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/BM5020IC
The Operator is: Timet UK Limited
The Installation is: Timet UK Limited
This Variation Notice number is: EPR/BM5020IC/V004

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 30th 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 13th 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 16th 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 30th June 2020, which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 30th 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 that the response did not contain sufficient information for us to commence determination of the permit review. We therefore issued a further information request to the Operator. Suitable further information was provided by the Operator on 8th June 2018.

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 for those techniques and requirements described in BAT Conclusion 1, 3, 4, 5, 6, 10, 11 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 30th June 2020 (the “compliance date”). We have therefore included Improvement Conditions IC1, IC2, and IC3 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 30th 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 the form of a Regulation 61 Notice on 02/05/2018. A copy of the further information request was placed on our public register.

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

- Further response to our Regulation 61 Notice dated 02/05/18, received 11/06/18, of process flow diagrams providing further clarification of processes carried out on site
- Response to our email dated 11/06/18 received 11/06/18, confirming that Stage 1 NaK cooled furnaces will not be used until infrastructure improvements have been completed the Environment Agency notified.
- Response to our email dated 12/06/18 received 12/06/18, regarding waste status of raw materials
- Response to our email dated 13/06/18 received 13/06/18, regarding the usage of HF and nitric acid within the processes carried out on site.
- Copy of original site condition report provided on 12/07/18 and the operator confirmed that this is still current.

We made a copy of this information available to the public in the same way as the responses to our information requests.

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[1] (priority hazardous substances, priority substances and "other pollutants"). It also applies to the specific pollutants listed in the 2015 Directions[2], 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

[1] Environmental Quality Standards Directive (EQSD) (2008/105/EC, as amended by 2013/39/EU)
[2] The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015

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 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 IC4 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. They have indicated that this assessment will be ready in September 2018.

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.

The operator's response to this confirmed that the existing Site Condition Report is still accurate and is still representative of the site, the operator provided a copy of the report on 12/07/18. Therefore no further information or assessment required.

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 (ELV's) 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 Consolidated Variation Notice via two tables in Schedule 3 – Emissions and monitoring, as follows:

Emissions to air

- Table S3.1a, the requirements of which are effective from the date of issue of the notice, and which contains the existing ELVs and monitoring requirements; and

- Table S3.1b, the requirements of which will take effect from 30th June 2020, and which contains amended ELV's 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 30th 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

Table 1: Decision checklist for relevant BAT Conclusions		
Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries	**Status** **NA / CC / FC / NC**	**Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement** **Type of process: N/A (as no specific BAT Conclusions for titanium production)**
BAT Conclusions that are not applicable to this installation	**NA**	**General BAT Conclusions for Non-Ferrous Metals Industries: 12** 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 BAT Conclusions for secondary aluminium production: 74-86 inclusive 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 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
BAT Conclusions where we accept the operator's Reg 60 notice response that they are	**CC**	**General BAT Conclusions for Non-Ferrous Metals Industries: 2, 7, 8, 9, 13, 14, 15, 17, 18 and 19**

Table 1: Decision checklist for relevant BAT Conclusions		
Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries	**Status** **NA / CC / FC / NC**	**Assessment of the installation capability to demonstrate compliance with the BAT Conclusion requirement** **Type of process: N/A (as no specific BAT Conclusions for titanium production)**
currently compliant and no further explanation is required.		
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	**FC**	**General BAT Conclusions for Non-Ferrous Metals Industries: 1, 3, 4, 5, 6, 10, 11 and 16**
BAT Conclusions where the Operator has responded that they are not compliant and have not submitted any plans to become compliant	**NC**	**None**

Key Issues

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 / 61 Notice response as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

BAT Conclusion 3 & 4
Although the operator's response indicates the techniques used there is currently no adequate Environmental Management System (EMS) in place. Once such an EMS, detailing the process/management systems employed, is in place the operator will be compliant with the requirements of these BAT conclusions

BAT Conclusion 5
The response from the operator does not adequately address the diffuse emissions, the operator only states that diffuse emissions are kept to a minimum. They also state that they run an MCERTS accredited effluent treatment plant which is not relevant to the reduction of diffuse emissions.

BAT Conclusion 10

Monitoring requirements for emissions to air

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-NOx 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 (IC3) 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 IC3, which must be submitted to the Environment Agency within 6 months of the date of issue of this variation.

BAT Conclusion 12

We have removed the existing ELV for SO_2 and the associated monitoring requirements from the permit. This is because BAT 12 does not apply to plants producing titanium as confirmed by the applicability section of the BAT Conclusion. Furthermore there is no BAT-AEL for SO_2 or any requirement to monitor SO_2 emissions from titanium production within the BAT Conclusions.

BAT-AELs and monitoring requirements for Titanium production

BAT Conclusion 11

We have included an ELV for mercury of 0.05mg/m^3 which is in accordance with the upper BAT-AEL value. This is a requirement of BAT 11 where the operator uses materials which contain mercury. The operator confirmed in their Regulation 60 response that they use both techniques to reduce mercury emissions to air so are compliant with the BAT conclusion. However they do not currently monitor for mercury so have not demonstrated that mercury is not present in the materials used on site. The operator has confirmed that they will meet the BAT-AEL and will be compliant with the BAT conclusion by 30th June 2020

ELV for dust emissions

The intention of the NFM BAT conclusions is to protect human health and the environment from the detrimental effects of non-ferrous metal production. While titanium is a non-ferrous metal it not included in any of the non-ferrous sub-sectors contained in the BREF and BAT conclusions.

The BAT conclusions address a number of key areas associated with metal production, including:

- Improving Energy efficiency
- Reducing diffuse emissions to air and water
- Reducing channelled emissions, including:
    - dust and metals
    - mercury
    - SO_2
    - NOx
    - NH_3
    - Volatile organics
    - Dioxins and furans
- Preventing contamination of:
    - Groundwater
    - Soil
    - Surface waters, and
- Reducing waste sent for disposal

In assessing this installation against the BAT conclusions we have applied the general requirements set out in BAT 1-19. We have also ensured that where relevant the principles and techniques which underpin BAT for the non-ferrous sector as a whole have been applied to the production of titanium.

The following ELV, which is typically applied to channelled emissions from non-ferrous metal production using furnaces processes, and which is based on the BAT-AEL for dust, is deemed appropriate to be included in the varied permit:

- Particulates, 5 mg/Nm^3

We have included this ELV which is in accordance with the BAT requirements and BAT-AEL (upper limit). This ELV only applies to the emission from the bag plant. The bag plant treats emissions collected from the forge furnaces using LEV and extraction systems. The relevant emission points are A7, A8 and A9, as listed in Table S3.1 of the permit.

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. ‘

A summary of any derogation(s) granted is also recorded in an Annex of the Consolidated Variation Notice in accordance with the requirement of IED Article 15(4) as described above.

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 / 61 Notice response(s) 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.

If 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
IC1	The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the BAT conclusion AELs where BAT is currently not achieved, but will be achieved before 30th June 2020 The report shall include, but not be limited to, the following: 1) Current performance against the BATc AEL. 2) Methodology for reaching the AELs. 3) Associated targets / timelines for reaching compliance by 30th June 2020. 4) Any alterations to the initial plan The report shall address the following **BAT 11** (…reduce mercury emissions to air from a pyrometallurgical process…). Refer to BAT Conclusions for a full description of the BAT requirements	30/06/20 Progress reports by 31/12/18 30/06/19 31/12/19 01/04/20
IC2	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 30th June 2020.The report shall include, but not be limited to, the following:	30/06/20 Progress reports by 31/12/18 30/06/19 31/12/19 01/04/20

Reference	Improvement Condition	Completion date
	1) Methodology for achieving BAT. 2) Associated targets / timelines for reaching compliance by 30th June 2020. 3) Any alterations to the initial plan The report shall address the following **BAT 1** ("… improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the listed features") **BAT 3** (…ensure stable process operation by using a process control system…) **BAT 4** (…reduce channelled dust and metal emissions to air…apply a maintenance management system which especially addresses the performance of dust abatement systems as part of the EMS) **BAT 5** ("…prevent or…reduce diffuse emissions to air and water, BAT is to collect diffuse emissions as much as possible nearest to the source and treat them.) **BAT 6** ("…to set up an implement an action plan on diffuse dust emissions, as part of the environmental management system...") **BAT 10** ("….to monitor the stack emissions with at least the frequency given… in accordance with EN standards in secondary lead production…") **BAT 16** ("…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 …") Refer to BAT Conclusions for a full description of the requirements	
IC3	The operator shall undertake a review of periodic monitoring for emissions to air of mercury and its compounds from	Within 12 months of

Reference	Improvement Condition	Completion date
	emission points A7, A8 and A9. 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. The evidence required under this condition shall include analysis and interpretation of monitoring results for each substance, and performance against the relevant BAT-AEL. Consideration should be given to inter alia 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. 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.	effective date of notice V004

Reference	Improvement Condition	Completion date
IC4	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 **and/or sewer** from the installation. The risk assessment shall include, but not be limited to the following: 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 M18 guidance; and b) a risk assessment in accordance with the screening procedures in Environment Agency guidance "Surface water pollution risk assessment for your environmental permit", using the representative emissions data obtained in (a) above.	Within 12 months of effective date of notice V004

Annex 4

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

There are no changes to be reported in this section.

Annex 5

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

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
	BAT 1-19: General requirements					
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	FC	FC	The operator has confirmed in their response that they will be compliant with BAT 1 by October 2019 well before the compliance date of 30 June 2020. In their response the operator has confirmed that they operate an EMS comprising of a number of standalone elements, that come together to make the complete EMS. The EMS is a fundamental document in regards the Environmental Permit, and as such the Environment Agency have included an improvement condition in the current permit to ensure the EMS is reviewed, and updated to cover all aspects listed below. The Environment Agency is satisfied that, pending completion of Improvement Condition IC2, the operator will meet the requirements of this BAT Conclusion by the compliance date.	Confirm future compliance of IC2 by Inspection.

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
2	In order to use energy efficiently, BAT is to use a combination of the techniques given	1.2	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 2. The techniques used are: • BAT 2b Regenerative or recuperative burners • BAT 2l Suitable insulation for high temperature equipment such as steam and hot water pipes • BAT 2n Use high efficiency electric motors equipped with variable-frequency drive, for equipment such as fans • BAT 2o Use control systems that automatically activate the air extraction system or adjust the extraction rate depending on actual emissions The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None
3	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	1.3	CC	FC	The operator has stated in their response that they are compliant with BAT Conclusion 3. The Environment Agency does not agree that the operator meets the requirements of this BAT Conclusion as there is no defined	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					process control system in place but does agree that the operator employs appropriate techniques to meet the requirements of the BAT Conclusion. The techniques used are: • BAT3a Inspect and select input materials according to the process and the abatement techniques applied • BAT 3d Processors to control material feed rate, critical process parameters and conditions including the alarm, combustion conditions and gas additions • BAT 3e On-line monitoring of the furnace temperature, furnace pressure and gas flow • BAT 3f Monitor the critical process parameters of the air emission abatement plant such as gas temperature, reagent metering, pressure drop, ESP current and voltage, scrubbing liquid flow and pH and gaseous components (e.g. O2, CO, VOC) • BAT 3h On-line monitoring of vibrations to detect blockages and possible equipment failure	

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					• BAT 3j Temperature monitoring and control at melting and smelting furnaces to prevent the generation of metal and metal oxide fumes through overheating The Environment Agency does not agree that the operator meets the requirements of this BAT Conclusion as there is no defined process control system in place. The Environment Agency is satisfied that, pending completion of Improvement Condition IC2, the operator will meet the requirements of this BAT Conclusion by the compliance date.	
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)	3.2	CC	FC	The operator has stated in their response that they are compliant with BAT Conclusion 4 however the Environment Agency disagrees with this statement as currently the EMS for the site is not complete. The operator confirmed that they operate a maintenance management system which addresses the performance of the dust abatement system and this will form part of their Environmental Management System. The Environment Agency is satisfied that, pending completion of Improvement	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					Condition IC2, the operator will meet the requirements of this BAT Conclusion by the compliance date.	
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	FC	The operator has stated in their response that they are compliant with BAT Conclusion 5. The Environment Agency disagrees with this assessment as the operator only states that all diffuse emissions are kept to a minimum but do not describe how this is achieved. To meet the requirements of this BAT conclusion the operator is required to explain how they will 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. The Environment Agency is satisfied that, pending completion of Improvement Condition IC2, the operator will meet the requirements of this BAT Conclusion by the compliance date.	Confirm future compliance of IC2 by Inspection.
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	3.2	NC	FC	The operator has stated in their response that they are not compliant with this BAT conclusion. The Environment Agency recognises that the operator acknowledges that they need	Confirm future compliance of IC2 by Inspection.

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
	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.				to review the potential for diffuse emissions as part of the site EMS and that this will be completed by February 2019. This BAT conclusion requires the operator to have a Diffuse Emissions Action plan, a high level document that is part of their EMS. This documented plan is required to include: a) Identify and the most relevant sources of diffuse emissions, and. b) Define, and implement appropriate actions and techniques to prevent or reduce diffuse emission over a given time frame. The Environment Agency is satisfied that, pending completion of Improvement Condition IC2, the operator will meet the requirements of this BAT Conclusion by the compliance date.	
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	The operator has confirmed in their response that they are compliant with the BAT Conclusion 7. The techniques used are: • BAT 7a Enclosed buildings or silos/bins for storing dust-forming materials such as concentrates, fluxes and fine materials	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					• BAT 7b 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 • BAT 7c Sealed packaging of dust-forming materials or secondary materials that contain water-soluble organic compounds • BAT 7f Dust/gas extraction devices placed at the transfer and tipping points for dust-forming materials • BAT 7h Tank construction materials that are resistant to the contained materials • BAT 7i Reliable leak detection systems and display of tank's level, with an alarm to prevent overfills • BAT 7j 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 • BAT 7k Design storage areas so that	

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					— any leaks from tanks and delivery systems are intercepted and contained in bunds that have a capacity capable of containing at least the volume of the largest storage tank within the bund; — delivery points are within the bund to collect any spilled material • BAT 7l Use inert gas blanketing for the storage of materials that react with air • BAT 7r 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 The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
8	In order to prevent diffuse emissions from the handling and transport of raw	3.2	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 8.	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
	materials, BAT is to use a combination of the techniques given				The techniques used are: • BAT8a Enclosed conveyors or pneumatic systems to transfer and handle dust-forming concentrates and fluxes and fine-grained material • BAT 8c Extraction of dust from delivery points, silo vents, pneumatic transfer systems and conveyor transfer points, and connection to a filtration system (for dust-forming materials) • BAT 8d Closed bags or drums to handle materials with dispersible or water-soluble components • BAT 8e Suitable containers to handle pelletised materials • BAT 8g Minimise transport distances • BAT 8h Reduce the drop height of conveyor belts, mechanical shovels or grabs • BAT 8i Adjust the speed of open belt conveyors (< 3,5 m/s) • BAT 8j Minimise the speed of descent or free fall height of the materials	

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					• BAT 8k Place transfer conveyors and pipelines in safe, open areas above ground so that leaks can be detected quickly and damage from vehicles and other equipment can be prevented. If buried pipelines are used for non-hazardous materials, document and mark their course and adopt safe excavation systems • BAT 8l Automatic resealing of delivery connections for handling liquid and liquefied gas • BAT 8o Use planned campaigns for road sweeping • BAT 8p Segregate incompatible materials (e.g. oxidising agents and organic materials) • BAT 8q Minimise material transfers between processes The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	3.2	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 9. The techniques used are:	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
	collection and treatment by using a combination of the techniques given				• BAT 9b Use a closed furnace with a properly designed dedusting system or seal the furnace and other process units with an adequate vent system • BAT9c Use a secondary hood for furnace operations such as charging and tapping • BAT 9d Dust or fume collection where dusty material transfers take place (e.g. furnace charging and tapping points, covered launders) The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	3.1	CC	FC	The operator has stated in their response that they are currently compliant with BAT 10. However the operator has confirmed that there is currently no monitoring for mercury and its compounds. They have confirmed that the will initiate monitoring for mercury and they will adopt the required frequency of monitoring as required by the BAT 10 by the compliance date. The Environment Agency disagrees with the operator's initial assessment and	Confirm future compliance of IC3 by Inspection.

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					requires further information from the operator in order to determine the appropriate level of monitoring provision to be employed at the site from 30 June 2020. We have included Improvement Condition IC3 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. The Environment Agency is satisfied that, pending completion of Improvement Condition IC3, the operator will meet the requirements of this BAT Conclusion by the compliance date.	
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	3.1	FC	FC	The operator has stated in their response that they are not compliant with the BAT Conclusion 11 as currently they do not monitor for mercury and its compounds in the emissions from the furnace activities. The do employ the following technique • BAT 11a Use raw materials with a low mercury content, including by cooperating with providers in order to remove mercury from secondary materials.	Confirm future compliance of IC1 by Inspection.

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					They are currently reviewing the use of adsorbents (e.g. activated carbon, selenium) in combination with dust filtration (BAT 11b) The Environment Agency has determined that this BAT Conclusion and BAT-AEL are applicable to this installation. The operator has not been able to provide evidence that mercury and its compounds are not released from the furnace processes. If monitoring of the emissions to air indicates that processes require amendment the Environment Agency is confident that such amendments will be made and the operator shall confirm this in writing We are therefore satisfied that, pending completion of Improvement Condition IC1, the operator will meet the requirements of this BAT Conclusion by the compliance date.	
12	In order to reduce emissions of SO_2 from off-gases with a high SO_2 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_2	NA	NA	NA	This BAT Conclusion is not applicable to plants producing secondary aluminium, as confirmed by the applicability section within BAT 12.	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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	3.1	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 13. The technique used is • BAT 13c Flue-gas recirculation (back through the burner to reduce the temperature of the flame) in the case of oxy-fuel burners The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None
14	In order to prevent or reduce the generation of waste water, BAT is to use one or a combination of the techniques given	3.1	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 14. The techniques used are: • BAT14a Measure the amount of fresh water used and the amount of waste water discharged • BAT14f Use a closed circuit cooling system The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
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	3.1	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 15. The operator has confirmed that all cooling water from the furnaces is treated via the effluent treatment plant prior to discharge to the River Tame and all surface water is kept segregated and is treated by filtration prior to discharge to River Tame The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None
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 not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality. The monitoring frequency may be adapted if the data series clearly demonstrate sufficient stability of the emissions	3.1	FC	FC	The operator has stated that they are partially compliant with the BAT conclusion All process water is treated in an MCERTS accredited effluent treatment plant operated and maintained by a third party waste contractor. The current permit limits are more stringent than those of the BAT-AELs for the parameters monitored. The operator is aware that some parameters have been omitted and have undertaken to performing monitoring of all relevant parameters and will report these to the Environment Agency via the H1 assessment tool in line with the requirements of improvement condition IC4.	Confirm future compliance of IC4 by Inspection

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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
					Rain fall dependant site drainage is kept separate from the process water, as per BAT 15 and is then discharged via W1 along with the treated process effluent. The Environment Agency is satisfied that, pending completion of Improvement Condition IC4, the operator will meet the requirements of this BAT Conclusion by the compliance date.	
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	3.2	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 17. The techniques used are: • BAT17a Chemical precipitation • BAT17b Sedimentation • BAT17c Filtration Further, all cooling water from the furnace process is collected and treated using an effluent treatment plant operated by a third party waste contractor. The discharge to surface water is already regulated by limits within the permit, these limits are currently set below the relevant BAT-AELs and we have not been able to review them as no H1 assessment for discharges to surface water was provided.	None

BATc Number	Compliance Issue Priority BAT indicated in **Bold Text**	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 operator will submit the H1 assessment as required by IC4 but as the existing limits in the permit are below those required by BAT-AELs of BAT 17 the Environment Agency considers that the operator satisfies this BAT conclusion.	
18	In order to reduce noise emissions, BAT is to use one or a combination of the techniques given	3.4	CC	CC	The operator has confirmed in their response that they are compliant with BAT Conclusion 18. The technique used is: • BAT18b Enclose noisy plants or components in sound-absorbing structures The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None
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 compliant with BAT Conclusion 19. The technique used is: • BAT19a Appropriate storage and handling of odorous materials The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None