

## **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/WP3436UJ  
The Operator is: AWE PLC  
The Installation is: Aldermaston Carbon Activity  
This Variation Notice number is: EPR/WP3436UJ/V002

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

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

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

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

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 is likely

# 1 Our decision

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

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

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

## 2 How we reached our decision

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

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

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

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

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

The Regulation 60 Notice response from the Operator was received on 30<sup>th</sup> March 2017. Additional information was provided on the 17th September 2017 concerning the operators intention to cease carbonization activities before June 2020.

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

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

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

Based on our records and previous experience in the regulation of the installation we consider that the operator will be able to comply with the techniques and standards described in the BAT Conclusions.

## 2.3 Requests for Further Information during determination

No further requests for information were made during determination.

## 2.4 Surface Water Pollution Risk Assessment

As part of our delivery of the Water Framework Directive (WFD) requirements, we need to identify and assess the impact of all sources of hazardous pollutants to surface waters from regulated industry. We use the term 'hazardous pollutants' to collectively describe substances covered by the EQSD<sup>1</sup> (priority hazardous substances, priority substances and "other pollutants"). It also applies to the specific pollutants listed in the 2015 Directions<sup>2</sup>, and substances which have operational (non-statutory) Environmental Quality Standards (EQS).

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

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

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

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

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

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

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

The operator has stated that there are no direct emissions to surface water or sewer. All effluent is collected in a sump tank, before being pumped to a collective hold and monitor tank used by a number of buildings outside the scope of the installation. When full, the tank is emptied into the AWE trade effluent treatment plant. Discharge from the treatment plant are covered by a Thames Water Consent to discharge to Silchester Sewerage Works. No further assessment was therefore considered necessary.

## 2.5 Condition of Soil and Groundwater

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

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

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

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

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

Based on the written submissions provided in response to our Regulation 60 Notice the operator has confirmed that they do not use, produce or release any relevant hazardous substances and that their original application site report still provides a representative baseline for the site. No further assessment was therefore considered necessary.

### 3 The legal framework

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

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

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

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



## **Annex 1**

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

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

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

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

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

<b>Table 1: Decision checklist for relevant BAT Conclusions</b>		
<b>Summary of BAT Conclusion requirement for Non-Ferrous Metals Industries</b>	<b>Status NA / CC / FC / NC</b>	<b>Assessment of the installation capability to demonstrate the BAT Conclusion requirement Type of process: Carbon production</b>
BAT Conclusions that are not applicable to this installation	<b>NA</b>	<b>General BAT Conclusions for Non-Ferrous Metals 9, 10, 11, 12, 13, 15, 16 and 17</b> 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: 64-66 BAT Conclusions for secondary aluminium production: 67-69 BAT Conclusions for salt slag recycling process: 87-89 BAT Conclusions for lead and/or tin production: 90-100 BAT Conclusions for primary zinc production: 108-120 BAT Conclusions for secondary zinc production, 121-123 BAT Conclusions for cadmium production: 131-133 inclusive BAT Conclusions for precious metals production: 134-136 BAT Conclusions for ferro-alloys production: 150-162 BAT Conclusions for nickel and/or cobalt production: 163-165 <b>BAT Conclusions for carbon and/or graphite production: 180, 181, 182, 183 and 184</b>
BAT Conclusions where we accept the operator's Reg 60 notice response that they are currently compliant and no further explanation is required.	<b>CC</b>	<b>General BAT Conclusions for Non-Ferrous Metals 18 and 19</b> <b>BAT Conclusions for carbon and/or graphite production: 180, 181, 182, 183 and 184</b>
BAT Conclusions where improvements will be undertaken on site within the 4 year period in order to achieve compliance with the narrative and/or BAT-AEL prior to the 4 year deadline	<b>FC</b>	<b>General BAT Conclusions for Non-Ferrous Metals 9, 10, 11, 12, 13, 15, 16 and 17</b> <b>BAT Conclusions for carbon and/or graphite production: 180, 181, 182, 183 and 184</b>
BAT Conclusions where the Operator has responded that they are not compliant and have not submitted any plans to become compliant	<b>NC</b>	<b>General BAT Conclusions for Non-Ferrous Metals 9, 10, 11, 12, 13, 15, 16 and 17</b> <b>BAT Conclusions for carbon and/or graphite production: 180, 181, 182, 183 and 184</b>

## **Key Issues**

During the determination of permit application EPR/WP3436UJ/A001 the operator demonstrated to us that the installation meets the low impact criteria as set out in our guidance. This includes not being reliant upon active abatement for releases to the environment outside of any buildings. As such we are satisfied that there is no likelihood of a release to the environment of any particular substance from the whole installation at a rate greater than that determined as insignificant.

It is our view therefore that the BAT Conclusions that refer to the use of extraction and abatement to prevent and reduce emissions are not applicable to this Low Impact Installation and we have not set emission limit values in the consolidated variation notice.

As a LII, the permit includes the following conditions:

- Condition 2.2.1 *"The activities shall, subject to the conditions of this permit, be operated in accordance with the Low Impact Installation criteria specified in the Environment Agency's Environmental Permitting application form at the time the permit application was duly made."*
- Condition 4.2.2 *"A report on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report shall include as a minimum, a review of the results of the actual and anticipated operation of the installation against the low impact criteria issued by the Environment Agency at the time of the review".*

These conditions ensure the installation remains within the LII criteria or, if not, the operator will need to apply for a bespoke permit. A new permit application would be determined against the BAT requirements.

We also note the operator's intention to cease carbonization/graphitization activities at the site prior to June 2020.

## **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 granted is also recorded in Annex 2a 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-AELs have been considered.

## **Annex 3**

### **Improvement Conditions**

Based on the information in the Operator's Regulation 60 Notice response and our own records of the capability and performance of the installation at this site, we do not consider that we need to set improvement conditions to ensure compliance with the BAT conclusions.

## **Annex 4**

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

The Directly Associated Activity (off gas burning system) (Schedule 1 – Table S1.1) has been removed from the permit, as it is no longer used.

## Annex 5

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

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	<b>BAT 1-19: General requirements</b>					
1	In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the features given	1.1	CC	CC	The operator has confirmed in their response that they are currently compliant with BAT 1.  AWE Plc have an EMS accredited to ISO 14001, that covers the elements listed (a to i).  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 operator uses a combination of techniques given to achieve BAT: l – suitable insulation for high temperature equipment such as steam and hot water pipes  n – use high efficiency electric motors equipped with variable-frequency drive, for equipment such as fans	None.



BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
					<p>o – use control systems that automatically activate the air extraction system or adjust the extraction rate depending on actual emissions</p> <p>There is a low energy use criteria for LII.</p> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT conclusion.</p>	
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	1.1	CC	CC	<p>The operator has confirmed in their response that they are currently compliant with BAT 3.</p> <p>The operator uses a computer process control system to operate equipment, with multiple alarm systems which trigger shutdown where required.</p> <p>The operator uses a combination of techniques given to achieve BAT i.e.:</p> <p>a – inspect and select input materials according to the process and the abatement technique applied</p> <p>b – good mixing of the feed materials to achieve optimum conversion efficiency and reduce emissions and rejects</p> <p>c – feed weighing and metering systems</p> <p>d – processors to control material feed rate, critical process parameters and conditions</p>	None.

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
					<p>including the alarm, combustion conditions and gas additions</p> <p>e – on-line monitoring of the furnace temperature, furnace pressure and gas flow</p> <p>We also note the operator meets the requirements of technique h using an alternative technique – trace heating on exhaust to prevent blockage, and alarms in place if increase in pressure due to blockage.</p> <p>The Environment Agency is satisfied that the operator meets the requirements of this BAT conclusion.</p>	
4	In order to reduce channelled dust and metal emissions to air, BAT is to apply a maintenance management system which especially addresses the performance of dust abatement systems as part of the environmental management system (see BAT 1)	NA	NA	NA	<p>The operator has stated in their response that BAT 4 is not applicable.</p> <p>As described in the Key Issues section above, this installation meets the low impact criteria and as such emissions from the installation have been demonstrated to be insignificant without having to rely on active abatement for releases to the environment.</p> <p>This BAT Conclusion is therefore not applicable to this installation because it refers to a maintenance management system which especially addresses the performance of dust abatement systems</p>	None.

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
					which are designed to reduce the environmental impact of channelled dust and metal emissions to air. The Environment Agency agrees that this BAT is not applicable.	
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	NA	The operator has confirmed in their response that they are currently compliant with BAT 5.  However, as described in the Key Issues section above, this installation meets the low impact criteria and as such emissions from the installation have been demonstrated to be insignificant without having to rely on active abatement for releases to the environment.  This BAT Conclusion, and the requirement to collect and treat diffuse emissions to air and water, is therefore not applicable.	None.
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:	NA	NA	NA	The operator has stated in their response that BAT 6 is not applicable.  As described in the Key Issues section above, this installation meets the low impact criteria and as such emissions from the installation have been demonstrated to be insignificant without having to rely on	None.

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
	(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.				active abatement for releases to the environment. This BAT Conclusion, and the requirement to set up and implement an action plan on diffuse dust emissions, is therefore not applicable.	
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	NA	In their response the operator states they are currently compliant with BAT 7. However, as described in the Key Issues section above, this installation meets the low impact criteria and as such emissions from the installation have been demonstrated to be insignificant without having to rely on active abatement for releases to the environment. The operator states no diffuse emissions are expected from the storage of raw materials for the carbonisation process. This BAT Conclusion is therefore not applicable. However we note the following technique is employed: g – certificated pressure vessels for storing chlorine gas or mixtures that contain chlorine gas The operator states “Cl gas used in the process is stored in gas cylinders in an	None.

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					<i>extracted enclosure when in use, or an external gas cage when not</i>	
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	NA	<p>The operator states they are currently compliant with BAT 8.</p> <p>However, as described in the Key Issues section above, this installation meets the low impact criteria and as such emissions from the installation have been demonstrated to be insignificant without having to rely on active abatement for releases to the environment. As the operator states in their response “no diffuse emissions expected from the handling and transport of raw materials”. The carbonisation process is not an inherently dusty process.</p> <p>This BAT Conclusion is therefore not applicable.</p>	None.
9	In order to prevent or, where this is not practicable, to reduce diffuse emissions from metal production, BAT is to optimise the efficiency of off-gas collection and treatment by using a combination of the techniques given	NA	NA	NA	<p>The operator states in their response that BAT 9 is not applicable.</p> <p>BAT 9 relates to diffuse emissions from metal production. This is a carbon activity so this BAT conclusion does not apply.</p> <p>The Environment Agency agrees this BAT Conclusion is not applicable.</p>	None.

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
10	BAT is to monitor the stack emissions to air with at least the given frequency and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality	NA	NA	NA	<p>This installation meets the low impact criteria and as such emissions from the installation have been demonstrated to be insignificant without having to rely on active abatement for releases to the environment.</p> <p>It is our view therefore that BAT Conclusions that refer to the use of extraction and abatement, and associated emission limit values, to prevent and reduce emissions are not applicable. BAT 10, which specifies the frequency of such monitoring and the standard by which the monitoring would be undertaken, is also therefore not applicable.</p> <p>We also note in additional correspondence (letter dated 26/09/17) the operator has confirmed that they intend to cease carbonization / graphitisation during 2018 before the June 2020 compliance date.</p> <p>Please refer to Key Issues section above for further information.</p>	None
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.	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion and BAT-AEL are not applicable to this installation. This is because they relate to pyrometallurgical processes, which are typically only undertaken during primary metal	None.

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	BAT-AEL for Hg				production, and therefore are not applicable to the production of carbon at this site.	
12	In order to reduce emissions of SO <sub>2</sub> from off-gases with a high SO <sub>2</sub> content and to avoid the generation of waste from the flue-gas cleaning system, BAT is to recover sulphur by producing sulphuric acid or liquid SO <sub>2</sub>	NA	NA	NA	This BAT Conclusion is not applicable to plants producing carbon, as confirmed by the applicability section within BAT 12.	None.
13	In order to prevent NO <sub>x</sub> emissions to air from a pyrometallurgical process, BAT is to use one of the techniques given	NA	NA	NA	The Environment Agency has determined that this BAT Conclusion is not applicable to this installation. This is because it relates to pyrometallurgical processes, which are typically only undertaken during primary metal production, and therefore are not applicable to the production of carbon at this site.	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	1.3	CC	CC	The operator states in their response that they are currently compliant with BAT 14. They employ a combination of techniques given to achieve BAT: a – measure the amount of fresh water used and the amount of waste water discharged f – use a closed circuit cooling system	None.

BATc Number	Compliance Issue  Priority BAT indicated in <b>Bold Text</b>	Relevant permit condition	Compliance stated by Operator  NA / CC / FC / NC	Compliance assessment conclusion  NA / CC / FC / NC	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
					The Environment Agency is satisfied the operator is currently compliant with this BAT Conclusion.	
15	In order to prevent the contamination of water and to reduce emissions to water, BAT is to segregate uncontaminated waste water streams from waste water streams requiring treatment	NA	CC	NA	The Environment Agency has determined that this BAT Conclusion is not applicable for this installation as there is no on-site treatment of wastewater.	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	NA	NA	NA	In their response the operator confirms that there are no discharges from the installation to surface water or directly into the foul sewer. All effluent is collected in a sump tank, before being pumped to a holding tank used by a number of buildings outside the scope of the installation. When full, the tank is emptied into the AWE trade effluent treatment plant. Discharges from the treatment plant are ultimately routed to Silchester Sewerage Works under trade effluent consent issued by the sewerage undertaker.  The Environment Agency has determined that this BAT Conclusion is not generally applicable for installations which only discharge wastewater to sewer.	None.



BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
					<p>We do not require operators to routinely monitor discharges of wastewater to sewer where the discharge is already regulated (and monitored) by the sewerage undertaker via a trade effluent consent, unless there is a site-specific environmental need for additional monitoring, e.g. if there was a ELV on the environmental permit to protect water quality, in which case we would require monitoring to be undertaken in accordance with BAT 16.</p> <p>The above position is consistent with how we regulate other industrial sectors through the permitting process.</p>	
17	In order to reduce emissions to water, BAT is to treat the leakages from the storage of liquids and the waste water from non-ferrous metals production, including from the washing stage in the Waelz kiln process, and to remove metals and sulphates by using a combination of the techniques given	NA	NA	NA	<p>The Environment Agency has determined that this BAT Conclusion is not applicable for installations which only discharge wastewater to sewer.</p> <p>The BAT-AELs for BAT 17 relate to direct emissions to receiving waters (as opposed to indirect emissions made via the foul sewer) and in any case do not apply to the production of carbon.</p> <p>It is our view that the intention of BAT 17 is to ensure that surface waters are appropriately protected, through the prevention of direct discharges which may</p>	None.

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
					otherwise have been made without (or with minimal) treatment.	
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 states in their response that they are currently compliant with BAT 18. They use a variation of technique a. The facility is not near the site boundary at all. In addition a noisy chiller has been replaced, and no noisy equipment remains either inside or outside the facility. As a LII the installation meets the low impact criteria for noise. The Environment Agency is satisfied that the operator is currently compliant with 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	NA	CC	In their response the operator states that BAT 19 is not applicable, as the site does not produce odour. However, the Environment Agency considers that they are currently compliant with this BAT Conclusion, as they use one of the techniques given: b – minimise the use of odorous materials. As a LII the installation meets the low impact criteria for odour.	None.
<b>BAT 177-184: Carbon and/or graphite production</b>						

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
177	In order to reduce diffuse PAH emissions to air from the storage, handling and transport of liquid pitch, BAT is to use one or a combination of the techniques given	NA	NA	NA	In their response the operator states that BAT 177 is not applicable. Liquid pitch is not used in the process. The Environment Agency is satisfied this BAT Conclusion is not applicable.	None.
178	In order to reduce dust emissions to air from the storage, handling and transportation of coke and pitch, and mechanical processes (such as grinding) and graphitising and machining, BAT is to use a bag filter BAT-AELs for Dust and BaP	NA	NA	NA	In their response the operator states BAT 178 is not applicable. The operator does not carry out any of the activities identified in the BAT Conclusion. The Environment Agency is satisfied this BAT Conclusion is not applicable.	None.
179	In order to reduce dust and PAH emissions to air from the production of green paste and green shapes, BAT is to use one or a combination of the techniques given BAT-AELs for Dust and BaP	NA	NA	NA	In their response the operator states BAT 179 is not applicable. The operator does not produce green paste or green shapes. The Environment Agency is satisfied this BAT Conclusion is not applicable.	None.
180	In order to reduce dust and PAH emissions to air from baking, BAT is to use one or a combination of the techniques given BAT-AELs for Dust and BaP	NA	TBC	NA	This installation meets the low impact criteria and as such emissions from the installation have been demonstrated to be insignificant without having to rely on active abatement for releases to the environment. It is our view therefore that BAT conclusions that refer to the use of	None.

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
					<p>extraction and abatement, and associated emission limit values, to prevent and reduce emissions are not applicable.</p> <p>The operator has previously used technique c – thermal oxidiser. However this is a low-impact installation and, due to insignificant emissions, the thermal oxidiser was removed in 2008. This is not an inherently dusty process and emissions have been shown to be insignificant therefore the BAT-AEL for dust does not apply.</p> <p>We also note in further correspondence (letter dated 26/09/17) the operator has confirmed that they intend to cease carbonization / graphitisation during 2018 before the June 2020 compliance date.</p> <p>The Environment Agency considers this BAT Conclusion to be not applicable.</p>	
181	In order to reduce dust and PAH emissions to air from impregnation, BAT is to use one or a combination of the techniques given BAT-AELs for Dust and BaP	NA	NA	NA	<p>The operator states in their response that BAT 181 is not applicable.</p> <p>The activity does not include impregnation.</p> <p>The Environment Agency is satisfied that this BAT Conclusion is not applicable.</p>	None.
182	In order to reduce SO <sub>2</sub> emissions to air when there is a sulphur addition in the	NA	NA	NA	<p>The operator states in their response that BAT 182 is not applicable.</p> <p>There is no sulphur addition in the process.</p>	None.

BATc Number	Compliance Issue	Relevant permit condition	Compliance stated by Operator	Compliance assessment conclusion	Summary of Permitting Officer assessment against BATc techniques	Compliance Action to implement BATc
	Priority BAT indicated in <b>Bold Text</b>		NA / CC / FC / NC	NA / CC / FC / NC		
	process, BAT is to use a dry and/or wet scrubber				The Environment Agency is satisfied that this BAT Conclusion is not applicable.	
183	In order to reduce emissions of organic compounds to air, including phenol and the formaldehyde from the impregnation stage where special impregnation agents such as resins and biodegradable solvents are used, BAT is to use one of the techniques given <b>BAT-AEL for TVOC</b>	NA	FC	NA	The operator states in their response that they are not currently compliant with BAT 183.  However, they do not use an impregnation stage, so the Environment Agency considers this BAT conclusion to be not applicable to the installation.	None.
184	In order to reduce the quantities of waste sent for disposal, BAT is to organise operations on site so as to facilitate process residues reuse or, failing that, process residues recycling, including by reuse or recycling of carbon and other residues from the production processes within the process or in other external processes	NA	CC	NA	The operator states in their response that they are currently compliant with BAT 184. However, they do not use any of the techniques listed.  Due to the nature of the materials used, they cannot be recycled back into the process or reused.  Therefore the Environment Agency deems this BAT Conclusion as not applicable.	None.