

Review of an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010 (as amended)

Decision document recording our decision-making process following review of a permit

The Permit number is: EPR/BK6793IC

The Operator is: Outokumpu Stainless Limited

The Installation is: Stainless Melting and Continuous Casting, PO Box 61, Europa Link, Sheffield S9 1TZ

This Variation Notice number is: EPR/BK6793IC/V007

What this document is about

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

We have reviewed the permit for this installation against the revised BAT Conclusions for the iron and steel production industry sector published on 8th March 2012 and other relevant BAT Conclusions published prior to this date. This is our decision document, which explains the reasoning for the consolidated variation notice that we are issuing.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to the decision made by the European Commission establishing best available techniques (BAT) conclusions ('BAT Conclusions') for Iron and Steel Production as detailed in document reference 2012/135/EU. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position. It also provides a justification for the inclusion of any specific conditions in the permit that are in addition to those included in our generic permit template.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. It also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and philosophy and with other permits issued to installations in this sector. Although the wording of some conditions has changed, while others have disappeared because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document we

therefore address only our determination of substantive issues relating to the new BAT Conclusions.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

How this document is structured

1. Our proposed decision
2. How we reached our decision
3. The legal framework
4. Annex 1- Review of operating techniques within the Installation against BAT Conclusions

1 Our decision

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

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

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

2 How we reached our decision

2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 13/09/2013 requiring the Operator to provide information to demonstrate how the operation of their installation currently meets, or will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

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

- Describes the techniques that will be implemented before 08/03/2016 which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 08/03/2016, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.

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

The Regulation 60 Notice response from the Operator was received on 30/04/2014.

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

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

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

Based on our records and previous regulatory activities with the facility we have no reason to consider that the operator will not be able to comply with the techniques and standards described in the BAT Conclusions.

3 The legal framework

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

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

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

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

Annex 1: decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the Production of Iron Steel, were published by the European Commission on 8th March 2012. There are 95 BAT Conclusions. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the Consolidated Variation Notice.

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
General BAT		
1	BAT is to implement and adhere to an environmental management system (EMS)	<p>Environmental Management System (EMS) has been in place since 2005 which meets the requirements of ISO14001:2004 and this aligns with subsection 1-8. Benchmarking is undertaken both internally across the site and with other electric arc furnaces. Emissions benchmarks and ranges from the BREF note are compared annually in the process of calculating the mass emissions from the process.</p> <p>BAT is achieved.</p>
2	BAT is to reduce thermal energy consumption by using a combination of techniques.	<p>An energy management system – OK1 is in place using a combination of techniques such as Ultra High Power Operation having dedicated power supply and high power furnaces for higher productivity, reduced electrode consumption and reduced waste gas volume. All furnaces are all fitted with dedicated transformers. A computer controlled raw material batch selection and furnace control is in place to maximise productivity and minimise energy consumption.</p> <p>Sensible heat re-use and the recovery of excess heat from cooling zones is undertaken, including heat energy improvement techniques are employed to retain heat in transfer and teaming ladles between processing points by process optimization.</p> <p>Noted that the BAT conclusion document refers certain techniques being important for integrated steelworks in order to improve the overall energy efficiency and we accept that the use of steam boilers for reheating furnaces, combined heat and power and the use of ‘modern, gravimetric solid fuel feed systems’ is not relevant.</p> <p>BAT is achieved.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
3	<p>BAT is to reduce primary energy consumption by optimisation of energy flows and optimised utilisation of the extracted process gases such as coke oven gas, blast furnace gas and basic oxygen gas.</p> <p>Process integrated techniques to improve energy efficiency in an integrated steelworks by optimising process gas utilisation include:</p>	<p>BAT conclusion 3 is not applicable as the site does not have any coke oven gas, blast furnace gas or basic oxygen gas.</p>
4	<p>BAT is to use desulphurised and dedusted surplus coke oven gas and dedusted blast furnace gas and basic oxygen gas (mixed or separate) in boilers or in combined heat and power plants to generate steam, electricity and/or heat using surplus waste heat for internal or external heating networks, if there is a demand from a third party.</p>	<p>BAT conclusion 4 is not applicable as it relates to an integrated steel works and the site does not produce coke oven gas, blast furnace gas or basic oxygen gas.</p>
5	<p>BAT is to minimise electrical energy consumption by using one or a combination of the following techniques:</p> <ul style="list-style-type: none"> I. power management systems II. grinding, pumping, ventilation and conveying equipment and other electricity-based equipment with high energy efficiency. 	<p>The operator has a power management system for the main electric furnaces (EAF and LAF) use power management systems to regulate the power usage of the melting and refining operations.</p> <p>Energy monitoring is routinely carried out and the results fed in to the Environmental Management System. Energy consumption is a key performance indicator for the site and reviewed on a monthly basis.</p> <p>Variable Speed Drives are used extensively (>90%), including the largest motors which are located on the fume extraction plant. Variable Speed Drives deliver high energy efficiency by varying the use of electricity to suit demand. High efficiency motors for other fixed speed applications are in use.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
6	<p>BAT is to optimise the management and control of internal material flows in order to prevent pollution, prevent deterioration, provide adequate input quality, allow reuse and recycling and to improve the process efficiency and optimisation of the metal yield.</p>	<p>The Raw Materials area has concreted scrap metals storage pens to prevent soil, groundwater and runoff water pollution. Drainage of the area goes to an onsite reservoir, allowing temporary storage prior to discharge.</p> <p>Regular maintenance of surface water drains is undertaken.</p> <p>Specific alloying materials are stored inside the main building to minimize fugitive releases.</p> <p>Production wastes such as steel cut offs from downstream activities the ASR rolling mill on Stevenson Road are transferred back to SMACC for use as a raw material. Additionally SMACC uses systems and has facilities to segregate its own arising metallic wastes for use in the EAF.</p> <p>Bat achieved.</p>
7	<p>BAT is to select appropriate scrap qualities and other raw materials. scrap sorting to minimise the risk of including hazardous or non-ferrous contaminants, particularly polychlorinated biphenyls (PCB) and oil or grease.</p>	<p>A raw material and scrap based acceptance testing is undertaken which includes visual inspection. Materials must be free from radiological contamination, the presence of unwanted heavy metals such as mercury and organic contaminants that might lead to the formation of PCDD/F or PCB's.</p> <p>Bat achieved</p>
8	<p>BAT for solid residues is to use integrated techniques and operational techniques for waste minimisation by internal use or by application of specialised recycling processes (internally or externally).</p>	<p>Solid residues are recycled, this includes dust collected in the bag plant is collected in a silo and re-used in the smaller DC Arc Furnace.</p> <p>The DC Arc ingots are used as a raw material in the facilities EAF.</p> <p>Refractory bricks, primarily dolomite, are crushed externally and brought back to the facility and consumed in place of virgin dolomite stone. ultimately transformed to slag and re-used in to asphalt and hence avoiding landfill. 85-90% of all the slag produced is recycled to road stone with the remaining 10-15% being utilised on the Tinsley Park landfill as a stabilising material for rolling mill filter cake.</p> <p>Bat achieved</p>

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
9	BAT is to maximise external use or recycling for solid residues which cannot be used or recycled according to BAT 8, wherever this is possible and in line with waste regulations. BAT is to manage in a controlled manner residues which can neither be avoided nor recycled.	As described in BATC8 most materials are recycled with just 10-15% of slag sent to landfill as a stabilisation material as described above. Only wastes that cannot be recycled or avoided is dust arising from the operation of the DC Arc Furnace, due to the high zinc content it is sent off-site for zinc recovery. Bat achieved
10	BAT is to use the best operational and maintenance practices for the collection, handling, storage and transport of all solid residues and for the hooding of transfer points to avoid emissions to air and water.	Within the scope of the SMACC environmental permit most production residues are transferred inside the main building, those predominately being slag, spent refractories and scales. The sites ISO14001 certified environmental management system (EMS) includes controls for the operation and maintenance for the collection, handling, storage and transport of all solid residues. Bat achieved
11	BAT is to prevent or reduce diffuse dust emissions from materials storage, handling and transport	A fugitive dust management strategy is in operation. Bat achieved
12	BAT for waste water management is to prevent, collect and separate waste water types, maximising internal recycling and using an adequate treatment for each final flow.	A recirculation water cooling systems is used. Water consumption per tonne of produced steel being 1.032m ³ /tonne The site operates five distinct water recirculation plants those being the Ladle Arc Furnace water treatment plant (LAF WTP), Billet Caster water treatment plant (BC WTP), Main water treatment plant (Main WTP), Compressor water treatment plant (Compressor WTP) and DC Arc water treatment plant (DC Arc WTP). The LAF, DC Arc and compressor WTP provides only non contact recirculation cooling, while the BC WTP and Main WTP provide both contact and non-contact cooling. The Main WTP also provides recirculation cooling for the EAF. All site surface water collects in the facilities reservoir where water is re-used for dust suppression. Bat is achieved.

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
13	<p>BAT is to measure or assess all relevant parameters necessary to steer the processes from control rooms by means of modern computer-based systems in order to adjust continuously and to optimise the processes online, to ensure stable and smooth processing, thus increasing energy efficiency and maximising the yield and improving maintenance practices.</p>	<p>Each process step has its own operational control room to facilitate the adjustment and optimization of the process step utilizing computer based systems, ensuring efficient use of energy and maximized process yields.</p> <p>BAT is achieved</p>
14	<p>BAT is to measure the stack emissions of pollutants from the main emission sources from all processes included in the Sections 1.2 – 1.7 whenever BAT-AELs are given and in process gas-fired power plants in iron and steel works.</p> <p>BAT is to use continuous measurements at least for:</p> <ul style="list-style-type: none"> • emissions of nitrogen oxides (NO_x) from power plants • dust emissions from large electric arc furnaces. <p>For other emissions, BAT is to consider using continuous emission monitoring depending on the mass flow and emission characteristics.</p>	<p>This is not an integrated steel works, no requirement for continuous measurements of emissions of nitrogen oxides (NOX) from power plants.</p> <p>The current permit already requires continuous dust emissions monitoring of the electric arc furnace.</p> <p>We have reviewed the need to continue to continuously monitor dust emissions namely the Melting shop scavenging filter (West) stack A15 and the Melting shop scavenging filter (East) stack A16. Monitoring results between 2005 -2013 range from 0.1 to 3.8 mg/m³ from each stack and as the discharge is less than 800Kg/year, less than 1.5% of total dust emissions from the site continuous monitoring is not necessary. Annual periodic spot sampling has been set.</p> <p>We have also removed the requirement to continuously monitor carbon monoxide, emissions have been very low and as the BAT conclusion does not require this. We have removed this requirement.</p> <p>Bat is achieved</p>

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
15	<p>For relevant emission sources not mentioned in BAT 14, BAT is to measure the emissions of pollutants from all processes included in the Sections 1.2 – 1.7 and from process gas-fired power plants within iron and steel works as well as all relevant process gas components/pollutants periodically and discontinuously. This includes the discontinuous monitoring of process gases, stack emissions, polychlorinated dibenzodioxins/furans (PCDD/F) and monitoring the discharge of waste water, but excludes diffuse emissions</p>	<p>The permit already specifies self-monitoring programme for air and waste water emissions. See Tables S3.1 Emission to Air & S3.2 Emissions to Water of the permit.</p> <p>With regard to emissions to water we have changed the methodology for measurement of oil/grease to Total Petroleum Hydrocarbons (C10-C40). The monitoring frequency has been reduced from weekly (52 samples per year) to 12 per year, in line with Water Discharge and Groundwater (from point source) Activity Permits and Technical Guidance (EPR 7.01) with the provision to reduce to 6 per year if there are no breaches of the permit limits after 12 months.</p> <p>This is in line with BAT.</p>
16	<p>BAT is to determine the order of magnitude of diffuse emissions from relevant sources by the methods</p> <ul style="list-style-type: none"> • Direct measurement methods where the emissions are measured at the source itself. • Indirect measurement methods where the emission determination takes place at a certain distance from the source; • Calculation with emission factors. 	<p>PM10 Continuous monitoring is undertaken using a Turnkey Optical Particulate Analysis System (TOPAS) monitor and these forms the basis for annual mass release calculations. See Table S3.4.</p> <p>The site is within an AQMA for NO₂. From 2007 to 2013 the site has conducted a diffusion tubes for NO_x assessment survey to assess the impact on the surrounding area. The results demonstrate that the site has a negligible contribution to the local NO_x levels. We have therefore removed the requirement to undertake diffusion tube monitoring.</p> <p>BAT is achieved</p>
17	<p>BAT is to prevent pollution upon decommissioning</p>	<p>A decommissioning plan is in place as part of the site condition report and meets site condition reports and baseline reporting under IED– guidance and templates (H5).</p>
18	<p>BAT is to reduce noise emissions from relevant sources in the iron and steel manufacturing processes</p>	<p>All noisy equipment is within a total enclosure of the main building with all access doors having operational doors to minimize noise leakage. There are no sensitive receptors nearby and no noise complaints have been received.</p> <p>BAT is achieved</p>

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BAT Conclusions for Sinter Plant		
BAT conclusions 19 to 32 inclusive	This is not an integrated steel works. There is no sinter plant at the installation. Therefore, BAT Conclusions 19 to 32 inclusive are not relevant for this installation.	BATC 19 to 32 not relevant.
BAT Conclusions for Pelletisation Plants		
BAT Conclusions 33 to 41 inclusive	There are no pelletisation plants in the U.K. Therefore, BAT Conclusions 33 to 41 inclusive are not relevant for this installation.	BATC 33 to 41 not relevant
BAT Conclusion for Coke Oven Plants		
BAT Conclusions 42-58 inclusive	There are no coke oven plants at the installation. Therefore, BAT Conclusions 42-58 inclusive are not relevant for this installation	BATC 42 to 58 not relevant
BAT Conclusions for Blast Furnaces		
BAT Conclusions 59-74 inclusive	This is not an integrated steel works. There are blast furnaces at the installation. Therefore, BAT Conclusions 59-74 inclusive are not relevant for this installation	BATC 59 to 74 not relevant
BAT Conclusions for Basic Oxygen Steelmaking and Casting		
BAT Conclusions 75-86 inclusive	This not integrated steel works. No Basic Oxygen Steelmaking and Casting is undertaken at the installation. Therefore, BAT Conclusions 75-86 inclusive are not relevant for this installation	BATC 75 to 86 not relevant

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
BAT Conclusions for Electric Arc Furnace Steelmaking and Casting		
87	BAT for the electric arc furnace (EAF) process is to prevent mercury emissions by avoiding, as much as possible, raw materials and auxiliaries which contain mercury (see BAT 6 and 7)	As described in BAT 6 & 7 above raw materials and auxiliaries' selection without mercury. BAT is achieved.
88	<p>BAT for the electric arc furnace (EAF) primary and secondary dedusting (including scrap preheating, charging, melting, tapping, ladle furnace and secondary metallurgy) is to achieve an efficient extraction of all emission sources by using one of the techniques listed below and to use subsequent dedusting by means of a bag filter:</p> <p>I. a combination of direct off-gas extraction (4th or 2nd hole) and hood systems</p> <p>II. direct gas extraction and doghouse systems</p> <p>III. direct gas extraction and total building evacuation (low-capacity electric arc furnaces (EAF) may not require direct gas extraction to achieve the same extraction efficiency).</p> <p>The overall average collection efficiency associated with BAT is > 98 %.</p> <p>The BAT-associated emission level for dust is < 5 mg/Nm³, determined as a daily mean value.</p> <p>The BAT-associated emission level for mercury is < 0.05 mg/Nm³, determined as the average over the sampling period (discontinuous measurement, spot samples for at least four hours).</p>	<p>In line with Bat the following techniques are used for primary and secondary dedusting:</p> <ul style="list-style-type: none"> I. Use of 4th hole extraction from the electric arc furnace (EAF) II. Direct gas extraction from the electric arc furnace (EAF) is employed but space constraints do not allow dog leg system • Direct extraction from the argon oxygen carburiser vessel (AOD), direct extraction from the ladle arc furnace (LAF) and total building evacuation of the steelmaking building (encompassing charging, melting, tapping and de-slagging operations) <p>Overall Collection efficiency is calculated each year results from 2008-2013 confirm the efficiency to be over 98%</p> <p>Review of the continuous monitoring results for last year 2012 -2013 of dust emissions confirms that there have been no instances of the emissions above 5mg/m³ as a daily mean average and the BAT-AEL is already met.</p> <p>Review of the periodic monitoring results of mercury emissions from 2005 to 2013 range from 0.001 - 0.043 mg/Nm³. BAT AEL is achieved.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
89	<p>BAT for the electric arc furnace (EAF) primary and secondary dedusting (including scrap preheating, charging, melting, tapping, ladle furnace and secondary metallurgy) is to prevent and reduce polychlorinated dibenzodioxins/furans (PCDD/F) and polychlorinated biphenyls (PCB) emissions by avoiding, as much as possible, raw materials which contain PCDD/F and PCB or their precursors (see BAT 6 and 7) and using one or a combination of the following techniques, in conjunction with an:</p> <ol style="list-style-type: none"> I. appropriate dust removal system: appropriate post-combustion II. appropriate rapid quenching III. injection of adequate adsorption agents into the duct before dedusting. <p>The BAT-associated emission level for polychlorinated dibenzodioxins/furans (PCDD/F) is < 0.1 ng I-TEQ/Nm³, based on a 6 – 8 hour random sample during steady-state conditions. In some cases, the BAT-associated emission level can be achieved with primary measures only.</p>	<p>As discussed in BAT 6 & 7 above the selection of raw materials minimises dioxins. In addition BAT I & II is undertaken</p> <p>The design of the extraction and bag filter equipment allows rapid cooling of the off gas takes place prior to the bag filters. In addition a combustion chamber is fitted to the electric arc furnace direct extraction to enable appropriate post-combustion to take place.</p> <p>Review of the periodic monitoring results for dioxins from 2005 to 2013 range from 0.011 to 0.045 ng I-TEQ/Nm³. BAT AEL is already met.</p>
90	<p>BAT for on-site slag processing is to reduce dust emissions by using one or a combination of the following techniques:</p> <ol style="list-style-type: none"> I. efficient extraction of the slag crusher and screening devices with subsequent off-gas cleaning, if relevant II. transport of untreated slag by shovel loaders III. extraction or wetting of conveyor transfer points for broken material IV. wetting of slag storage heaps V. use of water fogs when broken slag is loaded. <p>In the case of using BAT I, the BAT-associated emission level for dust is < 10 – 20 mg/Nm³, determined as the average over the sampling period (discontinuous measurement, spot samples for at least half an hour).</p>	<p>This is not applicable. The activity is undertaken by Harsco Ltd. under the Environmental Permit EPR/DP3337ZK.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
91	<p>BAT is to minimise the water consumption from the electric arc furnace (EAF) process by the use of closed loop water cooling systems for the cooling of furnace devices as much as possible unless once-through cooling systems are used.</p>	<p>Closed loop water system cooling is used. BAT is achieved.</p>
92	<p>BAT is to minimise the waste water discharge from continuous casting by using the following techniques in combination:</p> <p>I. the removal of solids by flocculation, sedimentation and/or filtration</p> <p>II. the removal of oil in skimming tanks or in any other effective device</p> <p>III. the recirculation of cooling water and water from vacuum generation as much as possible.</p> <p>The BAT-associated emission levels, for waste water from continuous casting machines, based on a qualified random sample or a 24-hour composite sample, are:</p> <ul style="list-style-type: none"> — suspended solids < 20 mg/l — iron < 5 mg/l — zinc < 2 mg/l — nickel < 0.5 mg/l — total chromium < 0.5 mg/l — total hydrocarbons < 5 mg/l 	<p>Two continuous casting facilities</p> <p>Slab/bloom caster facilities - the discharge from the slab/ bloom caster goes to an onsite collection system (the Concast Clarifier) , referenced as emission point S1 in the Permit,</p> <p>BAT I-III is undertaken</p> <p>Scale pit for sedimentation of heavy scale Silt settler for the sedimentation of fine scale 3x sand filters for the filtration of contaminants Cooling towers to allow for adequate cooling and recirculation of water Non-contact cooling water is re-used by internal recirculation in the open system</p> <p>The current permit already requires periodic monitoring of suspended solids, iron, zinc, nickel, total chromium and total hydrocarbons. Review of the monitoring data for the last two years shows that there have been no exceedances for nickel, zinc, iron, total chromium or total hydrocarbons between January 2010 and 19th March 2014.</p> <p>However with regard suspended solids there have been 104 instances when the suspended solids were above the BAT-associated limit of 20mg/l, which equates to 53% of the samples collected. The current limit in the permit is set at 50 mg/l where 100% compliance is achieved. The operator believes the new standard can be achieved. The permit therefore includes the existing limit for suspended solids as relevant until the compliance date for the BATC and the new standard beyond that</p> <p>Billet caster facilities - The discharge from the billet caster closed system goes to the onsite surface water system, referenced as emission point S2 in the permit.</p> <p>BAT I-III is undertaken using a scale pit for sedimentation of heavy scale, 3x sand filters for the filtration of contaminants and cooling towers to allow for adequate cooling and recirculation of water.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
		<p>Review of the monitoring results between January 2010 and 13th March 2014 show that there have been no exceedance for nickel, zinc, iron, total chromium or total hydrocarbons 6 instances when the suspended solids were above the BAT-associated limit of 20mg/l, which equates to 4% of the samples collected and 1 instance where the total hydrocarbon was above the BAT-associated limit of 5mg/l.</p> <p>The billet caster non-contact cooling discharge shown to be compliant for metals and total hydrocarbons for over 96% of the time for suspended solids and 99% of the time for total hydrocarbons.</p> <p>We accept simple adjustment of plant operating conditions will achieve the BAT AEL's.</p> <p>Billet Caster Emission Levels for the open system The discharge from the billet caster (S5) goes directly to foul sewer and onward to Yorkshire Waters Blackburn Meadows treatment plant. Outokumpu and Yorkshire Water have a commercial agreement for the treatment of the billet caster waters before discharge. Yorkshire Water has lower limits for the discharge from Blackburn Meadows tighter than the BAT 92 limits.</p> <p>Having looked through Outokumpu's quarterly monitoring data our conclusions are that:</p> <ul style="list-style-type: none"> • We have no need for further flow reporting on discharges to sewer through points S1, S2, S3 and S4. Previous permit conditions required reporting of the maximum hourly flow recorded in the reporting period. Historical data are sufficient for us to have a high level of confidence in knowledge of typical maximum flow rates • Reporting for other determinants on points S1 to S4 was mainly by concentration, and the 95% and maximum values are reported. As it is concentration that is reported, there is a requirement that the flow rate at the time of sampling also be noted. • Concentration values do not provide enough information alone, and we would certainly require any operator to record flow rate to then give context to concentration values • As flow rate is being recorded, it would appear that flow measurement should be undertaken in accordance with our Monitoring guidance note M18

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		<ul style="list-style-type: none"> Rather than insist on installation of MCERTS flow meters, we conclude that current meters should be inspected in line with our current guidance & replaced when they fail to meet the total daily volume target of better than +/- 8% uncertainty for effluent flow <p>A footnote has been included to table S3.2 to ensure this happens</p>
93	This relates to production residues and specifically states that BAT is to prevent waste generation. It also makes reference to a number of techniques and BAT is to manage in a controlled manner EAF process residues which can neither be avoided nor recycled.	This has been covered in BAT 8 above.
94	BAT is to reduce energy consumption by using continuous near net shape strip casting, if the quality and the product mix of the produced steel grades justify it.	Continuous near net shape strip casting is not undertaken product mix does not allow this to take place.
95	BAT is to reduce noise emissions from electric arc furnace (EAF) installations and processes generating high sound energies by using a combination of the following constructional and operational techniques depending on and according to local conditions (in addition to using the techniques listed in BAT 18):	As described above in BAT18 – production processes generating high sound energies are housed within the main building with the EAF positioned in the centre of the melting shop building to reduce structural-borne noise. There are no sensitive receptors in close proximity to the site.

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 Notice response as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.