Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Britannia Refined Metals Limited

Britannia Refined Metals Limited
Botany Road
Northfleet
Gravesend
Kent
DA11 9BG

Variation application number

EPR/BM4945IW/V005

Permit number

EPR/BM4945IW

Britannia Refined Metals Limited
Permit number EPR/BM4945IW

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 30th 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 13th June 2016. The BATc for this installation which apply from 30th June 2020 are 1 to 10, 12 to 19, 92 to 94, 96 to 100, 104, 107 and 134 to 149. The operator is already compliant with the BATc with the exception of 5 to 8, 10, and 92. We have set improvement conditions in the varied permit to track progress against future compliance.

The Environment Agency also took this opportunity to update information relating to point source emissions to water as two of the current permitted emission points are not linked to the installation or its processes. This has resulted in the removal of emission points W3 and W4 from table S3.2 of the permit.

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

Britannia Refined Metals Limited (the Installation) is operated by Britannia Refined Metals Limited and is located in Gravesend, Kent, England.

The main purpose of the site is the production of commercial grade refined lead. Crude lead bullion is sourced from the Mount Isa Smelter in Australia or other external sources. The site has the capacity to produce approximately 250,000 tonnes of commercial grade lead per year. The production process occurs at a high temperature and is undertaken 24 hours a day. This is listed as a Section 2.2 A (1) (b) activity within table S1.1 of the permit.

During the lead production process, silver is extracted from crude lead and further refined to obtain silver of 99% purity. This is undertaken as part of the Section 2.2 A (1) (b) activity.

The primary lead production process has the following key stages:

- **Premelting:** The lead bullion is charged and melted in melting kettles.
- **Desilvering (Parkes Process):** The lead bullion is contaminated with silver which needs to be removed from the lead as part of the process. Zinc is added to the kettle and due to its properties stays as a separate layer rather than mixing into the lead. The silver migrates into the zinc layer on the top of the kettle and is skimmed off as a dross. This dross is then fed into the silver production process, and any remaining zinc in the molten lead is removed via vacuum distillation and reused in the process.
- **Refining:** The molten lead is then transferred to the refining kettle where it is refined using a number of additions.
- **Alloying:** Alloys can then be added to the molten lead as required.

- **Casting:** The molten lead is then cast into ingots.

With regard to the silver production process, the solid silver/dross received from the lead production process is first melted in the liquation furnace and then the silver and zinc is separated in the vacuum retort induction furnace. The silver is then further refined before being cast into silver ingots.

There are a number of emissions to air from both the lead and silver production processes. Process emissions are collected by local extractive ventilation and capture hoods and then treated via abatement bag plants and actairs (emission points A1-A10). Emissions that are solely from combustion processes (burners) are released via the combustion vents (emission points A11- A13), and emissions from processes that occur under vacuum are released via the vacuum pump vents (emission points A14-A16).

There are two emissions to surface water, namely, the River Thames: one from the site of the former battery recycling plant which is referred to as 'CX Effluent Treatment Plant'. The effluent treatment plant now only treats contaminated surface water from other parts of the site before discharging to the River Thames. Surface water is tested prior to being treated by the effluent treatment plant and is only treated substances are present above the permitted limits. The other is also a surface water discharge from site which is also discharged into the River Thames.

The operator has an Environmental Management System (EMS) accredited to the ISO14001 environmental standard.

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

Status log of the permit		
Description	**Date**	**Comments**
Application received EPR/BM4945IW/A001	21/12/01	Application for non-ferrous metals processing facility
Determined EPR/BM4945IW/A001	30/04/04	Permit issued to Britannia Refined Metals Limited.
Agency lead variation EPR/BM4945IW/V002	04/10/05	Variation notice issued to Britannia Refined Metals Limited.
Application received EPR/BM4945IW/V003	31/03/05	Application to remove RFO from the list of permitted fuels and so remove necessity compliance with WID.
Variation determined EPR/BM4945IW/V003	02/12/05	Application notice issued to Britannia Refined Metals Limited.
Agency lead variation EPR/BM4945IW/V004	14/02/07	Variation notice issued to Britannia Refined Metals Limited.
Regulation 60 Notice dated 16/12/16 (Notice requiring information for statutory review of permit)	Response Received 13/03/17	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 06/11/17 (Notice requiring information for statutory review of permit)	Response Received 28/11/17	Further information / clarification with regard to BAT conclusions 2-9, 15, 19, 75, 77-80. 84.
Environment Agency initiated variation EPR/BM4945IW (variation and consolidation) (PAS / Billing Ref: TP3535JK)	18/05/18	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/BM4945IW

Issued to

Britannia Refined Metals Limited ("the operator")

whose registered office is

Botany Road
Northfleet
Kent
DA11 9BG

company registration number: 00252455

to operate an installation at

Britannia Refined Metals Limited
Botany Road
Northfleet
Gravesend
Kent

DA11 9BG

to the extent set out in the schedules.

The notice shall take effect from 18/05/2018

Name	Date
Tom Swift	**18/05/2018**

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/BM4945IW

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BM4945IW/V005 authorising,

Britannia Refined Metals Limited ("the operator"),

whose registered office is

Botany Road
Northfleet
Kent
DA11 9BG

company registration number 00252455

to operate an installation at

Britannia Refined Metals Limited
Botany Road
Northfleet
Gravesend
Kent
DA11 9BG

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

Name	Date
Tom Swift	**18/05/2018**

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 green 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 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.

2.3.5 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 and S3.2.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Where a substance is specified in schedule 3 table S3.2 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.

3.1.4 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 and S3.2,

(b) ambient air monitoring specified in table 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 and S3.2 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.

4.3 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 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.

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

Table S1.1 Activities		
Activity listed in Schedule 1 of the EP Regulations	**Description of specified activity**	**Limits of specified activity**
Section 2.2 A(1)(b):	Melting, including making alloys of, non-ferrous metals, including recovered products and the operation of non-ferrous metal foundries where- (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 (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 [Includes both lead and silver refining]	From charging of furnace to transfer to finishing activities.
Directly Associated Activity		
Raw materials storage and handling	Receipt, handling and storage primary lead bullion, all process substances and intermediate materials.	Receipt of raw materials until used in the process.
Effluent discharge to controlled waters	Discharge of surface water from the installation to the River Thames.	From collection of site surface water to discharge to the River Thames
Storage and handling of wastes	Handling, storing and removal of all wastes from site.	From waste production by the specified activities to waste leaving the site. Except wastes from finished products packaging and storage.
Off gas collection, abatement and discharge systems.	Ducting, lime injection, carbon injection, magnesium silicate lined bag filter, internal burner system, localised extraction hoods and stack.	From melting/smelting/holding furnaces and dross cooling to exit point from stack.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to question 2.3 of the application.	21/12/01
Response to Regulation 60 Notice – request for further information dated 06/12/16	Technical standards detailed in response to BAT Conclusions 1-10, 13, 14, 18, 19, 92, 93, 96-99, 107, 134, 135, 139, 140, and 147 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	Received 13/03/17

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
	European Parliament and of the Council on industrial emissions for non-ferrous metals industries	
Response to the Regulation 61 Notice, dated 06/11/17	Further information and/or clarification on BAT conclusions: 2, 3, 5 – 10, 12, 14, 16, 92, 93, 97, 99, 100, 107.	Received 28/11/17
Response to emails issued 12/12/17, and 20/12/17.	Further information and/or clarification on BAT conclusions: BAT 134 – 149 Further information and/or clarification on emissions and emission points.	Received 27/12/17
Response to email issued 22/02/18.	Further information and/or clarifications in regards to the air emissions and emission points and the detailed emission point drawing entitled 'Emission points' dated 09/03/2018	Received 09/03/18
Response to email issued 16/04/18.	Further information in regards to BAT 135.	Received 25/04/18

Table S1.3 Improvement programme requirements		
Reference	**Improvement Condition**	**Completion date**
IC1	The operator shall submit for approval by Environment Agency, a report that clearly demonstrates how the 'Narrative BAT' set out in BAT 5 and 92 of the Non-ferrous metals BAT Conclusions is achieved. The report shall describe the methodology implemented on site to achieve BAT. In the report the operator shall give consideration to providing extractive ventilation during charging, melting/smelting, drossing and tapping (discharging) of the pre-melting ISA kettles.	Interim progress report by 30th June 2019 Final report by 31st March 2020
IC2	The operator shall submit for approval by Environment Agency, a report that clearly demonstrates how the 'Narrative BAT' set out in BAT 7 and 8 of the Non-ferrous metals BAT Conclusions is achieved. The report shall describe the methodology implemented on site to achieve BAT. In the report the operator shall give consideration to the following site operations • Storing the ISA lead blocks in covered storage to prevent dust formation (crust formed by weathering) on their surface. • Storing intermediate materials (eg. silver plant slag, and fine process drosses) in sealed containers ready for charging into the relevant furnaces.	Interim progress report by 30th June 2019 Final report by 31st March 2020
IC3	The operator shall submit for approval by Environment Agency, a Diffuse Emission Action Plan that clearly meets the requirements of the 'Narrative BAT' set out in BAT 6 of the Non-ferrous metals BAT Conclusion. The operator shall also confirm how the action plan will be implemented into the sites EMS, and utilised to set targets to reduce the sites diffuse emissions.	Interim progress report by 30th June 2019 Final report by 31st March 2020

Table S1.3 Improvement programme requirements		
Reference	**Improvement Condition**	**Completion date**
IC4	The operator shall undertake a review of periodic monitoring for emissions to air of Particulate Matter, Metals, and TVOC from emission point A2, A7 and A8, and Particulate Matter and Metals only from emission points A1, A4, A5 and A6. The review will be made with reference to BAT 10 of the BAT Conclusions for the Non-Ferrous Metals Industries (Commission Implementing Decision EU2016/1032) and shall justify, with appropriate evidence, the frequency of monitoring to be employed at the installation from 30 June 2020. The evidence required under this condition shall include analysis and interpretation of monitoring results for each substance, and performance against the relevant BAT-AEL. Consideration should be given to amongst other things the nature of the raw materials, fluxing agents, refining chemicals used; operational stability; and process monitoring associated with operation of abatement plant. The quantity of monitoring data considered must be justified and be sufficient so as to demonstrate that the results are statistically representative of emissions during normal operations, covering the concentration range and mass emission rate of substances emitted at all stages of the process. A report on the above review shall be submitted to the Environment Agency to facilitate agreement in writing of the appropriate monitoring provision at the installation.	Within 12 months of effective date of notice V005
IC5	The operator shall submit a surface water pollution risk assessment to the Environment Agency for approval, which shall assess the impact of discharges of hazardous pollutants to surface water **and/or sewer** from the installation. The risk assessment shall include, but not be limited to the following: a) representative emissions data for the following hazardous pollutants: silver, arsenic, cadmium, cobalt, chromium (total), chromium (VI), copper, mercury, nickel, lead, zinc; and any other relevant substances discharged from the installation. Any emissions monitoring required should be carried out using the methods and standards described in Environment Agency M18 guidance; and b) a risk assessment carried out in accordance with the screening procedures in Environment Agency guidance "Surface water pollution risk assessment for your environmental permit", using the representative emissions data obtained in (a) above.	Within 12 months of effective date of notice V005

Schedule 2 – Waste types, raw materials and fuels

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

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 as shown in the 'Emission Point' drawing referenced by table S1.2.	Actairs 1 & 3 Silver Plant	Total Particulates	10 mg/m^3	Daily average	Continuous	Principles of BS EN 14181
			5 mg/m^3	Monthly average	Continuous	Principles of BS EN 14181
			10 mg/m^3	Extractive Sample	Annual	EN 13284-1 and MID
		Lead or its compounds	2 mg/m^3	Extractive Sample	Annual	EN 14385 and MID
A2 as shown in the 'Emission Point' drawing referenced by table S1.2.	Actairs 2 & 4 ISA Kettle Floor, Pilot Plant	Total Particulates	10 mg/m^3	Daily average	Continuous	Principles of BS EN 14181
			5 mg/m^3	Monthly average	Continuous	Principles of BS EN 14181
			10 mg/m^3	Extractive Sample	Annual	EN 13284-1 and MID
		Lead or its compounds	2 mg/m^3	Extractive Sample	Annual	EN 14385 and MID
A4 as shown in the 'Emission Point' drawing referenced by table S1.2.	Gravesend (Main Baghouse) Silver Plant	Total Particulates	10 mg/m^3	Daily average	Continuous	Principles of BS EN 14181
			5 mg/m^3	Monthly average	Continuous	Principles of BS EN 14181
			10 mg/m^3	Extractive Sample	Annual	EN 13284-1 and MID
		Lead or its compounds	2 mg/m^3	Extractive Sample	Annual	EN 14385 and MID
A5 as shown in the 'Emission Point' drawing referenced by table S1.2.	Middle (Main Baghouse) Silver Plant	Total Particulates	10 mg/m^3	Daily average	Continuous	Principles of BS EN 14181
			5 mg/m^3	Monthly average	Continuous	Principles of BS EN 14181
			10 mg/m^3	Extractive Sample	Annual	EN 13284-1 and MID
		Lead or its compounds	2 mg/m^3	Extractive Sample	Annual	EN 14385 and MID
A6 as shown in the 'Emission Point' drawing referenced by table S1.2.	London (Main Baghouse) Silver Plant	Total Particulates	10 mg/m^3	Daily average	Continuous	Principles of BS EN 14181
			5 mg/m^3	Monthly average	Continuous	Principles of BS EN 14181
			10 mg/m^3	Extractive Sample	Annual	EN 13284-1 and MID
		Lead or its compounds	2 mg/m^3	Extractive Sample	Annual	EN 14385 and MID

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**
A7 as shown in the 'Emission Point' drawing referenced by table S1.2.	Main Stack (Process and Hygiene Baghouse)	Total Particulates	10 mg/m^3	Daily average	Continuous	Principles of BS EN 14181
			5 mg/m^3	Monthly average	Continuous	Principles of BS EN 14181
			10 mg/m^3	Extractive Sample	Annual	EN 13284-1 and MID
		Lead or its compounds	2 mg/m^3	Extractive Sample	Annual	EN 14385 and MID.
		Sulphur Dioxide	200 mg/m^3	Half-hourly average	Annual	BS EN 14791
		Nitrogen Oxides	200 mg/m^3	Half-hourly average	Annual	BS EN 14792
		Carbon Monoxide	300 mg/m^3	Half hourly average	Annual	ISO 12039
		TVOC (as C)	50 mg/m^3	Half hourly average	Annual	BS EN 12619
		Dioxins (expressed I-TEQ)	0.1 ng/m^3	Extractive Sample	Annually	EN 1948 parts 1, 2 and 3, and MID
A8 as shown in the 'Emission Point' drawing referenced by table S1.2.	Actair 7 (Secondary Kettle floor)	Total Particulates	10 mg/m^3	Daily average	Continuous	Principles of BS EN 14181
			5 mg/m^3	Monthly average	Continuous	Principles of BS EN 14181
			10 mg/m^3	Extractive Sample	Annual	EN 13284-1 and MID
		Lead or its compounds	2 mg/m^3	Extractive Sample	Annual	EN 14385 and MID
A10 as shown in the 'Emission Point' drawing referenced by table S1.2.	Donaldson Torit Downflo Cartridge Dust Collector	-	-	-	-	-
A11 as shown in the 'Emission Point' drawing referenced by table S1.2.	Combustion Gas vents from all the kettles on the BRM kettle Floors and No 1 & No 2 Moulding shop)	-	-	-	-	-
A12 as shown in	(Combustion Gas vents	-	-	-	-	-

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**
the 'Emission Point' drawing referenced by table S1.2.	from all the kettles on the ISA kettle Floors and No 3 Moulding shop)					
A13 as shown in the 'Emission Point' drawing referenced by table S1.2.	Combustion Gas vents from all the kettles on the Secondary Kettle Floors and No 4 Moulding shop)	-	-	-	-	-
A14 as shown in the 'Emission Point' drawing referenced by table S1.2.	(The vents from the dezincing kettles on the ISA Kettle Floor)	-	-	-	-	-
A15 as shown in the 'Emission Point' drawing referenced by table S1.2.	(The vents from the dezincing kettles on the BRM Kettle Floor)	-	-	-	-	-
A16 as shown in the 'Emission Point' drawing referenced by table S1.2.	(The vent from the dezincing retort in the silver plant)	-	-	-	-	-

Note 1: For each emission point A1 to A6 and A8, Monitoring for total particulate and lead is not required when all the sources to that point are shut down for more than the relevant monitoring period.

Note 2: The limits for extractive monitoring (for release point A7) of Sulphur Dioxide, Oxides of nitrogen , Carbon monoxide and VOCs are compliant if the average of the half hourly averages over the monitoring period are less than the ELVs given in Table S3.1a

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 [1]**	**Monitoring frequency [1]**	**Monitoring standard or method [1]**
A1 as shown in the 'Emission Point' drawing referenced by table S1.2.	Actairs 1 & 3 Silver Plant	Total Particulates	5 mg/m^3	Average over sampling period	Annual	EN 13284-1 and MID
		Lead or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Arsenic or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Antinomy or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Cadmium or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Copper or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Silver or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Zinc or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
A2 as shown in the 'Emission Point' drawing referenced by table S1.2.	Actairs 2 & 4 ISA Kettle Floor, Pilot Plant	Total Particulates	4 mg/m^3	Average over sampling period	Annual	EN 13284-1 and MID
		TVOC as C	40 mg/m3	Average over sampling period	Annual	EN12619
		Dioxins (expressed I-TEQ)	0.1 ng/m^3	Average over sampling period	Annual	EN 1948 parts 1, 2 and 3, and MID
		Lead or its compounds	1 mg/m^3	Average over sampling period	Annual	EN 14385 and MID
		Arsenic or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Antinomy or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Cadmium or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Copper or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Zinc or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Silver or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
A4 as shown in		Total Particulates	5 mg/m^3	Average over sampling period	Annual	EN 13284-1 and MID

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 [1]**	**Monitoring frequency [1]**	**Monitoring standard or method [1]**
the 'Emission Point' drawing referenced by table S1.2.	Gravesend (Main Baghouse) Silver Plant	Nitrogen Oxides	No limit set	Average over the sample period	Annual	EN 14792 and MID
		Lead or its compounds	No limit set	Average of sampling period	Annual	EN 14385 and MID
		Arsenic or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Antinomy or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Cadmium or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Copper or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Zinc or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Silver or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
A5 as shown in the 'Emission Point' drawing referenced by table S1.2.	Middle (Main Baghouse) Silver Plant	Total Particulates	5 mg/m^3	Average over sampling period	Annual	EN 13284-1 and MID
		Nitrogen Oxides	No limit set	Average over the sample period	Annual	EN 14792 and MID
		Lead or its compounds	No limit set	Average of sampling period	Annual	EN 14385 and MID
		Arsenic or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Antinomy or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Cadmium or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Copper or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Zinc or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Silver or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
A6 as shown in the 'Emission Point'	London (Main Baghouse) Silver Plant	Total Particulates	5 mg/m^3	Average over sampling period	Annual	EN 13284-1 and MID
		Nitrogen Oxides	No limit set	Average over the sample period	Annual	EN 14792 and MID

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 [1]**	**Monitoring frequency [1]**	**Monitoring standard or method [1]**
drawing referenced by table S1.2.		Lead or its compounds	No limit set	Average of sampling period	Annual	EN 14385 and MID
		Arsenic or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Antinomy or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Cadmium or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Copper or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Zinc or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Silver or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
A7 as shown in the 'Emission Point' drawing referenced by table S1.2.	Main Stack (Process and Hygiene Baghouse)	Total Particulates	4 mg/m^3	Average over sampling period	Annual	EN 13284-1 and MID
		Nitrogen Oxides	No limit set	Average over the sample period	Annual	EN 14792 and MID
		Lead or its compounds	1 mg/m^3	Average over sampling period	Annual	EN 14385 and MID.
		Arsenic or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Antimony or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Cadmium or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Copper or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Zinc or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Silver or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		TVOC as C	40 mg/m3	Average over sampling period	Annual	EN12619
		Dioxins and furans (PCDD/F) (expressed I-TEQ)	0.1 ng/m^3	Average over sampling period	Annual	EN 1948 parts 1, 2 and 3, and MID
A8 as shown in		Total Particulates	4 mg/m^3	Average over sampling period	Annual	EN 13284-1 and MID

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 [1]**	**Monitoring frequency [1]**	**Monitoring standard or method [1]**
the 'Emission Point' drawing referenced by table S1.2.	Actair 7 (Secondary Kettle floor)					
		TVOC as C	40 mg/m3	Average over sampling period	Annual	EN12619
		Dioxins (expressed I-TEQ)	0.1 ng/m^3	Average over sampling period	Annual	EN 1948 parts 1, 2 and 3, and MID
		Lead or its compounds	1 mg/m^3	Average over sampling period	Annual	EN 14385 and MID
		Arsenic or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Antimony or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Cadmium or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Copper or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Zinc or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Silver or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
		Tin or its compounds	No limit set	Average over sampling period	Annual	EN 14385 and MID
A10 as shown in the 'Emission Point' drawing referenced by table S1.2.	Donaldson Torit Downflo Cartridge Dust Collector	-	-	-	-	-
A12 as shown in the 'Emission Point' drawing referenced by table S1.2.	(Combustion Gas vents from all the kettles on the ISA kettle Floors and No 3 Moulding shop)	Nitrogen Oxides	No limit set	Average over the sample period	Annual	EN 14792 and MID
A13 as shown in the 'Emission Point' drawing	Combustion Gas vents from all the kettles on the Secondary Kettle Floors)	Nitrogen Oxides	No limit set	Average over the sample period	Annual	EN 14792 and MID

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 [1]**	**Monitoring frequency [1]**	**Monitoring standard or method [1]**
referenced by table S1.2.						
A14 as shown in the 'Emission Point' drawing referenced by table S1.2.	(The vents from the dezincing kettles on the ISA Kettle Floor)	-	-	-	-	-
A16 as shown in the 'Emission Point' drawing referenced by table S1.2.	(The vent from the dezincing retort in the silver plant)	-	-	-	-	-
1. Monitoring to be undertaken in accordance with stated requirements in Table S3.1b pending completion of Improvement Condition IC4 in Table S1.3						

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
W1 on site plan to the River Thames. Location shown in the 'Emission Point' drawing referenced by table S1.2.	Site Drainage and Roof water routed through the Effluent Treatment Plant [CX Discharge Pipe]	Antimony and antimony compounds expressed as antimony	0.5 mg/l	Instantaneous	Every discharge	In accordance with Environment Agency M18 Guidance[1]
		Arsenic and arsenic compounds expressed as arsenic	0.1 mg/l	Instantaneous	Every discharge	
		Cadmium and cadmium compounds expressed as cadmium	0.03 mg/l	Instantaneous	Every discharge	
		Copper and copper compounds	0.1 mg/l	Instantaneous	Every discharge	

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
		expressed as copper				
		Lead and lead compounds expressed as lead	1 mg/l	Instantaneous	Every discharge	
		Nickel and nickel compounds expressed as nickel	0.1 mg/l	Instantaneous	Every discharge	
		Silver and silver compounds expressed as silver	0.05 mg/l	Instantaneous	Every discharge	
		Zinc and Zinc compounds expressed as Zinc	0.5 mg/l	Instantaneous	Every discharge	
		Suspended Solids	30	Instantaneous	Every discharge	
		pH	6-9	Instantaneous	Every discharge	
		Oil and grease	None visible	Instantaneous	Every discharge	
W2 on site plan to the River Thames Location shown in the 'Emission Point' drawing referenced by table S1.2	'T' Jetty outfall [Surface drainage form the site and the surrounding land]	Antimony and antimony compounds expressed as antimony	No limit set	Instantaneous	Every discharge	In accordance with Environment Agency M18 Guidance[1]
		Arsenic and arsenic compounds expressed as arsenic	No limit set	Instantaneous	Every discharge	
		Cadmium and cadmium compounds expressed as cadmium	No limit set	Instantaneous	Every discharge	
		Copper and copper compounds	No limit set	Instantaneous	Every discharge	

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
		expressed as copper				
		Lead and lead compounds expressed as lead	No limit set	Instantaneous	Every discharge	
		Nickel and nickel compounds expressed as nickel	No limit set	Instantaneous	Every discharge	
		Silver and silver compounds expressed as silver	No limit set	Instantaneous	Every discharge	
		Zinc and Zinc compounds expressed as Zinc	No limit set	Instantaneous	Every discharge	
		Suspended Solids	No limit set	Instantaneous	Every discharge	
		pH	No limit set	Instantaneous	Every discharge	
		Oil and grease	No limit set	Instantaneous	Every discharge	
1. Or as otherwise agreed by the Environment Agency.						

Table S3.3 Ambient air monitoring requirements				
Location or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
A, B, C, S, SE & W Location shown in the 'Emission Point' drawing referenced by table S1.2	Lead	Continuous	EN 12341 for monitoring at location S with analysis in accordance with condition 3.5 All other measuring points to use M type sampler unless otherwise agreed with the Agency.	None

Table S3.4 Annual limits		
Substance	**Medium**	**Limit (including unit)** [1]
Antimony, and antimony compounds expressed as antimony	Water	5kg per year
Arsenic, and arsenic compounds expressed as arsenic	Water	1kg per year
Cadmium, and cadmium compounds expressed as cadmium	Water	1kg per year
Copper, and copper compounds expressed as copper	Water	5kg per year
Lead, and lead compounds expressed as lead	Water	50kg per year
Nickel, and nickel compounds nickel	Water	1kg per year
Silver, and silver compounds expressed as silver	Water	0.01kg per year
Zinc, and zinc compounds expressed as zinc	Water	5kg per year
Note 1 – These limits refer to *total metal* discharged.		

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air Parameters as required by condition 3.5.1.	Extractive Sampling A1, A2, A4, A5, A6, A7, A8 Continuous Sampling A1, A2, A4, A5, A6, A7, A8	 Every 12 months Every 12 months	 1 January 1 January
Emissions to water Parameters as required by condition 3.5.1	W1, W2,	Every 12 months	1 January
Ambient air monitoring Parameters as required by condition 3.5.1	Monitoring locations A,B,C,S,SE,W	Every 3 months	1 January

Table S4.2: Annual production/treatment	
Parameter	**Units**
Production of refined lead	tonnes

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Water usage	Annually	M^3/year
Energy usage	Annually	MWh
Total raw material used	Annually	tonnes
Waste per unit output	Annually	--

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air	Form air1 (for extractive sampling) or other form as agreed in writing by the Environment Agency For continuous monitoring, reporting format as agreed with the Environment Agency	18/05/2018
Ambient Air	Form ambient air 1 or other form as agreed in writing by the Environment Agency	18/05/2018
Water	Form water 1 or other form as agreed in writing by the Environment Agency	18/05/2018
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	18/05/2018

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	18/05/2018
Waste	Form waste 1 or other form as agreed in writing by the Environment Agency	18/05/2018
Performance	Form performance 1 or other form as agreed in writing by the Environment Agency	18/05/2018

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	

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

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

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
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.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“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.

“emissions to land” includes emissions to groundwater.

“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 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

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

“monthly average” means the average over a period of a calendar month of valid daily averages obtained by continuous measurements.

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

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

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. “year” means calendar year ending 31 December.

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 Hexachlordibenzofuran (HxCDF)	0.1
1,2,3,7,8,9 Hexachlordibenzofuran (HxCDF)	0.1
1,2,3,6,7,8 Hexachlordibenzofuran (HxCDF)	0.1
2,3,4,6,7,8 Hexachlordibenzofuran (HxCDF)	0.1
1,2,3,4,6,7,8 Heptachlordibenzofuran (HpCDF)	0.01
1,2,3,4,7,8,9 Heptachlordibenzofuran (HpCDF)	0.01
Octachlordibenzofuran (OCDF)	0.001

Schedule 7 – Site plan

END OF PERMIT