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/BM1091IW
The Operator is: Pegler Limited trading as Pegler Yorkshire Group Limited
The Installation is: Belmont Works, St Catherine's Avenue, Doncaster, South Yorkshire DN4 8DF.
This Variation Notice number is: EPR/BM1091IW/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 and any changes to the operation of the installation.

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 6th April 2017 and 11th April 2017.

We considered that the response did not contain sufficient information for us to commence determination of the permit review. We received additional information and/or clarification regarding BAT conclusions 2-8, 10-12, 20, 23, 25-36, 40, 42-44, 46-48, 50-52 and 54on 21/03/2018

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.

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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. 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 10, 46 and 48. In relation to these BAT Conclusions, we are confident that the operator understands the requirements and that they will be compliant before 30th June 2020 (the "compliance date"). We have included Improvement Conditions IC1, IC2, IC3, and IC4 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusion 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 6th February 2018. A copy of the further information request was placed on our public register.

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

- Response to our email dated 4th April 2018, received 13th April 2018, regarding BAT Conclusions 2-8, 10, 20, 22, 25, 26, 46 and 48 along with operation details to clarify consolidation of the existing permit.
- Response to our email dated 5th April 2018 received 6th April 2018 regarding active stacks and swarf handling query.
- Response to our email dated the 13th April 2018 receive 20th April 2018 regarding the chemical analysis of raw materials and the position the Mother Drain enters the site.

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[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,

[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

operators were required to identify and assess any other hazardous pollutants that may be present in their effluent. A full list of hazardous pollutants is included in our surface water pollution risk assessment guidance, which we 'signposted' operators to via the Regulation 60 Notice.

b) Undertake a risk assessment using the above emissions data to determine whether any hazardous pollutants were liable to cause pollution of the downstream receiving waters. The WFD requires Member States to prior regulate, all substances in a discharge which are "liable to cause pollution". Previously discharges from the Non-Ferrous Metals Industries were controlled on a "liable to contain" approach set by the Dangerous Substances Directive through either numeric limits, or descriptive conditions. Under the "liable to cause pollution" approach we would only consider applying numeric emission limits to those pollutants calculated to have the potential to cause pollution.

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

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

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

Details of how we have considered the operator's response is provided in Annex 4.

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.

During the determination of this variation the operator confirmed via email (dated 13th April 2018) that the existing Site Condition Report is still accurate and is still representative of the site. 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: SECONDARY COPPER PRODUCTION**
BAT Conclusions that are not applicable to this installation	**NA**	**General BAT Conclusions for Non-Ferrous Metals Industries: 11, 12, 13 15, 16 and 17** **BAT Conclusions for copper production: 21, 23, 24, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 42, 43, 44, 47, 49, 50, 51, 52 and 53** 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 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

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: SECONDARY COPPER PRODUCTION**
BAT Conclusions where we accept the operator's Reg 60 notice response that they are currently compliant and no further explanation is required.	**CC**	**General BAT Conclusions for Non-Ferrous Metals Industries: 1, 2, 3, 4, 5, 7, 8, 9, 14, 18 and 19** **BAT Conclusions for copper production: 20, 22, 25, 26, 35, 41, 45 and 54**
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:6 and10.** **BAT Conclusions for copper production: 46 and 48**
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 responses as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

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 10 also requires the metals copper, lead, zinc, cadmium and tin and arsenic to be monitored once a year. Historic measurements have indicated insignificant concentrations are emitted to air via stack A1 (typically Cu, Pb and Zn combined at <0.005mg/m^3) therefore the requirement for monitoring has been removed from the permit requirements after 30 June 2020.

BAT-AELs and monitoring requirements for secondary copper production

BAT Conclusion 41

We have included an ELV for particulate matter of 5 mg/m^3 which is in accordance with the BAT-AEL (upper limit). This replaces the current ELV of 10 mg/m^3 for particulate matter arising from the secondary copper holding furnaces (Emission point A1, Table S3.1 of the permit).

BAT Conclusion 45

We have included an ELV for particulate matter of 5 mg/m^3 which is in accordance with the BAT-AEL (upper limit). This replaces the current ELV of

10 mg/m^3 for particulate matter arising from the copper melting furnaces (Emission point A1, Table S3.1 of the permit).

BAT Conclusion 46

We have included an ELV for Total Volatile Organic Carbon (TVOC) of 30 mg/m^3 which is in accordance with the BAT-AEL (upper limit) arising from the drying and melting of secondary raw materials (Emission point A1, Table S3.1 of the permit).

BAT Conclusion 48

We have included an ELV for Dioxins and Furans (PCDD/F) of 0.1ng I-TEQ/Nm^3 which is in accordance with the BAT-AEL arising from melting operations in secondary copper production (Emission points A1, 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 responses 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.

We also consider that we need to set improvement conditions relating to changes in the permit not arising from the review of compliance with BAT Conclusions. The justifications for these are provided in Annex 4 of this 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.

Table S1.3 Improvement programme requirements		
Reference	**Improvement Condition**	**Completion date**
IC1	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 30/06/20. The report shall include, but not be limited to, the following: 1) Methodology for achieving BAT. 2) Associated targets / timelines for reaching compliance by 30/06/20. 3) Any alterations to the initial plan The report shall address the following BAT Conclusion: **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…") Refer to BAT Conclusions for a full description of the requirements.	Interim progress report by 30th June 2019 Final report by 31st March 2020

Table S1.3 Improvement programme requirements		
Reference	**Improvement Condition**	**Completion date**
IC2	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 BATc: **BAT 46** (…reduce organic compounds emissions to air from…melting of secondary raw materials…) **BAT 48** (…reduce PCDD/F emissions to air from…melting… operations in secondary copper production…) Refer to BAT Conclusions for a full description of the requirements.	Interim progress report by 30th June 2019 Final report by 31st March 2020
IC3	The operator shall undertake a review of periodic monitoring for emissions to air of Particulate Matter, TVOC and PCDD/F 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. 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.	Within 12 months of effective date of notice V004

Table S1.3 Improvement programme requirements		
Reference	**Improvement Condition**	**Completion date**
	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.	
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
IC5	The operator shall propose to the Environment Agency monitoring standards and techniques for the routine monitoring of emissions to water and sewer. The proposals should be in line with Environment Agency TGN M18 and the Surface Treatment of Metals and Plastics BREF 2006. The proposals should include arrangements for sample storage and transport.	Within 1 months of effective date of notice V004
IC6	The operator shall review the current permitted limits against the BAT-AELs in the Surface Treatment of Metals and Plastics BREF 2006. Where the permitted ELVs are higher than the BAT-AELs, the operator shall propose a plan to meet the BAT-AELs. Where there is no BAT-AEL the operator may propose to cease the monitoring.	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.

Surface Water Pollution Risk Assessment

In response to our Regulation 60 notice the operator confirmed that they do not produce waste water from lead processing. All cooling water is in a closed loop recirculating system which is periodically emptied and removed from site by a registered waste carrier for appropriate disposal. There are however discharges to public foul sewer from the effluent treatment plant associated with the surface plating processes and to surface water of site drainage containing hazardous pollutants.

In response to questions 5 and 6 of the Regulation 60 Notice the operator has provided a H1 Risk Assessment report however the method used for sampling and storage was not undertaken in line with Environment Agency TGN M18. Therefore we cannot make an assessment of the impact on surface water from discharge to water from the site, in particular the effect of the discharge on the designated site downstream of the discharge point, W1 and W2.
We have therefore included improvement conditions IC4, IC5 and IC6 requiring the operator to resubmit an H1 assessment after collecting data under the prescribed methods

Emissions to Air from Extrusion furnace (A41)

The current permit requires monitoring of both Oxides of Nitrogen and Carbon monoxide.
The emission point is not covered by the BREF for non-ferrous metals as the activity is not included in Section 2.2 A(1)(b), but rather from a DAA.
The intention of the BAT conclusions is to protect the environment so to afford such protection the emission from this stack has been considered.
Commissioning reports from 2010 indicate levels of NOx at <10mg/m^3 this is significantly below the benchmark figure obtained for both Low NOX and Oxy burners as such the concentrations within the emissions to air can be considered insignificant and the monitoring and reporting requirements have been removed with immediate effect.

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	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 1. The operator's response confirms that the operator has an ISO14001 accredited Environmental Management System. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None.
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 currently compliant with BAT 2. The site is covered by the operator's registration under ESOS, a mandatory energy assessment and energy saving identification scheme. From discussions during the site visit on 22nd March 2018 it was evident that in order to comply with BAT 2 the techniques currently 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
					• 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 drives, for equipment such as fans (old fans gradually being replaced with variable drive versions as required) Although not directly comparable to the techniques listed in the BAT conclusions. The operator confirmed that a programme is underway to replace all lighting with LED fitting which will aid in the reduction of energy consumption. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
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	CC	The operator has confirmed in their response that they are currently compliant with BAT 3. The operator has a documented process control system compliant with ISO9001 and ISO14001.	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
					During the site visit on 22nd March 2018 the operator confirmed that the techniques currently used are • BAT 3a Inspect and select input materials according to the process and abatement techniques used • BAT 3b Good mixing of the feed materials to achieve optimum conversion efficiency and reduce emissions and rejects • BAT 3c Feed weighing and metering system • Bat 3d Processors to control material feed rate, critical process parameters and conditions including the alarm and combustion conditions. • Bat 3e On-line monitoring of the furnace temperature and pressure. • BAT 3j temperature monitoring and control at melting furnaces to prevent metal and metal oxide fumes through overheating The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	

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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	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 4. The maintenance management system is part of the operator's Accredited ISO 14001 Environmental Management System. Specifically the operator confirms the EMS requires that the filters in Camfil system are changed annually with monthly maintenance controlled by an electronic reminder and recording system – the "Mainsaver" There is also a PCME monitoring for fault detection as a back-up system. The Environment Agency is satisfied that the operator is compliant with the requirements of this BAT Conclusion.	None
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 they are currently compliant with BAT 5~~.~~, as the raw materials are not dusty The site compliant as determined by the following: • The operator has confirmed in their response to other BAT conclusions (eg BAT 9) that they are have	None

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					enclosed hoods over the melting furnace and continuous casting machine. The Environment Agency confirmed during a site visit on 22nd March 2018 that these hoods are in place and the operator is able to collect fugitive emissions as close to source as possible. • It is recognised that all emissions to air from site process that are collected are treated via the site bag plant and filter. The site are currently compliant with this aspect of the BAT conclusion. • From the site visit on 22nd March 2018 it was evident that the scrap copper is delivered and stored inside was dust free and that the site had been recently swept (confirmed as weekly by the operator) Other raw materials are delivered in sealed drums or bags and are stored inside the building. • Drosses and filter bag dust are stored under cover in appropriate containers prior to removal and further treatment off site	

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					The Environment Agency is satisfied that the operator will meet the requirements of this BAT Conclusion.	
6	In order to prevent or, where this is not practicable, to reduce diffuse dust emissions to air, BAT is to set up and implement an action plan on diffuse dust emissions, as part of the environmental management system (see BAT 1), that incorporates both of the following measures: (a) identify the most relevant diffuse dust emission sources (using e.g. EN 15445); (b) define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given time frame.	3.2	CC	FC	The operator has confirmed in their response that they are currently compliant with BAT 6 Although the site is inherently not dusty the Environment Agency considers the action plan essential for future compliance with the BREF and as such insists that the operator produces a written diffuse emissions action plan. The diffuse emission action plan will be incorporated into the sites EMS by the compliance date. Further the diffuse emissions action plan will meet the following points: • Identify the most relevant diffuse emissions source (using eg. EN15445). • Define and implement appropriate actions and techniques to prevent or reduce diffuse emissions over a given timeframe. The Environment Agency is satisfied that the operator will meet the requirements of	None

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					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 currently compliant with BAT 7. . The site employs the following techniques to mitigate against diffuse emissions from raw material storage • BAT 7b Covered storage of non-dust forming materials… and secondary materials that contain water-soluble organic compounds • BAT 7c Sealed packages of dust-forming materials or secondary materials that contain water-soluble organic compounds • BAT 7k Design storage areas so that o 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;	None

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					o Delivery points are within the bund to collect any spilled materials • BAT 7n Regular cleaning of the storage area and, where needed, moistening with water It is also worth noting that with the exception of graphite powder, which is received in sealed containers in small quantities, no dusty materials are stored on site 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 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 currently compliant with BAT 8. From the site visit on 22nd March 2018 it was evident that the operator is compliant with the following BAT techniques: • BAT 8d Closed bags or drums to handle materials with dispersible or water-soluble components • BAT 8g Minimise transport distances	None

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					• BAT 8h Reduce drop height of conveyor belts, mechanical shovels or grabs • BAT 8i Adjust the speed of open belt conveyors(<3.5 m/s) • BAT 8o Use planned campaign for road sweeping • 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 collection and treatment by using a combination of the techniques given	3.2	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 9. The techniques used are • BAT 9c Use secondary hood for furnace operations such as charging and tapping • BAT 9d Dust or fume collection where dusty materials take place The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None

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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 3.5	CC	FC	The operator has stated in their responses that they are currently compliant with BAT 10. However 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 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 unable to agree that the operator is currently compliant with the monitoring requirements of BAT 10, but we are satisfied that pending completion of IC3, the operator will be compliant by 30 June 2020.	Confirm future compliance via IC1 and IC3.
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.	N/A	NA	NA	The operator has indicated that this BAT conclusion is not applicable. The operator has confirmed that there is no mercury in the copper scrap that they use as a raw material.	None

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	BAT-AEL for Hg				Based on the above information provided by the operator the Environment Agency has determined that this BAT Conclusion is not applicable and therefore the operator is not expected to meet the Narrative or BAT-AEL aspects of the BAT conclusion. However, to ensure that specification of the raw materials remains free from mercury the Table S2.1 in the permit has been updated.	
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	The operator has confirmed in their response that they do not accept raw materials on to site that contain sulphur. As sulphur or sulphur containing raw materials are not being added to the process the Environment Agency has determined that this BAT conclusion is not applicable. However, to ensure that specification of the raw materials remains free from sulphur the Table S2.1 in the permit has been updated.	None
13	In order to prevent NOx emissions to air from a pyrometallurgical process,	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion is not applicable	None

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	BAT is to use one of the techniques given				to this installation. This is because it relates to pyrometallurgical processes, which are typically only undertaken during primary and early secondary metal production, and therefore are not applicable to the production of late stage secondary copper production at this site. Further this site only operates electrically powered induction furnaces so no NOx can be generated by burning natural gas.	
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 currently compliant with BAT 14 The furnaces detailed under Activity 2.2 A(1)(b) are run dry, any water present would lead to a risk of explosion. The site uses closed loop cooling system within the casting plant The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion because there is no generation of waste water during the undertaking of Activity 2.2 A(1)(b) on this site.	None
15	In order to prevent the contamination of water and to reduce emissions to water, BAT is to segregate	NA	CC	NA	The Environment Agency has determined that this BAT Conclusion is not applicable for the melting process detailed under	None

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	uncontaminated waste water streams from waste water streams requiring treatment				Activity 2.2 A(1)(b) as there is no process waste water generated to keep segregated from site drainage.	
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	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion is not applicable for the melting process detailed under Activity 2.2 A(1)(b) as there is no water used in the process.	None
17	In order to reduce emissions to water, BAT is to treat the leakages from the storage of liquids and the waste water from non-ferrous metals production, including from the washing stage in the Waelz kiln process, and to remove metals and sulphates by using a combination of the techniques given	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion is not applicable for the melting process detailed under Activity 2.2 A(1)(b) as there is no generation of waste process water.	None

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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 currently compliant with BAT 18. They use a combination of techniques to achieve BAT: • BAT 18b Enclose noisy plant or components in sound-absorbing structures • BAT 18c Use anti-vibration supports and interconnections for equipment. 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 currently compliant with BAT 19. They use one of the techniques given to achieve BAT: • BAT 19b: Minimise the use of odorous materials. The operator has confirmed they do not use or store any odorous materials on site The operator has confirmed that small quantities of dross are produced and although drosses from copper production	None

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					are not particularly odorous they are stored undercover. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
	BAT 20-54: Copper production					
20	In order to increase the secondary materials' recovery yield from scrap, BAT is to separate non- metallic constituents and metals other than copper by using one or a combination of the techniques given	1.3	NA	CC	The operator has stated in their response that BAT 20 is not applicable. The Environment Agency does not agree and considers the operator compliant with this BATc as the following technique is used: • BAT 20a manual separation of large visible contaminants. As the operator has confirmed they visually check and manually removal of large constituents from the conveyor feeding the furnace The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None

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21	In order to use energy efficiently in primary copper production, BAT is to use one or a combination of the techniques given	NA	NA	NA	BAT 21 is not applicable as it only applies to primary copper production, which does not take place at the site.	None
22	In order to use energy efficiently in secondary copper production, BAT is to use one or a combination of the techniques given	1.2	NA	CC	The operator has stated in their response that BAT 20 is not applicable. However the Environment Agency disagrees with the operator as it is apparent from information provided during the site visit on 22nd March 2018 that the following technique • BAT 22d Holding furnace between processing stages (to ensure continuous feed to Concast machine). It should also be noted that the feed materials must be dry otherwise there is a high risk of expolsion The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None
23	In order to use energy efficiently in electrorefining and electrowinning operations, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as there is no electrorefining and electrowinning operations performed at the site.	None

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24	In order to reduce secondary emissions to air from furnaces and auxiliary devices in primary copper production and to optimise the performance of the abatement system, BAT is to collect, mix and treat secondary emissions in a centralised off-gas cleaning system	NA	NA	NA	BAT 24 is not applicable as it only applies to primary copper production which does not take place at the site.	None
25	In order to prevent or reduce diffuse emissions from pretreatment (such as blending, drying, mixing, homogenisation, screening and pelletisation) of primary and secondary materials, BAT is to use one or a combination of the techniques given	3.2	NA	CC	The operator has stated in their response that BAT 25 is not applicable to the site. The Environment Agency does not agree and considers this BAT applicable to the site because swarf drying is carried out. The Environment Agency considers swarf drying a pre-treatment. During the site visit it was observed that swarf drying is carried out in an enclosed building using a swarf centrifuge. The feedstock (swarf) is inherently not dusty. The site is compliant with BAT25 by using the following technique. • BAT 25b Carry out activities… in an enclosed building.	None

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					The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
26	In order to prevent or reduce diffuse emissions from charging, smelting and tapping operations in primary and secondary copper smelters and from holding and melting furnaces, BAT is to use a combination of the techniques given	3.2	NA	CC	The operator has stated that BAT 26 is not applicable to the site. From the site visit on 22nd March 2018 Environment Agency has determined that this BAT does apply as charging and tapping operations take place at the melting and holding furnaces. The site is compliant as it employs the following techniques. • BAT 26e Encapsulate furnace in vented housing • BAT 26g Hold the temperature in the furnace at the lowest required level • BAT 26i Enclosed building in combination with other techniques to collect diffuse emissions • BAT 26k Select and feed the raw materials according to the type of furnace and abatement techniques used. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None

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27	In order to reduce diffuse emissions from Peirce-Smith converter (PS) furnace in primary and secondary copper production, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as they do not have a Peirce-Smith converter furnace at the site.	None
28	In order to reduce diffuse emissions from a Hoboken converter furnace in primary copper production, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as they do not have a Hoboken converter furnace at the site.	None
29	In order to reduce diffuse emissions from the matte conversion process, BAT is to use a flash converting furnace	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as they do not perform the matte conversion process at the site.	None
30	In order to reduce diffuse emissions from a top-blown rotary converter (TBRC) furnace in secondary copper production, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as there is no top-blown rotary converter furnace at the site.	None
31	In order to reduce diffuse emissions from copper recovery with a slag concentrator, BAT is to use the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as there is no copper recovery with a slag concentrator at the site.	None

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32	In order to reduce diffuse emissions from copper-rich slag furnace treatment, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as there is no copper-rich slag furnace processing at the site.	None
33	In order to reduce diffuse emissions from anode casting in primary and secondary copper production, BAT is to use one or a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as there is no anode casting performed at the site.	None
34	In order to reduce diffuse emissions from electrolysis cells, BAT is to use one or a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as there are no electrolysis cells at the site.	None
35	In order to reduce diffuse emissions from the casting of copper alloys, BAT is to use one or a combination of the techniques given	3.2	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 35. They use a combination of techniques to achieve BAT: • BAT 35a Use enclosures or hoods to collect and transfer the emissions to an abatement system. • BAT 35b Use coverings for the melts in holding and casting furnaces.	None

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					The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
36	In order to reduce diffuse emissions from non-acid and acid pickling, BAT is to use one of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as there is no non-acid or acid pickling performed at the site.	None
37	In order to reduce dust and metal emissions to air from the reception, storage, handling, transport, metering, mixing, blending, crushing, drying, cutting and screening of raw materials, and the pyrolytic treatment of copper turnings in primary and secondary copper production, BAT is to use a bag filter. BAT-AEL for Dust	3.1	CC	NA	The operator has stated that they are currently compliant with BAT 37. The Environment Agency considers it unnecessary to have an abatement system and bag filter to collect and channel dust emissions from the reception, storage, handling, transport and screening of raw materials for this site. This is due to the majority of materials being stored in sealed packaging, containers or being non-dust forming. No metering, mixing, blending, crushing, or cutting of raw materials is undertaken on the site. From the site visit on 22nd March 2018 it was evident that • the scrap copper is delivered and stored outside and was dust free	None

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					and that the site had been recently swept (confirmed during the site visit on 22nd March 2018 as weekly by the operator) • Swarf is not dusty as it is wetted with a water/oil mix from lubrication during cutting of billets. This swarf is stored in in small skips in an enclosed building prior to spinning to dry the swarf before moving to the furnace. • Other raw materials are delivered in sealed drums or bags and are stored inside buildings. All other sources of diffuse emissions have capture systems appropriately positioned to capture any releases which are then directed to the Camfil filter plant. Based on the above the Environment Agency has determined that this BAT conclusion is not applicable to the site.	
38	In order to reduce dust and metal emissions to air from concentrate drying in primary copper production, BAT is to use a bag filter	NA	NA	NA	BAT 38 is not applicable as it only applies to primary copper production, which does not take place at the site.	None

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39	In order to reduce dust and metal emissions to air (other than those that are routed to the sulphuric acid or liquid SO 2 plant or power plant) from the primary copper smelter and converter, BAT is to use a bag filter and/or a wet scrubber	NA	NA	NA	BAT 39 is not applicable as it only applies to primary copper production, which does not take place at the site.	None
40	In order to reduce dust and metal emissions to air (other than those that are routed to the sulphuric acid plant) from the secondary copper smelter and converter and from the processing of secondary copper intermediates, BAT is to use a bag filter BAT-AEL for Dust	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion and associated BAT-AEL is not applicable as they do not have a secondary copper smelter and converter at the site.	None
41	In order to reduce dust and metal emissions to air from the secondary copper holding furnace, BAT is to use a bag filter BAT-AEL for Dust	3.1	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 41. The holding furnace is covered by an extraction hood leading to the abatement system and integral bag filter, as per BAT 26 The current limit for particulates is 10mg/Nm^3, the revised BAT-AEL is ≤5mg/Nm^3	None

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					The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	
42	In order to reduce dust and metal emissions to air from copper-rich slag furnace processing, BAT is to use a bag filter or a scrubber in combination with an ESP BAT-AEL for Dust	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion and the associated BAT -AEL is not applicable as there is no copper-rich slag furnace processing at the site.	None
43	In order to reduce dust and metal emissions to air from the anode furnace in primary and secondary copper production, BAT is to use a bag filter or a scrubber in combination with an ESP BAT-AEL for Dust	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion and the associated BAT -AEL is not applicable as they do not have an anode furnace at the site.	None
44	In order to reduce dust and metal emissions to air from anode casting in primary and secondary copper production, BAT is to use a bag filter or, in the case of off-gases with a water content close to the dew point, a wet scrubber or a demister BAT-AEL for Dust	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion and the associated BAT -AEL is not applicable as they do not perform anode casting at the site.	None

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45	In order to reduce dust and metal emissions to air from a copper melting furnace, BAT is to select and feed the raw materials according to the furnace type and the abatement system used and to use a bag filter BAT-AEL for Dust	3.1	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 45. During the site visit on 22nd March 2018 it was observed and the operator confirmed that the melting furnace is covered by an extraction hood leading to the abatement system and integral bag filter. The feed conveyor swings into place between the furnace mouth and extraction hood to deposit copper, zinc and other metal scrap/ingot directly into the furnace and the belt moves at < 3.5m/s to minimise any dust mobilisation. The current limit for particulates is 10mg/Nm^3, the revised BAT-AEL is 5mg/Nm^3 The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	None
46	In order to reduce organic compound emissions to air from the pyrolytic treatment of copper turnings, and the drying, smelting and melting of secondary raw materials, BAT is to use one of the techniques given BAT-AEL for TVOC	3.1	NA	FC	The operator states that this BAT conclusion is not applicable to this site as the activity is not conducted at the site.	Confirm future compliance via IC2.

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					The Environment Agency disagrees as the site undertakes drying of and melting of secondary materials. From the site visit on 22nd March 2018 it was evident that the following techniques are employed • BAT 46b Injection of adsorbents in combination with a bag filter • BAT46d Select and feed the raw materials according to the furnace and the abatement techniques used • BAT46e Thermal destruction of TVOC at high temperatures in the furnace (>1000ºC) This BAT conclusion has an associated BAT-AEL therefore a limit of 30mg/Nm^3 has been set and to ensure compliance Improvement condition (IC2) has been set to that effect. The Environment Agency is satisfied that the operator will meet the requirements of this BAT Conclusion.	

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47	In order to reduce organic compound emissions to air from solvent extraction in hydrometallurgical copper production, BAT is to use both of the techniques given and to determine the VOC emissions annually, e.g. through mass balance	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as they do not carry out solvent extraction at the site.	None
48	In order to reduce PCDD/F emissions to air from the pyrolytic treatment of copper turnings, smelting, melting, fire refining and converting operations in secondary copper production, BAT is to use one or a combination of the techniques given BAT-AEL for PCDD/F	3.1	NA	FC	The operator states that this BAT conclusion is not applicable to this site as the activity is not conducted at the site. The Environment Agency disagrees as melting in secondary copper production does occur. From the site visit on 22nd March 2018 it was evident that the following techniques are employed • BAT 48a select and feed the raw materials according to the furnace and abatement techniques used • BAT 48b Optimise combustion conditions to reduce the emissions of organic compounds	Confirm future compliance via IC2.

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 48d Thermal destruction of PCDD/F in the furnace at high temperatures (>850ºC) • BAT 48h Avoid exhaust systems with a high dust build-up for temperatures >250ºC • BAT 48j Injection of absorption agent in combination with an efficient dust collection system This BAT conclusion has an associated BAT-AEL therefore a limit of ≤0.1ng I-TEQ/Nm^3 has been set and to ensure compliance Improvement condition (IC2) has been set to that effect.	
49	In order to reduce SO 2 emissions (other than those that are routed to the sulphuric acid or liquid SO 2 plant or power plant) from primary and secondary copper production, BAT is to use one or a combination of the techniques given BAT-AEL for SO 2 (for secondary copper production)	NA	NA	NA	The operator has confirmed in their response to BAT 12 that their raw materials do not contain sulphur. As there is no sulphur added to the process the Environment Agency consider this BAT AEL not applicable to this site's operations.	None
50	In order to reduce acid gas emissions to air from exhaust gases from the electrowinning cells, the electrorefining cells, the washing chamber of the	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as they do not have any	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
	cathode stripping machine and the anode scrap washing machine, BAT is to use a wet scrubber or a demister				electrowinning cells or electrorefining cells at the site.	
51	In order to prevent soil and groundwater contamination from copper recovery in the slag concentrator, BAT is to use a drainage system in cooling areas and a correct design of the final slag storage area to collect overflow water and avoid fluid leakage	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as they do not recover copper in a slag concentrator at the site.	None
52	In order to prevent soil and groundwater contamination from the electrolysis in primary and secondary copper production, BAT is to use a combination of the techniques given	NA	NA	NA	The operator has confirmed in their response that this BAT Conclusion is not applicable as they do not carry out electrolysis in primary or secondary copper production at the site.	None
53	In order to prevent the generation of waste water from primary and secondary copper production, BAT is to use one or a combination of the techniques given	NA	NA	NA	The operator has confirmed that there is no water usage from the secondary copper production so there is no waste water production association with Activity 2.2 A(1)(b). The Environment Agency is satisfied that this BAT conclusion is not applicable to this activity	None
54	In order to reduce the quantities of waste sent for disposal from primary	1.4	CC	CC	The operator has confirmed in their response that they are currently compliant	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
	and secondary copper production, BAT is to organise operations so as to facilitate process residues reuse or, failing that, process residues recycling, including by using one or a combination of the techniques given				with BAT 54 by using the following techniques • BAT 54a Recover metals from the dust coming from the abatement system • BAT 54j Use the skimming from the melting furnace to recover metal content These processes are carried out by an external contractor as it is not cost effective to recover the metals on site. The Environment Agency is satisfied that the operator meets the requirements of this BAT Conclusion.	