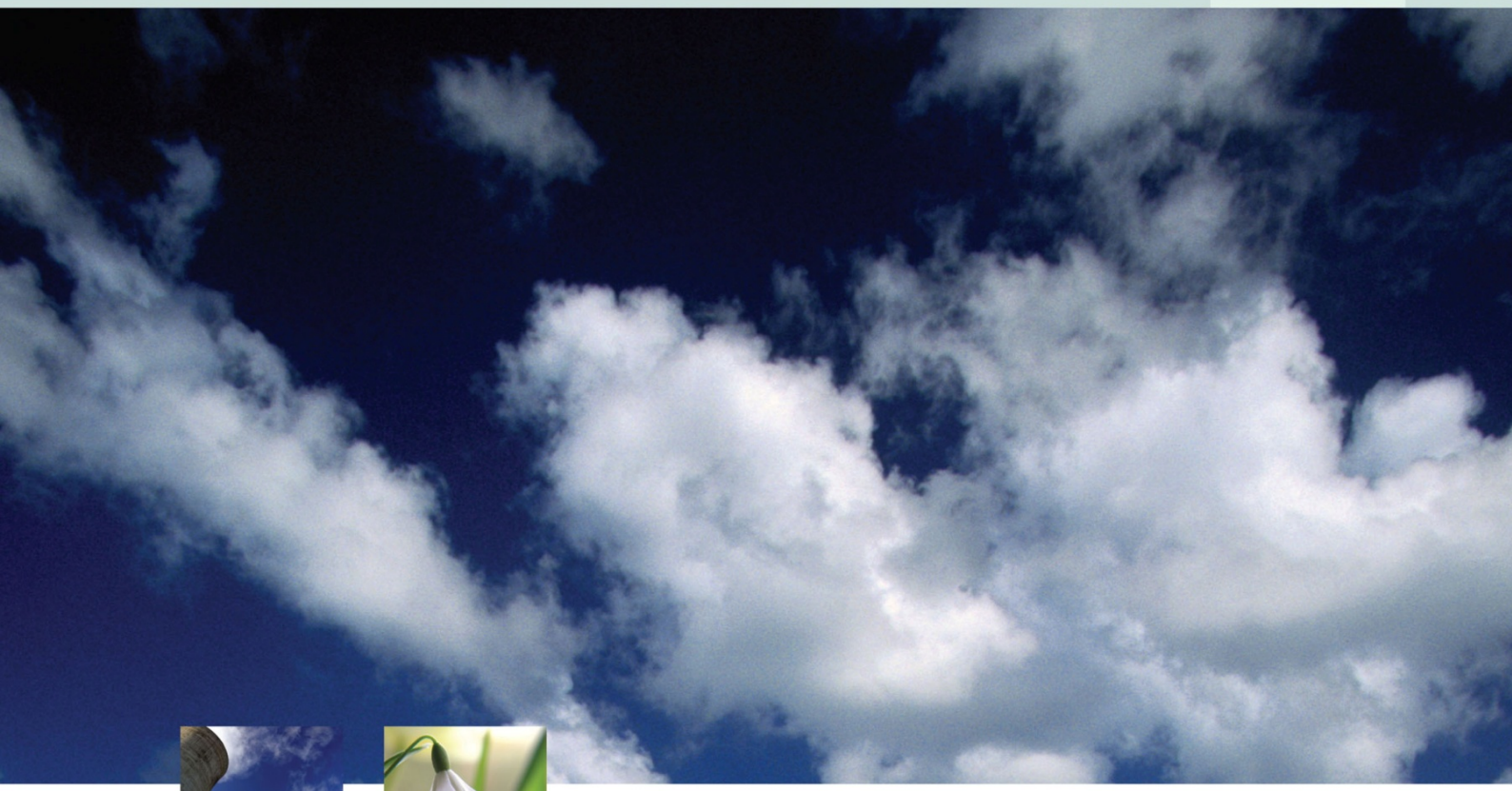

EPR APPLICATION VARIATION

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

Prepared by:
Sol Environment Ltd

Date:
October 2017

Project or Issue Number:
SOL1710RA01

Sol Environment Ltd | Malvern | Bristol | Edinburgh
enquiries@sol-environment.co.uk | t. +44(0)1684 572727 (Switchboard) | +44(0)117 9372811 (Bristol)

Contract/Proposal No:	SOL1710RA01
Issue:	0
Author: (signature):	Steve Butler
	
Date:	October 2017

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VERSION CONTROL RECORD				
Issue	**Description of Status**	**Date**	**Reviewer Initials**	**Authors Initials**
1	First Issue to Natural Resources Wales	October 2017	SB	SP

Contents

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 'Minor Technical' Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to increase the installation boundary of the Part A(1) Activity to include an additional building for the storage of salt slag.

The Real Alloys 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 pant 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/V005.

In 2015 a 'Minor Technical' 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 to include a new raw material storage area and a 1 ½ tonne capacity rotary sample furnace to enable the sampling and analysis of product alloys.

An administrative variation (EPR/EP3935UC/V003) was granted by NRW in June 2015 to reflect the purchase of the company and change of name to Real Alloy (UK) Ltd.

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 and EMAS. 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.

Emissions to Air

All atmospheric emissions from the site are released via 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 (including 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 storage area is fully enclosed within a building and will not give rise to any contaminated or potentially contaminated discharges.

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.

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 an 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 ‘Minor Technical’ Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2016 (as amended) to increase the installation boundary of the Part A(1) Activity to include an additional building for the storage of salt slag.

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 pant 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/V005.

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 unchanged as a result of this proposed variation. The applicant has included the previous Application Support Documents in Annex B 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 boundary of the current Installation Boundary and the new proposed Installation Boundary is provided in Figure 2.1 and Annex A - Figures.

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 '*Minor Technical*' Variation of their existing EPR permit to increase the installation boundary of the Part A(1) Activity to include an additional building for the internal storage of salt slag (also referred to as salt cake).

Salt slag is a waste / by-product that occurs as a function of the secondary aluminium and dross recovery processing activities carried out on site.

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'

The storage of waste materials and finished product (which includes the storage of salt cake) is already covered in the sites permit under a directly associated activity.

Therefore, there are no proposed changes to Schedule 1 – Operations of the sites existing permit. Please refer to Table 2.1 overleaf for more information.

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.
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 Installation Boundary

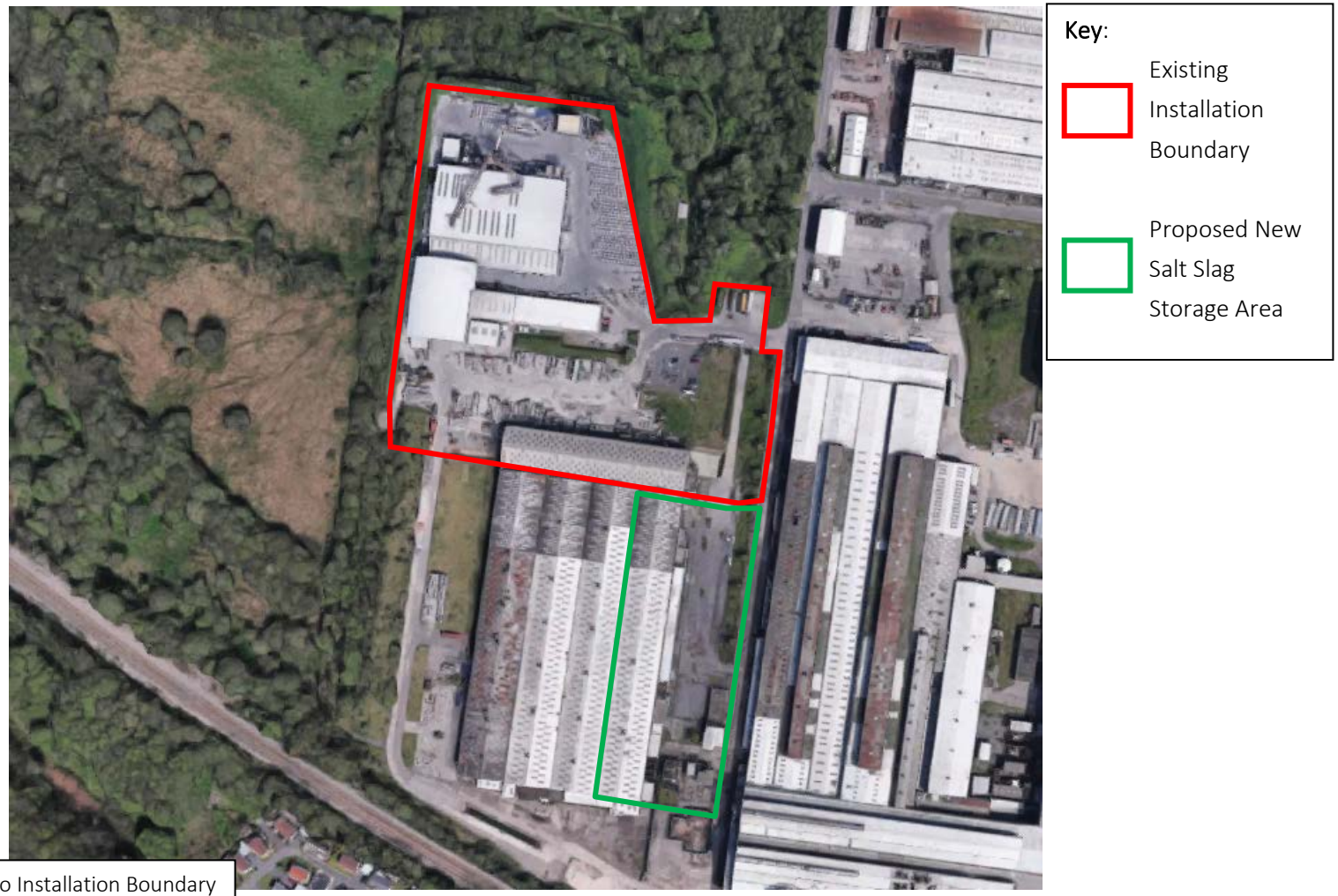

Figure 2.1: Proposed Changes to Installation Boundary

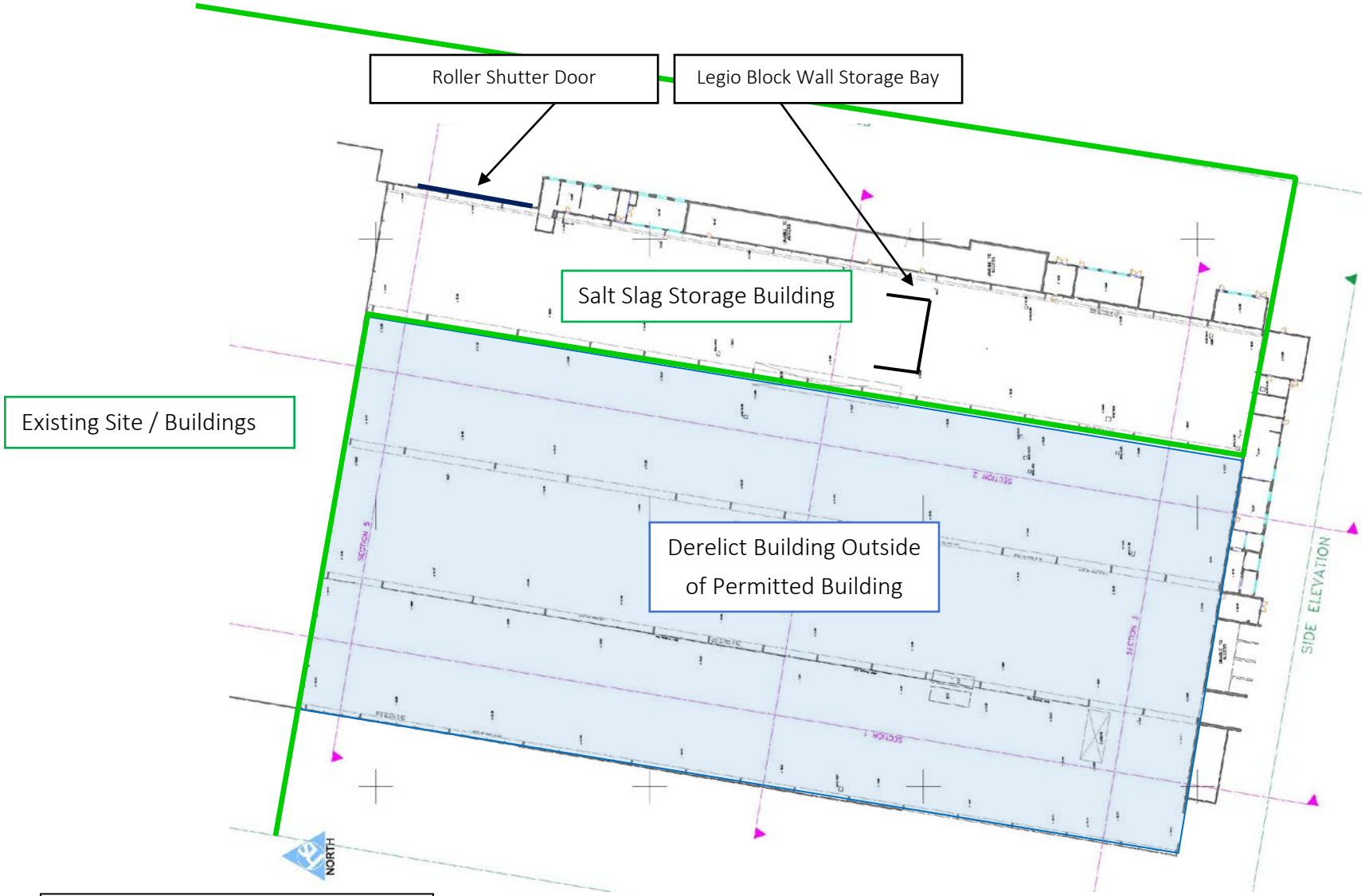

Figure 2.2: Proposed Salt Slag Building

Figure 2.1 above shows the existing Installation Boundary (in red) and the proposed new area (in green). The salt slag will be stored internally within the building located in the proposed new area shown in Figure 2.2. No salt cake will be stored externally.

Due to the changes in the Installation Boundary, an updated H5 assessment has been provided within Annex C of this Application Support Document. Due to material being stored internally within a contained building, the increased boundary does not increase the potential for ground contamination from the site.

The potential land contamination associated with the former industrial uses of the new salt cake storage building were fully investigated at the time of site closure and decommissioning by Alcoa, the former site owners. All relevant baseline ground condition information has been used within the revised H5 assessment.

2.2.2 Site Infrastructure and Design

There will be no changes to the site infrastructure or design of the Installation. The new salt slag storage building does not contain any internal drains and hence the site drainage infrastructure for the Installation, remains unchanged.

No water will be used within the building. The building will only be used for the temporary storage of salt slag before it is exported off site for recovery.

In the event of a spillage from a vehicle, it would be immediately cleaned up using a spill kit.

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 the Previous Application Support Document provided in Annex B for more details.

2.3 Description of the Process

There will be no changes to the process resulting from this proposed permit variation apart from the inclusion a new building to temporarily store salt slag before it is exported off site.

Salt Slag

Salt slag (EWC 10-03-08*) is a grey to black conglomerate of metallic appearance, mixed with small particles, which can evolve ammonia when wet.

Salt slag which is a by-product of the secondary aluminium recovery process, comprises aluminium oxide, magnesium oxide, sodium, potassium, and oxides of other impurities removed from the molten aluminium. After tapping the furnace of aluminium, the salt slag is poured into steel containers, which are transferred to the covered salt slag cooling area by mobile plant, where it is stored. Fume produced during cooling is removed by the Salt Slag Fume Control System, which extracts air to a fabric filter plant. After cooling, the salt slag is loaded onto a sealed lorry and transferred to the salt slag storage building where it is temporarily stored before being transferred off site for reprocessing at specialist sites.

Approximately 30,000 tonnes of salt slag is produced per year by the facility. A maximum quantity of 4,000 tonnes will be stored within the building at any one time and it will be stored for a maximum of 6 months.

Photo 1: Salt Slag

Covered ADR lorries will transfer the salt slag from the mud room to the salt slag storage building. Lorries will access the building through roller shutter doors which will remain shut at all times apart

from during delivery and export of the material. This will prevent potential dust emissions from escaping the building. Additionally, a jet sweeper is used on a daily basis to clean the site. Due to the enclosed storage, certified environmental management system and housekeeping employed on site, dust emissions from the proposed storage of salt slag is not expected.

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

Photo 2: Salt Slag Storage Building

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 ISO14001:2004 and EMAS. This proposed permit variation will not result in any changes to the existing environmental management system used on site.

A summary of the management system currently used on site is provided in Table 3.1 below. This will remain exactly the same once the permit has varied.

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 – Out Side 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 emission point, ELV's, specific sources and monitoring frequency[1].

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	50	mgm^{-3}		Quarterly Extractive
	SO_2	50	mgm^{-3}		Quarterly Extractive
	HF	2	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.

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 (mgl^{-1}) Spot Sample	0.25	6 Monthly
Lead and its compounds as Pb (mgl^{-1}) Spot Sample	0.1	6 Monthly
Tin and its compounds as Sn (mgl^{-1}) Spot Sample	0.1	6 Monthly
Zinc and its compounds as Zn (mgl^{-1}) Spot Sample	0.5	6 Monthly
Aluminium and its compounds as Al (mgl^{-1}) Spot Sample	1.5	Monthly
Mercury and its compounds as Hg (mgl^{-1}) Spot Sample	0.075	6 Monthly
Arsenic and its compounds as (mgl^{-1}) Spot Sample	0.1	6 Monthly
Nickel and its compounds as Ni (mgl^{-1}) Spot Sample	0.5	6 Monthly
Ammoninical nitrogen as N (mgl^{-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	R04
Main baghouse filter dust	0	Hazardous	R04
Main baghouse filter dust	~ 1500	Non-Hazardous	D09
Mudroom baghouse filter dust	0	Hazardous	R04
Refractory Waste	<0.5	Hazardous	R04
Interceptor Residue	<0.5	Hazardous	R04
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	D09

5 IMPACTS TO THE ENVIRONMENT

5.1 Impacts to Air

There will be no changes to emissions impacts to air from the proposed permit variation.

Please refer to the previous Application Support Document provided in Annex B for a detailed Air Quality H1 Assessment and Dispersion Modelling that was carried out for the 2013 permit variation application.

5.2 Impacts to Land

There are no impacts to Land arising from this variation.

5.3 Impacts to Controlled Water

There are no impacts to water arising from this variation.

All proposed 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.