



European Metal Recycling Ltd.

**Variation of Environmental Permit EPR/LB3403FG
Non-Technical Summary & Supporting Information**

Document Ref: VAR/NEW/NTS Non-Technical Summary
November 2023 (vs 2)

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1 INTRODUCTION

1.1 Background

European Metal Recycling (EMR) operates a metal recycling facility at 111 Fordham Road, Snailwell, Newmarket, which accepts a maximum of 250,000 tonnes of ferrous and non-ferrous wastes per annum.

The activities are authorised by the Environment Agency (EA) under Environmental Permit ref. EPR/LB3403FG, and include metal recycling, plastic recycling, waste electrical and electronic equipment (WEEE) storage, and an end-of-life vehicle (ELV) authorised treatment facility (ATF).

As part of the metal recycling activities, the site receives metal shredding residues for processing through various plant including Heavy Media Plant (HMP) to facilitate the recovery of metals, aggregates and plastics.

Due to the recent reclassification of metal shredder residue and to future proof the permit, EMR has applied to vary the permit to an installation. The installation will include the List of Waste (LoW) codes for hazardous metal shredder residue, the relevant Schedule 1 paragraph for treating hazardous waste, and the relevant Schedule 1 paragraph for the temporary storage of hazardous waste with a total capacity exceeding 50 tonnes at any one time. The installation will also include two point source emissions to air (one related to the Heavy Metal [Media] Plant currently listed within the permit, and the other relating to a new aluminium polishing plant installed at the site).

Point source emissions to controlled water are currently authorised by two Environment Agency Water Discharge permits (refs. AN/PR1NF/2058/A and AN/PRCNF05446/003, which are required to be consolidated into the permit).

The remaining waste operations will incorporate the non-ferrous area, previously authorised by exemption T9 recovering scrap metal (ref. WEX378227). The appropriate LoW codes for hazardous WEEE and non-WEEE cable have been requested due to the recent reclassification of some types of cable.

1.2 Scope of Document

This Non-Technical Summary (NTS) provides supporting information relevant to the application to vary Permit EPR/LB3403FG, including a description of the required changes to the permit.

Following variation of the permit, the operations will be subject to the following technical standards and guidance:

- EU 2018/1147 Waste treatment BREF

2 ADDITION OF IED PARAGRAPH – HAZARDOUS WASTE TREATMENT

2.1 Addition of Schedule 1 Activity: Hazardous Waste Treatment

In order to authorise the processing of hazardous ASR and to future-proof the permit, EMR has applied for the permit to be varied to an installation, to include the following paragraphs from Schedule 1 of the EPR.

- Section 5.3 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

2.2 Non-Technical Summary of Hazardous Waste Treatment

EMR Newmarket recover metals, plastics and aggregate from metal shredder residue using a combination of plant, including Non-Ferrous Separator (NFS), Gladiator, Centurion and Heavy Media Plant (HMP). The process is summarised on a flow chart provided with the application.

Non-Ferrous Separator (NFS):

Metal shredder residue is fed into the NFS where it is sized and has low density waste removed.

The material is fed into the plant by hopper and conveyor, first passing through a trommel to remove oversized (>90mm) materials. The oversized material then has waste and plastic manually picked leaving a metal rich material to be re-shredded.

The sub <90mm material is then subjected to a cyclone which removes the lighter fraction for disposal. The remaining denser material is sized through a trommel to remove the 30-90mm fraction. The finer material is fed through a wash drum to remove the lighter fraction (float waste NFS) and the remainder is further sized into 0-10mm and 10-30mm fractions, which are in turn fed into the Gladiator or Centurion Plant.

Gladiator/Centurion Plant:

Both plants use heavy media to wash the incoming material and remove the denser fines (sludge for disposal).

The material is fed through a wheel with a defined media density to allow metals and stone to sink and most waste to float. Both cuts after leaving the wheel go over a wash screen to recover media.

On both plant the denser metal rich cut passes over an ECS to create an aluminium rich thrown cut and a stainless rich drop cut which go on for further processing.

On the Gladiator the waste cut would also pass under an ECS to recover metals from the waste which go on for further refinement. The Centurion currently does not have an ECS on the waste side.

Heavy Media Plant:

The Newmarket Heavy Media Plant's (HMP) primary function is to separate aluminium from heavier metals and waste, utilising media separation.

The material is transported into the HMP by means of a conveyor and hopper arrangement. This material is fed onto a pre-wash screen where it is cleaned of any heavy grit or dirt, from in-feed material using recycled water.

This material is then passed over a de-watering screen to remove excess water and keep media free from dilution.

The material is then fed through a "Drew boy" wheel with media at a defined density which causes the aluminium and waste to float and heavier metals and some stone to sink to the bottom of the trough.

The Heavier metals leave the wheel, the media is removed (on a washing screen) and is transported on a conveyor to the outside of the main building where any ferrous metals are removed by a magnetic head drum.

The aluminium/ waste 'cut' is then passed over a washing screen to remove the media and where it is then directed into a barrel at a set density, which causes the waste to float off and the aluminium to sink.

The waste is deposited into a bay post cleaning on a wash-screen whilst the aluminium cut, once cleaned, is sent over an Eddy Current Separator (ECS) for further refining. (The main function of the ECS is to separate aluminium and dropping stone, copper wire from ferrous materials).

The stone etc is then conveyed to a bay and is refined later. The aluminium passes through a drying barrel in order to ensure it is dried and therefore will not corrode and is held in a covered storage bay until polished.

Aluminium Polishing Plant (Directly Associated Activity):

The EMR Newmarket site has developed and constructed a recycling metals finishing process that reduces later post-processing of recycled metals. The process removes any remaining contaminants in the aluminium, in particular circuit boards, and cleans the surface of the aluminium. The process is as follows:

1. Floated aluminium is loaded into the plant via a feed hopper (hopper is enclosed on 4.5 sides by acoustic absorbent panels)
2. Transfer to the conveyor takes place within the hopper enclosure and hopper opening is directed into the site.
3. A slow rotating drum 'polishes' the aluminium by abrasive attrition (removing aluminium oxide). This is also fully enclosed within by acoustic absorbent panels and the infeed and outlet apertures are sealed around conveyors.
4. Fine particulates are extracted via an LEV system (the exhaust is fitted with a silencer reducing noise to <75dB) and captured in the Dust Removal Unit (fed into bags for disposal).

5. The polished material passes over a sieve to remove any <10mm material which goes for further processing.
6. The larger material then passes over an ECS (Eddy Current Separator) to remove stone and any other contaminants, which also go for further processing. The ECS is also fully enclosed by acoustic absorbent panels.
7. The thrown cut from the ECS passes through a colour sorter to remove circuit boards and any other non-metallic materials. As there is a large quantity of painted aluminium in this fraction it is later hand sorted
8. The clean aluminium cut is then held in storage bays, enclosed on 4 sides (open side faces into the site).

2.3 Annex IIA and IIB Recycling/Disposal Codes

The following Recycling and Disposal Codes taken from the Waste Framework Directive Annex I and II apply to the new activities:

- R13 storage of waste pending any of the operations numbered R1 to R12, excluding temporary storage, pending collection, on the site where the waste is produced
- D15 storage of waste pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)
- R3 recycling/reclamation of organic substances which are not used as solvents
- R4 recycling/reclamation of metals and metal compounds
- R5 recycling/reclamation of other inorganic compounds

2.4 List of Waste (LoW) Codes

In accordance with RPS 274, the following LoW codes are required to reflect the re-classification of metal shredder residues (and residues derived from it) as hazardous waste, and to future-proof the permit:

- 19 10 03* fluff-light fraction and dust containing hazardous substances
- 19 10 05* other fractions containing hazardous substances
- 19 12 11* other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances

2.5 Directly Associated Activities (DAAs): Hazardous Waste Treatment

The DAAs for the treatment of hazardous waste will be:

Directly Associated Activity		
Storage of processed materials	R13 Storage of waste pending the operations numbered R1 and R12 (excluding temporary storage, pending collection, on	Storage of processed and separated plastics, ferrous and non-ferrous metals following treatment to dispatch off site for recovery

	site where it is produced)	Storage of separated materials including plastics, ferrous, non-ferrous metals and shredder residue following treatment
Raw materials storage	Storage of raw materials including lubrication oil, diesel, magnetite and defoaming agent	From the receipt of raw materials to dispatch for use within the facility
Aluminium Polishing Plant	R3 recycling/reclamation of organic substances which are not used as solvents; R4 recycling/reclamation of metals and metal compounds; R5 recycling/reclamation of other inorganic compounds	Post processing of recycled metals
Water Treatment Plant	Site drainage from roof and surface water collected in drainage gullies and drainage pipes and discharged to a tributary of the River Snail	Collected water to pass through a water treatment process to authorised discharge points at HMP (discharge consent ref. AN/PRCNF05446/003 and Pre-Sort (discharge consent ref. AN/PR1NF2058/003)
Storage of processed materials, excluding temporary storage of hazardous waste under section 5.6 A(1)(a)	R13 Storage of waste pending the operations numbered R1 and R12 (excluding temporary storage, pending collection, on site where it is produced) D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)	Storage of hazardous and non-hazardous fractions following treatment under paragraph S5.3 A(1)(a)

2.6 Noise and Vibration – Aluminium Polishing Plant

The process is relatively new and EMR are enclosing the processing in an acoustic enclosure as there is not any clear data on the noise emission levels to the external air. In order to ensure a robust assessment the site has taken the internal plant noise levels at 1m and assumed these break out of openings in the building giving a series of point sources of noise.

Where breakout noise was found to be excessive then openings can be retrospectively fitted with absorbent lined ductwork to reduce the emissions. However, the levels of noise are considered so low this is not considered necessary.

The location of EMR Newmarket is well away from residential areas and the northern part of the site (where the polishing plant is located) is particularly screened and mitigated by distance. The only risk of impact is upon commercial neighbours who adjoin the site.

The nearest building with operable windows to offices and facing the site’s sources of noise are to the north at a distance from the sources of noise of not less than 76m. Disregarding screening and directional reduction effects, this gives a distance reduction alone of the order of 37dBA.

The northern corner of the site benefits from significant screening by industrial buildings and the absence of any nearby residential use. Assessment is based on commercial office use as the most sensitive form of use.

A noise modelling report was undertaken by MAS Environmental prior to the installation of the plant, and is provided with the application.

2.7 Point Source Emissions

There are 4 Point Source Emissions in relation to the EMR Newmarket site. In addition, foul water drains to cess pits located at the motorbike parking area. The cess pits are emptied by an approved and permitted contractor as and when required.

Emission point ref. and location	Type of emission	Source	Comments
A1 NGR TL 63613 68066	Air	Heavy Media Plant bag filter system	Currently stated on permit (Table S3.1)
A2 NGR TL 63606 68111	Air	Polishing Plant	To be added to the permit
W1 NGR TL 6370 6790	Controlled Water	'Pre-Sort'	Authorised under Consent to Discharge ref. PR1NF/2058A
W2 NGR TL 63670 67760	Controlled Water	'HMP'	Authorised under Consent to Discharge ref. AN/PR1NF/05446/003

2.8 Monitoring of Point Source Emissions to Controlled Water

The adjacent water course is visually inspected on a daily basis for signs of any pollution. Any signs of pollution will be reported to the Environment Agency and action or preventative measures taken to prevent pollution.

Water samples are taken from both HMP and pre-sort discharge outfalls (as outlined in the relevant EPP) and sent for laboratory analyses (at UKAS accredited laboratories) to measure parameters and determine if they meet discharge consent requirements, described above.

2.9 Monitoring of Point Source Emissions to Air (BS EN 15259)

The point source emission to air currently listed on the permit (HMP filter bag system) does not require any formal monitoring (other than visual appearance). It is currently unknown whether this emission point is compliant with BS EN 15259; however, CES Environmental have been instructed to carry out a visit to the site to assess the level of compliance and advise on how these standards can be met. The information will be provided to the Environment Agency as soon as it becomes available.

3 ADDITION OF IED PARAGRAPH – HAZARDOUS WASTE STORAGE

3.1 Addition of Schedule 1 Activity: Hazardous Waste Storage

In order to authorise the storage of hazardous waste, including ASR, EMR has applied for the permit to be varied to an installation, to include the following paragraphs from Schedule 1 of the EPR.

- Section 5.6 Part A(1) (a) Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b) of this Section, except— (i) temporary storage, pending collection, on the site where the waste is generated, or (ii) activities falling within Section 5.2.

3.2 Non-Technical Summary of Hazardous Waste Storage

Metal shredder residue and other hazardous residues: These are stored in designated bays on impermeable concrete surface with a sealed drainage system, and are processed as soon as possible.

Waste Oils and other hazardous bulk liquids: These are not brought in as a discrete waste stream but produced as part of the ELV depollution process or plant maintenance. Waste oils and other hazardous fluids are stored on site in appropriately engineered containers and bunds designed to a minimum 110% holding capacity for a single tank. Where two or more tanks are held within one secondary containment system or bund, the bund will hold at least 110% of the biggest tank's maximum storage capacity or 25% of the total maximum storage capacity of all the tanks, whichever is the greatest. All bunds are constructed of materials impermeable to water and oil. All draw-off pipes and fill pipes that pass through the containment system are adequately sealed. Engineered catch systems are employed in areas where fluid spills may potentially occur.

Tanks and bunds are inspected quarterly to ensure their continued integrity. Any defects observed will be made temporarily secure by the end of the working day with permanent repairs being instigated within seven working days. Inspections, defects, damage and repairs will be recorded in the site diary or the site environmental file where appropriate.

Drainage systems including gullies, drains, drain covers and interceptors will be inspected on a quarterly basis. Site interceptors shall be emptied by an authorised contractor in accordance with the manufacturer recommendations, who state that oil and diesel should be removed when capacity reached at a frequency no less than every 6 months. In reality the site interceptors will be cleared of skimmed of oil and the contents removed from site for treatment, recycling or disposal (where relevant).

All operational mobile plant and fixed equipment will be maintained and inspected by a competent person and records of inspections and maintenance schedules shall be retained on site.

All inspections, defects, damage, maintenance and repairs will be recorded in the appropriate site files or the site diary.

The site manager will undertake regular checks of the site's surfaces to ensure that they are maintained in good condition and repairs across the site are anticipated and planned for. Damaged and worn site surfaces will be repaired as required as part of the on-going site maintenance program, at times when shutdown periods are planned or when stocks on site can be relocated to appropriate alternative storage areas. Details of any damage requiring repair shall be recorded on a TCM Event log.

Batteries: Lead acid batteries are stored in containers with an impermeable, acid resistant base and a lid to prevent ingress of water.

Hazardous ELV Components, including brake pads and oil filters: Stored in appropriate leak proof containers on impermeable concrete within a sealed drainage system.

Hazardous Cable: Hazardous cables are designated as such based on current EA guidance, or where relevant, waste classification testing and assessment. WEEE and non-WEEE cables are stored separately with designated bays, bins or containers.

Small Mixed WEEE: Stored in designated bays, bins or containers, provided with impermeable concrete surface and sealed drainage system. Storage only.

3.3 Annex IIA and IIB Recycling/Disposal Codes

The following Recycling and Disposal Codes taken from the Waste Framework Directive Annex I and II apply to the new activities:

- R13 storage of waste pending any of the operations numbered R1 to R12, excluding temporary storage, pending collection, on the site where the waste is produced
- D15 storage of waste pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)

3.4 List of Waste (LoW) Codes

- 19 10 03* fluff-light fraction and dust containing hazardous substances
- 19 10 05* other fractions containing hazardous substances
- 16 01 07* oil filters
- 16 01 11* brake pads containing asbestos
- 16 01 21* hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
- 16 02 15* hazardous components removed from discarded equipment
- 16 06 01* lead batteries
- 16 06 02* nickel-cadmium batteries
- 17 04 10* cables containing oil, coal tar and other hazardous substances
- 20 01 33* batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries
- 20 01 35* discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components

The relevant LoW codes for hazardous WEEE cable (16 02 15*) and hazardous non-WEEE cable (17 04 10*) have been added to reflect the re-classification of cables (in accordance with RPS 276). 20 01 35* has been added to reflect the dual coding requirements for Small Mixed WEEE (SMW). All other hazardous wastes required under this IED paragraph are already authorised by the permit.

3.5 Directly Associated Activities (DAAs)

There are no DAAs in relation to the storage of hazardous waste.

4 WASTE OPERATIONS FALLING OUTSIDE OF IED

The EMR Newmarket operations include a number of activities which fall outside the definition of an installation as defined by the EPR 2013, and therefore remain as 'waste operations'. These are already authorised under EPR/LB3403FG, and include:

4.1 Metal Recycling

Activities:

Treatment consisting of sorting, separation, grading, shearing, baling, compaction, crushing, granulation or cutting of non-hazardous waste into different components for recovery.

Recovery and Disposal Codes:

- R4 recycling/reclamation of metals and metal compounds
- R13 storage of waste pending any of the operations numbered R1 to R12, excluding temporary storage, pending collection, on the site where the waste is produced

List of Waste codes:

As currently listed within permit EPR/LB3403FG, with the addition of the following LoW codes to reflect the re-classification of some cables as hazardous waste (RPS 276);

- 16 02 15* hazardous components removed from discarded equipment
- 17 04 10* cables containing oil, coal tar and other hazardous substances

and the addition of the following EWC code, at the request of the EA (during a site visit on 13th November) for Unrefined Fragmentiser Residue (UFR).

- 19 10 06 other fractions other than mentioned in 19 10 05

and the addition of the following LoW codes to reflect authorise the acceptance of uPVC window frames:

- 17 09 04 Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
- 20 01 39 Plastics

4.2 Vehicle storage, depollution and dismantling (authorised treatment facility)

Activities:

Treatment consisting of depollution of waste motor vehicles and sorting, separation, grading, shearing, baling, compacting, crushing and cutting of wastes into different components for recovery.

Recovery and Disposal Codes:

- R4 recycling/reclamation of metals and metal compounds
- R5 recycling/reclamation of other inorganic compounds
- R13 storage of waste pending any of the operations numbered R1 to R12, excluding temporary storage, pending collection, on the site where the waste is produced

List of Waste codes:

As currently listed within permit EPR/LB3403FG.

4.3 Waste Electrical and Electronic Equipment (WEEE) storage

Activities:

Storage only; there will be no treatment of WEEE.

Recovery and Disposal Codes:

- R13 storage of waste pending any of the operations numbered R1 to R12, excluding temporary storage, pending collection, on the site where the waste is produced
- D15 storage of waste pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)

List of Waste codes:

As currently listed within permit EPR/LB3403FG, with the addition of the following LoW code to reflect the re-classification of WEEE cable as hazardous waste (RPS 276);

- 16 02 15* hazardous components removed from discarded equipment

And the following EWC code to reflect the dual coding requirements for Small Mixed WEEE (SMW)

- 20 01 35* discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components

4.4 Plastic Recycling

Activities:

Treatment consisting of sorting, separation, screening, shredding, baling, compaction or crushing of non-hazardous waste into different components for recovery.

Recovery and Disposal Codes:

- R5 recycling/reclamation of other inorganic compounds
- R13 storage of waste pending any of the operations numbered R1 to R12, excluding temporary storage, pending collection, on the site where the waste is produced

List of Waste codes:

As currently listed within permit EPR/LB3403FG.

5 OTHER CHANGES TO THE PERMIT

5.1 Operating Techniques (Table S1.2)

In relation to application form Part C3, Question 3a1, the permit currently lists the following documents from the original application. Both documents should be removed; the EA document “How to comply with your Environmental Permit” is understood to have been withdrawn, and the document “Acceptance of dusty wastes” will be replaced by information provided in the Environmental Management Plan.

Description	Parts	Date Received	Keep/Remove
How to comply with your Environmental Permit	Document 433_11 Part 1 and 2	02/08/13	Remove
Additional information	Acceptance of dusty wastes	01/05/14	Remove

5.2 Increase in Permitted Area

The application includes a proposal to incorporate the non-ferrous area (currently authorised under a T9 exemption) into the permitted area, due to the forthcoming removal of the T9 exemption. A site condition record has been provided with the application, which includes the additional area.

5.3 Size of Operation

As currently stipulated by the permit, the total quantity of waste accepted at the site across all activities will not exceed 250,000 tonnes.

5.4 Change of Address

The address on the notice of transfer and Environment Agency initiated variation dated 12/09/2022 is stated as 103 Fordham Road, which is incorrect. The correct address for the new permit, provided on the Part A application form, is 111 Fordham Road.

6 RESOURCE EFFICIENCY AND CLIMATE CHANGE

6.1 Basic measures for improving energy efficiency of activities

There are a number of key issues which impact the efficiency of plant used on recycling sites; the nature and density of the infeed, the use of lubricants, and the frequency of start ups.

Efficient power usage relies on an infeed of consistent density and the absence of items that could cause flame events, potentially causing down time or damage to the plant.

All material arriving at the EMR site is inspected to by trained operatives to ensure that it is suitable for processing. On the rare occasion where an unauthorised waste is discovered, the material will be separated and quarantined.

Operators are trained to load the plant at a constant rate, thus evening out power usage.

As additional power is required to start the plant, processing is carried out when there is a sufficient amount of infeed.

A full lubricating and greasing schedule is implemented on a daily basis to ensure all processing plant and equipment is operating to optimum efficiency.

6.2 Breakdown of any changes to the energy used by the activities

EMR are planning on replacing the old fitters vans with electric vans, and in the long term, mobile plant where possible will be placed with non-fossil fuel alternatives when they reach end of use.

There are also plans to add an inverter for the cyclone on the non-ferrous separation plant with a view to having greater control over its speed to improve energy efficiency, as well as replacing/adding PFC controllers around site.

6.3 Description and Justification of Raw Materials

A list of raw materials used on site, including oils, diesel and heavy media additives has been included with the application. This includes justification of their use and maximum quantities stored and used annually.

Water:

Other than general welfare, water is used in several parts of the process such as wash drums within the Non-Ferrous Separation Plant, floatation tanks within the Centurion and Gladiator Plants and wash screens within the Heavy Media Plant, and is an important part of separating out the recyclable components of the waste. Water is provided by mains and is recirculated by the various separation plants, and topped up only as required. Water may be also be used for dust suppression across the site, only as required to comply with the permit and duty of care obligations to minimise dust emissions.

6.4 Waste Avoidance in line with Council Directive 2008/98/EC

The entire concept of the EMR Newmarket facility is to recover recyclable materials from metal-rich wastes that would otherwise be sent to landfill. The site recovers metals, plastics and aggregate for sale as products or onwards recycling.

Treatment processes are continuously reviewed and enhanced to maximise the proportion of recycled and recovered materials, therefore reducing the amount of waste sent to landfill.