

# Notice of variation and consolidation with introductory note

**The Environmental Permitting (England & Wales) Regulations 2016**

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Mueller Europe Limited  
Bilston Copper Shaft Furnace  
Oxford Street  
Bilston  
Wolverhampton  
West Midlands  
WV14 7DS

**Variation application number**

EPR/BJ9843IH/V007

**Permit number**

EPR/BJ9843IH

# Bilston Copper Shaft Furnace

## Permit number EPR/BJ9843IH

### Introductory note

#### **This introductory note does not form a part of the notice.**

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

#### **Changes introduced by this variation notice/statutory review**

This variation has been issued to update some of the conditions following a statutory review of the permits in the industry sector for non-ferrous metals. The opportunity has also been taken to consolidate the original permit and subsequent variations.

The Industrial Emissions Directive (IED) came into force on 7th January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) Conclusions as described in the Commission Implementing Decision. The BAT Conclusions (BATc) for the non-ferrous metals industries were published on 30<sup>th</sup> June 2016 in the Official Journal of the European Union (L174) following a European Union wide review of BAT, implementing decision (EU) 2016/1032 of 13<sup>th</sup> June 2016. The BATc for this installation which apply from 30<sup>th</sup> June 2020 are 1-10, 14, 18, 19, 22, 26, 37, 41, 45, 46, 48 and 54. The operator is already compliant with the BATc with the exception of 10. We have set improvement condition in the varied permit to track progress against future compliance.

The schedules specify the changes made to the permit. Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

#### **Brief description of the process**

Bilston Copper Shaft Furnace (the installation) is operated by Mueller Europe Limited. The installation is located in Bilston, Wolverhampton, West Midlands, England.

The main purpose of the activities at the installation is the production of seamless copper tubing from virgin metal, scrap metal and copper, on a self-contained site.

#### **Raw Materials**

Raw materials used in the process include copper cathode, copper phosphorus waffle, copper billet, in-house process scrap and copper scrap. These materials are stored within the foundry area before being introduced to the process.

The site also requires other raw materials including water treatment chemicals, chlorinated organic solvents and tube forming lubricants.

#### **Melting Furnace**

The scrap copper is charged into the ASARCO shaft furnace via a top loading system. The copper is heated in the charging section by hot combustion gases from the gas burners. The copper gradually passes from the charge section to the melting section where a temperature of 1100°C is maintained. The molten copper runs through a tap hole and down a gas heated covered launder into the holding furnace. The shaft furnace is designed to operate 24 hours per day and is rated at 12 tonnes/hr. Emissions from the shaft furnaces are released through the integral chimney, which releases emissions from the furnace to air after first passing through a dedicated filtration plant to remove particulate matter. The holding furnace is gas heated and has a capacity of 12 tonnes of copper.

The emissions from the abatement plant are monitored continuously for carbon monoxide and particulate matter using MCERTs equipment (where available). Improvement in burner technology, and state-of-the-art automatic PLC controlled burner trimming assists in reducing emissions of carbon monoxide and oxides of nitrogen as well as improving thermal efficiency.

### **Continuous Casting**

Molten copper is passed directly from the holding furnace to a continuous casting machine. Copper phosphorus alloy pellets are mixed with the melt as it exits the holding furnace, and phosphorus de-oxidised copper “logs” are produced. An automatic dosing unit ensures a controlled addition of copper phosphorus pellets to the molten metal. This minimises excess usage and helps reduce production of fugitive phosphorus pentoxide fume.

All launders incorporate ceramic tip burners to enable close covering of the launder in order to improve thermal efficiency and prevent fugitive emissions. The covers are easily removed for essential maintenance.

The logs are cut to the required length by a vertical flying saw, complete with chip exhaust system, all local to the casting machine.

A second saw is used to cut shorter lengths from the logs of the cast machine for further processing. These shorter lengths are referred to as “billets”.

### **Extrusion/ Drawing**

The billets are heated in a gas fired oven prior to being extruded into a long, hollow tube at the start of the continuous tube production line. From here the extrusions are drawn down to the required size using a draw bench fitted with energy efficient motors and single shot drawing lubricant equipment. Synthetic or mineral oil based metal forming lubricants are used. Due to the elevated temperatures low smoking lubricants are used.

### **Annealing**

Tubes requiring intermediate tempers are heat treated in controlled atmosphere “bright annealing” furnaces. The tubes will be annealed using a 500kW inline induction annealing furnace. These are gas fired or electric and use a nitrogen or hydrogen atmosphere system dependent upon the specification.

On completion of the annealing process the tube will pass through a straightening unit.

### **Product Finishing**

Finished copper tube may be degreased in chlorinated solvent to achieve customer specifications. The company has 2 chlorinated solvent tanks that contain a total of 25.5m<sup>3</sup> of solvent. The solvent tanks have a re-circulation loop to enable the solvent to be cleaned and periodically replaced. The solvent tanks are vented to atmosphere through installed ducting.

Tube finishing includes a saw and eddy current unit. Once the tubing has passed through the finishing phase the final product is then directed to the warehouse for storage.

The site operates an Environmental Management System that is compliant with ISO 14001 and an ongoing Energy Efficiency Action Plan as part of the company’s Energy Management System.

### **Releases to the environment**

Releases to air from the shaft furnace and holding furnace are made through a single stack (A2) following abatement via a bag filter with adsorbant injection. The other main emission to air is the bay degreaser (A4) and is part of the solvent emission activity listed in Table S1.1.

Site surface water is discharged to sewer under trade effluent consent from Severn Trent or to surface water via an interceptor.

There are no releases to groundwater or land.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Response to request for information	Request dated 18/02/02	Response dated 15/06/02
Response to second request for information	Request dated 24/07/02	Response dated 07/01/03
Request by Agency to extend determination from 01/07/02 to 01/11/02	Request dated 02/07/02	Request accepted 03/07/02
Request by Operator to extend determination period from 01/11/02 to 21/12/02	Request dated 02/10/02	Request accepted 08/10/02
Request by Operator to extend determination period from 21/12/02 to 31/01/03	Request dated 09/12/02	Request accepted 16/12/02
Permit BJ9843IH	Determined 31/03/03	
Application for variation	Received 11/12/03	
Request by Environment Agency to extend determination period from 11/03/04 to 11/05/04	Request dated 24/02/04	Request agreed 02/03/04
Variation BX1292IY	Determined 19/04/04	
Variation RP3532ST	Determined 07/07/05	
Variation LP3036XX	Request dated 02/04/08	
Variation LP3036XX	Determined 08/08/08	
Application for variation EPR/BJ9843IH/V004	Duly made 18/01/12	
Variation EPR/BJ9843IH/V004	Determined 27/02/12	New EPR reference introduced
Application for variation EPR/BJ9843IH/V005	Duly Made 16/02/15	Application to add fourth copper tube finishing line
Additional information received	16/02/15 & 17/02/15	
Variation EPR/BJ9843IH/V005 Determined (billing ref.)	09/04/15	
Part surrender application EPR/BJ9843IH/S006	Duly made 27/11/17	Application to surrender part of the permitted area.
Part surrender determined EPR/BJ9843IH PAS billing ref. FP3635JD	01/02/18	Part surrender complete.
Regulation 60 Notice dated 16/12/16 (Notice requiring information for statutory review of permit)	Response Received 10/08/17	Technical standards detailed in response to the information notice. Information to demonstrate that relevant BAT Conclusions are met for the non-ferrous metals industries as detailed in document reference L174.
Regulation 61 Notice dated 06/02/18 (Notice requiring information for statutory review of permit)	Responses Received 09/02/18 and 20/02/18	Further information / clarification with regard to BAT conclusions 2-5, 7-10, 12, 20, 23, 25-36, 42-44, 46-48, 50 and 51.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Further information requests on 02/05/18 04/05/18	Responses received 04/05/18	Details of surface water discharges and de-greaser used.
Further information requests on 10/05/18	Responses received 10/05/18	Receipt of site plan with emission points labelled
Further information requests on 24/05/18	Responses received 24/05/18	Receipt of techniques for BAT 48, diffuse dust emissions plan and climate change agreement clarification.
Environment Agency initiated variation EPR/BJ9843IH/V007 (variation and consolidation)  Variation determined EPR/BJ9843IH/V007 (PAS / Billing Ref: PP3232JV)	04/06/2018	Statutory review of permit – Non-ferrous metals BAT Conclusions published 30/06/16  Varied and consolidated permit issued

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates

### Permit number

**EPR/BJ9843IH**

### Issued to

**Mueller Europe Limited** (“the operator”)

whose registered office is”

**Oxford Street  
Bilston  
Wolverhampton  
West Midlands  
WV14 7DS**

company registration number **03316088**

to operate an installation at

**Bilston Copper Shaft Furnace  
Oxford Street  
Bilston  
Wolverhampton  
West Midlands  
WV14 7DS**

to the extent set out in the schedules.

The notice shall take effect from 04/06/2018

Name	Date
Tom Swift	04/06/2018

Authorised on behalf of the Environment Agency

## **Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2016

### Permit number

**EPR/BJ9843IH**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BJ9843IH/V007 authorising,

**Mueller Europe Limited** (“the operator”)

whose registered office is”

**Oxford Street  
Bilston  
Wolverhampton  
West Midlands  
WV14 7DS**

company registration number **03316088**

to operate an installation at

**Bilston Copper Shaft Furnace  
Oxford Street  
Bilston  
Wolverhampton  
West Midlands  
WV14 7DS**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Tom Swift	04/06/2018

Authorised on behalf of the Environment Agency



# Conditions

## 1 Management

### 1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
  - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

### 1.2 Energy efficiency

- 1.2.1 The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
  - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
  - (c) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
  - (b) maintain records of raw materials and water used in the activities;
  - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
  - (d) take any further appropriate measures identified by a review.

### 1.4 Avoidance, recovery and disposal of wastes produced by the activities

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
  - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
  - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.4 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2; and
  - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.6 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

### **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
  - (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.3 Odour**

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
  - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
  - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.4 Noise and vibration**

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

## **3.5 Monitoring**

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1, S3.2 and S3.3;

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

## **3.6 Fire prevention**

3.6.1 The operator shall take all appropriate measures to prevent fires on site and minimise the risk of pollution from them including, but not limited to, those specified in any approved fire prevention plan.

3.6.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to a risk of fire, submit to the Environment Agency for approval within the period specified, a fire prevention plan which prevents fires and minimises the risk of pollution from fires;
- (b) implement the fire prevention plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

# **4 Information**

## **4.1 Records**

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

- (i) off-site environmental effects; and
  - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

## 4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports 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(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
  - (b) the annual production /treatment data set out in schedule 4 table S4.2; and
  - (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
  - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.
- 4.2.6 The operator shall submit an annual solvent management plan in order to demonstrate compliance with the requirements of the Industrial Emissions Directive, by 31 January each year in respect of the previous year.

## 4.3 Notifications

- 4.3.1 In the event:
- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
    - (i) inform the Environment Agency,
    - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
    - (iii) take the measures necessary to prevent further possible incidents or accidents;

- (b) of a breach of any permit condition the operator must immediately—
    - (i) inform the Environment Agency, and
    - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
  - (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator’s trading name, registered name or registered office address; and
  - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (a) any change in the operator’s name or address; and
  - (b) any steps taken with a view to the dissolution of the operator.
- In any other case:
- (a) the death of any of the named operators (where the operator consists of more than one named individual);
  - (b) any change in the operator’s name(s) or address(es); and
  - (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.
- 4.3.4 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and
  - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.5 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

## 4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately” in which case it may be provided by telephone.

# Schedule 1 – Operations

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
Section 2.2 A(1)(b):	<p>Melting, including making alloys of, non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where-</p> <p>(i) the plant has a melting capacity of more than 4 tonnes per day for lead or cadmium or 20 tonnes per day for all other metals, and</p> <p>(ii) any furnace (other than a vacuum furnace), bath or other holding vessel used in the plant for the melting has a design holding capacity of 5 or more tonnes</p>	<p>From receipt of material in the furnace charging bins to intermediate storage prior to the extrusion process.</p> <p>Waste types as specified in Table S2.2</p>
<p>Activities under Schedule 14 to Environmental Permitting Regulations</p> <p>(Solvent emission activity)</p>	<p>Degreasing of components prior to surface treatment using more than 5 tonnes per annum of tetrachloroethylene (halogenated volatile organic compound carrying the H351 hazard statement)</p>	<p>From receipt of raw materials to disposal of waste solvent</p>
<b>Directly Associated Activity</b>		
Raw materials storage and handling	Receipt, handling and storage of copper cathode, copper waffle and copper scrap and all process substances	Receipt of raw materials until used in the process
Off-gas collection, abatement and discharge systems.	Localised extraction hoods, ducting, bag filter and stacks,	Collections of air emissions to exit point via stacks.
Finishing activities	Billets extruded into copper tubing annealing, and cutting	Billet storage and handling, extrusion, annealing, and cutting. Includes plant services, die cleaning, process materials storage.

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
Water discharges to controlled waters	Discharge of site drainage from the installation	From site drainage to entry into Darlaston Brook
Effluent discharge to foul sewer	Discharge of secondary cooling water from cast plant.	From production of cooling water effluent to discharge to external foul sewer
Storage and handling of solid and liquid wastes	Handling, storing and removal of all wastes from site	From separation of wastes to despatch from installation

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application BJ9843	The response to questions 2.4 given in section 2.4 of the application.	19/12/01
Response to Schedule 4 Part 1 Notice	Response to question 27	15/06/02
Response to Regulation 60 Notice – request for further information dated 06/12/16	Technical standards detailed in response to BAT Conclusions 2-5, 7-10, 12, 20, 23, 25-36, 42-44, 46-48, 50 and 51 of the notice provided under Regulation 60(1) of Environmental Permitting Regulations. Best available techniques as described in BAT Conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for non-ferrous metals industries	Received 17/03/17
Response to Regulation 61 Notice – request for further information dated 06/02/18	Further information and/or clarification on BAT Conclusions 2, 3, 4, 5, 7, 8, 10, 12, 20, 23, 25-36, 42-44, 46-48, 50 and 51 of the notice provided under Regulation 61(1) of Environmental Permitting Regulations.	Received on 09/02/18 and 20/02/18
Receipt of additional information to the Regulation 60 Notice, requested by emails dated 02/05/18 and 04/05/18	Details of surface water discharges and de-greaser used	Received 04/05/18
Receipt of additional information requested by email dated 10/05/18	Receipt of site plan with emission points labelled	Received 10/05/18
Receipt of additional information requested by email dated 24/05/18	Receipt of techniques for BAT 48, diffuse dust emissions plan and climate change agreement clarification.	Received 24/05/18



<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Improvement Condition</b>	<b>Completion date</b>
IC1	<p>The operator shall undertake a review of periodic monitoring for emissions to air of TVOC and PCDD/F from emission point A2. The review will be made with reference to BAT 10 of the BAT Conclusions for the Non-Ferrous Metals Industries (Commission Implementing Decision EU2016/1032) and shall justify, with appropriate evidence, the frequency of monitoring to be employed at the installation from 30 June 2020.</p> <p>The evidence required under this condition shall include analysis and interpretation of monitoring results for each substance, and performance 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.</p> <p>A report on the above review shall be submitted to the Environment Agency to facilitate agreement in writing of the appropriate monitoring provision at the installation.</p>	<p>Within 12 months of effective date of notice V007</p>

## Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
-	-

Table S2.2 Permitted waste types and quantities for melting of non-ferrous metals.	
Maximum Quantity	12,000 tonnes per annum
Waste code	Description
<b>17</b>	<b>Construction and Demolition Wastes (including excavated soil from contaminated sites</b>
<b>17 04</b>	<b>metals (including their alloys)</b>
17 04 01	Copper, bronze, brass

## Schedule 3 – Emissions and monitoring

Table S3.1a Point source emissions to air – emission limits and monitoring requirements Effective until 29 June 2020						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1	ASARCO Shaft Furnace Stack <sup>1</sup>	No parameters set	-	-	-	-
A2 on site plan in schedule 7	Abatement plant (including bag-plant) serving ASARCO Shaft Furnace	Particulates	10 mg/Nm <sup>3</sup>	Daily average	Continuous <sup>2,7</sup>	Principles of BS14181
			15 mg/Nm <sup>3</sup>	Maximum hourly mean concentration	Continuous <sup>2,7</sup>	Principles of BS14181
			10 mg/Nm <sup>3</sup>	Extractive sample	Once a year	BS EN 13284
		Total Volatile Organic Compounds (as carbon)	50 mg/Nm <sup>3</sup>	Extractive Sample	Once a year	BS EN 12619
		Dioxins (as I-TEQ/Nm <sup>3</sup> )	0.1 ng/Nm <sup>3</sup>	Extractive Sample	Twice a year	BS EN 1948 parts 1, 2 & 3 and MID
		Oxides of nitrogen (as NO <sub>x</sub> )	100 mg/Nm <sup>3</sup>	Extractive Sample	Once a year	BS EN 14792
		Carbon monoxide	65 kg/hr	Continuous	Continuous <sup>2</sup>	Principles of BS14181
				Extractive Sample	Once a year	ISO 12039
		Hydrogen chloride	10 mg/Nm <sup>3</sup>	Extractive Sample	Once a year	BS EN 1911
		Phosphorus (as P <sub>2</sub> O <sub>5</sub> )	5 mg/Nm <sup>3</sup>	Extractive Sample	Once a year	BS EN 14385
Copper, lead, zinc and their compounds taken together (as metal) <sup>3</sup>	2 mg/Nm <sup>3</sup>	Extractive Sample	Once a year	BS EN 14385 and MID		
Cadmium, arsenic, nickel and their compounds taken together (as elements) <sup>4</sup>	0.5 mg/Nm <sup>3</sup>	Extractive Sample	Once a year	BS EN 14385 and MID		
A4 on site plan in schedule 7	1 Bay Degreaser	Tetrachloroethylene <sup>5</sup>	20 mg/Nm <sup>3</sup>	Average over the sampling period <sup>6</sup>	Twice a year	EN/TS 13649

**Table S3.1a Point source emissions to air – emission limits and monitoring requirements**  
**Effective until 29 June 2020**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A6	In-line Annealing Furnace – 10 bay	No parameters set	No limits set	-	-	-
A7	In-line Annealing Furnace – 10 bay	No parameters set	No limits set	-	-	-
A12	In-line Annealing Furnace – 9 bay	No parameters set	No limits set	-	-	-
<ol style="list-style-type: none"> <li>1. This Emission Point will only be used to vent the furnace to air in an emergency, during start-up and approximately six times a year during melting down operations for repair and shutdowns. Melting down operations shall take no longer than nine hours.</li> <li>2. For continuous emission monitoring the emission limit value is complied with if 95% of hourly average readings for each rolling 24 hour period do not exceed the emission limit value given in Table 3.1a and the peak hourly average value does not exceed 1.5 times the limit. Excludes periods of abnormal operation.</li> <li>3. No individual element to exceed 2 mg/Nm<sup>3</sup></li> <li>4. No individual element to exceed 0.5 mg/Nm<sup>3</sup></li> <li>5. Limit value refers to mass of compounds in mg/Nm<sup>3</sup>, and not to total carbon.</li> <li>6. At least three measurement values shall be obtained during each measurement exercise</li> <li>7. Continuous Emission Monitoring systems shall be quality assured using the following general principles in BS EN 14181: functionality testing with full linearity, and verification with parallel tests using a standard reference method.</li> </ol>						

**Table S3.1b Point source emissions to air – emission limits and monitoring requirements.**  
**Effective from 30 June 2020**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period <sup>4</sup>	Monitoring frequency <sup>4</sup>	Monitoring standard or method <sup>4</sup>
A1	ASARCO Shaft Furnace Stack <sup>1</sup>	No parameters set	-	-	-	-
A2 on site plan in schedule 7	Abatement plant (including bag-plant) serving ASARCO Shaft Furnace	Particulate Matter	5 mg/Nm <sup>3</sup>	Average over the sampling period	Once a year	BS EN 13284-1 and MID
		Total Volatile organic compounds (as carbon)	30 mg/ Nm <sup>3</sup>	Average over the sampling period	Once a year	BS EN 12619

**Table S3.1b Point source emissions to air – emission limits and monitoring requirements.  
Effective from 30 June 2020**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period <sup>4</sup>	Monitoring frequency <sup>4</sup>	Monitoring standard or method <sup>4</sup>
		PCDD/F (as I-TEQ/Nm <sup>3</sup> ) <sup>5</sup>	0.1 ng/m <sup>3</sup>	Average over the sampling period	Twice a year	BS EN 1948 parts 1, 2 & 3 and MID
		Oxides of nitrogen (as NOx )	100 mg/Nm <sup>3</sup>	Average over the sampling period	Once a year	BS EN 107429
		Hydrogen chloride	10 mg/Nm <sup>3</sup>	Average over the sampling period	Once a year	BS EN 1911
		Phosphorus (as P <sub>2</sub> O <sub>5</sub> )	5 mg/Nm <sup>3</sup>	Average over the sampling period	Twice a year	BS EN 14385
A4 on site plan in schedule 7	1 Bay Degreaser	Tetrachloroethylene <sup>2</sup>	20 mg/Nm <sup>3</sup>	Average over the sampling period <sup>3</sup>	Twice a year	ENTS 13649
A6,	In-line Annealing Furnace – 10 bay	No parameters set	No limit set	-	-	-
A7	In-line Annealing Furnace – 10 bay	No parameters set	No limit set	-	-	-
A12	In-line Annealing Furnace – 9 bay	No parameters set	No limit set	-	-	-

1. This Emission Point will only be used to vent the furnace to air in an emergency, during start-up and approximately six times a year during melting down operations for repair and shutdowns. Melting down operations shall take no longer than nine hours.
2. Limit value refers to mass of compounds in mg/Nm<sup>3</sup>, and not to total carbon.
3. At least three measurement values shall be obtained during each measurement exercise
4. Monitoring to be undertaken in accordance with stated requirements in Table S3.1b pending completion of Improvement Condition IC3 in Table S1.3
5. Average over the sampling period of at least six hours

**Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 on site plan in schedule 7 emission to Darlaston Brook	Surface Water Run-off via interceptor	Total suspended solids	35 mg/ml	Instantaneous (Spot meter)	Twice a year	In accordance with Environment Agency M18 Guidance <sup>1</sup>
		pH	6-9	Instantaneous (Spot meter)	Twice a year	
		Zinc and, its compounds expressed as Zn	500 µg/l	Instantaneous (Spot meter)	Twice a year	
		Copper and its compounds expressed as Cu	500 µg/l	Instantaneous (Spot meter)	Twice a year	
		Lead and its compounds expressed as Cu	50 µg/l	Instantaneous (Spot meter)	Twice a year	
		Cadmium and its compounds, expressed as Cd	10 µg/l	Instantaneous (Spot meter)	Twice a year	
		Chemical oxygen demand (COD)	125 mg/l	Instantaneous (Spot meter)	Twice a year	
		Total hydrocarbon oil	2000 µg/l	Instantaneous (Spot meter)	Twice a year	
<p><b>1.</b> Or as otherwise agreed by the Environment Agency.</p>						

**Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
S1 on site plan in schedule 7 emission to Severn Trent public foul sewer	Secondary cooling water from cast plant	Total suspended solids	400 mg/l	Instantaneous (Spot meter)	Twice a year	In accordance with Environment Agency M18 Guidance <sup>1</sup>
		pH	6-10	Instantaneous (Spot meter)	Twice a year	
		Copper and its compounds (as Cu)	5 mg/l	Instantaneous (Spot meter)	Twice a year	
		Zinc and its compounds (as Zn)	25 mg/l	Instantaneous (Spot meter)	Twice a year	
		Chemical Oxygen demand (COD)	600 mg/l	Instantaneous (Spot meter)	Twice a year	

1. Or as otherwise agreed by the Environment Agency.

## Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A2, A4	Every 6 months	1 January, 1 July
Emissions to water Parameters as required by condition 3.5.1	W1,	Every 6 months	1 January, 1 July
Emissions to Sewer Parameters as required by condition 3.5.1	S1	Every 6 months	1 January, 1 July

Parameter	Units
Copper products	tonnes

Parameter	Frequency of assessment	Units
Water usage	Annually	Tonnes/ tonne of finished product
Energy usage	Annually	MWh
Total raw material used	Annually	Tonnes/tonne of finished product
Particulates and CO released to air	Annually	Kg/tonne of finished product
Waste disposal (excluding material sent for recovery).	Annually	Tonnes/ tonne of finished product

Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Water	Form water 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY



<b>Table S4.4 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Particulates/CO	Form Performance 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Waste	Form Performance 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY

# Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

## Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

## Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“average over the sampling period” means the average value of three consecutive measurements of at least 30 minutes each, unless otherwise stated, as defined in the *General Considerations* section of the Non-Ferrous Metals BAT Conclusions. For batch processes, the average of a representative number of measurements taken over the total batch time or the result of a measurement carried out over the total batch time can be used.

“BAT-AELs” means BAT-associated emission levels, i.e. the emission levels associated with the best available techniques for emissions to air and/or water, as set out in the Non-Ferrous Metals BAT Conclusions.

“daily average” means the average over a period of 24 hours of valid half-hourly or hourly averages obtained by continuous measurements, as defined in the *General Considerations* section of the Non-Ferrous Metals BAT Conclusions. A half-hourly or hourly average shall be considered valid if measurements are available for a minimum of (a) 20 minutes during the half hour, or (b) 40 minutes during the hour. The number of half-hourly or hourly averages so validated shall not exceed 5 per day.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“List of Wastes” means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes and not subject to BAT-AELs for air emissions, the concentration in dry air at a temperature of 273.15K, at a pressure of 101.3 kPa, and with an oxygen content of 3% dry for liquid and gaseous fuels and 6% dry for solid fuels; and/or

- in relation to emissions from non-combustion sources and not subject to BAT-AELs for air emissions, the concentration at a temperature of 273.15K and at a pressure of 101.3 kPa, with no correction for water vapour content; and/or
- in relation to emissions from non-combustion sources subject to BAT-AELs for air emissions, the concentration in dry air at a temperature of 273.15K and at a pressure of 101.3 kPa; and/or
- in relation to emissions from combustion processes subject to BAT-AELs for air emissions, the concentration in dry air at a temperature of 273.15K and at a pressure of 101.3 kPa, and with an oxygen content of 3% dry for liquid and gaseous fuels and 6% dry for solid fuels.

For the determination of the toxic equivalence (I-TEQ) value stated as a release limit the mass concentrations of the following dioxins and furans have to be multiplied with their equivalence factors before summing.

Equivalence factor:

#### **Dioxins**

2,3,7,8 Tetrachlordibenzodioxin (TCDD)	1
1,2,3,7,8 Pentachlordibenzodioxin (PeCDD)	0.5
1,2,3,4,7,8 Hexachlordibenzodioxin (HxCDD)	0.1
1,2,3,7,8,9 Hexachlordibenzodioxin (HxCDD)	0.1
1,2,3,6,7,8 Hexachlordibenzodioxin (HxCDD)	0.1
1,2,3,4,6,7,8 Heptachlordibenzodioxin (HpCDD)	0.01
Octachlordibenzodioxin (OCDD)	0.001

#### **Furans**

2,3,7,8 Tetrachlorodibenzofuran (TCDF)	0.1
2,3,4,7,8 Pentachlorodibenzofuran (PeCDF)	0.5
1,2,3,7,8 Pentachlorodibenzofuran (PeCDF)	0.05
1,2,3,4,7,8 Hexachlorodibenzofuran (HxCDF)	0.1
1,2,3,7,8,9 Hexachlorodibenzofuran (HxCDF)	0.1
1,2,3,6,7,8 Hexachlorodibenzofuran (HxCDF)	0.1
2,3,4,6,7,8 Hexachlorodibenzofuran (HxCDF)	0.1
1,2,3,4,6,7,8 Heptachlorodibenzofuran (HpCDF)	0.01
1,2,3,4,7,8,9 Heptachlorodibenzofuran (HpCDF)	0.01
Octachlorodibenzofuran (OCDF)	0.001

“year” means calendar year ending 31 December.

# Schedule 7 – Site plan



Site plan indicating emission points provided by operator.

END OF PERMIT