Waste & Environmental Solutions

Albion Environmental

NHS Northumbria
Northumbria Specialist Emergency Care Hospital
Northumbria Way, Cramlington, NE23 6NZ

Non-Technical Summary
August 2023

PREPARED BY	**Stella Consonni (Senior Consultant)**	**DATE**	**14.06.2023**
REVIEWED BY	**Jane Bond (Project & Business Development Director)**	**DATE**	**01.08.2023**
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APPENDICES

1.0 INTRODUCTION

1.1 Background

Northumbria Healthcare NHS Foundation Trust has developed Curo with Peacocks and have trialled an innovative system in hospitals and healthcare facilities over the past three years. Curo processes clinical waste on-site through sterilisation and creates inert floc that will be used by waste to energy facilities. The NHS aims to minimise the impact on the environment and to help the NHS return substantial cost savings that can be reinvested back into patient care.

The hospital/ Applicant proposes to carry out the physical treatment (via autoclave) of its own healthcare wastes (wastes produced by the hospital only).

1.2 Site Location

NHS Northumbria Emergency Care Hospital
Northumbria Way
Cramlington
NE23 6NZ

National Grid reference number is NZ 27690 75603. Ref Appendix A Site location plan.

The site where the waste operation/ treatment will occur is within the Hospital area at the designated building. The public are prevented from gaining access by signage and enforcement by hospital staff.

2.0 PROPOSED ACTIVITIES

2.1 Regulated Activity

The proposed activities would be regulated under Section 5.3 A(1) a(ii) of the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

SECTION 5.3 Disposal or recovery of hazardous waste
Part A (1) (a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities:
(ii) physico-chemical treatment
SECTION 5.4 Disposal or recovery of non-hazardous waste
Part A (1) (a) Disposal or recovery of hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities:
(ii) physico-chemical treatment

2.2 Specified Waste Management Activities

The waste management activities to be carried out at the site and referent R and Ds codes are detailed below:

Name of the waste operation	Description of the waste operation	Annex I (D codes) and Annex II (R codes) and descriptions
Treatment of Healthcare wastes - hazardous	Treatment of Healthcare wastes - physico-chemical (autoclave)	R3/ D09
Treatment of Healthcare wastes - non-hazardous	Treatment of Healthcare wastes - physico-chemical (autoclave)	R3/ D09
Storage of hazardous wastes	Storage of wastes prior treatment	R13/ D15
Storage of non hazardous wastes	Storage of wastes prior treatment	R13/ D15

Name of the waste operation	Description of the waste operation	Annex I (D codes) and Annex II (R codes) and descriptions
Repackaging non-hazardous	Repackaging- treated waste (floc) prior dispatch to be used as fuel in an energy from waste plant (Teeside Energy from Waste Plant).	R12/ D14
Storage of treated wastes	Storage of treated wastes (floc) prior dispatch to energy from waste plant, as above.	R13/ D15

3.0 BRIEF DESCRIPTION OF SITE OPERATIONS

3.1 Thermal Treatment - Autoclave

The site proposes to carry out an onsite thermal treatment of its own healthcare wastes (ancillary to hospital activities) via an autoclave process. The treatment process will occur within the designated building on an impermeable surface ref Appendix B Site Layout Plan

The maximum storage capacity for wastes (pre and post treatment) at any one time will not exceed 10 tonnes. The process capacity of the CISA-WSD200 autoclave is a maximum of 3.2t per day.

Types of wastes and quantities proposed to undergo onsite autoclave treatment are as follows:

- 18-01-03* infectious waste (orange bag)
- 18-01-03* infectious sharps
- 18-01-04 Offensive waste (tiger stripe bags)

The CISA WSD200 autoclave uses a wet thermal method. The system comprises of a sterilizer chamber and a shredding device which is embedded in the same enclosed container beside the autoclave. The shredder is accessible through a hatch/ door, through which the wastes are placed by the trained staff. The shredding process is carried out after the sterilisation of the wastes.

No waste compaction will be carried out at any point during the process.

The sterilised waste (floc) will be collected in 240l bins (UN lockable and fully enclosed rigid bins), bagged (UN approved bags) and stored temporarily (as per **section 2** above) in 770l bins (UN lockable and fully enclosed rigid bins). The floc will then be collected by Northumberland Council at first, then sent to a permitted facility (Teeside Energy from Waste facility) which will carry out further treatment on the floc (primarily for metal separation) then will utilise the material at their energy from waste treatment process.

3.2 Monitoring Plan

An autoclave monitoring plan (**Doc Ref_Site Management Plan Appendix H)** has been developed that details the emissions monitoring frequency and parameters schedule that is proposed to be carried out on the Autoclave, in accordance with relevant guidelines. Additional monitoring will be conducted if issues are identified during servicing and or maintenance, and or if required by the EA.

The applicant is aware that the EA will place conditions for monitoring of the autoclave process for particulates, VOCs and microbial emissions to air. Details on the proposed treatment process and control measures are described in the **Doc Ref_Site Management Plan and Doc Ref_Risk Assessment.**

4.0 CONTROL MEASURES

4.1 Noise, Odour and Dust Emissions

The potential for significant dust, odour and noise emissions arising from the site operations were identified as very low by the Risk Assessment carried out on site. This is because the site operations will only occur within the designated building. In addition, the autoclave is fully enclosed (including the shredding process) in order to eliminate the potential for the release of pathogens from the untreated waste. The autoclave is equipped with an air extract system via a HEPA air filter system. The HEPA filter will remove small particulates from the air and trap it, preventing their release to atmosphere also providing odour and dust control.

The HEPA filters also prevent the emissions of bio-aerosols during the process. Once used, the filters are then processed in the autoclave and treated as waste. Post process shredding of treated wastes minimises the potential for bio-aerosols emissions.

Although the risk assessment for odour emissions was considered low, the applicant was advised at pre-application discussions that an Odour Management Plan was required due to the type of wastes handled (healthcare wastes). **(Doc Ref_NSECH_Odour Management Plan).**

4.2 Drainage

The Hospital site has a sealed drainage system. Liquids from the autoclave process are sterilized internally before being discharged via the HEPA filter into the foul sewage drain (sealed drainage system).

5.0 SITE STAFF AND MANAGEMENT

The site will be operated by suitably qualified personnel. A waste management policy is in place for the hospital which includes the roles and responsibilities of the Trust in relation to the management and handling of waste **Doc Ref V07 Waste Management Policy**

Appendix A – Site Location Plan and Proposed Permit Boundaries

KEY

PERMIT BOUNDARY

N

Rev	A	B	C	D	E	

Drawn by RB	Scale NTS	Original Size A3
Surveyed by JB	Date 25/07/2023	Drg File Name 2023-6333

NORTHUMBRIA HEALTHCARE TRUST
NORTHUMBRIA WY NE23 6NZ
CRAMLINGTON

NORTHUMBRIA SPECIALIST EMERGENCY CARE HOSPITAL
SITE LOCATION PLAN

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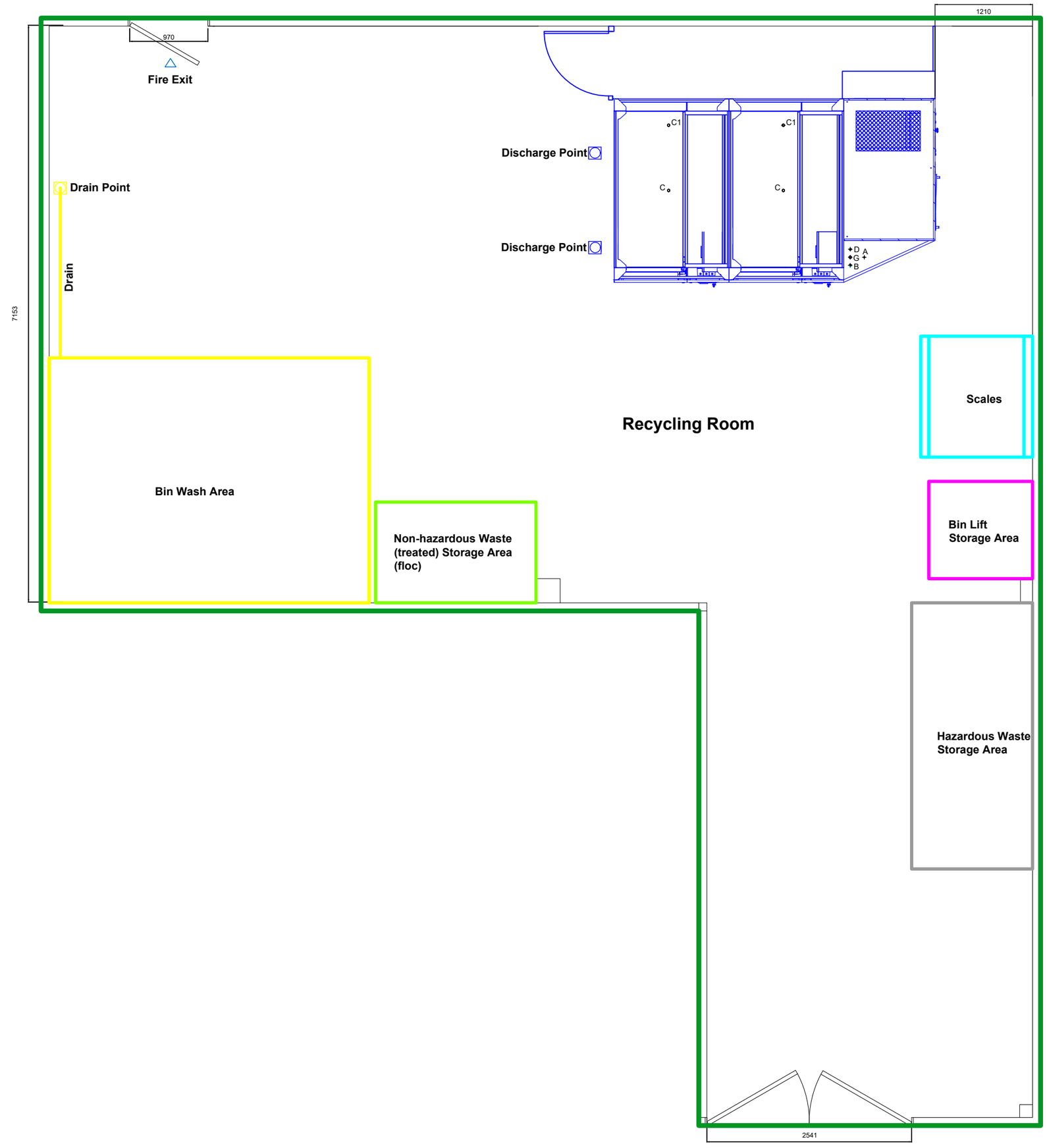
DRAWING No.	REV.
2023-6333-002	REV

Appendix B – Site Layout Plan



KEY

- PERMIT BOUNDARY
- BIN WASH AREA
- BIN LIFT STORAGE AREA
- SCALES
- HAZARDOUS WASTE STORAGE AREA (MAXIMUM STORAGE OF 2 x 770 l BINS)
- NON HAZARDOUS WASTE (TREATED) STORAGE AREA (FLOC) (MAXIMUM STORAGE OF 2 x 240 l BINS)

A	POWER CONNECTION POINT
B	COMPRESSED AIR
C	MACHINE DRAIN
C1	VACUUM DRAIN
D	POTTABLE WATER
G	SOFTENED WATER

Rev						
Hazardous and Non-hazardous waste areas added						
A	B	C	D	E		

Drawn by: RB	Scale: NTS	Original Size A3
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NORTHUMBRIA HEALTHCARE TRUST
NORTHUMBRIA WY NE23 6NZ
CRAMLINGTON

NORTHUMBRIA SPECIALIST EMERGENCY CARE HOSPITAL
SITE LAYOUT
PLAN

Albion Environmental

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DRAWING No.	REV.
2023-6333-005	A