

## **Environment Agency**

### **Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England & Wales) Regulations 2016**

#### **Decision document recording our decision-making process following review of a permit**

The Permit number is: EPR/JP3538LX  
The Operator is: Impalloy Limited  
The Installation is: Impalloy Limited  
This Variation Notice number is: EPR/JP3538LX/V005

#### **What this document is about**

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication by the European Commission of updated decisions on BAT Conclusions.

We have reviewed the permit for this installation against the revised BAT Conclusions for the non-ferrous metals industries sector published on 30<sup>th</sup> June 2016 in the Official Journal of the European Union. Where appropriate, we also considered other relevant BAT Conclusions published prior to this date but not previously included in a permit review for the Installation. In this decision document, we set out the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to the decision made by the European Commission establishing best available techniques (BAT) conclusions (BATc) for the non-ferrous metals industries as detailed in the Official Journal of the European Union (L174) following a European Union, implementing decision (EU) 2016/1032 of 13<sup>th</sup> June 2016. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the

consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and with other permits issued to installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document we therefore address only our determination of substantive issues relating to the new BAT Conclusions.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

## **How this document is structured**

1. Our proposed decision
2. How we reached our decision
3. The legal framework
4. Annex 1- Review of operating techniques within the Installation against BAT Conclusions
5. Annex 2a - Review and assessment of derogation request(s) made by the operator in relation to BAT Conclusions which include an Associated Emission Level (BAT-AEL) value
6. Annex 2b - Consultation responses
7. Annex 3 - Improvement Conditions
8. Annex 4 - Review and assessment of changes that are not part of the BAT Conclusions derived permit review
9. Annex 5 – Priority Compliance Issues & Detailed assessment of Regulation 60 Notice responses where future action likely

# 1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow it to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice that updates the whole permit.

We consider that, in reaching our decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure that a high level of protection is provided for the environment and human health.

The Consolidated Variation Notice contains many conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

## 2 How we reached our decision

### 2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 16<sup>th</sup> December 2016 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Notice required that where the revised standards are not currently met, the operator should provide information that

- Describes the techniques that will be implemented before 30<sup>th</sup> June 2020, which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 30<sup>th</sup> June 2020, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or

- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.

Where the Operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT AEL) described in the BAT Conclusions Document, the Regulation 60 Notice required that the Operator make a formal request for derogation from compliance with that AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 60 Notice response from the Operator was received on 28/03/17.

We received additional information and/or clarification during the determination as follows:

- Response to our request for clarification on operating techniques and BAT3, received 22/12/17 and 15/01/18.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 60 Notice response that appears to be confidential in relation to any party.

## 2.2 Review of our own information in respect to the capability of the installation to meet revised standards included in the BAT Conclusions document

Based on our records and previous experience in the regulation of the installation we have no reason to consider that the operator will not be able to comply with the applicable techniques and standards described in the BAT Conclusions.

## 2.4 Surface Water Pollution Risk Assessment

As part of our delivery of the Water Framework Directive (WFD) requirements, we need to identify and assess the impact of all sources of hazardous pollutants to surface waters from regulated industry. We use the term 'hazardous pollutants' to collectively describe substances covered by the EQSD<sup>1</sup> (priority hazardous substances, priority substances and "other

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<sup>1</sup> Environmental Quality Standards Directive (EQSD) (2008/105/EC, as amended by 2013/39/EU)

pollutants”). It also applies to the specific pollutants listed in the 2015 Directions<sup>2</sup>, and substances which have operational (non-statutory) Environmental Quality Standards (EQS).

For all installations with discharges to surface water and/or sewer we required the operator, via our Regulation 60 Notice, to undertake a surface water pollution risk assessment, in two stages, as follows:

- a) Provide emissions data for the following hazardous pollutants: silver, arsenic, cadmium, cobalt, chromium (total), chromium (VI), copper, mercury, nickel, lead and zinc. The BAT Conclusions for the Non-Ferrous Metals Industries specify BAT-AELs associated with the direct discharge of these substances to surface water. We therefore considered that these substances potentially posed the highest risk from industry and listed them in our Regulation 60 Notice. In addition, operators were required to identify and assess any other hazardous pollutants that may be present in their effluent. A full list of hazardous pollutants is included in our surface water pollution risk assessment guidance, which we ‘signposted’ operators to via the Regulation 60 Notice.
- b) Undertake a risk assessment using the above emissions data to determine whether any hazardous pollutants were liable to cause pollution of the downstream receiving waters. The WFD requires Member States to prior regulate, all substances in a discharge which are “liable to cause pollution”. Previously discharges from the Non-Ferrous Metals Industries were controlled on a “liable to contain” approach set by the Dangerous Substances Directive through either numeric limits, or descriptive conditions. Under the “liable to cause pollution” approach we would only consider applying numeric emission limits to those pollutants calculated to have the potential to cause pollution.

The risk assessment methodology uses a number of sequential screening steps to determine if a substance warrants detailed modelling and hence any emission limits being required, namely:

- Screen out insignificant emissions that do not warrant further investigation;
- Determine if significant load test is failed (for priority hazardous substances only);
- Decide if detailed modelling is needed;
- Assess emissions against relevant standards and set permit limits where considered necessary.

The methodology provides for undertaking assessments of both direct and indirect discharges to surface water, ‘indirect’ meaning that the effluent is

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<sup>2</sup> The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015

discharged to foul sewer from the installation and is treated at a sewage treatment works (STW) prior to discharge to surface water. Treatment at the STW will remove a proportion of a discharged substance from the final effluent discharged to the environment. This removal needs to be taken into account when calculating the concentration of a hazardous pollutant which will be discharged to a receiving water via the sewage works. This is achieved by applying STRFs (sewage treatment reduction factors) within the screening steps.

We have used the non-ferrous metals permit review to regulate any discharge of hazardous pollutants to surface waters from this installation using the “liable to cause pollution” approach. Based on the written submissions provided in response to our Regulation 60 Notice the operator has confirmed that they do not discharge hazardous pollutants to surface water either directly or via the foul sewer. We therefore consider that no further action is necessary.

## 2.5 Condition of Soil and Groundwater

Articles 16 and 22 of the Industrial Emissions Directive (IED) require that a quantified baseline is established for the level of contamination of soil and groundwater with hazardous substances, in order that a comparison can be made on final cessation of activities.

We have used the non-ferrous metals permit review to regulate against the above IED requirements. Our Regulation 60 Notice required operators, where the activity of the installation involved the use, production or release of a relevant hazardous substance (as defined in Article 3(18) of the Industrial Emissions Directive), to carry out a risk assessment considering the possibility of soil and groundwater contamination at the installation with such substances. Where any risk of such contamination was established we requested that the operator either:

- prepare and submit a baseline report containing information necessary to determine the current state of soil and groundwater contamination; or
- provide a summary report referring to information previously submitted where they were satisfied that such information represented the current state of soil and groundwater contamination

so as to enable a quantified comparison to be made with the state of soil and groundwater contamination upon definitive cessation the activity.

Where operators concluded that there were no risks of soil or groundwater contamination (due to there not being any release of hazardous substances), they were required to provide a copy of the risk assessment.

Based on the written submissions provided in response to our Regulation 60 Notice the operator has confirmed that they do not use, produce or release any relevant hazardous substances. We therefore consider that no further action is necessary.

### **3 The legal framework**

The Consolidated Variation Notice will be issued under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Consolidated Variation Notice, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.



## **Annex 1**

### **Review of operating techniques within the Installation against BAT Conclusions**

BAT Conclusions for the non-ferrous metals industries, were published by the European Commission on 30<sup>th</sup> June 2016. There are 184 BAT Conclusions. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation.

This annex should be read in conjunction with the Consolidated Variation Notice.

The overall status of compliance with the BAT conclusion is indicated in the table as:

- NA Not Applicable
- CC Currently Compliant
- FC Compliant in the future (within 4 years of publication of BAT conclusions)
- NC Not Compliant

<b>Table 1: Decision checklist for relevant BAT Conclusions</b>		
<b>Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries</b>	<b>Status NA / CC / FC / NC</b>	<b>Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement Type of process: SECONDARY ALUMINIUM PRODUCTION SECONDARY ZINC PRODUCTION</b>
BAT Conclusions that are not applicable to this installation	<b>NA</b>	<p><b>General BAT Conclusions for Non-Ferrous Metals Industries: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17</b></p> <p>BAT Conclusions for copper production: 20-54 inclusive            BAT Conclusions for alumina production: 55-57 inclusive            BAT Conclusions for anode production: 58-63 inclusive            BAT Conclusions for primary aluminium production: 64-73 inclusive  <b>BAT Conclusions for secondary aluminium production: 74, 76, 77, 80, 81, 82, 83, 84, 86</b></p> <p>BAT Conclusions for salt slag recycling process: 87-89 inclusive            BAT Conclusions for lead and/or tin production: 90-107 inclusive            BAT Conclusions for primary zinc production: 108-120 inclusive  <b>BAT Conclusions for secondary zinc production: 121, 122, 123, 124, 125, 126, 127, 128, 129</b></p> <p>BAT Conclusions for cadmium production: 131-133 inclusive            BAT Conclusions for precious metals production: 134-149 inclusive            BAT Conclusions for ferro-alloys production: 150-162 inclusive            BAT Conclusions for nickel and/or cobalt production: 163-176 inclusive            BAT Conclusions for carbon and/or graphite production: 177-184 inclusive</p>

**Table 1: Decision checklist for relevant BAT Conclusions**

<b>Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries</b>	<b>Status NA / CC / FC / NC</b>	<b>Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement</b> Type of process: <b>SECONDARY ALUMINIUM PRODUCTION</b> <b>SECONDARY ZINC PRODUCTION</b>
BAT Conclusions where we accept the operator’s Reg 60 notice response that they are currently compliant and no further explanation is required.	<b>CC</b>	<b>General BAT Conclusions for Non-Ferrous Metals Industries: 1, 2, 3, ,18, 19</b> <b>BAT Conclusions for secondary aluminium production: 75, 78, 79, 85</b> <b>BAT Conclusions for secondary zinc production: 130</b>
BAT Conclusions where improvements will be undertaken on site within the 4 year period in order to achieve compliance with the narrative and/or BATAEL prior to the 4 year deadline	<b>FC</b>	<b>None</b>
BAT Conclusions where the Operator has responded that they are not compliant and have not submitted any plans to become compliant	<b>NC</b>	<b>None</b>

## **Key Issues**

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 Notice response as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

### **BAT Conclusion 12**

The BAT-AEL for SO<sub>2</sub> and the associated monitoring requirements from the BAT Conclusions has not been added to the permit. This is because BAT 12 does not apply to plants producing secondary aluminium or zinc as confirmed by the applicability section of the BAT Conclusion. Furthermore there is no BAT-AEL for SO<sub>2</sub> or any requirement to monitor SO<sub>2</sub> emissions from secondary aluminium production or secondary zinc production within the BAT Conclusions.

## **Annex 2a**

### **Assessment, determination and decision where an application(s) for Derogation from BAT Conclusions with associated emission levels (AEL) has been requested.**

The Operator did not request derogation from compliance with any AEL included within the BAT Conclusions as part of their Regulation 60 Notice response.

## **Annex 2b**

### **Advertising and Consultation on the draft decision**

This section is not applicable as no derogations from BAT-AEL's have been considered, nor is the installation a site of high public interest.

## **Annex 3**

### **Improvement Conditions**

Based on the information in the Operator's Regulation 60 Notice response and our own records of the capability and performance of the installation at this site, we do not consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BAT Conclusions are achieved by the installation.

The opportunity has been taken to delete completed improvement conditions in the consolidated permit.

## **Annex 4**

### **Review and assessment of changes that are not part of the BAT Conclusions derived permit review.**

The opportunity was taken to update the operating techniques table (Table S1.2) to more accurately reflect the techniques used, since the permit now only refers to the anode manufacturing activity.



## Annex 5

### Priority Compliance Issues & detailed assessment of Regulation 60 Notice responses where future action likely

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	<b>BAT 1-19: General requirements</b>					
1	In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the features given	1.1	CC	CC	<p>The operator has confirmed in their response that they are currently compliant with BAT 1.</p> <p>The operator implements and adheres to an Environmental Management system (ISO 14001: 2015) which is approved by a UKAS accredited auditing body.</p> <p>The Environment Agency is satisfied that the operator is currently compliant with this BAT Conclusion.</p>	
2	In order to use energy efficiently, BAT is to use a combination of the techniques given	1.2	CC	CC	<p>The operator has confirmed in their response that they are currently compliant with BAT 2.</p> <p>The operator uses a combination of the techniques given, as follows:</p> <ul style="list-style-type: none"> <li>a – energy efficient management system</li> <li>b – regenerative or recuperative burners</li> <li>n – use high efficiency electric motors equipped with variable efficiency drive, for equipment such as fans.</li> </ul>	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					<p>All furnaces at the installation were replaced in 2014, the new furnaces being more energy efficient. A new compressor was installed in 2015, also reducing energy consumption. Specific energy consumption has reduced significantly as a result.</p> <p>The Environment Agency is satisfied that the operator is currently compliant with this BAT Conclusion.</p>	
3	<p>In order to improve overall environmental performance, BAT is to ensure stable process operation by using a process control system together with a combination of the techniques given</p>	2.3	CC	CC	<p>The operator has confirmed in their response that they are currently compliant with BAT 3.</p> <p>The operator confirmed during a site visit on 6/12/17 that they operate to ISO 9001, a UKAS accredited quality control system. They also supplied additional information regarding process controls and operating techniques on 22/12/17 and 15/01/18.</p> <p>They use work instructions manuals (paper and digital copies). They have specific instructions for each product from the customer. They have a laboratory on site to test and check the products are performing to the required specification. A small proportion of the anodes are cut up to check the manufacturing process is working correctly. Raw materials are brought in to</p>	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					<p>an exact specification. Each product batch is meticulously labelled to ensure any particular anode can be traced back to a particular batch. (A high level of production control is required in the manufacture of marine anodes, as often the anodes are on a sea pipeline or oil rig and have a 25 year life expectancy). The melt temperature of the furnaces is strictly controlled.</p> <p>All applicable techniques of BAT 3 are met (g, h, l &amp; k are not applicable).</p> <p>a - All raw materials are virgin pure grade metals.</p> <p>b - Solid additions of trace materials are made to the melt to produce the required alloy. Once molten the rear doors of the furnace are opened and the operator mixes the melt by hand with a large ravel. A sample of the melt is taken and analysed prior to casting.</p> <p>c - Zinc and aluminium additions are made in 1 tonne blocks - alloying elements are weighed prior to adding to the melt</p> <p>d - Furnaces melt on a batch basis. Additions are made by operator with the use of a crane. Roof mounted hugger</p>	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					<p>burners are used to melt the feed stock and are thermocouple controlled.</p> <p>e - Furnace temperatures are set and are thermocouple controlled. The furnaces fail safe in the event of thermocouple failure i.e. in the event of thermocouple failure the burners will turn off</p> <p>The Environment Agency is satisfied that the operator is currently compliant with this BAT Conclusion.</p>	
4	In order to reduce channelled dust and metal emissions to air, BAT is to apply a maintenance management system which especially addresses the performance of dust abatement systems as part of the environmental management system (see BAT 1)	NA	NC	NA	<p>The operator has said in their response that they are not operating to BAT.</p> <p>BAT 4 is to apply a maintenance system to address the performance of the dust abatement system. However, the operator does not have a dust abatement system.</p> <p>The use of virgin pure metal feedstock and strict temperature control prevents the metal from fuming or generating any dust emissions.</p> <p>There was an extraction (not abatement) system in place for the original furnaces, with all furnaces ducted to a 36m stack (emission point A8). However, extractive monitoring results over a four year period gave particulate results for all furnaces combined at less than 1mg/m<sup>3</sup>. Following</p>	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					<p>an Operator Monitoring Assessment (OMA) audit from the Environment Agency in July 2008, the Environment Agency varied the permit to remove the monitoring requirement for the extraction system.</p> <p>In 2014 the operator applied for a variation when the furnaces were replaced with more efficient versions. The extraction system was removed at this time as the methodology for melting used at the installation does not produce dust or metallic emissions. The emission point to air (A8) was removed.</p> <p>Therefore, the Environment Agency is satisfied that this BAT conclusion does not apply to the installation.</p>	
5	In order to prevent or, where this is not practicable, to reduce diffuse emissions to air and water, BAT is to collect diffuse emissions as much as possible nearest to the source and treat them	NA	NA	NA	<p>The operator has stated in their response that this BAT is not applicable.</p> <p>There are no diffuse emissions to water from the installation. The process does not produce any water emissions. The installation does not discharge to surface water or to sewer.</p> <p>The use of virgin pure metal feedstock and strict temperature control prevents the metal from fuming or generating any dust emissions to air.</p>	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					The Environment Agency is satisfied that this BAT conclusion does not apply to the installation.	
6	In order to prevent or, where this is not practicable, to reduce diffuse dust emissions to air, BAT is to set up and implement an action plan on diffuse dust emissions, as part of the environmental management system (see BAT 1), that incorporates both of the following measures:  (a) identify the most relevant diffuse dust emission sources (using e.g. EN 15445);  (b) define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given time frame.	NA	NA	NA	The operator has stated in their response that this BAT conclusion is not applicable. The use of virgin pure metal feedstock and strict temperature control prevents the metal from fuming or generating any dust emissions to air. The site does not use any dust forming materials, such as concentrates, fluxes or fine materials. All activities take place inside an enclosed building.  The Environment Agency is satisfied that this BAT conclusion does not apply to the installation	
7	In order to prevent diffuse emissions from the storage of raw materials, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has stated in their response that this BAT conclusion is not applicable. There are no diffuse emissions from the storage of raw materials. All raw materials are solid pure virgin metal in one tonne sow or one tonne bundle of 25kg ingots. These are stored in an enclosed building prior to use. No fluxes, drosses, concentrates or fines are used in the process.	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					The Environment Agency is satisfied that this BAT conclusion does not apply to the installation.	
8	In order to prevent diffuse emissions from the handling and transport of raw materials, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has stated in their response that this BAT conclusion is not applicable. All raw materials are solid pure virgin metal in one tonne sow or one tonne bundle of 25kg ingots. There are no diffuse emissions from the transport and handling of these materials. No fluxes, drosses, concentrates or fines are used in the process. The Environment Agency is satisfied that this BAT conclusion does not apply to the installation.	
9	In order to prevent or, where this is not practicable, to reduce diffuse emissions from metal production, BAT is to optimise the efficiency of off-gas collection and treatment by using a combination of the techniques given	NA	CC	NA	The operator has confirmed in their response that they are currently compliant with BAT 9. However our view is that BAT 9 does not apply because there are no diffuse emissions from the storage of raw materials. All raw materials are solid pure virgin metal in one tonne sow or one tonne bundle of 25kg ingots. These are stored in an enclosed building prior to use. No fluxes, drosses, concentrates or fines are used in the process.	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					The Environment Agency is satisfied that this BAT conclusion does not apply to the installation.	
10	BAT is to monitor the stack emissions to air with at least the given frequency and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality	NA	NA	NA	The operator states in their response that BAT 10 is not applicable to the installation. There are no stack emissions from the site. The Environment Agency is satisfied that BAT 10 does not apply.	
11	In order to reduce mercury emissions to air (other than those that are routed to the sulphuric acid plant) from a pyrometallurgical process, BAT is to use one or both of the techniques given. BAT-AEL for Hg	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion and BAT-AEL are not applicable to this installation. This is because they relate to pyrometallurgical processes, which are typically only undertaken during primary metal production, and therefore are not applicable to the production of secondary aluminium and zinc at this site.	
12	In order to reduce emissions of SO <sub>2</sub> from off-gases with a high SO <sub>2</sub> content and to avoid the generation of waste from the flue-gas cleaning system, BAT is to recover sulphur by producing sulphuric acid or liquid SO <sub>2</sub>	NA	NA	NA	This BAT Conclusion is not applicable to plants producing secondary aluminium or zinc, as confirmed by the applicability section within BAT 12.	



BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
13	In order to prevent NOx emissions to air from a pyrometallurgical process, BAT is to use one of the techniques given	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion is not applicable to this installation. This is because it relates to pyrometallurgical processes, which are typically only undertaken during primary metal production, and therefore are not applicable to the production of secondary aluminium and zinc at this site.	
14	In order to prevent or reduce the generation of waste water, BAT is to use one or a combination of the techniques given	NA	NA	NA	The operator states in their response that BAT 14 is not applicable to the installation. The operation does not produce any waste water. The moulds are air cooled. The Environment Agency is satisfied that BAT 14 does not apply.	
15	In order to prevent the contamination of water and to reduce emissions to water, BAT is to segregate uncontaminated waste water streams from waste water streams requiring treatment	NA	NA	NA	The operator states in their response that BAT 15 is not applicable to the installation. The operation does not produce any waste water. The moulds are air cooled. The Environment Agency is satisfied that BAT 15 does not apply.	
16	BAT is to use ISO 5667 for water sampling and to monitor the emissions to water at the point where the emission leaves the installation at least once per month and in accordance with EN standards. If EN standards are	NA	NA	NA	The operator states in their response that BAT 16 is not applicable to the installation. The operation does not produce any waste water, or discharge to surface water or sewer. The moulds are air cooled.	

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	<p>not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</p> <p>The monitoring frequency may be adapted if the data series clearly demonstrate sufficient stability of the emissions</p>				The Environment Agency is satisfied that BAT 16 does not apply.	
17	In order to reduce emissions to water, BAT is to treat the leakages from the storage of liquids and the waste water from non-ferrous metals production, including from the washing stage in the Waelz kiln process, and to remove metals and sulphates by using a combination of the techniques given	NA	NA	NA	<p>The operator states in their response that BAT 17 is not applicable to the installation. The operation does not produce any waste water.</p> <p>The Environment Agency is satisfied that BAT 17 does not apply.</p>	
18	In order to reduce noise emissions, BAT is to use one or a combination of the techniques given	3.4	CC	CC	<p>The operator has confirmed in their response that they are currently compliant with BAT 18.</p> <p>The operator employs technique b to achieve BAT.</p> <p>b – the activities take place inside an enclosed building.</p>	

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					The Environment Agency is satisfied that the operator is currently compliant with the requirements of this BAT Conclusion.	
19	In order to reduce odour emissions, BAT is to use one or a combination of the techniques given	3.3	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 19.  The operator employs technique b to achieve BAT.  b – minimise the use of odorous materials.  The Environment Agency is satisfied that the operator meets the requirements of this BAT conclusion.	
<b>BAT 74-86: Secondary aluminium production</b>						
74	In order to increase the raw materials' yield, BAT is to separate non-metallic constituents and metals other than aluminium by using one or a combination of the techniques given depending on the constituents of the treated materials	NA	NA	NA	The operator states in their response that BAT 74 is not applicable to the installation.  The operator only uses pure virgin feedstock in the process and there are no non-metallic constituents in the raw materials.  The Environment Agency is satisfied that BAT 74 does not apply.	
75	In order to use energy efficiently, BAT is to use one or a combination of the techniques given	1.2	CC	CC	The operator states in their response they are currently compliant with BAT 75.  They use technique c to comply with this BAT.	

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					<p>c – supply the liquid metal for direct moulding.</p> <p>They state that molten metal is laundered directly from the furnace to the mould to reduce the number of molten metal transfers.</p> <p>The Environment Agency is satisfied that the operator meets the requirement of this BAT conclusion.</p>	
76	In order to prevent or reduce emissions to air, BAT is to remove oil and organic compounds from the swarf before the smelting stage using centrifugation and/or drying	NA	NA	NA	<p>The operator states in their response that BAT 76 does not apply to the installation. No swarf is used on site.</p> <p>The Environment Agency is satisfied that this BAT conclusion does not apply.</p>	
77	In order to prevent or reduce diffuse emissions from the pretreatment of scraps, BAT is to use one or both of the techniques given	NA	NA	NA	<p>The operator states in their response that BAT 77 does not apply to the installation. The operator does not use scraps in the process.</p> <p>The Environment Agency is satisfied that this BAT conclusion does not apply.</p>	
78	In order to prevent or reduce diffuse emissions from the charging and discharging/tapping of melting furnaces, BAT is to use one or a combination of the techniques given	3.3	CC	CC	<p>The operator states in their response they are currently compliant with BAT 78. They use technique c to comply with this BAT.</p> <p>c – sealed furnace door</p>	

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					The Environment Agency is satisfied that the operator meets the requirement of this BAT conclusion.	
79	In order to reduce emissions from skimmings/dross treatment, BAT is to use one or a combination of the techniques given	3.3	CC	CC	The operator states in their response that they are currently compliant with BAT 79. They use technique b to comply with this BAT.  b – prevention of wetting of the skimmings/dross.  The Environment Agency is satisfied that the operator meets the requirement of this BAT conclusion.	
80	In order to reduce dust and metal emissions from the swarf drying and the removal of oil and organic compounds from the swarf, from the crushing, milling and dry separation of non-metallic constituents and metals other than aluminium, and from the storage, handling and transport in secondary aluminium production, BAT is to use a bag filter  BAT-AEL for Dust	NA	NA	NA	The operator states in their response that BAT 80 does not apply to the installation. There are no channelled emissions (e.g. point source emissions from a stack) from the site.  The Environment Agency is satisfied that this BAT conclusion does not apply.	
81	In order to reduce dust and metal emissions to air from furnace processes such as charging, melting,	NA	NA	NA	The operator states in their response that BAT 81 does not apply to the installation.	

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	tapping and molten metal treatment in secondary aluminium production, BAT is to use a bag filter BAT-AEL for Dust				There are no channelled emissions (e.g. point source emissions from a stack) from the site. The Environment Agency is satisfied that this BAT conclusion does not apply.	
82	In order to reduce dust and metal emissions to air from remelting in secondary aluminium production, BAT is to use one or a combination of the techniques given BAT-AEL for Dust	NA	NA	NA	The operator states in their response that BAT 82 does not apply to the installation. There are no channelled emissions (e.g. point source emissions from a stack) from the site. Also, there are no re-melting activities at the site. Off grade anodes or anode cut ups are sent off-site for reprocessing. The Environment Agency is satisfied that this BAT conclusion does not apply	
83	In order to reduce emissions to air of organic compounds and PCDD/F from the thermal treatment of contaminated secondary raw and from the melting furnace, BAT is to use a bag filter in combination with at least one of the techniques given BAT-AELs for TVOC and PCDD/F materials (e.g. swarf)	NA	NA	NA	The operator states in their response that BAT 82 does not apply to the installation. There are no channelled emissions (e.g. point source emissions from a stack) from the site. The Environment Agency is satisfied that this BAT conclusion does not apply.	
84	In order to reduce emissions to air of HCl, Cl <sub>2</sub> and HF from the thermal	NA	NA	NA	The operator states in their response that BAT 82 does not apply to the installation.	

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	treatment of contaminated secondary raw materials (e.g. swarf), the melting furnace, and remelting and molten metal treatment, BAT is to use one or a combination of the techniques given BAT-AELs for HCl, CL 2 and HF				There are no channelled emissions (e.g. point source emissions from a stack) from the site.  The Environment Agency is satisfied that this BAT conclusion does not apply.	
85	In order to reduce the quantities of waste sent for disposal from secondary aluminium production, BAT is to organise operations on site so as to facilitate process residues reuse or, failing that, process residues recycling, including by using one or a combination of the techniques given	1.4	CC	CC	The operator states in their response that they are currently compliant with BAT 85. They use technique c to comply with this BAT.  c – apply skimmings/dross treatment to recover aluminium in the case of furnaces that do not use salt cover.  Off-grade products, dross and cut-ups are sent off-site for specialist metallic recovery.  The Environment Agency is satisfied that the operator meets the requirement of this BAT conclusion.	
86	In order to reduce the quantities of salt slag produced from secondary aluminium production, BAT is to use one or a combination of the techniques given	NA	NA	NA	The operator states in their response that BAT 86 does not apply to the installation. The operator does not produce salt slag. The Environment Agency is satisfied that this BAT conclusion does not apply.	
<b>BAT 121-130: Secondary zinc production</b>						

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
121	In order to reduce dust and metal emissions to air from pelletising and slag processing, BAT is to use a bag filter  BAT-AEL for Dust	NA	NA	NA	The operator states in their response that BAT 121 does not apply to the installation. Pelletising or slag processing are not undertaken at the installation. The Environment Agency is satisfied that this BAT conclusion does not apply.	
122	In order to reduce dust and metal emissions to air from the melting of metallic and mixed metallic/oxidic streams, and from the slag fuming furnace and the Waelz kiln, BAT is to use a bag filter  BAT-AEL for Dust	NA	NA	NA	The operator states in their response that BAT 122 does not apply to the installation. The use of virgin pure metal feedstock and strict temperature control prevents the metal from fuming or generating any dust emissions to air. There are no channelled emissions (e.g. point source emissions from a stack) from the site. The Environment Agency is satisfied that this BAT conclusion does not apply.	
123	In order to reduce emissions of organic compounds to air from the melting of metallic and mixed metallic/oxidic streams, and from the slag fuming furnace and the Waelz kiln, BAT is to use one or a combination of the techniques given  BAT-AELs for TVOC and PCDD/F	NA	NA	NA	The operator states in their response that BAT 123 does not apply to the installation. The use of virgin pure metal feedstock and strict temperature control prevents the metal from fuming or generating any dust emissions to air.	



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					<p>There are no channelled emissions (e.g. point source emissions from a stack) from the site.</p> <p>The Environment Agency is satisfied that this BAT conclusion does not apply.</p>	
124	<p>In order to reduce emissions of HCl and HF to air from the melting of metallic and mixed metallic/oxidic streams, and from the slag fuming furnace and the Waelz kiln, BAT is to use one of the techniques given BAT-AELs for HCl and HF</p>	NA	NA	NA	<p>The operator states in their response that BAT 124 does not apply to the installation.</p> <p>The use of virgin pure metal feedstock and strict temperature control prevents the metal from fuming or generating any dust emissions to air. No fluxes are used in the melt.</p> <p>There are no channelled emissions (e.g. point source emissions from a stack) from the site.</p> <p>The Environment Agency is satisfied that this BAT conclusion does not apply.</p>	
125	<p>In order to reduce the consumption of fresh water in the Waelz kiln process, BAT is to use multiple-stage countercurrent washing</p>	NA	NA	NA	<p>The operator states in their response that BAT 125 does not apply to the installation.</p> <p>The installation does not use water in the process.</p> <p>The Environment Agency is satisfied that this BAT conclusion does not apply.</p>	
126	<p>In order to prevent or reduce halide emissions to water from the washing</p>	NA	NA	NA	<p>The operator states in their response that BAT 126 does not apply to the installation.</p>	

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	stage in the Waelz kiln process, BAT is to use crystallisation				The installation does not use water in the process. The Environment Agency is satisfied that this BAT conclusion does not apply.	
127	In order to reduce diffuse dust emissions to air from the melting, alloying and casting of zinc ingots, BAT is to use equipment under negative pressure	NA	NA	NA	The operator states in their response that BAT 127 does not apply to the installation. The use of high grade virgin feed material and strict temperature control prevents any metal fuming or dust production during the melting of zinc ingots. Zinc is poured directly form the furnace to the mould via a ceramic lined launder. Anodes are cast by hand into open topped moulds. The Environment Agency is satisfied that this BAT conclusion does not apply.	
128	In order to reduce dust and metal emissions to air from the melting, alloying and casting of zinc ingots and zinc powder production, BAT is to use a bag filter BAT-AEL for Dust	NA	NA	NA	The operator states in their response that BAT 128 does not apply to the installation. The use of high grade virgin feed material and strict temperature control prevents any metal fuming or dust production during the melting of zinc ingots. Zinc is poured directly form the furnace to the mould via a ceramic lined launder. Anodes are cast by hand into open topped moulds.	

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					<p>There are no channelled emissions (e.g. point source emissions from a stack) from the site.</p> <p>The Environment Agency is satisfied that this BAT conclusion does not apply.</p>	
129	<p>In order to prevent the generation of waste water from the melting and casting of zinc ingots, BAT is to reuse the cooling water</p>	NA	NA	NA	<p>The operator states in their response that BAT 129 does not apply to the installation. Water is not used during zinc melting and casting.</p> <p>The Environment Agency is satisfied that this BAT conclusion does not apply.</p>	
130	<p>In order to reduce the quantities of waste sent for disposal from the melting of zinc ingots, BAT is to organise operations on site so as to facilitate process residues reuse or, failing that, process residues recycling, including by using one or both of the techniques given</p>	1.4	CC	CC	<p>The operator states in their response that the installation is currently compliant with BAT 130.</p> <p>The operator applies technique (a) where some of the zinc content from the zinc dross is used to alloy the aluminium anodes.</p> <p>a – use of the oxidised fraction of the zinc dross and the zinc-bearing dust from melting furnaces in the roasting furnace or in the hydrometallurgical zinc production process.</p> <p>Cut ups and off specification anodes are sent off-site for specialist recovery. Due to the customer requirements for high quality</p>	

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					<p>specification anodes these cannot be recovered on site. There is a ready market for this due to the high price of quality zinc and aluminium.</p> <p>The Environment Agency is satisfied that the operator is currently compliant with this BAT Conclusion.</p>	