

# Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

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Outokumpu Stainless Limited  
Stainless Melting and Continuous Casting  
Tinsley Park Works,  
Europa Link,  
Sheffield,  
S9 1TZ

**Variation application number**

EPR/BK6793IC/V007

**Permit number**

EPR/BK6793IC

# Stainless Melting and Continuous Casting

## Permit number EPR/BK6793IC

### Introductory note

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

The following notice gives notice of the variation and consolidation of an environmental permit.

This variation has been issued to consolidate the original permit and subsequent variations, to update some of the conditions following a statutory review of permits in the Metals Sector and to introduce a number of changes due to the transposition of the Industrial Emissions Directive. At the same time the permit has been converted into the current EPR Permit format.

The Industrial Emissions Directive (IED) came into force on 7th January 2014 with the requirement to implement all relevant BAT conclusions as described in the Commission Implementing Decision. The steelmaking BAT conclusions were published on 8th March 2012 in the Official Journal of the European Union following a European Union wide review of BAT. Unless otherwise stated all relevant BAT conclusions (1, 2, 5-18, 87-89, 91-93, 95) apply from 8th March 2016.

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.

#### **Description of the Installation**

The main purpose of the installation covered by this permit relates to the manufacture of stainless steel from high quality ferrous scrap metal. In full production, a maximum of 600,000 tonnes per annum of steel can be produced.

Steel scrap and other raw materials are melted in an electric arc furnace (EAF), which has a nominal capacity of 130 tonnes. The melt is tapped into a ladle for transfer to the secondary steel making unit; all steel is transferred to an argon-oxygen decarburisation vessel (AOD) for reducing the carbon content of the liquid steel and, depending on the process route being used, to a ladle arc furnace (LAF) or to an argon rinse station. Lime is added to the EAF and AOD to produce a lime-based slag which extracts, by chemical reactions, unwanted impurities from the molten steel. The function of the secondary steel making units is to improve the metallurgical properties of the steel by refining. Metal alloying additions are made to the EAF, AOD and LAF to achieve the correct steel analysis to meet specifications.

The molten steel is routed from the melting and refining stages to either the ingot casting area or the continuous casting machines for production of stainless steel slabs, blooms, billets and cast ingots. Steel is either sold direct to the customer in cast form or despatched for hot rolling at other sites within the Company.

The EAF, AOD and LAF employ primary fume and gas control. For the EAF, this is achieved by direct extraction of fume through a hole in the furnace roof and via water cooled ducting in which an air gap allows air to be drawn in to cool the hot furnace gases and to promote combustion of carbon monoxide to carbon dioxide in the combustion chamber situated downstream immediately adjacent to the furnace. The high temperatures achieved in the combustion chamber destroy any organic compounds given off in the process from materials contaminating the steel scrap. For the AOD vessel, extraction is at the vessel mouth which also induces sufficient air for the combustion of carbon monoxide. The LAF is fitted with a direct extraction facility located in the furnace roof.

Capture hoods situated in the roof of the melting shop building above the EAF and AOD are designed to capture fugitive emissions from the furnace and AOD during all its operations, this is the secondary

extraction. The Melting Shop is internally divided to partially segregate the fume generating areas from cleaner areas – the secondary extraction system operates within the fume generating area. The primary and secondary extraction ducts are connected to a mixing chamber that precedes the main extraction fans. The fume-laden gases are blown by these fans through the AAF fume fabric filtration plant, with a maximum design capacity of 500Nm<sup>3</sup>/s, from which filtered gases are discharged to atmosphere via vents in the ridge of the filter plant roof.

In addition a scavenging system is used to extract fume which has escaped the EAF and AOD fume capture hood and has accumulated within the Melting shop. The scavenging system includes fabric filters to clean the extracted fume laden gases before release to atmosphere via two separate release points. Solid fume collected in the EAF filtration plant is pneumatically discharged into a storage silo from which it can be sent, either to the DC Arc Plant for the recovery of chromium, nickel and molybdenum, or to a bag filling station. The bagged dust is removed off-site to third parties for chromium and nickel recovery and residuals disposal. The DC Arc Furnace is fitted with a dedicated extraction and fume filtration system to treat the fumes produced during the furnace operation. Treated fume is exhausted to atmosphere via a vent stack. The solid fume collected in the associated filtration plant is bagged at the base of the fume filtration plant. The dust is discharged via the above bagging station into bags and dispatched off-site to third parties for zinc reclamation and residuals disposal.

Lime-based slag formed at the surface of the molten metal within the EAF, AOD and the DC arc furnace is removed and transported out of the melting shop for processing and recovery on site by a specialist contractor. This is subject to a separate permit, number EPR/DP3337ZK. The amount of slag produced is minimised by careful control of the metallurgical processes.

The cooling water systems for the EAF, LAF and DC arc furnace are by town's water on closed-circuit re-circulation systems designed to operate with minimal loss of water. The DC Arc Furnace also employs a small evaporative cooling tower. Water used for the main spray cooling of the strands formed by the two Concast machines is treated in settlement and filtration systems at dedicated water treatment plants. The water is then recycled to the associated concast sprays. A certain amount of waste water is discharged from the circulatory systems to surface water or foul sewer in order to control total dissolved solids. Back-wash water from the water treatment (softening) plant is discharged to public sewer. There are no process releases direct to controlled waters.

The Installation is located in an industrial area which is separated from residential housing by the M1 Motorway. An area encompassing the motorway and adjacent to the Installation has been designated an air quality management area for nitrogen dioxide and PM<sub>10</sub> (annual average).

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

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application received	Duly made 30/08/01	
Additional information received	23/02/02 & 29/04/02	
Permit determined EPR /BK6793IC	05/11/02	Permit issued
Variation determined EPR/BK6793IC/V002 (PAS reference DP3931SB)	Application received 18/07/05 Determined 29/07/05	To permit operation of modified fume control arrangements at the Melting Shop. To permit operation of modified fume dust storage and handling facilities.
Variation determined EPR/BK6793IC/V003 (PAS reference SP3237LG)	Received 11/06/06 Determined 07/12/07	To remove improvement condition 9.13
Variation determined EPR/BK6793IC/V004 (PAS Reference FP3134UR)	Application received 30/04/07 Determined 21/05/07	To permit the use of a new billet saw release point
Variation determined EPR/BK6793IC/V005 (PAS Reference HP3831GE)	Received 25/03/09 Determined 12/05/09	To permit the operation of an ingot casting facility

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Variation determined EPR/BK6793IC/V006 (PAS Reference KP3932TF)	Determined 01/07/10	To replace MultiServ Group Ltd references with Harsco Metals Holdings Ltd.
Regulation 60 Notice dated 13/09/13	Response received 30/04/14	Technical standards detailed in the notice provided under Regulation 60 of Environmental Permitting Regulations. Best available techniques as described in BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for iron and steel production
Variation EPR/BK6793IC/V007 (variation and consolidation)		Permit review - BAT Conclusions
Variation EPR/BK6793IC/007 determined (PAS Reference EP3934VF) (EAWML 402638 for waste activity)	03/07/2015	Varied and consolidated permit issued in modern condition format.

<b>Other Part A installation permits relating to this installation</b>		
<b>Operator</b>	<b>Permit number</b>	<b>Date of issue</b>
Harsco Metals Group Limited	EPR/DP3337ZK	20/03/13

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

### Permit number

EPR/BK6793IC

### Variation reference number

EPR/BK6793IC/V007

### Issued to

**Outokumpu Stainless Limited** (“the operator”)

whose registered office is

**PO Box 161  
Europa Link  
Sheffield  
S9 1TZ**

company registration number 02794127

to operate a regulated facility at

**Stainless Melting and Continuous Casting  
Tinsley Park Works,  
Europa Link,  
Sheffield,  
S9 1TZ**

to the extent set out in the schedules.

The notice shall take effect from 03/07/2015

Name	Date
Anne Nightingale	03/07/2015

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 2010

### Permit number

**EPR/BK6793IC**

This is the consolidated permit referred to in the variation and consolidation notice for variation EPR/BK6793IC/V007 authorising,

**Outokumpu Stainless Limited** (“the operator”),

whose registered office is

**PO Box 161  
Europa Link  
Sheffield  
S9 1TZ**

company registration number 02794127

to operate an installation at

**Stainless Melting and Continuous Casting  
Tinsley Park Works,  
Europa Link,  
Sheffield,  
S9 1TZ**

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

Name	Date
Anne Nightingale	03/07/2015

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 For the following activities referenced in schedule 1, table S1.1. Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify immediately the other operator(s) 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”).
- 2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

### **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. The site is part of the installation covered by this permit and those permits of the other operators of the installation. The extent of the installation is represented by the areas edged in blue and 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 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table(s) S2.2, and
  - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.6 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

## **2.4 Improvement programme**

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

## **3 Emissions and monitoring**

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

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

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

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

### **3.3 Odour**

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

## **3.4 Noise and vibration**

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

## **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1 and S3.2;
  - (b) ambient monitoring specified in S3.4.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

# **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 For the following activities referenced in schedule 1, table S1.1 (A1 to A8). 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 performance parameters set out in schedule 4 table S4.2 using the forms specified in table S4.3 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 S4.3 ; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 Within 1 month of the end of each year, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted during the previous year under condition 2.3.4 and table S2.2 in schedule 2.

## 4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
  - (i) inform the Environment Agency,
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
  - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
  - (i) inform the Environment Agency, and
  - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must

immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

- 4.3.2 Any information provided under condition 4.3.1(a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 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.
- 4.3.5 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.
- 4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.7 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 "immediately", in which case it may be provided by telephone.

# Schedule 1 – Operations

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
A1	S2.1 A1 (b)	Production of stainless steel including continuous casting – Electric Arc Furnace > 7 tonnes/ hour capacity	From receipt of metal and other raw materials to despatch of finished product
A2	S2.1 A1 (b)	Production of ferro alloys from secondary raw materials - DC Arc Furnace	From receipt of metal and other raw materials to despatch of finished product
A3	S5.4 A1 (a)(ii)	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving physico-chemical treatment , and excluding activities covered by Council Directive 91/271/EEC concerning urban waste-water treatment	Effluent treatment prior to discharge via S1. Limited to effluent from concast clarifier
<b>Directly Associated Activity</b>			
A4	Ingot casting of steel	Receipt of raw materials to despatch of finished product	
A5	Secondary Steel Making	Receipt of raw materials to despatch of finished product	
A6	Cutting and surface rectification	Receipt of raw materials to despatch of finished product	
A7	Plant activities including:- Compressed air, water treatment, effluent treatment, cooling	Receipt of raw materials to despatch of finished product or services	
A8	Slab, bloom and billet caster of steel	Receipt of raw materials to despatch of finished product	
A9	Slag handling and processing. Metal recovery	Carried out by Harsco Metals Holdings Limited	
<b>Description of activities for waste operations</b>			<b>Limits of activities</b>
A10	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)  R4: Recycling/reclamation of metals and metal compounds	Treatment operations shall be limited to: Physical treatment including screening, crushing, baling, shearing and pelletising for the purpose of recovery. Waste types as specified in Table S2.2	

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	Response to questions 2.1-2.12 of the application	28/08/01
Particulate monitoring change in operation	Letter our reference 100206_eac_BK6793IC_CEM agreeing to change in particulate monitoring probe for DC Arc Furnace, emission point A2	02/06/10
Motor drive replacement change in operation	Letter our reference 1000811_eac_BK6793IC_CIOFans agreeing to operational change – replacement of motor drives in AAF mixing chamber and DC Arc Fume plant	11/08/10
Variation EPR/BK6993IC/V002 application support document	Support document EPR-SMACC-001 Sections 1.2.2, 4.1.4, 4.6, 5 (including subsections), and Appendices 5 and 6	Duly Made 20/03/13

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Response to Regulation 60 Notice dated 13/09/13	Technical standards detailed in response to BAT conclusions 1,2, 5-15, 17 & 18, 87-89, 91-93, 95 of the notice provided under Regulation 60 of Environmental Permitting Regulations. Best available techniques as described in BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for iron and steel production	30/04/14
Management of White Dust created during production of stainless steel	Outokumpu document entitled 'Stabilisation of AOD slags' dated 31 <sup>st</sup> October 2014	

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
	No Improvement conditions at the moment	

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

Raw materials and fuel description	Specification
-	-

Maximum quantity	No annual maximum throughput subject to storage limits for specified waste in Table S1.1
Waste code	Description
<b>02</b>	<b>Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing</b>
<b>02 01</b>	<b>wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing</b>
02 01 10	waste metal – Scrap metal input (metal recovery in EAF)
<b>10</b>	<b>Wastes from thermal processes</b>
<b>10 02</b>	<b>wastes from the iron and steel industry</b>
10 02 07	Mill scales - Solid wastes from gas treatment containing dangerous substances EAF heavy fall out for melting, own arising from SMACC
10 02 08	solid wastes from gas treatment other than those mentioned in 10 02 07 – Extraction system dust not classified as hazardous
10 02 10	mill scales - Downstream process and own arising from SMACC
10 02 12	wastes from cooling water treatment other than those mentioned in 10 02 07 Other scales from SMACC
10 02 99	Wastes not otherwise specified - Downstream process scrap
<b>10 03</b>	<b>wastes from aluminium thermal metallurgy</b>
10 03 05	Waste alumina scrap input
<b>10 09</b>	<b>wastes from casting of ferrous pieces</b>
10 09 05	Casting cores and moulds which have not undergone pouring containing dangerous substances
10 09 06	Casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05
10 09 07	Casting cores and moulds which have undergone pouring containing dangerous substances
10 09 08	Casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07
10 09 09	wastes not otherwise specified - Flue-gas dust containing dangerous substances - Internal input material for example from scull burning i.e. Harsco burning booth
<b>10 11</b>	<b>wastes from manufacture of glass and glass products</b>
10 11 12	waste glass other than those mentioned in 10 11 11 (Alternative to Borax for secondary steel making slag stabilisation (Pyrex))
<b>11</b>	<b>Wastes from chemical surface treatment and coating of metals and other materials; non-ferrous hydro-metallurgy</b>
<b>11 01</b>	<b>wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphatising, alkaline degreasing, anodising)</b>
11 01 10	Sludges and filter cakes other than those mentioned in 11 01 09 - Rolling mill filter cake (dried) for recovery of nickel (from ASR)
<b>12</b>	<b>Wastes from shaping and physical and mechanical surface treatment of metals and plastics</b>
<b>12 01</b>	<b>wastes from shaping and physical and mechanical surface treatment of metals and plastics</b>
12 01 01	ferrous metal filings and turnings – downstream process scrap
12 01 02	ferrous metal dust and particles - downstream process scrap
12 01 03	non-ferrous metal filings and turnings - downstream process scrap
12 01 04	non-ferrous metal dust and particles – downstream process scrap
12 01 16*	waste blasting material containing dangerous substances – Scrap metal input (metal recovery in EAF)



<b>Table S2.2 Permitted waste types and quantities for Steel &amp; alloy production</b>	
<b>Maximum quantity</b>	<b>No annual maximum throughput subject to storage limits for specified waste in Table S1.1</b>
<b>Waste code</b>	<b>Description</b>
<b>15</b>	<b>Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified</b>
<b>15 01</b>	<b>packaging (including separately collected municipal packaging waste)</b>
15 01 04	metallic packaging
<b>16</b>	<b>Wastes not otherwise specified in the list</b>
<b>16 01</b>	<b>end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)</b>
16 01 17	Ferrous metal
16 01 18	Non-ferrous metal
<b>16 02</b>	<b>wastes from electrical and electronic equipment</b>
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15
<b>16 11</b>	<b>waste linings and refractories</b>
16 11 02	carbon-based linings and refractories from metallurgical processes other than those mentioned in 16 11 01 - Spent own arising brick used as a lime substitute (current practice)
16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03 - Spent own arising brick used as a lime/ dolomite substitute (current practice)
<b>17</b>	<b>Construction and demolition wastes (including excavated soil from contaminated sites)</b>
<b>17 04</b>	<b>metals (including their alloys)</b>
17 04 01	Copper, bronze, brass – scrap input
17 04 02	Aluminium – scrap input
17 04 05	Iron and steel – scrap input
17 04 07	Mixed metals –scrap input
<b>19</b>	<b>Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use</b>
<b>19 01</b>	<b>wastes from incineration or pyrolysis of waste</b>
19 01 02	wastes from shredding of metal-containing wastes
<b>19 10</b>	<b>wastes from shredding of metal-containing wastes</b>
19 10 01	Iron and steel waste – scrap input
19 10 02	Non-ferrous waste – scrap input
<b>19 12</b>	<b>wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified</b>
19 12 02	Ferrous metal scarp input
19 12 03	Non-ferrous metal scrap input
<b>20</b>	<b>Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions</b>
<b>20 01</b>	<b>separately collected fractions (except 15 01)</b>
20 01 40	Metals – scrap input

## Schedule 3 – Emissions and monitoring

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on site plan in Schedule 7]	EAF Melting shop bag filter	Particulate matter	5 mg/m <sup>3</sup>	Daily average	Continuous	Principals of BS EN 14181 <sup>(1)</sup>
		Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	No limit set	Hourly average	Quarterly	BS EN 14792
		Carbon monoxide	100 mg/m <sup>3</sup>	Hourly average	Quarterly	BS15058
		Total VOCs (as Carbon)	No limit set	Hourly average	Annual	BS EN 12619
		Sulphur dioxide mg/m <sup>3</sup> (as 15 min avg.)	No limit set	15 minute average	Annual	BS EN 14791 or EA TGN M21 (agreed alternative method)
		Metals Ni, As, Cd, Cr, Cu, Pb, Hg, Fe, Zn and their compounds (total)	No limit set	periodic over minimum 30 minute, maximum 8 hour period	Annual	BS EN 14385 and associated Method Implementation Document (MID)
		Dioxins and furans (ITEQ)	0.1 ng/m <sup>3</sup>	Minimum 6 hour; maximum 8 hour	Annual	BS EN1948: Parts 1,2 and 3
		Mercury and its compounds	0.05 mg/m <sup>3</sup>	periodic over minimum 4 hours	Annual	BS EN 13211
A2 – Point A2 on site plan in Schedule 7	DC Arc Furnace bag filter	Particulate matter	5 mg/m <sup>3</sup>	Daily average	Continuous	Principals of BS EN 14181 <sup>(1)</sup>
		Oxides of Nitrogen (as NO <sub>2</sub> )	No limit set	Hourly average	Quarterly	BS EN 14792
		Carbon monoxide	100 mg/m <sup>3</sup>	Hourly average	Quarterly	BS 15058
		Metals Ni, As, Cd, Cr, Cu, Pb, Hg, Fe, Zn and their compounds (total)	No limit set	periodic over minimum 30 minute, maximum 8 hour period	Annual	BS EN 14385 and associated Method Implementation Document (MID)
A3 – Point A3 on site plan	Grinder bag filter No. 1	Particulate matter	10 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID
A4 – point A4 on site plan	Grinder bag filter No. 2	Particulate matter	10 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID

<b>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A5 – point A5 on site plan	Grinder bag filter No. 3	Particulate matter	10 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID
A6 - Adjacent grinder bay	Radial saw bag filter – Radiac 1	Particulate matter	10 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID
A11 – point A11 on site plan	Concast steam vent	No Parameters set	No limit set			
A12 – point A12 on site plan	Concast steam vent	No Parameters set	No limit set			
A13 – point A13 on site plan	Billet caster cut off (GeGa) bag filter	Particulate matter	10 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID
A14 - point A14 on site plan	Billet grinder bag filter	Particulate matter	10 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID
A15 - point A15 on site plan	Melting shop scavenging filter (West)	Particulate matter	5 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID
		Metals Ni, As, Cd, Cr, Cu, Pb, Hg, Fe, Zn and their compounds (total)	No limit set	periodic over minimum 30 minute, maximum 8 hour period	Annual	BS EN 14384
A16 - point A16 on site plan	Melting shop scavenging filter (East)	Particulate matter	5 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID
		Metals Ni, As, Cd, Cr, Cu, Pb, Hg, Fe, Zn and their compounds (total)	No limit set	Minimum 30 minute sample	Annual	BS EN 14384
A17 - point A17 on site plan	EAF dust storage silo filter	Particulate matter	10 mg/m <sup>3</sup>	Minimum 30 minute sample	Annual	BS EN 13284-1 and MID

**Notes:**

- (1) Continuous Emission Monitoring systems shall be quality assured using the following general principles in BS EN 14181: functionality testing with full linearity, and verification with parallel tests using a standard reference method.

<b>Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements</b>							
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	
S1 on site plan in schedule 7	Concast Clarifier discharging to private sewer leading to Yorkshire Water surface water sewer then River Don	pH	6-10	Qualified random sample or 24-hour composite sample	Monthly	BS ISO 10523	
		Total suspended solids	50 mg/ml until 8 March 2016		Monthly	BS EN 872	
			20 mg/l after 8 March 2016				
		Total hydrocarbons	5 mg/l				BS EN ISO 9377-2
		Nickel	0.5 mg/l			BS 6068-2.29 ISO 8288 or BS EN ISO 11885 or BS EN ISO 17294-2	
		Chromium	0.5 mg/l				
		Iron	5 mg/l				
		Zinc	0.5 mg/l				
		Lead	0.2 mg/l				
		Arsenic	0.01 mg/l				
		Cadmium	0.05 mg/l				
Copper	0.5 mg/l						
S2 on site plan in schedule 7	Reservoir discharging to private sewer leading to Yorkshire Water surface water then River Don	pH	6 -11	Random spot sample	Monthly	BS ISO 10523	
		Suspended solids	30 mg/l	Random spot sample	Monthly	BS EN 872	
		Total hydrocarbons	5 mg/l	Random spot sample	Monthly	BS EN ISO 9377-2	
S3 on site plan in schedule 7	East Cascade overflow discharging to private sewer leading to Yorkshire Water surface water sewer then to River Don	pH	6 to 11	Random spot sample	Monthly	BS ISO 10523	
		Total hydrocarbons	5 mg/l	Random spot sample	Monthly	BS EN ISO 9377-2	
		Suspended solids	No limit	Random spot sample	Monthly	BS EN 872	
S4 on site plan in schedule 7	Billet caster closed system discharging to private sewer leading to Yorkshire Water surface water then River Don	pH	6 -10	Qualified random sample or 24-hour composite sample	Monthly	BS ISO 10523	
		Suspended solids	30 mg/l until 8 March 2016			BS EN 872	
			20 mg/l after 8 March 2016,				
		Total hydrocarbons	5 mg/l			BS EN ISO 9377-2	
		Nickel	0.5 mg/l				BS 6068-2.29 ISO 8288 or BS EN ISO 11885 or BS EN ISO 17294-2
		Chromium	0.5 mg/l				
		Iron	5 mg/l				
		Zinc	0.5 mg/l				
		Lead	0.2 mg/l				
		Arsenic	0.01 mg/l				
		Cadmium	0.05 mg/l				
Copper	0.5 mg/l						

Flow measurement should be undertaken in accordance with Monitoring Guidance note M18. Flow meters to be replaced when they fail to meet the total daily volume target of better than +/- 8% uncertainty for effluent flow

<b>Table S3.3 Point source emissions to foul sewer</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring method</b>
S5	Billet caster open system discharging to Yorkshire Water foul sewer	No monitoring requirements for this permit	No limits for this permit	N/A	N/A	N/A

<b>Table S3.4 Ambient air monitoring requirements</b>				
<b>Location or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
NGR SK 40317 89596	PM <sub>10</sub>	Continuous	Turnkey Optical Particulate Analysis System (TOPAS) monitor or other agreed method	

## Schedule 4 – Reporting

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

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air - Parameters as required by condition 3.5.1.	A1, A2 – continuous monitoring of particulate matter	Every 6 months	1 January, 1 July
	A1, A2 – non-continuous periodic monitoring carbon monoxide, oxides of nitrogen, Sulphur dioxide, total VOCs, Dioxins / furans (A1 only), Ni, As, Cd, Cr, Cu, Pb, Hg, Fe, Zn and their compounds (total) (A1 and A2)	Every 12 months	1 January
Emissions to air - Parameters as required by condition 3.5.1	A3, A4, A5, A6, A13, A14, A15, A16, A17 – Particulate matter	Every 12 months	1 January
Emissions to water - Parameters as required by condition 3.5.1	S1, S2, S3, S4	Every 6 months	1 January, 1 July
PM10 - Ambient air monitoring Parameters as required by condition 3.5.1 - Provide report annually of monitoring results with comparison to Air Quality Standards	NGR SK 40317 89596	Every 12 months	1 January

Parameter	Frequency of assessment	Units
Water usage	Annually	M <sup>3</sup>
Energy usage	Annually	MWh

Media/parameter	Reporting format	Date of form
Air	Form Air1 for Continuous Particulate monitoring from A1 and A2, Form Air2 for periodic air emissions monitoring, or other forms as agreed in writing by the Environment Agency. PM <sub>10</sub> TOPAS monitor – annual report of results with comparison against Air Quality Standards	
Water	Form Water1 or other form as agreed in writing by the Environment Agency	
Water usage	Form WaterUsage1 or other form as agreed in writing by the Environment Agency	
Energy usage	Form Energy1 or other form as agreed in writing by the Environment Agency	
Waste subject to condition 4.2.5	Waste tonnage form stipulated by Environment Agency	

## Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

### Part A

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

<b>(a) Notification requirements for any operation of the activities that gives rise to an incident or accident which significantly affects or may significantly affect the environment</b>	
<b>To be notified immediately</b>	
Date and time of the event	
Description of the incident or accident.	
Reference or description of the location of the incident or accident	
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 to limit the environmental consequences of such an incident or accident	
Measures taken to prevent further possible incidents or accidents	

<b>(b) Notification requirements for the breach of any permit condition</b>	
<b>To be notified immediately</b>	
Permit condition	
Intent of condition	
Details of breach and, where relevant,:	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken to ensure compliance is restored within the shortest possible time	

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

Any more accurate information on the matters for notification under Part A.	
Further measures taken, or intended to be taken, to ensure compliance is restored and to prevent a recurrence of the incident or accident	
Further 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.

“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.

“disposal”. Means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 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 given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

“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.

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

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“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.

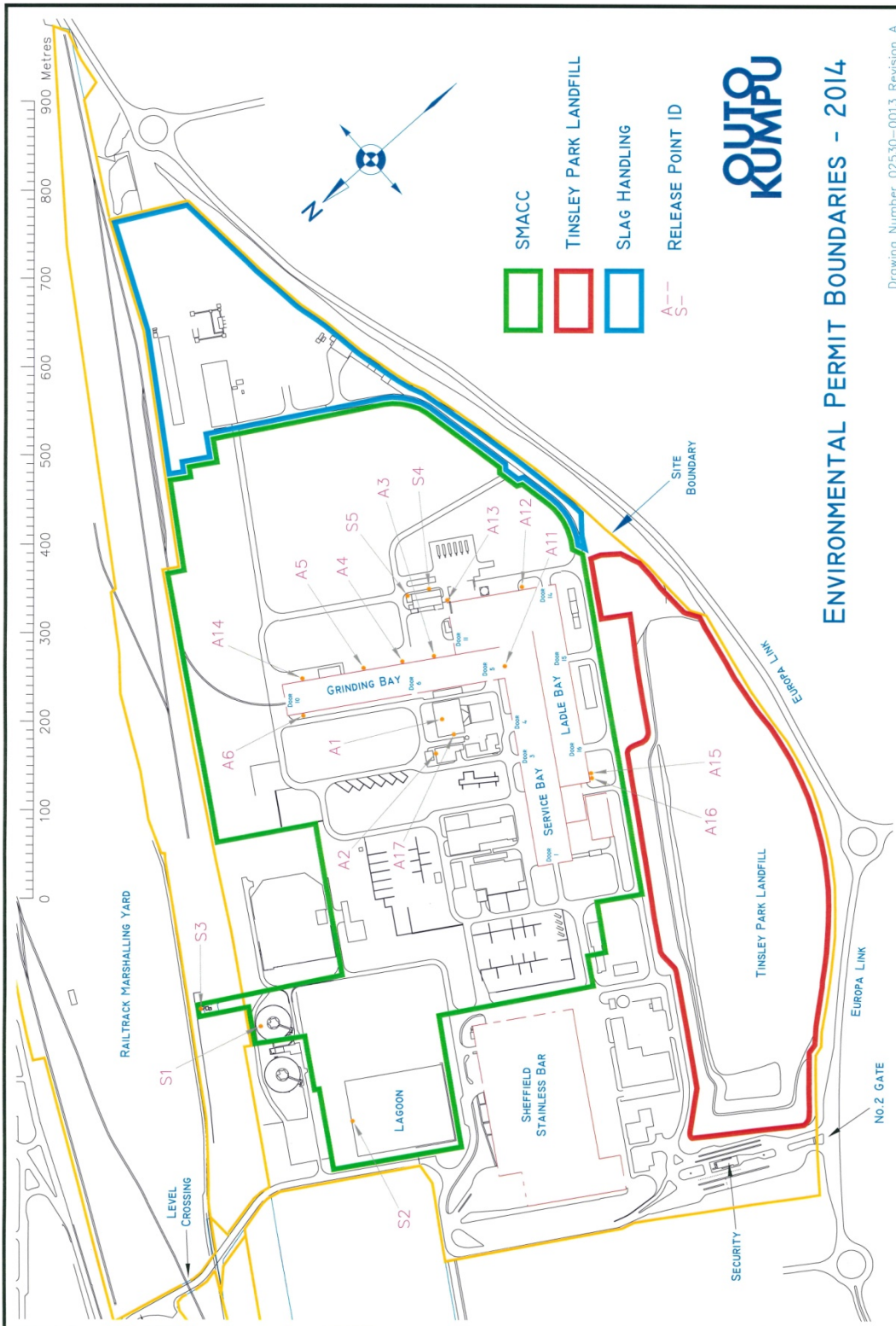
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion sources not subject to BAT-AELs for air emissions, the concentration at a temperature of 273.15K, at a pressure of 101.3 kPa, with correction for water vapour content and correction for 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 at a temperature of 273.15K and at a pressure of 101.3 kPa, with correction for water vapour content; and/or
- in relation to emissions from combustion sources subject to BAT-AELs for air emissions, the concentration at a temperature of 273.15K and at a pressure of 101.3 kPa, with correction for water vapour content and correction for an oxygen content of 3%

“year” means calendar year ending 31 December.

# Schedule 7 – Site plan



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