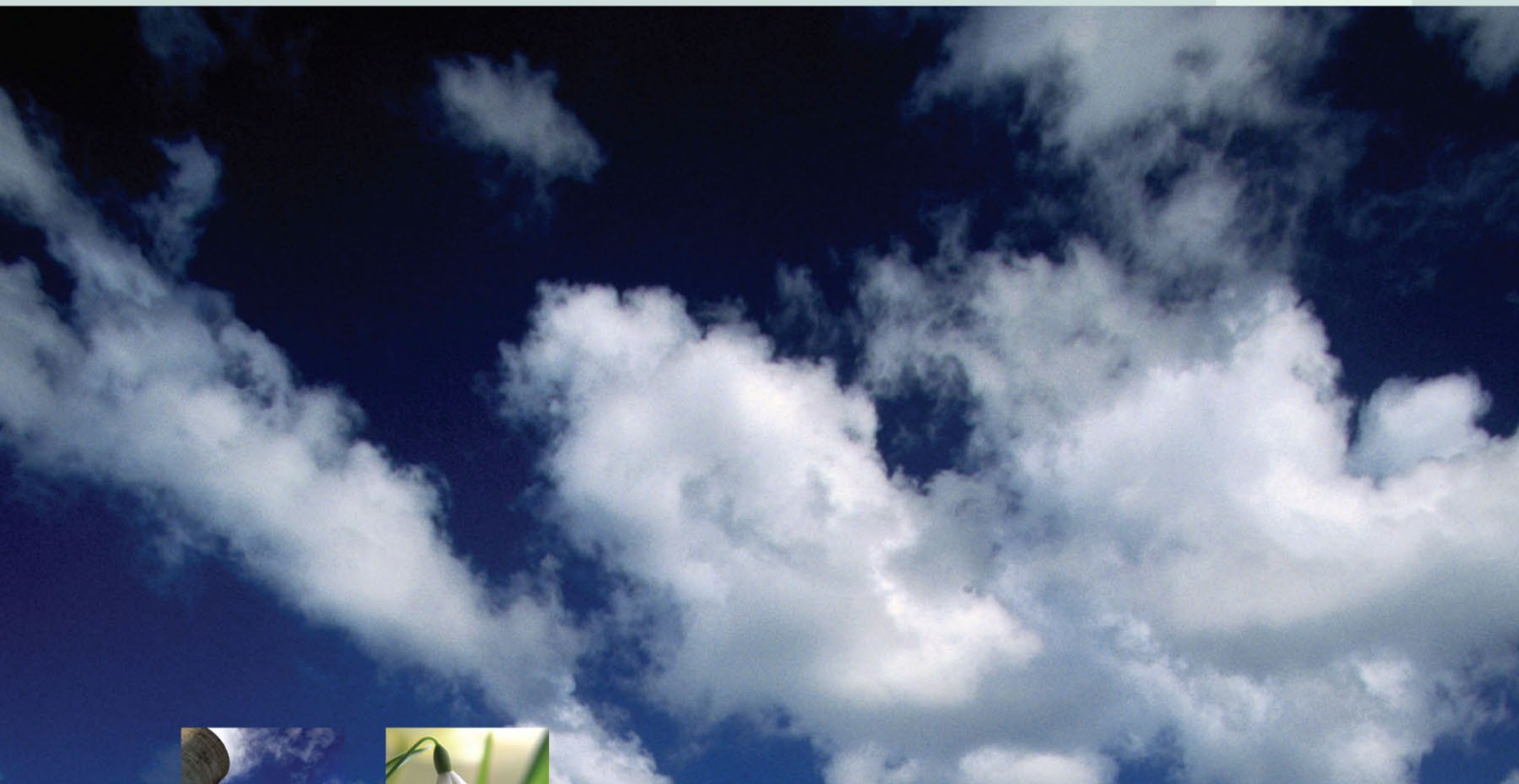




EPR APPLICATION VARIATION

Real Alloy (UK) Ltd
Waunarlwydd, Swansea
EPR/EP3935UC

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NON TECHNICAL SUMMARY

This document has been prepared on behalf of Real Alloy (UK) Ltd ('the applicant' hereafter) by Sol Environment Ltd and provides supporting evidence as required by Environmental Permit Application Forms Part C2 and C3 issued by Natural Resources Wales (NRW).

Real Alloy (UK) Ltd ('Real Alloy' or 'The Applicant' hereafter) is making this application to carry out a 'Normal' Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to:

- Include the installation of a shredder and associated balers on site to process incoming material;
- Increase the waste input materials from 65,000 tonnes per annum to 80,250 tonnes per annum; and
- Increase the maximum quantity of salt slag storage to 25,000 tonnes per annum.

The Real Alloy site is located at Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF.

The existing secondary aluminium recycling process is permitted as an Installation as defined by Schedule 1, Section 2.2 '*Non Ferrous Metals*,' paragraph A(1)(b)(i) of the EPR Regulations namely;

'Melting, including making alloys, of non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where -

- i) The plant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals'*

The site is currently permitted under the conditions established by Environmental Permit EPR/EP3935UC/V007.

In 2019 a 'Normal' variation was made under Regulation 20 of The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to increase the Installation Boundary of the Part A(1) Activity for additional storage capacity for the storage of salt slag produced on site. The additional quantity of salt slag proposed as a result of this variation will take place as currently permitted and detailed within the 2019 application.

Real Alloy operate and maintain a formal environmental management system which has been certified to meet the requirements of the International Standard BS EN ISO14001:2004. The changes brought about by this permit variation will not result in any functional or material changes to the existing environmental management system (EMS) used on site, with the exception of the introduction of a new work instruction for operation of the plant.

Emissions to Air

All atmospheric emissions from the site are released via existing emission point A4 and are controlled and abated through the use of a large, dedicated baghouse filtration system. All emissions impacts currently modelled and permitted have been modelled assuming likely worst case scenario (100% ELV releases, 100% of the time). The abatement plant operates well within these parameters and therefore the modelled emission impacts of the existing plant will remain unchanged.

There are no proposed changes or increases in impacts to air emissions resulting from this permit variation.

Emissions to Controlled Water and Sewer

All surface water emissions discharged from the site via the existing authorised release point WA1 are controlled by an oil / water interceptor.

The new shredding activity will not give rise to any contaminated or potentially contaminated discharges. It is proposed to undertake the activity within Bay 4 of the Saltcake Storage Building. This building is fully enclosed and has no internal drainage system, therefore any spillages / runoff will be effectively contained within the building.

The additional salt slag storage will take place within the Saltcake Storage Building as currently permitted.

There are no changes to water emissions resulting from this permit variation.

Emissions to Land

There are no emissions to land arising from the Installation.

Fugitive Emissions

The proposed shredding activity has the potential to generate fugitive emissions, namely dust and noise from the process.

The processing activity will only take place onsite within a fully enclosed building. Careful management of the process including ensuring all building doors are closed during the process and good housekeeping measures will mitigate any potential impacts from the proposed activity.

An Environmental Noise Assessment has been undertaken to model potential emissions from the new plant and their impact on nearby sensitive receptors. The assessment is provided within *Annex D – Noise Assessment*. The assessment concludes that, with duly implemented Noise Mitigation Plan measures as described within the report, environmental noise that is anticipated from the proposed new plant is not significant and furthermore does not alter the magnitude of the predicted noise level impact as currently experienced, with the as-existing facility operating normally.

1 INTRODUCTION

This document has been prepared on behalf of Real Alloy (UK) Ltd (*'The Applicant'* hereafter) by Sol Environment Ltd and provides supporting evidence as required by Environmental Permit Application Forms Part C2 and C3 issued by Natural Resources Wales (NRW).

Real Alloy (UK) Ltd (*'Real Alloy'* or *'The Applicant'* hereafter) is making this application to carry out a *'Normal'* Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to:

- Include the installation of a shredder and associated balers on site to process incoming material;
- Increase the waste input materials from 65,000 tonnes per annum to 80,250 tonnes per annum; and
- Increase the maximum quantity of salt slag storage to 25,000 tonnes per annum.

The Installation is located at Waunarlwydd Works, Waunarlwydd, Swansea, SA5 4SF.

The secondary aluminium recycling process is permitted as an Installation as defined by Schedule 1, Section 2.2 *'Non Ferrous Metals,'* paragraph A(1)(b)(i) of the EPR Regulations namely;

'Melting, including making alloys, of non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where -

- i) The plant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals'*

The site is currently permitted under the conditions established by Environmental Permit EP3935UC/V007.

In 2019 a *'Normal'* variation was made under Regulation 20 of The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to increase the Installation Boundary of the Part A(1) Activity for additional storage capacity for the storage of salt slag produced on site. The additional quantity of salt slag proposed as a result of this variation will take place as currently permitted and detailed within the 2019 application.

All aspects of the Installation will essentially remain unchanged and will operate in a similar manner as currently permitted. The process description and site information provided in the previous permit variation is predominantly unchanged as a result of this proposed variation. The applicant has included the previous Application Support Documents in *Annex B – Previous Applications* of this application for reference.

The remainder of this application support document is structured accordingly:

- Section 2: Provides specific nature of the proposed changes associated with the variation application;
- Section 3: Provides specific nature and detailed description of the emissions to air and water associated with the installation;
- Section 4: Provides an Environmental Impact and Assessment of the varied installation.

The site layout is provided in Figure 2.1 and *Annex A - Figures*. There are no changes to the Installation Boundary as a result of this permit variation.

2 DESCRIPTION OF VARIED CHANGES

2.1 Description of the Proposed Changes

Real Alloy (UK) Ltd is making this application under Regulation 20 of The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to carry out a ‘Normal’ Variation of their existing EPR permit to:

- Include the installation of a shredder and associated balers on site to process incoming material;
- Increase the waste input materials from 65,000 tonnes per annum to 80,250 tonnes per annum; and
- Increase the maximum quantity of salt slag storage to 25,000 tonnes per annum.

The existing processes operated at the site fall under the activity description provided by Schedule 1, Section 2.2 ‘Non Ferrous Metals,’ paragraph A(1)(b)(i) of the Environmental Permitting Regulations, namely;

‘Melting, including making alloys, of non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where -

- i) The plant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals’*

Currently the permit has a limit of 65,000 tonnes per annum of waste that can be accepted on site. As part of this permit variation, Real Alloy would like to increase this to 80,250 tonnes per annum to allow the site to operate on full capacity on both furnaces.

The processing of incoming waste materials via shredding will not exceed the ‘Section 5.4 paragraph A(1)(b)(iv) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (treatment in shredders of metal waste)’ capacity and will therefore only require an additional Directly Associated Activity (DAA) to be added to the permit.

The proposed changes to Schedule 1 – Operations of the sites existing permit are provided in Table 2.1 overleaf (marked in red).

Table 2.1: Permitted Activities

Schedule 1 Activity Reference	Description of specified activity and WFD Annex I and II Operations	Limits of Specified Activity
2.2 A(1)(b)(i)	Melting, including making alloys, of non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where the plant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals'	The limits of specified and associated activities collectively comprise all activities carried out in the Installation between the receipt of raw materials and the supply of finished product. Waste types are specified in Table S2.2 of the permit.
Directly Associated Activity		
R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)		The limits of specified and associated activities collectively comprises all activities carried out in the Installation between the receipt of raw materials and the supply of finished products. Storage for secondary sources of aluminium scrap materials restricted to areas shown on site plan in the permit. All salt slag storage to take place within dedicated building.
Processing of incoming waste		Limited to size reduction of incoming waste and compaction prior to processing. All processing activities will take place within an enclosed building upon an impermeable surface.
Sampling and analysis of aluminium alloys and aluminium scrap metal.		Batch melting of aluminium alloys and aluminium scrap material in a 1.5 tonnes rotary furnace to produce samples for analysis

2.2 Changes to the Existing Activities

2.2.1 Site Layout

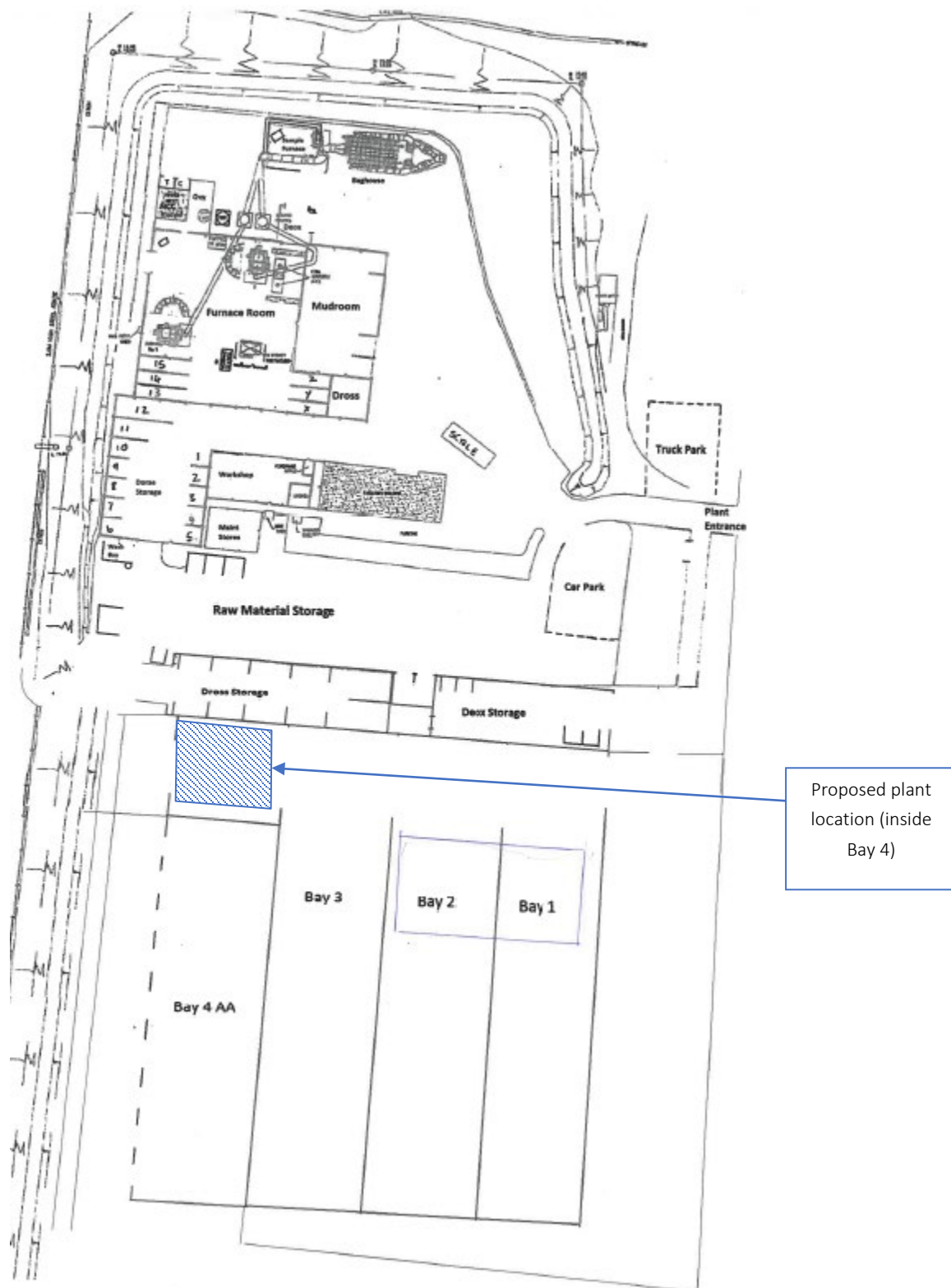


Figure 2.1: Proposed Activity Location

There will be no change to the existing site layout. Figure 2.1 above shows the location of the additional equipment, comprising a shredding unit and two balers within Bay 4 of the existing storage building. No processing of wastes will take place externally at any time.

The nature of the proposed changes do not include any new potentially contaminating chemicals or materials and the installation boundary of the site will remain as existing. Therefore, no update to the existing Site Condition Report has been submitted within this variation.

2.2.2 Site Infrastructure and Design

There will be no changes to the site infrastructure or design of the installation. The new shredding activity (with associated plant) will take place within the existing salt slag storage building.

All aspects of site drainage will remain unchanged. All drainage systems on the main site are as per the original permit application document and discharge under consent to the Gors Fawr Brook.

Please refer to *Annex B – Previous Applications* for more information.

2.3 Description of the Process

The new shredding plant will be used to remove any unwanted metals and shred incoming material.

Incoming material arrives on site in baled form prior to undergoing processing within the furnace to produce molten aluminium. The proposed pre-processing via shredding aims to enable efficient removal of contaminants prior to introduction to the furnace. This will result in the production of purer molten aluminium and optimise the site processes.

The proposed shredder plant is designed for a nominal throughput of 2,500 – 3,000 kg/hr depending on the material dimensions and produces a granulate sized < 20mm.

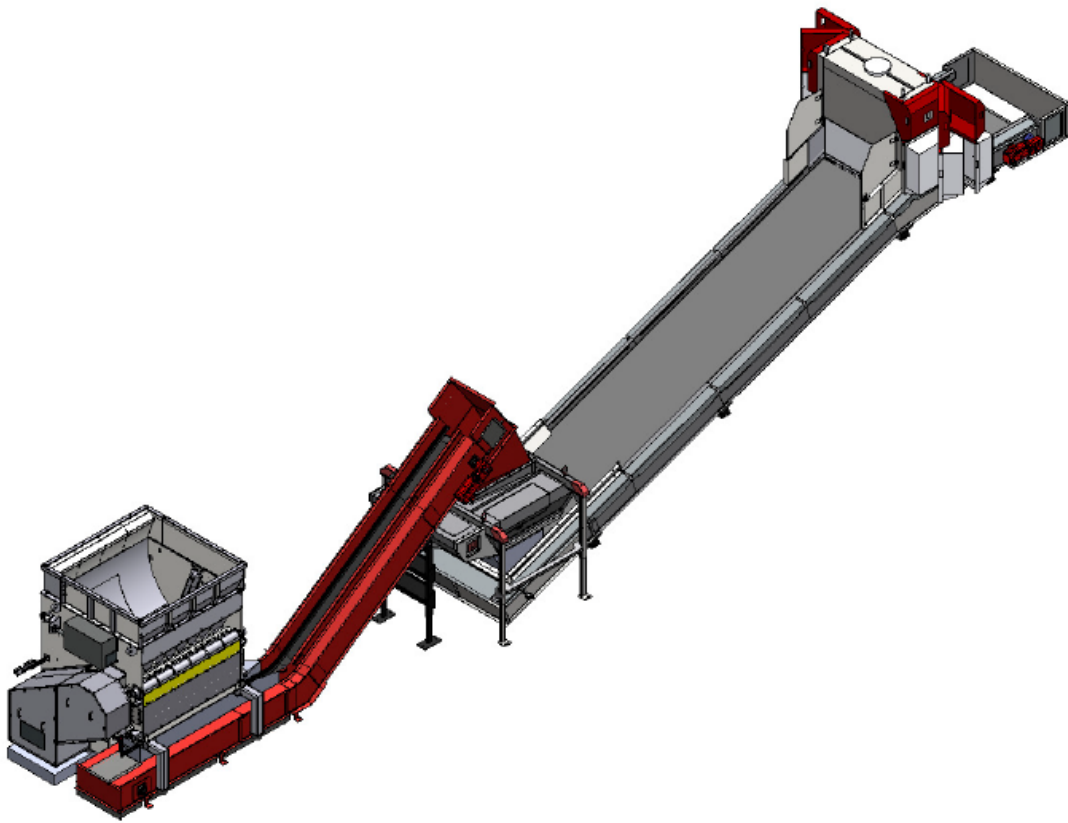


Figure 2.3: Example Shredder Plant

Summary technical information on the shredder is provided in Table 2.2 below with further details provided in Annex C.

There will be two balers installed with the shredder plant. An example illustration of a shredder with one baler is provided in figure 2.4 (the Real Alloy plant will have two balers).



Figure 2.4: Example Shredder with One Baler

The shredder and balers will be located within the fully enclosed storage building (Bay 4) and operated only when the buildings roller shutter doors are closed, minimising potential dust and noise emissions from the process. The salt slag stored within this building, may produce flammable gases when in contact with water, as such dampening dust suppression is not considered a viable form of dust control for the process. Due to the enclosed storage, certified environmental management system and housekeeping employed on site, offsite impacts from the proposed processing of UBC's and are not expected.

Personnel will be required to wear appropriate PPE within the storage building when shredding operations are in progress, including masks to prevent inhalation and ear protection where necessary.

The sites existing fire detection system will be extended to the area in which the shredder is situated and appropriate fire extinguishers will be located in situ.

No new raw materials are introduced onsite as a result of this permit variation. The plant is electrically operated.

In 2019 a 'Normal' variation was made under Regulation 20 of The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to increase the Installation Boundary of the Part A(1)

Activity for additional storage capacity for the storage of salt slag produced on site. The additional quantity of salt slag proposed as a result of this variation will take place as currently permitted and detailed within the 2019 application.

Currently the permit has a limit of 65,000 tonnes per annum of waste that can be accepted on site. As part of this permit variation, Real Alloy would like to increase this to 80,250 tonnes per annum to allow the site to operate on full capacity on both furnaces.

All other aspects of the site remain unchanged, therefore please refer to the previous Application Support Documents provided in *Annex B – Previous Applications* for a detailed process description.

3 ENVIRONMENTAL MANAGEMENT SYSTEM

Real Alloy operate and maintain a formal Environmental Management System which has been certified to meet the requirements of the International Standard BS EN ISO14001:2015. This proposed permit variation will not result in any significant changes to the existing Environmental Management System used on site.

The site will introduce a new Production Work Instruction relating to the proposed shredding activities.

A summary of the management system currently used on site is provided in Table 3.1 below.

Table 3.1: Environmental Management System	
Standards	
Number	Description
HSE 01	Investigation, Communication & Corrective Action for Incidents
HSE 02	Aluminium Molten Metal Safety
HSE 03	Mobile Equipment Standard
HSE 04	LOTO Standard
HSE 05	Industrial Hygiene & Medical Standard
HSE 06	Personal Protective Equipment
HSE 07	Cellular Phone & Electronic Devices Policy
Shipping & Receiving Work Instructions	
Number	Description
WI SR 1.0	Testing Raw Materials (Basics)
WI SR 2.0	Shipping Ingots
WI SR 3.0	Truck Loading Safety
Shipping & Receiving Short Instructions	
Number	Description
SI SR 1.0	Radioactivity Test
SI SR 1.1	Visual Inspection of Raw Material
SI SR 1.2	Moisture and Oil Check
SI SR 1.3	Loading a Bulk Carrier with Salt Cake
SI SR 1.4	Mudroom Control Measures
SI SR 1.5	Pre-Notification Procedure
SI SR 1.6	Receipt of Sodium Bicarbonate / Lime
SI SR 1.7	Liquid Oxygen Deliveries – Outside Normal Working Hours
Production Work Instructions	
Number	Description
WI PR 1.0	Preparing Production
WI PR 2.0	Running a Melting Furnace (Basics)
WI PR 2.1	Starting Up & Shutting Down of Melting Furnaces

WI PR 2.2	Charging Raw Material & Flux
WI PR 2.3	Running a Melting Furnace (Detailed)
WI PR 2.5	Pouring Molten Metal
WI PR 2.6	Mudding Out Salt Cake
WI PR 3.0	Running a Holding Furnace
WI PR 3.1	Charging Melting & Allying in Holding Furnaces
WI PR 3.2	Treatment Molten Metal
WI PR 3.7	D.E.O.X
WI PR 4.0	Taking a Sample From Molten Metal
WI PR 4.1	Recording & Evaluating Operating Data
WI PR 4.2	Cleaning Crucibles
Production Short Instructions	
Number	Description
SI PR 2.0	Material Identity Control

4 EMISSIONS AND THEIR ABATEMENT

4.1 Emissions to Air

Point-source Emissions to Air

There will be no change to emissions to air as a result from this proposed variation.

Table 4.1 below provides details of the sites existing emission point, ELV's, specific sources and monitoring frequency¹.

Table 4.1: Emissions to Air					
Emission point	Parameter	ELVs	Unit	Source	Monitoring Frequency
A4	PM	5	mgm ⁻³	Release from furnace, post baghouse filter	Continuous and Annual Extractive
	NOx	60	mgm ⁻³		Bi-Annual Extractive
	HCl	10	mgm ⁻³		Quarterly Extractive
	VOC	30	mgm ⁻³		Quarterly Extractive
	SO ₂	60	mgm ⁻³		Quarterly Extractive
	HF	1	mgm ⁻³		Bi-Annual Extractive
	Dioxin	0.1			Annual Extractive

¹ All extractive monitoring is carried out using MCERTS qualified contractors and approved methodology as agreed with Natural Resources Wales.

4.2 Emissions to Controlled Water

There will be no changes to the releases to the Gors Fawr Brook (WA1) resulting from this permit variation. As such, Table 4.2 below remains the same as currently permitted.

Table 4.2: Emission Limits into Water		
Parameter	Emission Point WA1	Monitoring Frequency
Total Suspended Solids – Spot Sample	50 mg/l	Monthly
Total Dissolved Solids – Spot Sample	1200 mg/l	Monthly
Oil and Grease Spot Sample	10	Monthly
Copper and its compounds as Cu (mg/l ⁻¹) Spot Sample	0.25	6 Monthly
Lead and its compounds as Pb (mg/l ⁻¹) Spot Sample	0.1	6 Monthly
Tin and its compounds as Sn (mg/l ⁻¹) Spot Sample	0.1	6 Monthly
Zinc and its compounds as Zn (mg/l ⁻¹) Spot Sample	0.5	6 Monthly
Aluminium and its compounds as Al (mg/l ⁻¹) Spot Sample	1.5	Monthly
Mercury and its compounds as Hg (mg/l ⁻¹) Spot Sample	0.075	6 Monthly
Arsenic and its compounds as (mg/l ⁻¹) Spot Sample	0.1	6 Monthly
Nickel and its compounds as Ni (mg/l ⁻¹) Spot Sample	0.5	6 Monthly
Ammonical nitrogen as N (mg/l ⁻¹)	1.5	Monthly
pH max	9	Monthly
pH min	6	Monthly

4.3 Emissions to Sewer

There are no emissions to sewer arising from the Installation.

4.4 Emissions to Land

There are no emissions to land arising from the Installation.

4.5 Emissions of Waste

Table 4.3 overleaf provides information relating to the typical disposal quantities and environmental fates of all waste materials arising at the Installation.

Table 4.3: Waste Arisings and Disposal

Substance	Quantity (Tonnes)	Waste Type (E.G. Hazardous)	Fate
Salt Slag	~30,000	Hazardous	R4
Main baghouse filter dust	0	Hazardous	R4
Main baghouse filter dust	~ 1500	Non-Hazardous	D9
Mudroom baghouse filter dust	0	Hazardous	R4
Refractory Waste	<0.5	Hazardous	R4
Interceptor Residue	<0.5	Hazardous	R4
Oily Waste	2	Hazardous	R13
Main baghouse filters	<0.1	Hazardous	D10
Mudroom baghouse filters	<0.1	Hazardous	D10
General Non-hazardous Waste	<100	Non-Hazardous	R3 / R4
Canteen waste	<20	Non-Hazardous	D1
Vehicle wash waters	~ 100	Hazardous	D9

4.6 Dust

It is accepted that there is the potential for dust emissions arising from the shredding and compaction of incoming waste, though due to the nature of the incoming material this is likely to be minimal. Due to the nature of salt slag stored within the building where the proposed shredding and baling operation will take place, dust suppression involving dampening is not appropriate as this may give rise to emissions of flammable gas including ammonia and hydrogen. Nevertheless, the site will maintain a number of control measures onsite in order to prevent any offsite impacts from fugitive emissions. These include the following:

- All processing activities to take place internally within an enclosed building;
- No processing will take place if the roller shutter doors are open;
- Minimization of drop heights;
- General site maintenance and good housekeeping measures; and
- Daily inspection of the site entrance and public highway.

Dust levels will be monitored by a visual assessment to be undertaken on a daily basis by a competent person and be overseen by the Site Manager. It is the duty of all site operatives to be vigilant and report any problems immediately to the competent person who will implement corrective action. The Site Manager is responsible for recording the details relating to the findings of the visual assessment in the site diary.

In the unlikely event that visible aerial emissions of dusts or particulates persist beyond the site boundary, the Site Manager will ensure that immediate corrective action is taken and NRW is notified accordingly.

As a result of the fully enclosed nature of the processing it is considered unlikely that fugitive dust emissions will arise from the proposed activity.

4.7 Noise

Despite the introduction of a noise source onsite, it is not considered that this will have a significant impact on noise emissions arising from the facility.

Processing activities will take place within an enclosed building and are proposed to be undertaken on a 24/7 basis. It is considered that due to the industrial nature of the area this is fitting with the existing industrial noise climate.

To ensure the addition of the new equipment onsite does not impact any offsite sensitive receptors, a Noise Impact Assessment has been completed and is provided in *Annex D*. The assessment concludes that, with duly implemented Noise Mitigation Plan measures as described within the report, environmental noise that is anticipated from the proposed new plant is not significant and furthermore does not alter the magnitude of the predicted noise level impact as currently experienced, with the as-existing facility operating normally.

5 IMPACTS TO THE ENVIRONMENT

5.1 Impacts to Air

There will be no change to impacts to air from this permit variation. All emissions will remain as currently permitted.

5.2 Impacts to Land

There are no impacts to land arising from this permit variation.

5.3 Impacts to Controlled Water

There are no impacts to water arising from this permit variation.

All emissions to controlled water are within the existing permitted consents / emission limit values.

5.4 Impacts to Sewer

There are no emissions to sewer arising from the Installation.

5.5 Noise Impacts

Noise impacts from the varied site have been modelled and environmental noise that is anticipated from the proposed new plant is not significant and furthermore does not alter the magnitude of the predicted noise level impact as currently experienced, with the as-existing facility operating normally.