

## **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/WP3538SS  
The Operator is: JVM Castings (Worcester) Limited  
The Installation is: JVM Castings (Worcester) Limited  
This Variation Notice number is: EPR/WP3538SS/V002

#### **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. It also provides a justification for the inclusion of any specific conditions in the permit that are in addition to those included in our generic permit template.

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 (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 is 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 30th March 2017.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review but not that it necessarily contained all the information we would need to complete that determination.

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 consider that the operator will be able to comply with the techniques and standards described in the BAT Conclusions. For the majority of the BAT Conclusions the operator has demonstrated that they currently operate in compliance with the requirements of the BAT Conclusions other than those techniques and requirements described in BAT Conclusions 2, 10 and 16. In relation to these BAT Conclusions, we agree with the operator in respect to their current stated capability as recorded in their Regulation 60 Notice response and understand that they will be compliant before the compliance date. We have therefore included Improvement Condition IC12 and IC 16 in relation to BATc2 and BATc10 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 30th June 2020. BATc16 concerns monitoring emissions to water, and the monitoring requirements in the Consolidated Variation Notice have been amended to ensure that the requirements of the BAT Conclusions are delivered by 30<sup>th</sup> June 2020.

### 2.3 Requests for Further Information during determination

Although we were able to consider the Regulation 60 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a further information request, in relation to BATc 3, 6, 7, 8, 75, 79, 80 and 86, in the form of a Regulation 61 Notice on 18<sup>th</sup> August 2017. A copy of the further information request was placed on our public register.

In addition to our further information request, we received additional information and/or clarification from the operator during the determination as follows:

- response to our email dated 04/10/17, received 04/10/17 regarding site drainage

We made a copy of this information available to the public in the same way as the response notices.

### 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 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 Question 5 and Question 6, 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

---

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

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

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 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.

Our intention was to use 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. However the operator has not provided satisfactory responses to questions 5 and 6 on our Regulation 60 Notice to enable us to undertake this aspect of the review within the agreed project timeline. We have therefore carried over this requirement into the Consolidated Variation Notice.

We have included Improvement Condition IC13 requiring the operator to submit a surface water pollution risk assessment in accordance with our guidance using representative emissions data.

The operator will be required to submit their risk assessment within 12 months of the effective date of our notice.

## 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 (question 7) 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.

Our intention was to use the non-ferrous metals permit review to regulate any discharge of hazardous substances to soil and groundwater. However, the operator has not provided a satisfactory response to question 7 on our Regulation 60 Notice to enable us to undertake this aspect of the review within the agreed project timeline. We have therefore carried over this requirement into the Consolidated Variation Notice.

We have included Improvement Condition IC14 requiring the operator to submit a risk assessment considering the possibility of soil and groundwater contamination where the activity involves the use, production or release of a relevant hazardous substance.



A follow-up Improvement Condition IC15 has also been included which requires the operator, if having established that there is a risk to soil and groundwater, to submit a baseline report compliant with Article 22 of the IED, containing information necessary to determine the current state of soil and groundwater contamination. This shall enable a quantified comparison to be made with the state of soil and groundwater contamination upon definitive cessation of activity.

The operator will be required to submit their IC14 response within 3 months of the effective date of our notice, and their IC15 response (if deemed necessary) within 12 months of the effective date.

### **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.

We have set emission limit values (ELVs) in line with the BAT Conclusions, unless a tighter, i.e. more stringent, limit was previously imposed and these limits have been carried forward. For emissions to each relevant environmental receptor (i.e. air, or surface water), the emission limits and monitoring requirements have been incorporated into the permit via two tables, as follows:

- Tables S3.1a and S3.2a, the requirements of which are effective from the date of issue of the notice, and which contain the existing ELVs and monitoring requirements; and
- Tables S3.1b S3.2b, the requirements of which will take effect 30<sup>th</sup> June 2020, and which contain amended ELVs where a BAT-AEL is specified in the BAT Conclusions, and any associated updated monitoring requirements.

## **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. Table 1 of 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 with the BAT Conclusion requirement</b>  <b>Type of process: SECONDARY ALUMINIUM PRODUCTION</b>
BAT Conclusions that are not applicable to this installation.	<b>NA</b>	<p><b>General BAT Conclusions for Non-Ferrous Metals Industries: 11, 12, 13, 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, 86</b>            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            BAT Conclusions for secondary zinc production, 121-130 inclusive            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>
BAT Conclusions where we accept the operator's Reg 60 notice response that they are	<b>CC</b>	<p><b>General BAT Conclusions for Non-Ferrous Metals Industries: 1, 3, 4, 5, 6, 7, 8, 9, 14, 15, 18, 19</b></p>

<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 with the BAT Conclusion requirement</b>  <b>Type of process: SECONDARY ALUMINIUM PRODUCTION</b>
currently compliant and no further explanation is required.		<b>BAT Conclusions for secondary aluminium production: 75, 78, 79, 81, 82, 83, 84, 85</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>General BAT Conclusions for Non-Ferrous Metals Industries: 2, 10, 16</b> <b>BAT Conclusions for secondary aluminium production: 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>General BAT Conclusions for Non-Ferrous Metals Industries: None</b> <b>BAT Conclusions for secondary aluminium production: 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.

### **Changes to emission limits and monitoring requirements for emission point A1 (bulk melt furnaces)**

#### **BAT Conclusion 10 – re monitoring frequencies**

BAT 10 sets out the minimum monitoring requirements for the NFM sector, stating that BAT is to monitor stack emissions to air with at least the frequency given and in accordance with EN standards. Furthermore, it says that 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.

A potential issue is that BAT 10 specifies that continuous monitoring is BAT for a number of parameters, but this is then qualified by footnote (1) to the monitoring table, which states:

*“For sources of high emissions, BAT is continuous measurement or, where continuous measurement is not applicable, more frequent periodic monitoring.”*

‘High emissions’ are not defined in the BAT Conclusions / BREF, however the implication is that this term links to higher environmental impacts / risk. Continuous monitoring is typically used for controlling higher environmental risks, when the feedback from such monitoring is required for process controls (e.g. abatement, such as de-NO<sub>x</sub> and acid-gas scrubbing) and where the absence of such monitoring could result in a lack of sufficient control and significant impacts; or when periodic monitoring does not give sufficiently representative results.

Our view is that rather than referring to ‘high emissions’, we will consider what levels of emissions can BAT for abatement and process controls achieve, and having determined that, we will consider the following questions:

- Can periodic monitoring provide representative results?
- Can the installation keep within the ELVs under normal conditions without the need for process controls through continuous monitoring?
- Are there surrogate parameters available that can be used to reliably infer the emissions and at an acceptable level of uncertainty, in case there is a breakdown in the abatement equipment, or under abnormal operations?

If the answer is 'yes' to all of the above three questions, our view is that periodic monitoring could be deemed to provide a sufficient level of control and demonstration of compliance. However, if the answer is 'no' to one or more of the above questions - especially the first and second question, then we would consider continuous monitoring to be more appropriate for the site.

Monitoring requirements can also be influenced by environmental risk, for example, if the risks were very low, we could opt for a combination of surrogate parameters and/or more frequent periodic monitoring, rather than continuous monitoring. We will also take this into consideration when making our judgement.

We have been unable to fully consider the implications for the operator as part of this review and will require the operator to provide further information to enable us to determine with respect to monitoring frequency, what is BAT for the site, and therefore to agree the appropriate monitoring provision to be applied at the site from 30 June 2020. Our pragmatic approach to the monitoring aspects of the permit review is therefore:

1. To ensure that the existing permit has been updated to reflect current monitoring standards, in accordance with our M2 monitoring guidance. These standards are contained within Table S3.1a.
2. The inclusion of an Improvement Condition (IC16) in the permit requiring that the operator provides evidence to justify the level of monitoring to be employed, including where relevant, the frequency of periodic monitoring. That evidence will allow us to address the questions above, and facilitate agreement of the appropriate monitoring provision that will apply from 30 June 2020 onwards.
3. To carry over the existing periodic monitoring requirements in Table S3.1b pending completion of IC16, which must be submitted to the Environment Agency within 6 months of the date of issue of this variation.

### **BAT Conclusion 10 re Associated Emission Limits:**

Not all parameters listed in BATc10 are applicable to this installation. The ones that apply relate to dust (referred to as total particulate in Table 3.1a and particulate matter in Table 3.1b) (BATc80, 81, 82); Total Volatile Organic Carbons (TVOCs) (BATc83); PCDD/F (polychlorinated dibenzo-p-dioxins and dibenzofurans i.e. dioxins and furans) (BATc83); gaseous fluorides (BATc84) and hydrogen chloride (BATc84).

#### **BAT Conclusions 10, 81 and 82**

We have included an ELV for particulate matter of 5 mg/Nm<sup>3</sup> which is in accordance with the upper BAT-AEL value. This ELV applies to dust emissions to air from furnace processes and remelting in secondary aluminium production and therefore applies to emission point A1. The reference period and monitoring frequency reflect the requirements of BATc10.

However, with regard to the continuous monitoring of particulate emissions to air, whereas the BATc10 specifies method BS EN 13284-2, our view is that monitoring should be carried out following the principles of method BS EN 14181. Our M2 guidance on the 'Monitoring of stack emissions to air' states that BS EN 13284-2 is for calibration of particulate CEMS (continuous emissions monitoring systems) and is applicable to large combustion plant (LCP) and waste incineration installations (EFW) under the IED. It goes on to say that for other processes the ongoing quality assurance should follow the principles of BS EN 14181 (i.e. applying QAL2/AST and QAL3) but that a reduced number of parallel measurements may be acceptable. Therefore as this installation is not an LCP or EFW we consider that monitoring following the principles of BS EN 14181 is more appropriate.

Table S3.1b has been updated within the consolidated variation notice.

### **BAT Conclusions 10 and 83**

We have retained the monitoring frequency for Total Volatile Organic Carbons (TVOC) but have reduced the limit from 50mg/Nm<sup>3</sup> to 30mg/Nm<sup>3</sup>, and changed the reference period and monitoring method to reflect the requirements of BATc10 and BATc83. The minimum monitoring frequency for TVOC is continuous or once per year<sup>1</sup>. The footnote<sup>1</sup> says *“for sources of high emissions, BAT is continue measurement or, where continuous measurement is not applicable, more frequent periodic monitoring.”* The Environment Agency reviewed monitoring results in 2014, and agreed that a monitoring frequency of once per year was suitable at this installation.

We have clarified the requirement to measure dioxins and furans, and retained the 0.1ngI-TEQ/Nm<sup>3</sup> limit, the monitoring frequency and monitoring standard but have changed the reference period to reflect the requirements of BATc10 and BATc83.

### **BAT Conclusions 10 and 84**

We have retained the 10mg/Nm<sup>3</sup> limit for hydrogen chloride and the monitoring method but have changed the reference period to reflect the requirements of BATc10.

We have retained the 1mg/Nm<sup>3</sup> limit for fluorides but have changed the reference period and monitoring method to reflect the requirements of BATc10.

For both hydrogen chloride and gaseous fluoride (expressed as HF), please see section above on monitoring frequencies.

The operator does not use chlorine in their refining process, so the BAT-AEL for Cl<sub>2</sub> does not apply.



**Annex 2a: Assessment, determination and decision where an application(s) for Derogation from BAT Conclusions with associated emission levels (AEL) has been requested.**

The IED enables a competent authority to allow derogations from BAT-AELs stated in BAT Conclusions under specific circumstances as detailed under Article 15(4):

'By way of derogation from paragraph 3, and without prejudice to Article 18, the competent authority may, in specific cases, set less strict emission limit values. Such a derogation may apply only where an assessment shows that the achievement of emission levels associated with the best available techniques as described in BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to:

- (a) the geographical location or the local environmental conditions of the installation concerned; or
- (b) the technical characteristics of the installation concerned.

The competent authority shall document in an annex to the permit conditions the reasons for the application of the first subparagraph including the result of the assessment and the justification for the conditions imposed. The Operator did not request derogation from compliance with any BAT-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-AELs 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 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. These improvement conditions are set out below - justifications for them is provided at the relevant section of the decision document.

There are two improvement condition on the existing permit which are not considered complete, IC1 and IC4. These conditions require the operator to submit reports to the Environment Agency to provide information on emission points A1 and W1, in order to agree appropriate emission limits.

Where the consolidated permit contains existing improvement conditions that are not yet complete or the opportunity has been taken to delete completed improvement conditions then the numbering in the table below will not be consecutive as these are only the improvement conditions arising from this permit variation.

Reference	Improvement Condition	Completion date
IC12	<p>The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the 'Narrative' BAT where BAT is currently not achieved, but will be achieved before 30<sup>th</sup> June 2020</p> <p>The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"><li>1) Methodology for achieving BAT.</li><li>2) Associated targets / timelines for reaching compliance by 30<sup>th</sup> June 2020</li></ol> <p>Any alterations to the initial plan. The report shall address the following</p>	<p>Progress report within 6 months of effective date of notice V002. Compliance by 30<sup>th</sup> June 2020.</p>

Reference	Improvement Condition	Completion date
	BATc: BATc 2 “in order to use energy efficiently, BAT is to use a combination of the techniques given....” Refer to BAT Conclusions for a full description of the BAT requirement.	
IC13	<p>The operator shall submit a surface water pollution risk assessment to the Environment Agency for approval, which shall assess the impact of discharges of hazardous pollutants to surface water <b>and/or sewer</b> from the installation. The risk assessment shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> <li>a) representative emissions data for the following hazardous pollutants: silver, arsenic, cadmium, cobalt, chromium (total), chromium (VI), copper, mercury, nickel, lead, zinc; and any other relevant substances discharged from the installation. Any emissions monitoring required should be carried out using the methods and standards described in Environment Agency <u>M18</u> guidance; and</li> <li>b) a risk assessment in accordance with the screening procedures in Environment Agency guidance “<u>Surface water pollution risk assessment for your environmental permit</u>”, using the representative emissions data obtained in (a) above.</li> </ul>	Within 12 months of effective date of notice V002
IC14	<p>The operator shall submit to the Environment Agency for approval a risk assessment considering the possibility of soil and groundwater contamination at the installation where the activity involves the use, production or release of a relevant hazardous substance (as defined in Article 3(18) of the Industrial Emissions Directive). The risk assessment</p>	Within 3 months of effective date of notice V002

Reference	Improvement Condition	Completion date
	shall clearly establish with appropriate evidence whether or not there is a risk of contamination of soil and groundwater.	
IC15	<p>Where the risk assessment carried out under IC3 above establishes a risk to soil and groundwater the operator shall:</p> <ul style="list-style-type: none"> <li>a) prepare and submit a baseline report compliant with Article 22 of the Industrial Emissions Directive (IED) containing information necessary to determine the current state of soil and groundwater contamination; or</li> <li>b) provide a summary report referring to information previously submitted where the operator is satisfied that such information represents the current state of soil and groundwater contamination,</li> </ul> <p>so as to enable a quantified comparison to be made with the state of soil and groundwater contamination upon definitive cessation of activity.</p>	Within 12 months of effective date of notice V002
IC16	<p>The operator shall undertake a review of periodic monitoring for emissions to air of hydrogen chloride and gaseous fluorides (expressed as HF) from emission point A1. The review will be made with reference to BAT 10 of the BAT Conclusions for the Non-Ferrous Metals Industries (Commission Implementing Decision EU2016/1032) and shall justify, with appropriate evidence, the frequency of monitoring to be employed at the installation from 30 June 2020.</p> <p>The evidence required under this condition shall include analysis and interpretation of monitoring results for each substance, and performance</p>	Within 6 months of effective date of notice V002

Reference	Improvement Condition	Completion date
	<p>against the relevant BAT-AEL. Consideration should be given to <i>inter alia</i> the nature of the raw materials, fluxing agents, refining chemicals used; operational stability; and process monitoring associated with operation of abatement plant. The quantity of monitoring data considered must be justified and be sufficient so as to demonstrate that the results are statistically representative of emissions during normal operations, covering the concentration range and mass emission rate of substances emitted at all stages of the process.</p> <p>A report on the above review shall be submitted to the Environment Agency to facilitate agreement in writing of the appropriate monitoring provision at the installation.</p>	

## **Annex 4**

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

#### **Changes to emission limits and monitoring requirements for emission point A2 (stack exiting furnaces in Alum 2)**

This stack has never been used, nor is it planned to be used in the future. Therefore this emission point and any associated limits have been removed.

#### **Monitoring frequencies for oxides of nitrogen, sulphur dioxide, carbon monoxide and volatile organic carbons**

Following a review of previous monitoring, the Environment Agency agreed in 2014 that the frequency of monitoring for the above parameters be reduced from twice yearly to once per year.

#### **Addition of Table 2.2 Waste Types in Schedule 2**

The NFM review is taking the opportunity to modernise the entire permit to make the permit consistent with our current general approach and with other permits issued to installations issued in this sector. To this effect a waste table has been included (Table 2.2 in Schedule 2), although we note that the operator currently only uses aluminium ingots or internally recycled aluminium cast material as raw material.

## 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>BATc 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 the installation is BATc1 compliant.</p> <p>The operator has an accredited EMS (ISO 14001) with an environmental policy in place. ISO 14001 covers the elements required by BATc1.</p> <p>The Environment Agency is satisfied that the operator is BATc1 compliant.</p>	Compliance checks of EMS, particularly EMS audits and the implementation of audit recommendations.
2	In order to use energy efficiently, BAT is to use a combination of the techniques given.	1.2	FC	FC	<p>The operator has stated in their response that they will be future compliant for BATc2.</p> <p>The operator is to use a combination of techniques to achieve BATc2:-</p> <ul style="list-style-type: none"> <li>• Achieve ISO 50001 accreditation by end 2019 (technique a)</li> <li>• Various energy saving opportunities identified with ESOS submission of December 2016 to be implemented by end 2019 – e.g.</li> </ul>	Compliance checks on progress of IC12 fulfilment.



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>use of highly efficient electric motors with variable frequency drives (technique n).</p> <p>The Environment Agency has added improvement condition (IC12) to the permit to ensure future compliance with BATc2 by the 30<sup>th</sup> June 2020.</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>	1	CC	CC	<p>The operator has confirmed in their response that the installation is BATc3 compliant.</p> <p>To ensure environmental performance and stable process operation the company operates externally accredited systems (i.e. ISO14001 – Environmental Management System, ISO 9001 – Quality Management System and IATF 16949 – Automotive Quality Management) and employs a range of monitoring processes (i.e. TPM - Total Productive Maintenance, SCADA – supervisory control and data acquisition).</p> <p>The operator employs techniques:</p> <p>a – inspect and select input materials according to the process and the abatement techniques applied</p> <p>b – good mixing of the feed materials to achieve optimum conversion efficiency and reduce emissions and rejects</p>	None.

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
					j – temperature monitoring and control at melting and smelting furnaces to prevent the generation of metal and metal oxide fumes through overheating to ensure compliance with BATc3. The Environment Agency is satisfied the operator is currently compliant with BATc3.	
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).	3.1 3.2	CC	CC	The operator has confirmed in their response that the installation is BATc4 compliant. The operator applies a maintenance management system, called Total Productive Maintenance (TPM) which addresses the performance of the dust abatement systems (specifically their air abatement system and local extraction ventilation systems or LEVs). The Environment Agency is satisfied that the operator is BATc4 compliant.	Compliance checks of the maintenance system as part of the EMS checks.
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.	3.2	CC	CC	The operator has confirmed in their response that the installation is BATc5 compliant. The operator collects diffuse air emissions by Local Exhaust Ventilation systems, with hoods fitted on all furnace doors and these	None.

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>are ducted for treatment by abatement systems on site.</p> <p>Site drainage is collected and discharged via an interceptor, prior to discharge to surface water. The interceptor will settle out suspended solids and remove oils. The interceptor is fitted with a shut-off valve that can be closed in the event of spillages on site.</p> <p>The Environment Agency is satisfied the operator is currently compliant with BATc5.</p>	
6	<p>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:</p> <p>(a) identify the most relevant diffuse dust emission sources (using e.g. EN 15445);</p> <p>(b) define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given time frame.</p>	1 3.2	CC	CC	<p>The operator has confirmed in their response that the installation is BATc6 compliant.</p> <p>Various measures are identified and implemented to reduce dust diffuse emissions, such as:</p> <ul style="list-style-type: none"> <li>- dross is kept in covered skips</li> <li>- filter residues from bulk melt process are captured in non porous bags in enclosed systems</li> <li>- molten metal transported in lidded shanks</li> <li>- charging/fluxing of furnaces undertaken under extracted/filtered bag (Disa) system</li> </ul>	None.

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
					<ul style="list-style-type: none"> <li>- road sweeping undertaken using wet mechanical process</li> <li>- flux/talc stored within buildings in sealed bags.</li> </ul> <p>The EMS incorporates review and continual improvement.</p> <p>The Environment Agency is satisfied the operator is currently compliant with BATc6.</p>	
7	In order to prevent diffuse emissions from the storage of raw materials, BAT is to use a combination of the techniques given.	3.2	CC	CC	<p>The operator confirms in their response that the installation is currently BATc7 compliant.</p> <p>A combination of techniques (a, b, c, d, h, j and r) are used to ensure compliance with BATc7:</p> <p>a – enclosed buildings or silo/bins for storing dust-forming materials such as concentrates, fluxes and fine materials</p> <p>b – covered storage of non-dust forming materials such as concentrates, fluxes, solid fuels, bulk materials and coke and secondary materials that contain water soluble organic compounds</p> <p>c – sealed packaging of dust-forming materials or secondary materials that contain water-soluble organic compounds</p>	None.

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>d – covered bays for storing materials which has been palletised or agglomerated</p> <p>h – tank construction materials that are resistant to the contained materials</p> <p>j – store reactive materials in double-walled tanks or tanks placed in chemical resistant bunds of the same capacity and use a storage area that is impermeable and resistant to the material stored</p> <p>r – use oil and solid interceptors for the drainage of open outdoor storage areas. Use of concreted areas that have kerbs or other containment devices for the storage of material that can release oil, such as swarf.</p> <p>The Environment Agency is satisfied the operator is currently compliant with BATc7.</p>	
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.	3.2	CC	CC	<p>The operator has confirmed in their response that the installation is BATc8 compliant.</p> <p>A combination of techniques are used to ensure compliance with BATc8:</p> <p>d – closed bags or drums to handle materials with dispersible or water-soluble components</p> <p>g – minimise transport distances</p>	None.

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>o – used planned campaigns for road sweeping</p> <p>q – minimise material transfers between processes.</p> <p>The Environment Agency is satisfied the operator is currently compliant with BATc8.</p>	
9	<p>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.</p>	<p>3.1 3.2</p>	CC	CC	<p>The operator has confirmed in their response that the installation is BATc9 compliant.</p> <p>The operator uses a combination of techniques (b and i) to optimise efficiency of off-gas collection:</p> <p>b – use a closed furnace with a properly designed dedusting system or seal the furnace and other process units with and adequate vent system</p> <p>i – treat the collected emissions in an adequate abatement system.</p> <p>The Environment Agency is satisfied that the operator is currently compliant with BATc9.</p>	None.
10	<p>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</p>	<p>3.1 3.5</p>	CC	FC	<p>The operator has confirmed in their response that the installation is BATc10 currently compliant.</p> <p>Where the extant permit did not reflect either the reference period, monitoring</p>	<p>Confirm future compliance by inspection and completion of IC16.</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
	international standards that ensure the provision of data of an equivalent scientific quality.				<p>frequency or monitoring method required by BATc10, the permit has been revised to reflect the BATc10 requirements.</p> <p>Please refer to the Key Issues section for further information on BATc10 decisions.</p> <p>The Environment Agency requires further information from the operator in order to determine the appropriate level of monitoring provision to be employed at the site for hydrogen chloride and gaseous fluorides (expressed as HF) from 30 June 2020. We have included Improvement Condition IC16 in order to obtain this information and to subsequently agree with the operator the BAT requirements for the site. We describe this aspect of our review in more detail within the Key Issues section of this decision document.</p> <p>The Environment Agency is unable to agree that the operator is currently compliant with the monitoring requirements of BAT 10, but we are satisfied that pending completion of IC16, the operator will be compliant by 30 June 2020.</p>	
11	In order to reduce mercury emissions to air (other than those that are routed to the sulphuric acid plant) from a	NA	NA	NA	The operator has confirmed in their response that BATc11 is not applicable at the installation.	None.

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
	pyrometallurgical process, BAT is to use one or both of the techniques given. BAT-AEL for Hg.				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 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	The operator has indicated in their response that BATc12 is not applicable to their installation. BATc12 only applies to plants producing copper, lead, primary zinc, silver, nickel and molybdenum, as confirmed by the applicability section within BATc12. These metals are not produced at this plant. The Environment Agency is satisfied that BATc12 does not apply.	None.
13	In order to prevent NO <sub>x</sub> emissions to air from a pyrometallurgical process, BAT is to use one of the techniques given.	NA	NA	NA	The operator has confirmed in their response that BATc13 is not applicable at the installation. 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	None.



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
					metal production, and therefore are not applicable to the production of secondary aluminium 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.	1.1 3.1 3.5	CC	CC	The operator has confirmed in their response that the installation is BATc14 compliant.  The operator is using one of the techniques given to achieve BATc14 (f - use of a closed circuit cooling system).  The Environment Agency is satisfied that the operator is currently compliant with BATc14.	None.
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.	3.2	CC	CC	The operator has confirmed in their response that the installation is BATc15 compliant.  The operator segregates uncontaminated waste water streams from waste water streams requiring treatment in accordance with BATc15.  Clean surface water is collected and discharged via an oil interceptor.  Water from the cooling tower is discharged to foul sewer.  Process water is collected and treated off-site.	None.

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 BATc15.	
16	<p>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 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>	3.1	NC	FC	<p>The operator has stated in their response that they are not operating to BATc16. (They currently sample the parameters and limits specified by the permit on a quarterly basis).</p> <p>The revised permit requires aluminium and total suspended solids to be monitored at the frequency and methodology required by BATc16, from the compliance date of 30<sup>th</sup> June 2020 onwards.</p> <p>The Environment Agency is satisfied that the operator will be future compliant with this BAT conclusion.</p>	Compliance by inspection - Ensure the correct monitoring regime is undertaken post 30/06/2020
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	NC	NA	<p>The operator states in their response that they are not compliant with BATc17.</p> <p>The Environment Agency has determined that this BAT Conclusion is not applicable for installations which only discharge waste water to sewer.</p>	None.

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>The BAT-AELs for BAT 17 relate to direct emissions to receiving waters (as opposed to indirect emissions made via the foul sewer) and in any case do not apply to the production of secondary aluminium, as confirmed in the BAT Conclusion.</p> <p>The Environment Agency considers BATc 17 not applicable at this site.</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 the installation is BATc18 compliant.</p> <p>The operator is using one of the techniques given to achieve BATc18 (b – enclose noisy plants or components in sound-absorbing structures).</p> <p>During 2011 and 2012 the operator received noise complaints at the installation. The operator worked extensively with the Environment Agency to identify the cause of these complaints and to rectify them (refer to EA Position Statement dated 14 March 2012). The operator has produced and operates to an approved Noise Management Plan. There have been no recent noise complaints.</p>	Compliance by inspection - Compliance checks on implementation of the Noise Management Plan, particularly around any noise complaints

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 BATc18.	
19	In order to reduce odour emissions, BAT is to use one or a combination of the techniques given.	3.3	CC	CC	<p>The operator has confirmed in their response that the installation is BATc19 compliant.</p> <p>The operator is using one of the techniques given to achieve BATc19 (a – appropriate storage and handling of odorous materials).</p> <p>The installation has received odour complaints. The operator has produced and operates to an approved Odour Management Plan.</p> <p>The Environment Agency is satisfied that the operator is currently compliant with BATc19.</p>	None.
<b>BATc 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.	1.3	NA	NA	<p>The operator has indicated in their response that BATc74 is not applicable to their installation.</p> <p>BATc74 aims to increase raw material yield. However, the installation currently only uses aluminium ingots or internally recycled aluminium cast material so BATc74 is not applicable.</p>	This BAT to be reviewed if the operator changes raw material input from aluminium and internally recycled aluminium cast material only

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 BATc74 does not currently apply to this installation.	
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 has indicated in their response the installation is currently compliant with BATc 75.  The operator employs technique a to comply with BATc75 requirements: a – preheating of the furnace charge with the exhaust gas.  The Environment Agency is satisfied that the operator is currently compliant with BATc75.	None.
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	The operator has indicated in their response that BATc76 is not applicable to their installation.  The installation does not use swarf in smelting. Swarf created is compacted and removed from site.  The Environment Agency is satisfied that BATc76 does not apply to this installation.	None.
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	The operator has indicated in their response that BATc77 is not applicable to their installation.  The operator does not pre-treat scraps.	None.

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 BATc77 does not apply to this installation.	
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.	3.1 3.2	CC	CC	The operator has confirmed in their response that the installation is BATc78 compliant.  The operator is using one of the techniques given to achieve BATc78 (a – placing a hood on top of the furnace door and at the taphole with off-gas extraction connected to a filtration system).  The Environment Agency is satisfied that the operator is currently compliant with BATc78.	None.
79	In order to reduce emissions from skimmings/dross treatment, BAT is to use one or a combination of the techniques given.	3.1 3.2	CC	CC	The operator has confirmed in their response that the installation is BATc79 compliant.  The operator is using one of the techniques given to achieve BATc79 (b- prevention of wetting of the skimming/dross).  The Environment Agency is satisfied that the operator is currently BATc79 compliant.	None.
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	NA	NA	NA	The operator has indicated in their response that BATc80 is not applicable to their installation.  The operator does not undertake any secondary aluminium production on site	None.

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
	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.				and or undertake any processes as indicated in techniques a to c. The Environment Agency is satisfied that BATc80 does not apply.	
81	In order to reduce dust and metal emissions to air from furnace processes such as charging, melting, tapping and molten metal treatment in secondary aluminium production, BAT is to use a bag filter. BAT-AEL for Dust.	3.1 3.2	CC	CC	The operator has confirmed in their response that the installation is BATc81 compliant. The operator uses a bag filter. Emissions are continuously monitored and validated externally (by PCME, a company that specialises in the monitoring of emissions i.e. continuous particulate emission and flow monitoring (for regulatory compliance and process control)). Monitoring data also confirms the operator's compliance with the BAT-AEL. Refer to Key Issues section for further information. The Environment Agency is satisfied that the operator is currently BATc81 compliant.	None.
82	In order to reduce dust and metal emissions to air from remelting in secondary aluminium production, BAT	3.1 3.2	CC	CC	The operator has confirmed in their response that the installation is currently compliant with BATc82.	None.

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
	is to use one or a combination of the techniques given. BAT-AEL for Dust.				The operator uses two techniques (a - use of uncontaminated aluminium material and c - bag filter) required for BATc82. Monitoring data also confirms the site is compliant with the BAT-AEL and the operator confirms the monitoring requirements are met in BATc10. Refer to Key Issues section for further information. The Environment Agency is satisfied that the operator is currently compliant with BATc82.	
83	In order to reduce emissions to air of organic compounds and PCDD/F from the thermal treatment of contaminated secondary raw materials (e.g. swarf) 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.	3.1	CC	CC	The operator has confirmed in their response that the installation is currently compliant with BATc83. The operator is using a bag filter in combination with two techniques required for BATc83 : a - select and feed the raw materials according to the furnace and abatement techniques used and e - activated carbon injection. Monitoring data also confirms the installation is meeting the BAT-AEL and the operator confirms the monitoring requirements are being met in BATc10.	None.



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>Refer to Key Issues section for further information.</p> <p>The Environment Agency is satisfied that the operator is currently compliant with BATc83.</p>	
84	<p>In order to reduce emissions to air of HCl, Cl<sub>2</sub> and HF from the thermal 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<sub>2</sub> and HF.</p>	3.1	CC	CC	<p>The operator has confirmed in their response that the installation is currently compliant with BATc84.</p> <p>The operator is using technique a (select and feed the raw materials according to the furnace and abatement techniques used).</p> <p>The operator states they are meeting the BAT-AELs relevant to their process i.e. HCL and HF. The operator does not refine molten metal using chemicals containing chlorine (Cl<sub>2</sub>) so the BAT-AEL for chlorine does not apply.</p> <p>Monitoring confirms the installation is meeting the BAT-AELs.</p> <p>Refer to Key Issues section for further information.</p> <p>The Environment Agency is satisfied that the operator is currently compliant with BATc84.</p>	None.

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
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 has confirmed in their response that the installation is currently compliant with BATc85.  The operator is using one technique required for BATc85 (c – apply skimming/dross treatment to recover aluminium in the case of furnaces that do not use salt cover).  The Environment Agency is satisfied that the operator is currently compliant with BATc85.	None.
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 confirms in their response that BATc86 is not applicable to their installation.  The operator does not undertake any secondary aluminium production on site.  The Environment Agency is satisfied that BATc86 is not applicable at this installation.	None.