WASTES FROM THE PHOTOGRAPHIC INDUSTRY</b>	
<b>09 01</b>	<b>wastes from the photographic industry</b>	
09 01 01*	water-based developer and activator solutions	AH
09 01 02*	water-based offset plate developer solutions	AH
09 01 03*	solvent-based developer solutions	AH
09 01 04*	fixer solutions	AH
09 01 05*	bleach solutions and bleach fixer solutions	AH

Note: The above wastes will be limited to medical practices and will only be small quantities less than 1000 ltrs/1 tonne held on site on a purpose built sealed bunded area.

<b>18</b>	<b>WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)</b>	
<b>18 01</b>	<b>wastes from natal care, diagnosis, treatment or prevention of disease in humans</b>	
18 01 01	sharps (except 18 01 03)	AN
18 01 02	Body parts and organs including blood bags and blood preserves (except 18 01 03)	AN
18 01 03*	wastes whose collection and disposal is subject to special requirements in order to prevent infection	AH
18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection(for example dressings, plaster casts, linen, disposable clothing, diapers)	AN
18 01 06*	chemicals consisting of or containing hazardous substances	MH
18 01 07	chemicals other than those mentioned in 18 01 06	MN
18 01 08*	cytotoxic and cytostatic medicines	AH
18 01 09	medicines other than those mentioned in 18 01 08	AN
18 01 10*	amalgam waste from dental care	AH

<b>18 02 wastes from research, diagnosis, treatment or prevention of disease involving animals</b>		
18 02 01	sharps (except 18 02 02)	AN
18 02 02*	wastes whose collection and disposal is subject to special requirements in order to prevent infection	AH
18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection	AN
18 02 05*	chemicals consisting of or containing hazardous substances	MH
18 02 06	chemicals other than those mentioned in 18 02 05	MN
18 02 07*	cytotoxic and cytostatic medicines	AH
18 02 08	medicines other than those mentioned in 18 02 07	AN

<b>20 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS</b>		
<b>20 01 separately collected fractions (except 15 01)</b>		
20 01 31*	cytotoxic and cytostatic medicines	AH
20 01 32	medicines other than those mentioned in 20 01 31	AN
20 01 99	Other fractions not otherwise specified - non-clinical human and animal offensive/hygiene waste only (not arising from healthcare and/or related research) which is not subject to special requirements in order to prevent infection	AN

### The process for transfer of the wastes will be:

- Pre-waste acceptance of all wastes received before any waste accepted on site;
- Driver to report to site supervisor to check paperwork and that the waste can be accepted onto the site;
- If the waste is loose in a van/bulk then the waste is loaded into 770ltr bins;
- Unloading checks are made to ensure waste corresponds to paperwork and no non-compliances are found, (if so, the non-compliance procedure is followed);
- Bin is then weighed and put into relevant holding area then transferred depending on the waste stream. This is carried out in accordance with Healthcare waste: appropriate measures for permitted facilities;
- This continues until all waste is emptied. The paperwork is then signed and a copy given to the driver. Site copies are retained for reporting and handed into the office;
- Once there is enough waste to fill a bulk container/trailer, the waste will be segregated and loaded onto the trailer/container for onward disposal or treatment;

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- Due to contingency of plant breakdown, the transfer capacity needs to be 31,000 tonnes. This is to allow for complete transfer of all codes listed in this document in the event of a serious malfunction.

## **Waste tracking**

Waste tracking is carried out electronically with the use of scanners and barcodes. The process is as follows:

- Once a contract is agreed the customer is entered onto the waste management tracking system along with the waste pre-acceptance waste audit (PWA). This will be checked by the technically competent person and signed for approval on the pre-acceptance audit sheet. The contract is then given an expiry date in accordance with the Health Technical Memorandum 07-01: safe management of healthcare waste. The contract is then entered on the system. The waste codes on the contract and PWA will be entered on the waste tracking system. If a waste code arrives at site that is not on the system it will be rejected or quarantined until verified for acceptance.
- When the waste arrives at site the supervisor will check paper work to ensure that waste is acceptable.
- If the waste arrives in refuse collection vehicles, then the supervisor will scan the customer file which contains information relating to the bar-code and waste stream. They will then scan the waste stream code, then scan the relevant D code (D9, D15) for disposal route, the waste will then be tipped into the relevant holding area.
- When loading into the shredder the operator will scan the load, and scan the bin that the waste will be going into once treated. Once the bin is fully loaded the bin will be scanned to final disposal (cradle-to-grave tracking).
- If the waste requires treatment then the first two steps, as above, will remain the same.
- When the waste arrives, it will be unloaded into 770ltr wheeled carts. Each cart will have a barcode.
- Operator will scan the customer file as above.;
- Scan the bin barcode;
- Scan the waste stream then scan the relevant D code (D9, D15) for disposal route, the waste will then be tipped into the relevant holding area.
- Upon treatment the bin will be scanned then tipped into the treatment plant for steam sterilization. Once treated the waste will be non-hazardous 19 02 10.
- When the compactor bin is full, the waste will be sent to final disposal.
- If the waste is for transfer the first two steps, as above, still apply and the waste will be scanned into the relevant holding area as above.
- Once enough waste is in the holding area to load into a bulk trailer/bulk bin then;
- Scan bulk trailer/bulk bin;
- Scan barcode on each 770ltr wheel cart and empty into bulk trailer/bulk bin.
- Once bulking is complete;
- Scan disposal location and the waste will be consigned for onward disposal.

## **Staff Training**

All staff will/have received relevant training on all plant and equipment along with waste segregation in accordance with HTM07-01 Health Technical Memorandum for Safe Management of Healthcare Waste.

This will be managed through a training matrix designed to ensure all roles are scoped for legal and necessary competence. A training plan will be devised for each role and the matrix and requirements will be reviewed every 3 months as part of the requirements of the operator's ISO accreditations.



**Proposed Site plan**

