Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

AMG Chrome Limited

AMG Chrome Limited
Fullerton Road
Rotherham
South Yorkshire
S60 1DL

Variation application number

EPR/BK6866IW/V005

Consolidated permit number

EPR/BK6866IW

AMG Chrome Limited
Permit number EPR/BK6866IW

Introductory note

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

The following notice gives notice of the variation of environmental permits:

- EPR/BK6866IW – (Arc Furnace process (AFS))
- EPR/QP3535YD – (Exothermic process (EXO)); and
- EPR/LP3504MJ – (Optical Surface Technologies (OST))

referred to in the status logs below, and the replacement of those permits with a varied and consolidated environmental permit. The new consolidated permit is EPR/BK6866IW.

The operator is also extending the overall installation boundary; updating activities and directly associated activities (DAAs) to reflect current site operations; and changing their name from AMG Superalloys UK Limited to AMG Chrome Limited. The extension to the permit boundary will result in installation permit EPR/GP3639ZY (held by AMG Aluminium Limited) sitting within the AMG Chrome Limited boundary.

The site

The site is around 1.8 km southwest of Rotherham, off the Fullerton Road, approximately centred at SK 42259 91154. There is a railway to the west and the River Rother and A630 to the east, with Canklow around 250m eastward.

Brief description of the site processes

AMG Chrome Limited produces speciality metal, metal alloys and glass polishing products to the aluminium, steel, superalloy, hard-facing, welding, and glass industries. Some of the production activities are classified as scheduled listed activities under the Environmental Permitting Regulations and hence require an environmental permit.

The EXO process is a S2.2 Part A 1(a) activity - *Producing non-ferrous metals from ore, concentrates or secondary raw materials by metallurgical chemical or electrolytic activities.*

The EXO department produces chromium alloys (chromium metal, chromium aluminium alloy, chromium iron alloy and other alloys) in a batch process using exothermic reactions in one of four firing crucibles. When an order is received from the customer, the bespoke “recipe” of raw materials is programmed by the operator and then weighed out into the pot via an automated system. The material is dried, tested for moisture and sent for mixing and blending. The mix is taken to the firing station where a controlled exothermic reaction occurs to produce a chrome button or alumina.

Once cool, the button undergoes stripping, shot blasting and then goes one of two ways, depending on the chrome grade. Standard chrome goes for breaking. HPD or SD25 grades go for machining and SD25 then goes for breaking and crushing while HPD goes for breaking, crushing and milling. If the material is required to be in a different specification, it is sent to the electrically powered vacuum furnaces for degassing, then briquetting. Materials are tested at various points throughout the process to ensure specifications are met. The finished product is transported to the warehouse to await dispatch. The facility has a maximum production capacity of 11,000 tonnes per year.

The EXO building is served by an air extraction system with a bag filter, discharging to air at emission point A7. Settled water from sludge produced in the wet filter system in the chrome crushing department is discharged to foul sewer, while the sludge is collected in IBCs and taken off-site for appropriate disposal.

The AFS facility includes two listed activities:

- S2.1 Part B(b)(i) - *Producing, melting or refining iron, steel or any ferrous alloy (other than producing pig iron or steel, including continuous casting) using one or more electric arc furnaces, none of which has a designed holding capacity of 7 or more tonnes;* and
- S2.2 Part B(a) - *Melting, including making alloys, of non-ferrous metals, including recovered products in plant with a melting capacity of 20 tonnes or less per day*.

The facility produces ferro boron, nickel boron and chrome boron alloys via one of two 1 tonne, single-phase, electric arc furnaces. Raw materials are weighed and blended to the appropriate specification and the furnace is charged and the alloy produced. The product then undergoes shot blasting, breaking and/or mixing. If needed, a furnace repair station in the AFS building can also be utilised.

Any fumes from the two furnaces are collected by the common exhaust system and transferred to the main bag filter prior to discharge (emission points A1 and A2). In addition, there are small dust collection facilities associated with the raw materials weigh station and the shot blast machine dust extractor in the AFS warehouse (emission points A4 and A6); and with the furnace repair station in the AFS building (emission point A5).

The following details the changes being made as a result of this variation:

1. Updating of Listed Scheduled activities

EPR/QP3535YD – EXO

The Section 2.2 Part A2(a) activity (melting clean steel, titanium and other specified metals) is being removed, as the activity was never put into operation.

The exothermic production of chromium alloys is being more accurately described as S2.2 Part A 1(a) - Producing non-ferrous metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic activities.

The Section 2.2 Part B(b) activity (degreasing of titanium scrap using a rotary drier with after burner, cyclone and final ceramic filter) is being removed, as the activity has ceased. The land in question is not being surrendered.

EPR/LP3504MJ – OST

The Section 3.5 Part B(a) activity (crushing, grinding (or other size reduction) and drying of a designated mineral) is being removed, as the process is no longer being operated. The old OST building will remain within the consolidated permit boundary to facilitate future use.

EPR/BK6866IW – AFS

The Section 2.2 Part A1(a) activity and description is being removed. The 2.5 tonne 3-phase electric arc furnace process activity did not take place (although the furnace was installed, it has never been operational).

The Section 2.1 Part B(b)(i) and Section 2.2 Part B(a) activity descriptions are being updated from referring to three x 1 tonne single phase electric arc furnaces to two x 1 tonne single phase electric arc furnaces. The third furnace has never been used and has been removed.

2. Addition of a DAA

AMG Chrome Limited are planning to install a new electrically powered de-starching oven to increase efficiency of the EXO High Purity De-gassed (HPD) chrome process. This will make the process more efficient by burning off the starch prior to the product entering the vacuum furnace for removal of nitrogen

gas from the surface layers of the briquettes. It will prevent the build-up of the tar like substance during the furnacing phase. The oven will be enclosed within the existing vacuum furnace building. Furnace loading and unloading will be manually controlled. There will be no changes to storage, handling and transport of solid materials except an additional step of loading and unloading HDP briquette to the oven. The capacity of the de-starching oven, maximum load per batch, operational temperature and holding time will ensure adequate combustion of the starch. The oven will have a stack that releases off-gas air to the environment, subject to any necessary abatement. The process is being trialled and is subject to an improvement condition.

3. Amending operating technique

The operator is adding a new mill (Hazemag 3). The new Hazemag will replicate the existing two Hazemags and will also enable AMG to have three interchangeable mills. This will allow flexibility. The activity will be sealed so no powder can escape and will be located in the chrome crushing building with the other two Hazemags. The Hazemag area has had full height walls installed to limit noise transfer and all vibrating equipment is fitted with anti-vibration support. Operating hours are restricted to 8am to 6pm.

4. Increasing site boundary

The site boundary has been increased, to create a more functional permitted area. An updated site condition report has been provided.

5. Consolidation and variation

The permits EPR/BK6866IW, EPR/QP3535YD and EPR/LP3504MJ have been consolidated and brought up to modern conditions. No reduction in environmental protection will result.

The schedules specify the changes made to the permit.

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

Status log of permit A: EPR/BK6866IW		
Description	**Date**	**Comments**
Application received	Received 23/01/2001	
Response to request for information	15/07/2002	
Request to extend determination	11/02/2002	Request accepted 28/02/2002
Permit BK6866IW	Determined 19/07/2002	
Variation application EPR/BK6866IW/V002	Duly made 31/01/2011	
Additional information submitted	Received 21/03/2011	
Variation EPR/BK6866IW/V002	Determined 28/06/2011	
Change of company name notification	28/01/2014	Name changed to AMG Superalloys UK Limited.
Variation issued EPR/BK6866IW/V003	26/02/2014	Varied permit issued to AMG Superalloys UK Limited.
Pre-application request EPR/BK6866IW/V004	19/07/2021	

Status log of permit A: EPR/BK6866IW		
Description	**Date**	**Comments**
Application EPR/6888IW/V005 (variation and consolidation with EPR/BK6866IW)	Duly made 04/02/2022	Application to vary and update the permit to modern conditions. Name changed to AMG Chrome Limited.
Schedule 5 notice issued	01/12/2022	
Schedule 5 notice response	14/12/2022	Overview of site processes. Clarification on installation boundary. Updated site emission plan.
Variation determined and consolidation issued EPR/BK6866IW	10/01/2023	Varied and consolidated permit issued in modern format.

Status log of permit B: EPR/QP3535YD		
Description	**Date**	**Comments**
Permit EPR/QP3535YD	15/11/2019	Permit E21/15 authorised by Rotherham Metropolitan Borough Council for a Part B(a) IPPC permitted activity transferred to Environment Agency regulatory control under direction of Secretary of State
Application EPR/BK6866IW/V005 (variation and consolidation with EPR/BK6866IW)	Duly made 04/02/2022	Application to vary and update the permit to modern conditions.
Schedule 5 notice issued	01/12/2022	
Schedule 5 notice response	14/12/2022	Overview of site processes. Clarification on installation boundary. Updated site emission plan.
Variation determined and consolidation issued EPR/BK6866IW	10/01/2023	Varied and consolidated permit issued in modern format.

Status log of permit C: EPR/LP3504MJ		
Description	**Date**	**Comments**
Permit EPR/LP3504MJ	15/11/2019	Permit E43/1 authorised by Rotherham Metropolitan Borough Council for a Part B(a) IPPC permitted activity transferred to Environment Agency regulatory control under direction of Secretary of State
Application EPR/BK6866IW/V005 (variation and consolidation with EPR/BK6866IW)	Duly made 04/02/2022	Application to vary and update the permit to modern conditions.
Schedule 5 notice issued	01/12/2022	
Schedule 5 notice response	14/12/2022	Overview of site processes. Clarification on installation boundary. Updated site emission plan.

Status log of permit C: EPR/LP3504MJ		
Description	**Date**	**Comments**
Variation determined and consolidation issued EPR/BK6866IW	10/01/2023	Varied and consolidated permit issued in modern format.

Other Part A installation permits relating to installation EPR/BK6866IW		
Operator	**Permit number**	**Date of issue**
AMG Aluminium UK Limited	GP3639ZY	05/06/2018

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 regulations 18 and 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates environmental permits

Permit numbers

EPR/BK6866IW

EPR/QP3535YD

EPR/LP3504MJ

Issued to

AMG Chrome Limited ("the operator")

whose registered office is

Fullerton Road
Rotherham
South Yorkshire
S60 1DL

company registration number 00345279

to operate a regulated facility at

AMG Chrome Limited
Fullerton Road
Rotherham
South Yorkshire
S60 1DL

to the extent set out in the schedules.

The notice shall take effect from 10/01/2023.

The number of the consolidated permit is EPR/BK6866IW.

Name	Date
Sandra Cavill	**10/01/2023**

Authorised on behalf of the Environment Agency

Schedule 1 – changes in the permit

Note: The conditions numbers used in this schedule refer to those in the consolidated permit.

All conditions have been varied by the consolidated permit as a result of the application made by the operator.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/BK6866IW

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BK6866IW/V005 authorising,

AMG Chrome Limited ("the operator"),

whose registered office is

Fullerton Road
Rotherham
South Yorkshire
S60 1DL

company registration number 00345279

to operate an installation at

AMG Chrome Limited
Fullerton Road
Rotherham
South Yorkshire
S60 1DL

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

Name	Date
Sandra Cavill	**10/01/2023**

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.

1.5 Multiple operator installations

1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator of the installation of the same information.

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. and represents the extent of the installation covered by this permit and that of the other operator of the installation.

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 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.

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.

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.

4.3.6 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

(a) a decision by the Secretary of State not to re-certify the agreement;

(b) a decision by either the operator or the Secretary of State to terminate the agreement; and

(c) any subsequent decision by the Secretary of State to re-certify such an agreement.

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 without dela , 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**
S2.2 Part A 1(a) Producing non-ferrous metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic activities	Exothermic production of chromium alloys using four firing crucibles to produce chromium metal, chromium aluminium alloy, chromium iron alloy and other alloys which are processed by physical resizing (breaking, grinding, milling, tableting) and, where appropriate, degassing by heating in electrically powered vacuum furnaces. [EXO]	From receipt of raw materials to dispatch of finished products.
S2.1 Part B(b)(i) Producing, melting or refining iron or steel or any ferrous alloy (other than producing pig iron or steel, including continuous casting) using one or more electric arc furnaces, none of which has a designed holding capacity of 7 or more tonnes.	Producing Ferro-Boron in two 1-tonne single phase electric arc furnaces. [AFS]	From receipt of raw materials to dispatch of finished products.
S2.2 Part B(a) Melting, including making alloys, of non-ferrous metals, including recovered products in plant with a melting capacity of 20 tonnes or less per day.	Producing Nickel-Boron and Chrome-Boron in two 1-tonne single phase electric arc furnaces. [AFS]	From receipt of raw materials to dispatch of finished product.
Directly Associated Activity		
Material and product preparation.	Casting, shot-blasting, packaging and storage of all metal and metal alloy products.	
Delivery, storage and handling of raw materials.	Handling all raw materials from receipt, storage in designated area and transporting the materials via a designated process route.	Receipt and storage of all raw materials through to the first stage of processing.
Breaking of materials	Breaking of material via pneumatic drill prior to dispatch or grinding, depending on customer requirements	
Handling and storage of waste material	Collection and storage of waste in one centralised waste area for all waste materials.	Removal of waste material and storage prior to collection in one designated area pending re-use with the process or removal from site.

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	**Description of specified activity**	**Limits of specified activity**
De-starching activity	Thermal pre-treatment of High Purity De-gassed (HPD) chrome briquette feed	From charging of de-starching oven to feed into vacuum furnaces **[Subject to successful completion of IC12]**

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Permit application BK3866	The response to question 2.3 given in section 2.3 of the original permit application	23/10/2001
Variation application	The response to question C3. Appendix 1 – AFS Department Layout Appendix 4 – AFS Safe Working Procedure Ref AFS/E/0010 Appendix 7 – LSM Site Drain Layout and Locations of Oil Spill Kits	31/01/2011
Additional information	Request to modify commissioning protocol for chrome alumina arc–furnace	21/03/2011
Variation and consolidation application	Response to Section 3 Operating Techniques, Part C of the application form.	Duly made 04/02/2022
Response to Schedule 5 Notice dated 01/12/2022	Detailing site-wide process overview. Clarification of installation boundary. Revised site emissions plan.	14/12/2022

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC7	The Operator shall revise, update and consolidate their operating techniques submitted in response to question 2.1 in section 2.1 of the original permit application (BK6866) in light of changes described in Variation Application EPR/BK6866IW/V002. A written report setting out these revised operating techniques shall be submitted to the Environment Agency for approval.	Complete
IC8	The Operator shall update the assessment of the environmental impact of emissions to air from the installation, using the emissions monitoring collected during the first year of operation following the grant of this variation. A written report summarising the environmental impact shall be submitted to the Environment Agency.	Complete
IC9	The Operator shall sample and analyse the fume dust collected in the abatement system to emission points A1 and A2 to establish the proportion of Chromium present in the dust as Cr(VI). The sampling and analysis shall be carried out to coincide with the emissions monitoring carried out on emission points A1 and A2 and the results used in	Complete

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	conjunction with these results to assess the environmental impact of emissions of Cr(VI) to air.	
IC10	The Operator shall carry out an assessment of the environmental impact of emissions to air of silicon and silica from the installation, using the emissions monitoring collected during the commissioning trials. A written report summarising the environmental impact against appropriate EALs shall be submitted to the Environment Agency.	Complete
IC11	The Operator shall carry out a full Best Available Techniques (BAT) assessment for activities at the installation with reference to: • The Non-Ferrous Metals Best Available Techniques Reference Document (BREF) and • The associated BAT Conclusions for the Non-Ferrous metals industries. The Operator shall submit a written report to the Environment Agency for approval. The report must identify where: • emission parameters are no longer applicable to the discharge with justification as to why not • the site fails to meet BAT requirements • the site fails to meet BAT Associated Emission Levels (AELs); and • the proposed actions to remedy where the site is failing to comply with BAT, together with proposed timelines required to address the failings.	Within 6 months of permit issue, or as otherwise agreed with the Environment Agency
IC12	By using the emissions monitoring results collected during investigative trials of the de-starching oven the Operator shall carry out an assessment of the environmental impact of emissions to air of off-gases. The Operator shall submit a written report to the Environment Agency for approval detailing the: • Assessment methodology used: and • Findings of the environmental impact assessment.	Within 6 months of permit issue, or as otherwise agreed with the Environment Agency

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 S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Arc furnace process AFS						
A1 (as shown in Schedule 7 – emissions to air and water)	Arc furnace shop bag filter	Particulate matter	10 mg/m^3	periodic over minimum 1-hour period	Annual	BS EN 13284-1
	Arc furnace shop bag filter	Carbon monoxide	No limit set	periodic over minimum 1-hour period	Annual	BS EN 15058
	Arc furnace shop bag filter	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	No limit set	periodic over minimum 1-hour period	Annual	BS EN 14792
	Arc furnace shop bag filter	Dioxins / furans (WHO-TEQ Humans / Mammals) as specified in Schedule 6	No limit set	periodic over minimum 1-hour period	Annual	BS EN 1948 Parts 1, 2 and 3
	Arc furnace shop bag filter	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	No limit set	periodic over minimum 1-hour period	Annual	BS ISO 11338 Parts 1 and 2.
	Arc furnace shop bag filter	Metals and their compounds (Al, B, Cr, Fe and Ni).	No limit set	periodic over minimum 1-hour period	Annual	BS EN 14385
	Arc furnace shop bag filter	Silicon and Silica (Si and SiO_2).	No limit set	periodic over minimum 1-hour period	Annual	BS EN 14385
A2 (as shown in Schedule 7 – emissions	Arc furnace shop bag filter	Particulate matter	10 mg/m^3	periodic over minimum 1-hour period	Annual	BS EN 13284-1

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
to air and water)	Arc furnace shop bag filter	Carbon monoxide	No limit set	periodic over minimum 1-hour period	Annual	BS EN 15058
	Arc furnace shop bag filter	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	No limit set	periodic over minimum 1-hour period	Annual	BS EN 14792
	Arc furnace shop bag filter	Dioxins / furans (WHO-TEQ Humans / Mammals) as specified in Schedule 6.	No limit set	periodic over minimum 1-hour period	Annual	BS EN 1948 Parts 1, 2 and 3
	Arc furnace shop bag filter	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	No limit set	periodic over minimum 1-hour period	Annual.	BS ISO 11338 Parts 1 and 2.
	Arc furnace shop bag filter	Metals and their compounds (Al, B, Cr, Fe and Ni).	No limit set	periodic over minimum 1-hour period	Annual	BS EN 14385
	Arc furnace shop bag filter	Silicon and Silica (Si and SiO_2).	No limit set	periodic over minimum 1-hour period	Annual	BS EN 14385
A4 (as shown in Schedule 7 – emissions to air and water)	Raw materials weigh station dust extract vent	Particulate matter	No limit set	periodic over minimum 1-hour period	Annual	Method to be agreed in writing with the Environment Agency.
A5 (as shown in Schedule 7 – emissions to air and water)	Repair station dust extraction vent	Particulate matter	No limit set	periodic over minimum 1-hour period	Annual	Method to be agreed in writing with the Environment Agency.
A6 (as shown in Schedule 7 –	Shot blast machine dust extractor	Particulate matter	No limit set	periodic over minimum	Annual	Method to be agreed in writing with the

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
emissions to air and water)				1-hour period		Environment Agency.
Exothermic process (EXO)						
A7 (as shown in Schedule 7 – emissions to air and water)	Exothermic reaction vessels with fume collection head discharging through bag filter set	Particulates	20 mg/m^3		Continuous plus once a year extractive	Indicative monitoring plus extractive monitoring BS EN 13284-1
		Chromium and its compounds	2 mg/m^3		Continuous plus once a year extractive	Indicative monitoring plus extractive monitoring BS EN 13284-1

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
S1 (as shown in Schedule 7 – emissions to air and water)	Decanting of settled water from sludge produced in the wet filter system in the crushing department	-	-	-	-	-

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**
Point source emissions to air Parameters as required by condition 3.5.1	A1, A2, A4, A5, A6, A7	Every 12 months	1 January

Table S4.2: Annual production/treatment	
Parameter	**Units**
Annual production of chrome metal	Tonnes
Annual production of ferrous alloys	Tonnes
Annual production of Non-ferrous alloys	Tonnes
Total annual production of chrome and metal alloys	Tonnes
Hazardous waste for offsite disposal	Tonnes
Non-hazardous waste for offsite disposal	Tonnes
Annual water consumption	m^3
Annual energy consumption	MWh

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Hazardous waste for offsite disposal	Annually	Tonnes/tonne of product
Non-hazardous waste for offsite disposal	Annually	Tonnes/tonne of product
Water consumption	Annually	Tonnes/tonne of product
Energy consumption	Annually	MWh

Table S4.4 Reporting forms		
Parameter	**Reporting form**	**Form version number and date**
Point source emissions to air	Emissions to Air Reporting Form, or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021
Waste usage	Waste Reporting Form, or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021
Energy usage	Energy Usage Reporting Form, or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021

Table S4.4 Reporting forms		
Parameter	**Reporting form**	**Form version number and date**
Other performance parameters	Other performance parameters reporting form, or other form as agreed in writing by the Environment Agency	Version 1, 08/03/2021

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 breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) 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.

“dioxin and furans” means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

“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 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.

“Hazardous property” has the meaning in Annex lll of the Waste Framework Directive.

“Hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005.

“heavy metal” means any compound of antimony, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, tellurium, thallium and tin, as well as these materials in metallic form, as far as these are classified as hazardous substances

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

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

“PAH” means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cycloppenta[c,d]pyrene, Dibenzo[ah]anthracene, Dibenzo[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene

“WHO-TEQ Humans / Mammals” means the 2005 World Health Organisation’s toxic equivalent concentration for dioxins and furans, the mass concentrations of each congener has to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins and furans, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum.

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.

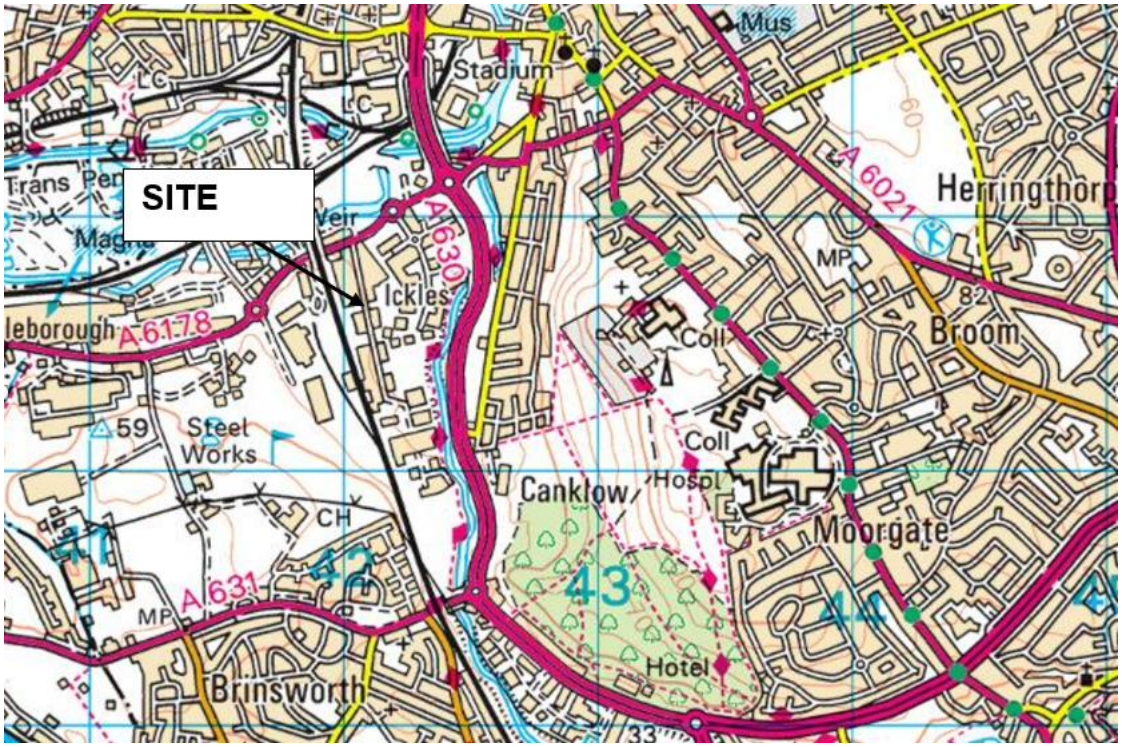
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

- in relation to emissions from gas engines or gas turbines, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15% dry for liquid and gaseous fuels ; and/or
- In relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content

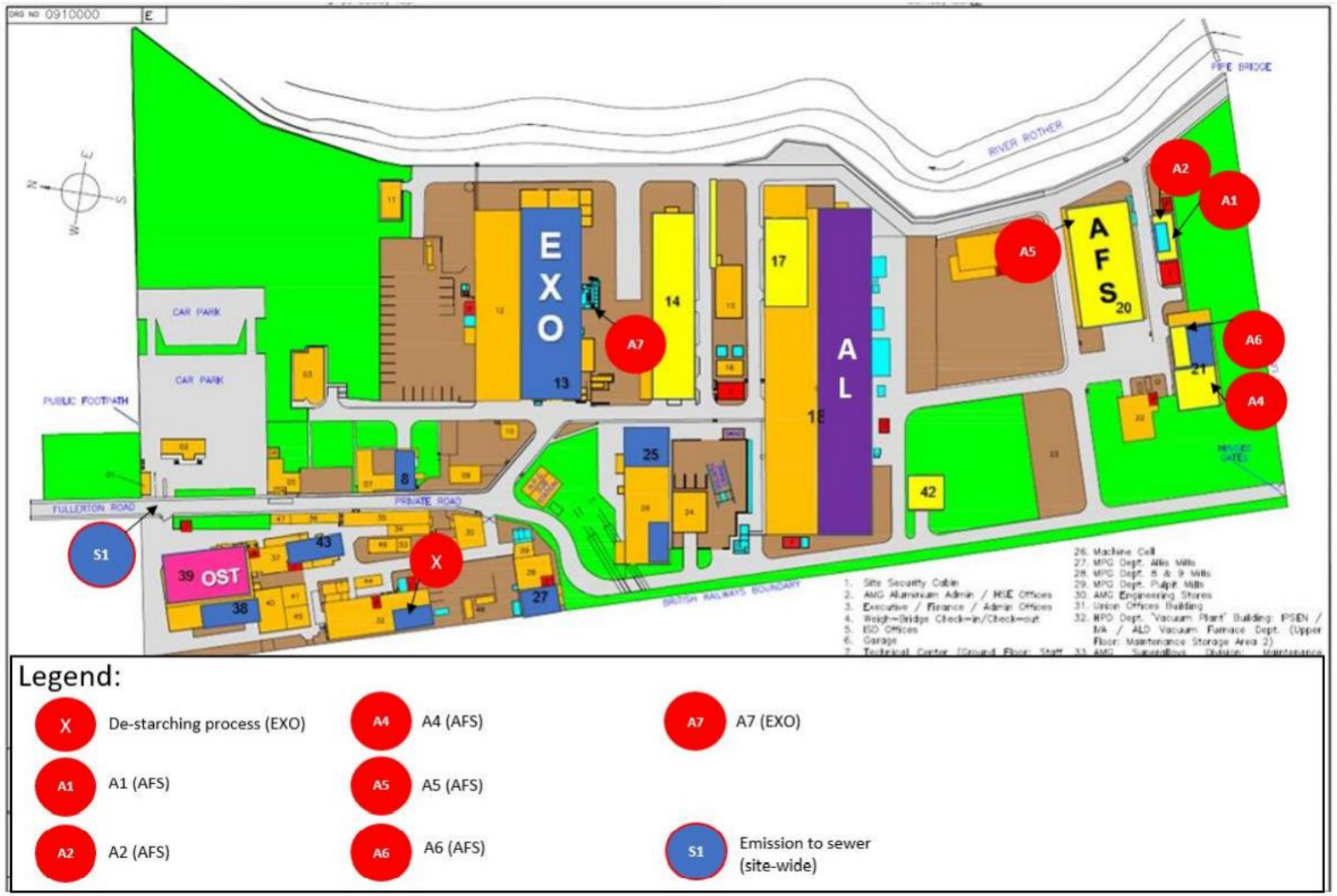
“year” means calendar year ending 31 December.

Schedule 7 – Site location



Site boundary

Emissions to air and water



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