Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Longs Steel UK Limited

Scunthorpe Integrated Iron & Steelworks
Brigg Road
Scunthorpe
North Lincolnshire

Variation application number

EPR/HP3736AW/V003

Permit number

EPR/HP3736AW

Scunthorpe Integrated Iron & Steelworks
Permit number EPR/HP3736AW

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 apply from 8th March 2016.

Concurrent with this permit review we have considered an application for derogations from the applicant. This related to BAT Conclusions 48, 49, 50, 51 and 56. Where we have granted a derogation, that derogation and the reasons for granting it, are also included in Annex 1 to the variation notice to the permit, as required by Article 15(4) of IED.

This Permit, for the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the Industrial Emissions Directive (IED), is varied by the Environment Agency to implement the special provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)). The IED makes special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP,

We have also reviewed and set combustion ELVs for the energy generation plants in the permit. This brings the permit up to date in terms of current BAT (based on historical performance to prevent "back-sliding") from present to 31st December 2019, and to implement the Transitional National Plan (TNP) compliance route selected to achieve the minimum standard provisions as required by Chapter III of IED or to close.

Finally, this variation allows the operator to undertake the physico-chemical treatment of hazardous waste (namely millscale) for the purpose of recovery (R4).

The schedules specify the changes made to the permit.

Description of the Installation

Scunthorpe integrated coke, iron and steel works is situated in North Lincolnshire to the east of Scunthorpe town. The site, covering some 1000 hectares, has a multitude of emission points and associated plant and site fugitive emissions. Liquid steel production at full capacity is approximately 4.5 million tonnes per annum though this can be flexibly reduced by operating a combination of 3 permitted Blast Furnaces.

The site is characterised by several identifiable processes which are carried out sequentially across the installation in order to convert raw materials such as iron ores and coal to iron, subsequently refines into steel and continuous casting to semi-finished slabs and billets. These are hot rolled on site to produce plates, sections, rails and rods for sale on world markets.

Raw materials

Bulk raw materials arrive by ship at the deep water port at Immingham and are discharged by unloader cranes to be stocked out and transhipped to Scunthorpe, mainly by rail. Iron ores, other raw materials and works arising recyclables ("reverts") are blended together into a sinter plant feed. This blend is laid down in beds to allow good mixing of material.

Sinter Production

Sinter feed is recovered from the beds by barrel reclaimers and a blend of sinter bed material, fluxes, coke breeze and limestone is fed onto a travelling grate where it is heated to a temperature in the region of 1300°C. Air is drawn through the bed of heated material and the flame front fuses the fine material into sinter. The sinter is cooled and screened prior to being transferred to the blast furnaces. Waste gases produced during sintering pass through an electrostatic precipitator and are discharged through the 82.3m high stack to atmosphere. Several emission improvements are in progress to meet IED BAT conclusion requirements.

Coke making

Two Coke Oven Plants operate in areas at Appleby and Dawes Lane. Coal is predominantly delivered by train for the Coal Handling Plant area to form a coal blend from coal beds (~14 -17) prior being recovered by a stacker-reclaimer, stored in silos and taken by conveyors to both coke oven plants battery silos. The coal is charged to ovens where it is heated at a temperature of between 1200-1300°C for a period of approximately 18-24 hours to produce coke before being pushed out of the oven chambers and quenched by water. After quenching the coke is graded by size and transferred to the blast furnaces. Coke Oven Gas (COG) driven off in the ovens is initially cooled, processed through gas cleaning scrubbers and by-products removed prior to gas-holder storage or reuse. Raw COG flaring can occur if a battery over-pressurises. Clean gas is recycled within the site as a high CV fuel and exported as a constituent of mixed enhanced gas (MEG) used to fuel boilers and reheat furnaces on the site. Excess gas may be flared via dedicated flare stack. Cooling and process waters transferred from the by-products plant is treated in an off-site biological effluent treatment plant prior to discharge into the River Trent.

Iron production – Blast furnaces

Three permitted Blast furnaces and associated support and process gas cleaning plant. At the blast furnaces, coke, sinter, rubble ore, pellets and fluxes, are weighed and batched to be charged to the blast furnace. The blast furnaces operate on a continuous basis and are maintained at a full stockline level by charging alternate layers of coke and ore. High pressure air is produced in the turbo blower house and passed through the furnace stoves where it is heated to temperatures in the range of 1000-1200°C. The pre-heated air is injected together with granular coal into the furnace at tuyere level just above the hearth and flows upwards to the top of the furnace. The air reacts with carbon from the granular coal and the coke at the tuyeres to form carbon monoxide which reduces the iron ore to iron as it travels up the furnace. Further reduction of the iron ore is undertaken directly by the coke in the bosh and stack areas of the furnace. Gangue material in the ores and coke agglomerate together to form a molten slag at the high temperatures produced from the exothermic reduction reactions. The molten iron is produced in the furnace; both iron and slag fall to the hearth of the furnace where they are periodically removed via taphole operations to minimise fume, captured by a dedicated Secondary emissions abatement system.

The iron and slag flowing from the taphole are separated in the iron runner. Slag is skimmed off the top of the iron into the slag runner to be further processed in the air-cooling slag pits or by a rapid water cooling granulator. The iron flows underneath the skimmer arrangement to ensure slag-free iron passes into torpedo ladles for transportation to the steel plant. Excess liquid iron may be “plated” in the iron plating beds if the Steel-making plant cannot accept it.

The blast furnace gas leaves the furnace top at moderate pressure, cooled and cleaned in the Primary Gas cleaning scrubber system. Clean gas is used as a fuel to preheat the incoming air in the blast furnace stoves, to power the turbo blowers and as a constituent of mixed enhanced gas (MEG) used to fuel boilers and reheat furnaces on the site. Excess gas can be stored in gas holders or flared through a dedicated flare stack. Slurry formed in the gas cleaning process is “hydrocycloned” - a usable over-flow portion is recycled at the sinter plant (via a filter press or slurry lagoon) and the remainder is made available for sale as iron-bearing material for other industries. The processes concentrate up very low levels of Naturally Occurring Radioactive Materials designated as NORM.

Steel Production - BOS

The liquid iron is transported 2.5 km by rail to the Basic Oxygen Steelmaking (BOS) plant in refractory lined torpedo ladles with a capacity of approximately 300 tonnes. The ladles are lidded prior to leaving the blast furnaces to reduce energy loss and emissions from the torpedo mouth. On arrival at the BOS plant the ladle is teemed into a transfer ladle and desulphurised, if necessary, prior to transfer to the steel making vessel. The sulphur is transferred to a slag which is air cooled and sent for further processing. The fume produced is extracted to a bag filter cleaning system prior to discharge to the atmosphere.

Desulphurised iron is charged in approximately 220 tonnes batches to one of three BOS vessels where scrap and fluxes are added to the melt and oxygen is used to refine the iron to steel. The oxygen is blown on to the surface of the steel at supersonic velocity; the process is controlled by a complex software system that automatically adjusts the lance height during the blow period. After sampling for quality the steel may be re blown for a final trim or teemed into a ladle for further processing. Fume from the process is cleaned in a gas cleaning plant and vented to atmosphere through flare stacks or collected for use as a site fuel, dependant on the gas composition. The gas is a major constituent of mixed enhanced gas (MEG) used to fuel boilers and reheat furnaces on the site. Slurry from the gas cleaning plant is processed with other site arising slurries and dusts at the waste oxide briquetting (WOB) plant to produce a briquette which may be fed back into the BOS vessel (or Blast Furnace) as an iron ore replacement. After air cooling BOS Slag in prepared pits from the vessel, it is de-metalled and processed by third-party contractors. Reject slags and fines are disposed of at an on-site landfill.

Secondary Steelmaking

Following primary steel making the steel can go through a number of secondary steel making processes before being converted into a solid form. To homogenise the steel chemistry and temperature the steel may be argon stirred, following which the steel may be refined to customer requirements in a ladle arc furnace or vacuum degasser.

Continuous casting

The steel is transported to the continuous casting plant (Concast) to form slabs, blooms or billets. At Concast the steel is vertically teemed into reciprocating water-cooled copper moulds and drawn from the mould in a semi-finished partially solid state, cooling whilst it is drawn horizontal and cut to length. The plant currently consists of one slab caster, one billet caster and two bloom casters. Provision of tundish changing and sequential casting of different steel grades allow long production sequences. Cooling water from the plant is recycled and any scale collected is recycled back to the sinter process.

The slabs, blooms and billets may undergo surface treatment. Slabs and blooms can be subdivided to customer requirements. The semi-finished products can be sold or sent to hot rolling mills on site for finishing.

Hot rolling

The installation has the following Mills:

- The Rail and Section Mill which produces a variety of rails, sections and beams for use in the construction, engineering and automotive industries.
- The Plate Mill which produces plate for use in heavy construction such as shipbuilding and pipeline manufacture.
- The Rod Mill which produces rod principally for wire drawing to supply the manufacturers of tyre cord, screws, nails, etc.

The rolling process involves reheating the steel in a gas fired furnace, using site arising gases as the main fuel. Furnace control systems are used to optimise fuel use and minimise gaseous emissions. The steel is shaped in a rolling process to a finished specification, then air cooled and a variety of finishing operations carried out e.g. straightening, levelling, surface dressing, cutting to size and coating, prior to dispatch to customers. The mills have water treatment plants to remove iron rich scale which is recycled in the installation, the water being reused. Where scale becomes contaminated with oil, this

can be transported to the millscale treatment pad for dewatering prior to further treatment off-site to remove the oil.

Site energy production

The main energy input into the installation is in the form of coal which accounts for the majority of all delivered energy. This coal is converted to coke in two coke oven plants and the arising by-product gas (Coke Oven Gas) is distributed throughout the site for use as a fuel. The coke is charged into the blast furnaces where it acts as a reductant on the iron ore to produce iron. As a consequence of the ironmaking process a low calorific value gas (Blast Furnace Gas) is produced. This gas is fired on the blast furnace stoves and is also distributed throughout the site as a fuel. Gas produced during steel making at the BOS Plant is collected when it reaches a predetermined CO level and is distributed throughout the site as a fuel. The above integration of energy producers and consumers enables the maximum use of the sites arising gases and minimises the use of purchased premium fuels.

The Central Power Station utilises works arising gases and purchased fuels to produce steam for process use, space heating and electrical generation. The plant was built in 1976 and has been expanded over the succeeding years to have 3 boilers and 6 main turbo-alternators. There is a continuous demand for steam and internal electrical generation. All plant items are thus operated year round, with some redundancy for planned stoppages. The plant has a steam raising capacity of 265MWth, with a generation capacity of 53.6 MW. The Turbo Blower House (TBH) produces steam, primarily to drive two large turbo-blowers that provide the cold blast air to the blast furnaces. Through developments the plant also has some capacity to produce steam for process use and some electrical generation.

Water sources for the site

Process water for the integrated works is provided via abstractions from the River Trent, River Ancholme and the North Lincoln Boreholes. Additionally, recovered site drainage and mines water is utilised in the process. Current site water use is approximately 2.7 m^3 per tonne of liquid steel. Process wastewater and site drainage is discharged to Brumby and Bottesford Becks running through the site, with the exception of coke oven effluent which is pumped to a biological effluent treatment plant before final discharge to the River Trent. Discharges to surface waters is via 10 permitted points, however fugitive particulate run-off during significant wet weather episodes can potentially impact on Bottesford Beck.

Other operators on site

In addition to the activities of Tata Steel, a number of third party operators contribute to the processing of by-products on the Scunthorpe site:

- The processing of granulated BF slag is undertaken by Hanson Cement (Civil and Marine Ltd)
- The processing of BF gas cleaning slurry wastes into process residue is undertaken by Tube City IMS
- The processing of BOS gas cleaning slurry into Waste Oxide Brriquettes is undertaken by Harsco Metal Group Ltd
- The processing and de-metalling of BOS slag is undertaken by Harsco Metal Group Ltd
- The processing of BOS slag into a saleable aggregate is undertaken by East Coast Slag Product Limited.

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

Status log of the permit		
Description	**Date**	**Comments**
Application received	Received	Application integrated steel works
Additional information received	19/12/01	Modelling

Status log of the permit		
Description	**Date**	**Comments**
2nd Schedule 4 information notice.	Response 17/01/02	Site condition report
3rd Schedule 4 information notice.	Response 26/04/02	General
4th Schedule 4 information notice.	Response 31/01/03	Site condition report
5th Schedule 4 information notice.	Response 30/05/03	BAT
6th Schedule 4 information notice.	Response 06/10/03	Impact assessment
Operator submissions of additional information	21/02/03	Normanby park material
Operator submissions of additional information	11/04/03	Normanby park material
Operator submissions of additional information	07/11/03	Normanby park material
Operator submissions of additional information	28/01/04	Normanby park material
Operator submissions of additional information	05/03/04	Process update
Permit BL3838IW	Determined 25/06/04	
Variation Notice EPR/BL3838IW/V002 issued (GP3935SC)	Effective 26/11/04	
Variation Notice EPR/BL3838IW/V003 issued (SP3736LE)	Effective 28/2/07	
Variation notice EPR/BL3838IW/V004 issued (KP3739XB)	Effective 20/12/07	
Variation notice EPR/BL3838IW/V005 DP3031XC issued	Effective 30/11/09	
Variation notice EPR/BL3838IW/V006	Effective 01/11/09	
Variation notice EPR/BL3838IW/V007	Effective 06/08/10	
Variation & Consolidation determined EPR/BL3838IW/V008	09/05/2012	Environment Agency Variation as a result of the Scunthorpe Integrated Iron and Steel Works PM10 permit review
Regulation 60(1) Notice – request for further information dated 07/06/13	Received 27/09/13	Technical standards in relation to BAT Conclusions Numbers: 1,6,7,13,18,19, 21, 22, 23, 25-32,42-47,52-55,57-58,61,62,64-68
Further request for information dated 03/03/14	Received 30/04/14	Technical standards in relation to BAT Conclusions Numbers: 2,3,4,5,8,9,10,11,12,14,15,16,17,20,24, 48,49,50,51,56, 60, 63, 69, 75, 78, 81

Status log of the permit		
Description	**Date**	**Comments**
Further request for information dated 03/03/14	11/08/14	Technical standards in relation to BAT48,49,50 &51 Technical standards in relation to BAT56
Further request for information dated 13/02/15	27/02/15	LCP – chapter III setting ELV's
Further request for information dated	03/03/15	Dust emissions following start up of sinter plant
Application EPR/BL3838IW/V009 (variation)	Received 11/05/15 Duly made 29/05/15	Application to add a listed activity – millscale handling & treatment (hazardous waste). Determined as part of the sectoral review incorporating 2012 BATC
Application EPR/HP3736AW/T001 (full transfer of permit EPR/BL3838IW)	Duly made 22/05/15	Application to transfer the permit in full to Longs Steel UK Limited.
Transfer determined EPR/HP3736AW	31/07/15	Full transfer of permit complete. Effective from 02/08/15
Variation EPR/HP3736AW/V002	22/12/15	Environment Agency Variation to implement TNP
Variation and consolidation determined EPR/HP3736AW/V003 (PAS Billing ref: RP3633RC)	dd/mm/yy	Environment Agency Variation and consolidated permit following Metals Sector & Chapter III & Annex V permit review

Other Part A installation permits relating to this installation		
Operator	**Permit number**	**Date of issue**
Harsco Metals Group Ltd (previously called Multiserv Group)	EPR/BL5288IC (as varied, consolidated)	09/05/2012
Tube City IMS (previously called Hanson Support Services Limited)	EPR/TP3731UE (as varied)	02/05/2008
Caparo Merchant Bar Plc	EPR/BR8832 (as varied)	01/05/2003
Longs Steel UK Ltd (Yarborough Quarry Landfill)	EPR/FP3136AL	21/08/2015
Longs Steel UK Ltd (Crosby North Landfill Site)	EPR/CP3036AJ	21/08/2015
East Coast Slag Product Limited (Lafarge Tarmac)	EPR/LP3537VV	19/11/2014

Other Part A2 or Part B installation permits relating to the site plan, regulated by the Local Authority		
Operator	**Permit number**	**Date of issue**
Longs Steel UK Part A(2)	P11-SG6/11 (as varied)	02/08/15
Civil & Marine (Hanson Cement): Part B	P8/S3.01/11 (as varied)	21/02/2011

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/HP3736AW

Issued to

Longs Steel UK Limited ("the operator")

whose registered office is

30 Millbank
2nd Floor
London
SW1P 4WY

company registration number **09438207**

to operate part of a regulated facility at

Scunthorpe Integrated Iron & Steelworks
Brigg Road
Scunthorpe
North Lincolnshire

to the extent set out in the schedules.

The notice shall take effect from [DD/MM/YYYY]

Name	Date
[name of authorised person] **Type name, signature not needed**	**[DD/MM/YYYY]**

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/HP3736AW

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/HP3736AW/V003 authorising,

Longs Steel UK Limited ("the operator"),

whose registered office is

30 Millbank
2nd Floor
London
SW1P 4WY

company registration number **09438207**

to operate part of a regulated facility at

Scunthorpe Integrated Iron & Steelworks
Brigg Road
Scunthorpe
North Lincolnshire

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

Name	Date
[name of authorised person]	**[DD/MM/YYYY]**

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) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;

(c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(d) 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(s) of the installation of the same information.

1.5.2 Within the installation boundary, notwithstanding the requirements of other issued Part A installation permits relating to this installation, the Iron and Steel works Operator shall take initial responsibility for investigating all complaints made against the Installation in accordance with condition 1.1, whether directly or indirectly caused, for the purpose of establishing the cause of the complaint and establishing any actions necessary to prevent a re-occurrence.

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 red (and no hatch infill) on the site plan at schedule 7 to this permit, which is within the area edged in blue on the site plan that represents the extent of the installation covered by this permit and that/those of (the) other operator(s) 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 For the following activities referenced in schedule 1, table S1.1 (LCP341, LCP342 and LCP343) and without prejudice to condition 2.3.1, the activities shall be operated in accordance with the "Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines" dated February 2015, or any later version unless otherwise agreed in writing by the Environment Agency.

2.3.3 For the following activities referenced in schedule 1, table S1.1 (LCP341, LCP342 and LCP343) the end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, Tables S1.2 and S1.4.

2.3.4 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.

2.3.5 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.6 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2 tables S2.2 and S2.3; and

(b) it conforms to the description in the documentation supplied by the producer and holder.

2.3.7 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.

2.3.8 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 Hazardous waste storage and treatment

2.4.1 Hazardous waste shall not be mixed, either with a different category of hazardous waste or with other waste, substances or materials, unless it is authorised by schedule 1 table S1.1 and appropriate measures are taken.

2.5 Improvement programme

2.5.1 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.

2.5.2 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(a), 3(b) and 3(c) Tables S3.0, S3.1, S3.2, S3.3, S3.4, S3.5, S3.6, S3.7 and S3.8.

3.1.2 The limits given in schedules 3(a), 3(b) and 3(c) shall not be exceeded.

3.1.3 Total annual emissions from the LCP341, LCP342 & LCP343 emission points set out in schedules 3(a), 3(b) and 3(c) table S3.7 of a substance listed in schedules 3(a), 3(b) and 3(c) table S3.6 shall not exceed the relevant limit in table S3.6.

3.1.4 Where a substance is specified in Schedule 3(a), 3(b) and 3(c) table S3.8 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.

3.1.5 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(a), 3(b) and 3(c) to this permit:

(a) point source emissions specified in tables S3.1, S3.2, S3.3, S3.4, S3.5, S3.6, S3.7 and S3.8

(b) process monitoring specified in table S4.4;

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(a), 3(b) and 3(c) tables S3.1, S3.2, S3.3, S3.4, S3.5, S3.6, S3.7 and S3.8 unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring for the purposes of the Industrial Emissions Directive Chapter III

3.6.1 All monitoring of large combustion plant required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.

3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in schedule 3, the operator shall:

(a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and

(b) implement the approved proposals.

3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.

3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.7 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.

3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.

3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3(a), 3(b) and 3(c), Table S3.6 the Continuous Emission Monitors shall be used such that;

(a) For the continuous measurement systems fitted to the LCP release points defined in Table S3.6 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval.

(b) The 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%.

(c) The 95% confidence interval for dust releases of a single measured result shall be taken to be 30%

(d) The 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%

(e) An invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing.

(f) Any day, in which more than three hourly average values are invalid shall be invalidated.

3.7 Air Quality Management Plan

3.7.1 The Operator shall submit a written Air Quality Management Plan (AQMP) to the Environment Agency for approval by 31st March 2016. The plan must contain appropriate measures aimed at addressing emissions of Particulate Matter (PM_{10}) and Polycyclic Aromatic Hydrocarbons (PAHs) from both significant point sources and diffuse sources on site. The measures should be targeted to address the most polluting sources on site and based on a review and analyses of measured stack releases and ambient data. The plan must take account of existing knowledge, evidence and information, particularly source and emissions inventories (point and fugitive), dispersion modelling methodology and tools, relevant meteorology, any differences in modelling with actual impact (local monitoring network evidence), assumptions made and uncertainties.

Where appropriate, the plan shall contain dates for the implementation of individual measures to prevent or, where not practicable, minimise those emissions with significant contribution to any exceedance of EU air quality limit values, objectives or targets for each of the substances in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland (as amended).

3.7.2 The AQMP should be updated and reported annually in writing on the first anniversary of the approval taking account of any new knowledge, evidence and information. The annual report shall include written descriptions of the improvements made during the year, action plans developed and planned improvements for the coming year; performance, and the success of previous years improvement measures should be demonstrated by an analysis of results. Where appropriate, the report shall contain dates for the implementation of individual measures to prevent or, where not practicable, minimise those emissions with significant contribution to any exceedance of EU air quality limit values, objectives or targets for each of the substances in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland (as amended).

3.7.3 Any revised AQMP should be implemented in place of the original in accordance with the Environment Agency's written approval unless otherwise agreed in writing.

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.

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;

(c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.5 of that schedule and

(d) the process monitoring requirements set out in schedule 4 table S4.4 using the forms specified in table S4.5 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 S4.5; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

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

4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

4.2.6 Within 10 days of the notification of malfunction or breakdown the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).

4.2.7 For the following activities referenced in schedule 1, table S1.1: LCP 341, LCP 342 and LCP 343. Unless otherwise agreed in writing with the Environment Agency, within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form IED RTA1, listed in table S4.5, the information specified on the form relating to the site's mass emissions.

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.

4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

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 delay”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity and WFD Annex I and II operations**	**Limits of specified activity and waste types**
A1	1.1 A(1) (a) Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more	LCP341: Central Power Station: 265 MWth LCP342: Turbo Blower House Boilers 1-4, 156 MWth LCP343: Turbo Blower House Boilers 5-6, 180 MWth Generating (steam and electricity) from indigenous fuels (BLF,COG etc)	From receipt of raw materials, the combustion of fuels for energy generation for use on site to the discharge of exhausts gases.
A2		Reheat Furnaces	2 reheat furnaces - Gaseous fuels and reheating slabs ready for hot rolling
A3	1.2 A(1) (c)	Coke making	From receipt of raw materials to finished product.
A4	2.1 A(1) (a)	Sintering	Preparing iron ore, recycled iron oxides and associated raw materials to produce sinter
A5	2.1 A(1) (b)	3 Blast Furnace/BOS Vessels/Secondary Steelmaking/Continuous Casting	Converting sinter, iron ore, coal and coke into liquid iron and the conversion of iron and iron scrap into steel, including any secondary treatments such as desulphurisation. Casting steel into bloom, billet and slab
A6	2.1 A(1) (c)	Hot rolling mills	Rolling hot slabs, blooms and billets into rolled products for sale or further processing
A7	2.1 A(1) (d)	Iron ore storage and handling	The receipt, storage and transfer of iron ore and associated raw materials (includes unloading)
A8	2.1 B (c)	Iron Desulphurisation	Receipt of molten iron to the dispatch of molten desulphurised iron.
A9	3.5 B (b) (iii)	Loading/unloading coal and coke	From receipt of materials to their dispatch to process.
A10	4.2 A(1) (a) (iii)	Producing Inorganic Chemicals: DLCO Concentrated Ammoniacal Liquor	From receipt of materials to dispatch of product.
A11	4.3 A(1) (a)	Chemical Fertiliser Production: ACO Ammonium Sulphate	From receipt of materials to dispatch of product.

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity and WFD Annex I and II operations**	**Limits of specified activity and waste types**
A12	5.4 A(1) (a) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving biological treatment , and excluding activities covered by Council Directive 91/271/EEC concerning urban waste-water treatment (i)	(i) biological treatment; Treatment of non hazardous waste for the purpose of disposal (D8)	Collecting, treating and separation of the aqueous effluent produced by the installation
A13	5.4 A(1) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities and excluding activities covered by Council Directive 91/271/EEC concerning urban waste-water treatment	(ii) physico-chemical treatment; Treatment of non hazardous waste - ferrous slurry conditioning for the purpose of disposal (D9)	Collecting, treating and separation of the aqueous effluent produced by the installation
A14	5.3 A(1)(a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day	ii) physico-chemical treatment Treatment of hazardous waste for the purpose of recovery (R4)	Mill scale handling and treatment, waste types and quantities as specified in Table S2.3
Directly Associated Activity			
A15	Directly associated activity	Hot metal transfers/tipping and recovery.	
A16	Directly associated activity	Collection and use of BF, BOS and CO gas.	
A17	Directly associated activity	Slag handling and storage, including pit operations and granulating operations.	
A18	Directly associated activity	Storage and treatment of intermediate or waste products (e.g. “reverts” and waste oil).	

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to question 2.3 given in Sections 2.3.1 to Section 2.3.27 of the application	30/08/01
Response to Schedule 4 Notice(5) dated 13/03/03	Response to the following: Section 2.3.2, questions 1-5, Section 2.3.3, questions 1-8, Section 2.3.4, questions 1-3, Section 2.3.5, questions 1-5, All questions contained within Section 2.3.6, All questions contained within section 2.3.7, Section 2.3.18, question 1	30/05/03

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Additional information submissions	All Parts	21/02/03, 1/04/03, 07/11/03, 28/01/04, 05/03/04
Operator submission concerning Plate Mill paint marking activity	All Parts	11/11/04
Operator submission concerning Continuous Casting, Scunthorpe Rod Mill and Medium Section Mill	All parts	26/05/06
Operator submission concerning replacement of Hot Metal Pour and Hot Metal Desulphurisation fume cleaning systems and installation of another slab scarfer at Concast	All parts	24/07/08
Regulation 69(6) request: Change of operation: Coke Oven Bleeder flares.	Corus letter BL3838_0284: 3 March 2008 and the Agency response letter 10 March 2008.	06/03/08
Regulation 69(6) request: Change of operation: Coke Oven Bleeder Flares.	Corus letter BL3838_0315: 2 June 2008 and the Agency response letter 2 July 2008.	1606/08
Operator submission to operate installed and commissioned raw coke oven gas bleeder flares at both Appleby and Dawes Lanes Coke Ovens.	All parts	30/9/08
Variation & Consolidation determined EPR/BL3838IW/V008	Environment Agency Variation as a result of the Scunthorpe Integrated Iron and Steel Works PM10 permit review	09/05/12
Regulation 60(1) Notice – request for further information dated 07/06/13	Technical standards in relation to BAT Conclusions Numbers: 1,6,7,13,18,19, 21, 22, 23, 25-32, 42-47, 52-55, 57-58, 61, 62, 64-68	27/09/13
Further request for information dated 03/03/14	Technical standards in relation to BAT Conclusions Numbers: 2,3,4,5,8,9,10,11,12,14,15,16,17, 20, 24, 48, 49, 50,51, 60, 63, 69, 75, 78, 81	30/04/14
Further request for information dated 03/03/14	Technical standards in relation to BAT 48,49,50,51 & 56	11/08/14
Further request for information dated 13/02/15	LCP – Chapter III setting ELV's	27/02/15
Further request for information dated	Dust emissions following start up of sinter plant	03/03/15
Application EPR/BL3838IW/V009 (variation)	Technical standards for millscale handling & treatment (hazardous waste).	11/05/15

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	For BATc 3, 8, 10, 11, 16, 25, 26, 56, 59, 60, 62, 65, 67 and 81 the operator shall submit a written report setting out progress to meeting BAT by 8th March 2016.	8th March 2016
IC2	For BATc: 48 & 49 the operator shall submit a written report setting out progress to achieving the ELV's where derogation has been granted. The report shall include, but not be limited to the following: 1. Current performance against the ELV after derogation period has elapsed for sulphur oxides (SOX), expressed as sulphur dioxide (SO2) of 500 mg/Nm3. 2. Associated targets / timelines for reaching compliance by 8th March 2019 for Dawes Lane Coke Ovens and Associated targets / timelines for reaching compliance by 31st January 2022 for Appleby Coke Ovens. 3. Any alterations to the initial plan submitted on 11/8/2014.	8th March 2016 and then every 6 months thereafter until the ELV after derogation period is met
IC3	For BATc: 49, 50 and 51 the operator shall submit a written report setting out progress to achieving the ELV's where a derogation has been granted. The report shall include, but not be limited to the following: 1. Current performance of dust emissions arising from under firing, coke pushing and coke quenching against the ELV after derogation period has elapsed. 2. Associated targets / timelines for reaching compliance on Dawes Lane and Appleby Coke Ovens by 8th March 2024. 3. Any alterations to the initial plan submitted on 11/08/14.	8th March 2016 and then every 6 months thereafter until the ELV after derogation period is met
IC4	Submit a written methodology and plan to the Environment Agency for approval for assessing visible emissions from the coke oven batteries. The methodology shall be as equivalent to BATc 44 and 46 requirements. The Operator shall implement the methodology and plan in accordance with the Environment Agency's written approval.	29th February 2016
IC5	Submit a written plan to the Environment Agency for approval on the measures to be taken to install a continuous Oxygen monitor to measure the oxygen content of the exhaust gas from emission point A1 of the Sinter Plant. Where appropriate, the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The Operator shall implement the plan in accordance with the Environment Agency's written approval.	29th February 2016

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC6	Submit a written plan to the Environment Agency for approval of the measures to be taken to install commission and calibrate MCERT Continuous Emission Monitors by 8th March 2016 to Appleby coke oven battery stacks A302 and A303. These are to continuously monitor nitrogen oxides arising from under firing (as NOx corrected to 5% oxygen standard) as daily mean values as required by BATc 49 (II). Where appropriate, the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The Operator shall implement the plan in accordance with the Environment Agency's written approval.	29th February 2016
IC7	Submit a written summary report to the Environment Agency to confirm by the results of calibration and verification testing that the performance of Continuous Emission Monitors for parameters as specified in Schedule 3(a) Table S3.1 emission point A1 complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3.	8th March 2016
IC8	The operator shall review the site condition report (SCR) and site protection monitoring plan to ensure Article 22 of the Industrial Emissions Directive is complied with. The Operator shall submit revised SCR to the Environment Agency in the format detailed in the 'European Commission Communication on Baseline reports (2014/C 136/03)'.	Within 1 year of permit variation issue and thereafter, at intervals of no more than 4 years
IC9	The operator shall provide a report in writing to the Environment Agency which provides the net rated thermal input for LCP341, LCP342 and LCP343. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised). Evidence to support this figure, shall be in the form of: a) Performance test results during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), unless this is not available in which case it shall be in the form of b) Performance test results after a significant modification (quoting the specified standards or test codes), unless this is not available in which case it shall be in the form of c) Manufacturer's contractual guarantee value, unless this is not available in which case it shall be in the form of d) Published reference data, e.g. Gas Turbine World Performance Specifications (published annually); unless this is not available in which case it shall be in the form of e) Design data, e.g. nameplate rating of a boiler or design documentation for a burner system; unless this is not available in which case it shall be in the form of f) Operational efficiency data as verified and used for heat accountancy purposes, unless this is not available in which case it shall be in the form of g) Data provided as part of Due Diligence during acquisition.	31st December 2016

Table S1.4 Start-up and Shut-down thresholds			
Emission Point and Unit Reference		**“Minimum start up load” Load in MW and as percent of rated power output (%) and/or discrete processes**	**“Minimum shut-down load” Load in MW and as percent of rated power output (%) and/or discrete processes**
LCP341	CPS Boiler 1 (A201/1)	43.2 MW; 40%	43.2 MW; 40%
	CPS Boiler 2 (A201/2)	43.2 MW; 40%	43.2 MW; 40%
	CPS Boiler 3 (A201/3)	19.6 MW; 40%	19.6 MW; 40%
LCP342	TBH Boiler 1 – 4 (A202)	15.6 MW; 40%	15.6 MW; 40%
LCP343	TBH Boiler 5 – 6 (A203)	21.6 MW; 40%	21.6 MW; 40%

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Coke Oven Gas (COG) for combustion until desulphurised	5000 (ACO) or 4500 (DLCO) mg /m^3 as the daily mean (06:00 hours to 06:00 hours) of the hydrogen sulphide content of coke oven gas burned at the coke ovens **Note 2**
Desulphurised Coke Oven Gas (COG) for combustion	1000 mg /m^3 as the daily mean (06:00 hours to 06:00 hours) of the hydrogen sulphide content of coke oven gas burned at the coke ovens **Note 3**
Dedusted surplus Coke Oven Gas (COG), Blast Furnace Gas (BFG), Basic Oxygen Steelmaking (BOS) Gas or natural gas, individually or in combination for combustion at the Blast Furnace Stoves.	Specification based on particulate loading, measured as a worst case scenario at the Blast Furnace Stoves
Mixed Enhanced Gas (MEG) for combustion	Specification on particulate loading of BOS gas in MEG, measured as a worst case scenario where fully combusted (e.g. at the reheat furnaces)
Diesel for standby equipment	The maximum sulphur content shall be 0.2% maximum of sulphur by weight/weight (dry)
Propane for burner ignition	
Crosby Oil Field Gas import into the works	Naturally occurring methane with no more than 20% by volume of inert or other constituents
Heavy Fuel Oil (HFO) for combustion in Power Plant & Turbo blowers	The maximum sulphur content shall be 1.0% of sulphur by weight/weight (dry)
Coals for carbonisation in the coke ovens	The maximum sulphur content of the blended coal shall be 0.75% of sulphur by weight/weight (dry) (daily average 06:00 – 06:00). **Note 1 & 2**
Crushed coke breeze for reduction in Blast Furnace	
Carbon fines for reduction in Blast Furnace	
Oil for coal blend density control	Oil for density control or recovered oil shall meet the end of waste protocol criteria
Caustic soda for ammonia removal	Mercury free - trace (<Level of Detection)
Sulphuric acid for ammonium sulphate production	Mercury and/or cadmium free- trace (<Level of Detection)
For Ore Preparation & Sinter Plant includes – Iron ore; Limestone; Olivine; Burnt lime; Dolomite; Coke breeze; Millscale; Blast Furnace flue dust; Blast Furnace hydrocyclone underflow; Sinter Plant fines and spillage; Metallic fines; BOS debris; Mag brick; Skimmer fines; Black sand; Limestone chips; Blast Furnaces;	

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
For Blast Furnaces Iron ore pellets; Sinter; Rubble ore, Recovered metallics, Oversized scale; Natural gas; Coal; Illmenite; Lump fluxes	
Blended reverts, recycled process residues or Sinter feed	Oil content (maximum) of Blended reverts1.0% weight/weight (dry). Oil content (maximum) of recycled process residues <0.5% and content of the sinter feed <0.1% weight/weight (dry)
Briquettes in Blast Furnace	Blend as specified in the business' EMS Controlled Document Ref KHAH-9XRSWA.
Coke nuts	
Coke	
For Steelmaking – Alloys Ferro Manganese; Silica Manganese; Ferro Silica; Aluminium; BATS alloy; Bismuth; Carbon; Calinjex; Casi powder; Copper; Ferro Boron; Ferro Molybdenum; Ferro Niobium; Nickel; Lead; Sulphur; Ferro Sulphide; Tellurium; Magnesium; Ferro Vanadium; Ferro Chrome; Ferro Titanium	
For Steelmaking – Fluxes Burnt Lime; Dolomet; Dolomite; Coke; Synthetic Slag; Bauxite; Cover Powder; CM Grade; Coag; Soda ash; Glass; BOS slag	
Briquettes for steel making	Blend as specified in the business' EMS Controlled Document Ref KHAH-9XRSWA.

Notes

1. Any sample taken and analysed in accordance with appropriate British Standards when considered together with a sampling and estimation protocol to be agreed with Environment Agency shall not exceed this limit.
2. On completion of the BAT Conclusion 48 for the use of desulphurised Coke Oven gas at the specific plant, the limit will no longer apply.
3. Desulphurised Coke Oven gas by the implementation of BAT Conclusion 48.

Table S2.2 Permitted waste types	
Waste code	**Description**
05	**WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTIC TREATMENT OF COAL**
05 01	05 01 wastes from petroleum refining
05 01 05*	Oil spills
05 01 06*	Oily sludges from maintenance operations of the plant or equipment
10	**WASTES FROM THERMAL PROCESSES**
10 02	**Wastes from the iron and steel industry**
10 02 01	Wastes from the processing of slag
10 02 02	Unprocessed slag

Table S2.2 Permitted waste types	
Waste code	**Description**
10 02 07*	Solid wastes from gas treatment containing dangerous substances
10 02 08	Solid wastes from gas treatment other than those mentioned in 10 02 07
10 02 10	Mill scales
10 02 11*	Wastes from cooling-water treatment containing oil
10 02 12	Wastes from cooling-water treatment other than those mentioned in 10 02 11
10 02 13*	Sludges and filter cakes from gas treatment containing dangerous substances
10 02 14	Sludges and filter cakes from gas treatment other than those mentioned in 10 02 13
10 02 15	Other sludges and filter cakes (WOBS – black sand)
10 03	**wastes from aluminium thermal metallurgy**
10 03 27*	Wastes from cooling-water treatment containing oil
10 03 28	Wastes from cooling-water treatment other than those mentioned in 10 03 27
10 02 99	Wastes not otherwise specified
10 08	**Wastes from other non-ferrous thermal metallurgy**
10 08 04	Particulates and dust
10 09	**Wastes from casting of ferrous pieces**
10 09 11*	Other particulates containing dangerous substances
10 09 12	Other particulates other than those mentioned in 10 09 11 (WOBS ferrous alloys – best fit)
10 13	**Wastes from manufacture of cement, lime and plaster and articles and products made** **From them**
10 13 04	Wastes from calcination and hydration of lime
12	**WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS**
12 01	**wastes from shaping and physical and mechanical surface treatment of metals and plastics**
12 01 01	Ferrous metal filings and turnings
12 01 02	Ferrous metal dust and particulates
12 01 17	Waste blasting material other than those mentioned in 12 01 16
13	**OIL WASTES AND WASTES OF LIQUID FUELS**
13 05	**Oil/water separator contents**
13 05 01	Solids from grit chambers and oil/water interceptors
13 05 03	Interceptor sludges
13 05 07*	Oily water from oil/water separators
15	**WASTE PACKING, ABSORBENTS, WIPING CLOTHES, FILTERWASTE PACKING, ABSORBENTS, WIPING CLOTHES, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**Packaging**
15 01 07	Glass

Table S2.2 Permitted waste types	
Waste code	**Description**
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 01	End of life vehicles from different means of transport and wastes from dismantling of end-of-life vehicles and vehicle maintenance
16 01 17	Ferrous metal (scrap)
17	**CONSTRUCTION AND DEMOLITION WASTES**
17 02	Wood, glass and plastic
17 02 02	Glass (for BOS slag add.)
17 04	Metals (including their alloys)
17 04 05	Iron and steel (scrap)
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITEWASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER WASTE WATER TREATMENT PLANTS AND PREP OF WASTE INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**
19 01	Wastes from incineration or pyrolosis of waste
19 01 02	Ferrous materials removed from bottom ash (scrap)
19 02	Wastes from physico/chemical treatment of waste
19 02 03	Premixed wastes composed only of non-hazardous waste
19 10	Wastes from shredding of metal-containing waste
19 10 01	Iron and steel waste (scrap)
19 12	Wastes from the mechanical treatment of wastes
19 12 02	Ferrous metal (scrap)
19 12 05	Glass (for BOS slag add.)
19 12 07	Wood other than that mentioned in 19 12 06.
20	**MUNICIPAL WASTES**
20 01	**Separately collected fractions**
20 01 02	Glass (for BOS slag add.)
20 01 40	Metals (scrap)
20 03	**Other municipal wastes**
20 03 03	Street cleaning residues (road sweepings and general sweepings)

Table S2.3 Permitted waste types for the Millscale Handling and Treatment Activity	
Waste code	**Description**
10	**WASTES FROM THERMAL PROCESSES**
10 02	**Wastes from the iron and steel industry**
10 02 11*	wastes from cooling-water treatment containing oil
13	**OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19)**
13 05	**oil/water separator contents**
13 05 01*	Solids from grit chambers and oil/water separators
13 05 03*	Interceptor Sludges

Table S2.3 Permitted waste types for the Millscale Handling and Treatment Activity	
Waste code	**Description**
13 05 07*	Oily water from oil/water seperators
19	**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**
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**
19 02 05*	sludges from physico/chemical treatment containing dangerous substances
19 12 07	Wood other than that mentioned in 19 12 06.

Schedule 3 – Emissions and monitoring

Table S3.0 Emission points		
Emission point description	**Source**	**Location**
Sinter Plant		
A1 Sinter Plant main stack	Sinter Plant	SE92050966
A2 Sinter Plant Dedust stack	Sinter Plant	SE92010979
Coal Preparation Plant		
A3 Coal Preparation Plant (1) Main Stack	Coal Preparation Plant	SE91950974
A4 Coal Preparation Plant (1) Warm Up Stack	Coal Preparation Plant	SE91950974
A5 Coal Preparation Plant (1) Oversize Filter	Coal Preparation Plant	SE91950974
A6 Coal Preparation Plant (1) Dedust Filter	Coal Preparation Plant	SE91950974
A7 Coal Preparation Plant (1) Product Silo Filter	Coal Preparation Plant	SE91950974
A8 Coal Preparation Plant (1) Tanker Dedust Filter	Coal Preparation Plant	SE91950974
A9 Coal Preparation Plant (2) Main Stack	Coal Preparation Plant	SE91980974
A10 Coal Preparation Plant (2) Warm Up Stack	Coal Preparation Plant	SE91980974
A11 Coal Preparation Plant (2) Oversize Filter	Coal Preparation Plant	SE91980974
A12 Coal Preparation Plant (2) Product Silo Filter	Coal Preparation Plant	SE91980974
A13 Coal Preparation Plant (2) Tanker Dedust Filter	Coal Preparation Plant	SE91980974
A13a Coal Preparation Plant (2) Constant Rate Feeder Dedust Filter	Coal Preparation Plant	SE91980974
Blast Furnaces		
A14a Queen Bess Coal Silo Filter	Blast Furnaces	SE91561052
A 14b Queen Anne Coal Silo Filter (1)	Blast Furnaces	SE91711035
A 14c Queen Anne Coal Silo Filter (2)	Blast Furnaces	SE91711035
A14d Queen Victoria Coal Silo Filter (1)	Blast Furnaces	SE91711022
A14e Queen Victoria Coal Silo Filter (2)	Blast Furnaces	SE91711022
No release point has been allocated reference A15		
A16 Queen Bess Hot Blast Stoves	Blast Furnaces	SE91611038
A17 Queen Anne Hot Blast Stoves 1 and 2	Blast Furnaces	SE91621033
A18 Queen Anne Hot Blast Stoves 3 and 4	Blast Furnaces	SE91631034
A19 Queen Victoria Hot Blast Stoves 1 and 2	Blast Furnaces	SE91621016
A20 Queen Victoria Hot Blast Stoves 3 and 4	Blast Furnaces	SE91641015
A21a Queen Bess Hot Gas Stoves, Blast Furnace Gas Supply Main (1)	Blast Furnaces	SE91611038
A21b Queen Bess Hot Gas Stoves, Blast Furnace Gas Supply Main (2)	Blast Furnaces	SE91611038
A21c Queen Bess Hot Gas Stoves, Blast Furnace Gas Supply Main (3)	Blast Furnaces	SE91611038
A21d Queen Bess Hot Gas Stoves, Blast Furnace Gas Supply Main (4)	Blast Furnaces	SE91611038
A21e Queen Anne Hot Gas Stoves, Blast Furnace Gas Supply Main (1)	Blast Furnaces	SE91621033

Table S3.0 Emission points		
Emission point description	**Source**	**Location**
A21f Queen Anne Hot Gas Stoves, Blast Furnace Gas Supply Main (2)	Blast Furnaces	SE91621033
A21g Queen Anne Hot Gas Stoves, Blast Furnace Gas Supply Main (3)	Blast Furnaces	SE91621033
A21h Queen Anne Hot Gas Stoves, Blast Furnace Gas Supply Main (4)	Blast Furnaces	SE91621033
A21i Queen Victoria Hot Gas Stoves, Blast Furnace Gas Supply Main (1)	Blast Furnaces	SE91641015
A21j Queen Victoria Hot Gas Stoves, Blast Furnace Gas Supply Main (2)	Blast Furnaces	SE91641015
A21k Queen Victoria Hot Gas Stoves, Blast Furnace Gas Supply Main (3)	Blast Furnaces	SE91641015
A21l Queen Victoria Hot Gas Stoves, Blast Furnace Gas Supply Main (4)	Blast Furnaces	SE91641015
A22a Queen Bess Hot Gas Stove Bustle Main	Blast Furnaces	SE91631043
A22b Queen Victoria Hot Gas Stove Bustle Main	Blast Furnaces	SE91631022
A22c Queen Anne Backdraught Chimney	Blast Furnaces	SE91631029
A23 Blast Furnace Gas Flare	Blast Furnaces	SE91601057
No release point has been allocated reference A24		
A25 Queen Bess Furnace Top Bleeders (2)	Blast Furnaces	SE91631043
A26 Queen Anne Furnace Top Bleeders (2)	Blast Furnaces	SE91631029
A27 Queen Victoria Furnace Top Bleeders (2)	Blast Furnaces	SE91631022
A28 QM Revolving Hopper Equalisation	Blast Furnaces	SE91631049
A29 QM Throat Armour Plates	Blast Furnaces	SE91631049
A30 QB Material Hoppers Vent (2)	Blast Furnaces	SE91631043
A32 QB Material Hoppers Vent (2)	Blast Furnaces	SE91631029
A33 QV Lock Hopper	Blast Furnaces	SE91631022
A34 QM Semi Clean BFG Bleeder	Blast Furnaces	SE91631049
A36 QA Semi Clean BFG Bleeder	Blast Furnaces	SE91631029
A37 QV Semi Clean BFG Bleeder	Blast Furnaces	SE91631022
A38 QM Gas Plant Purge	Blast Furnaces	SE91561046
A39 QB Gas Plant Purge	Blast Furnaces	SE91611045
A40 QA Gas Plant Purge	Blast Furnaces	SE91581025
A41 QV Gas Plant Purge	Blast Furnaces	SE91581024
A42 QA Conditioning Tower	Blast Furnaces	SE91581025
A43 QA Davy Cone Scrubber	Blast Furnaces	SE91581025
A44 QV Conditioning Tower	Blast Furnaces	SE91581024
A45 QV Davy Cone Scrubber	Blast Furnaces	SE91581025
A46 20m High Casthouse Ventilation Bag Filter Stack	Blast Furnaces	SE91561039
A47 22m High Casthouse Ventilation Bag Filter Stack	Blast Furnaces	SE91511037
A48 QA/QV Slag Granulator	Blast Furnaces	SE91601025

Table S3.0 Emission points		
Emission point description	**Source**	**Location**
A48b QB Slag Granulator	Blast Furnaces	SE91521042
Basic Oxygen Steelmaking (BOS)		
A49 Raw Materials Handling Dust Plant Number 1	Steelmaking	SE92350874
A50 Raw Materials Handling Dust Plant Number 2	Steelmaking	SE92440881
A51 Hot Metal Pour (East) (Note a)	Steelmaking	SE93060862
Release point A52 has been decommissioned.	Steelmaking	
Release point A53 has been decommissioned.	Steelmaking	
A54 Primary Gas Cleaning (OG) Number 1	Steelmaking	SE92990861
A55 Primary Gas Cleaning (OG) Number 2	Steelmaking	SE92990861
A56 Primary Gas Cleaning (OG) Number 3	Steelmaking	SE92990861
A57/1-4 Secondary Ventilation (ESP Zone A) (4 Vents)	Steelmaking	SE93050865
A57/5-8 Secondary Ventilation (ESP Zone B) (4 Vents)	Steelmaking	SE93050865
A58 Secondary Ventilation (Wet)	Steelmaking	SE92920864
A59 Ladle Arc Furnaces (LAF1 & LAF2)	Steelmaking	SE93190877
A60 Vacuum Degasser (VDG1)	Steelmaking	SE92910881
A61 Desulphurisation and Hot Metal Pour	Steelmaking	SE92860851
No release point has been allocated reference A62		
A78 Steel/Slag Ladle Decant Fume Extraction	Steelmaking	SE93300870
A81 Ladle Arc Furnace (LAF3)	Steelmaking	SE92790874
A82 Vacuum Degasser (VDG2)	Steelmaking	SE92960879
Concast		
A63 Slab Spray Extraction Chamber	Concast	SE93020880
A64 Slab Spray Extraction Chamber	Concast	SE93050879
A65 Bloom Spray Extraction Chamber	Concast	SE92950879
A66 Bloom Spray Extraction Chamber	Concast	SE92950879
A67 Billet Spray Extraction Chamber	Concast	SE92960880
A68 Billet Spray Extraction Chamber	Concast	SE92990880
A69 Slab Scarfer	Concast	SE92890901
A70 Leaded Steel Plant	Concast	SE92810891
A79 Bloom Spray Extraction Chamber (4^{th} Caster)	Concast	SE92730881
A80 Bloom Spray Extraction Chamber (4^{th} Caster)	Concast	SE92750880
A83 Leaded Steel (5^{th} Caster)	Concast	SE93270878
A84 Slab Scarfer	Concast	SE92880902
Steel Mills		
A71 – 76 No longer in use	Rolling Mill	
A77 No. 5 Grinder	Rolling Mill	SE92500929
A101 – 125 No longer in use	Bloom and Billet Mill	
No release point has been allocated reference A126		
A127 No longer in use	Medium Section Mill	

Table S3.0 Emission points		
Emission point description	**Source**	**Location**
No release point has been allocated reference A128		
A129 Reheater Furnace J	Heavy Plate Mill	SE91351121
A130 Reheater Furnace K	Heavy Plate Mill	SE91351121
A131 Normaliser N3	Heavy Plate Mill	SE91471117
A132 Tunnel Furnace	Rod Mill	SE91101056
No release point has been allocated reference A133 – 136		
A137 Walking Beam Reheat Furnace 3	Medium Section Mill	SE92830933
A138 Reheat Walking Beam Furnace	Rod Mill	SE91051066
No release point has been allocated reference A139 – 200		
Power Station and Turbo Blower Plant		
A201 Central Power Station Stack (Boilers 1, 2 & 3 combined) – LCP341	Power Plant Boilers	SE91361092
A201/1 Central Power Station Boiler 1 Outlet Duct	Power Plant Boilers	
A201/2 Central Power Station Boiler 2 Outlet Duct	Power Plant Boilers	
A201/3 Central Power Station Boiler 3 Outlet Duct	Power Plant Boilers	
A202 Turbo Blower House Stack (Boilers 1, 2, 3 & 4 combined) – LCP342	Power Plant Boilers	SE91581016
A202/1 Turbo Blower House Boiler 1 Outlet Duct	Power Plant Boilers	
A202/2 Turbo Blower House Boiler 2 Outlet Duct	Power Plant Boilers	
A202/3 Turbo Blower House Boiler 3 Outlet Duct	Power Plant Boilers	
A202/4 Turbo Blower House Boiler 4 Outlet Duct	Power Plant Boilers	
A203 Turbo Blower House (Boilers 5 & 6 combined) LCP342	Power Plant Boilers	SE91581008
A203/5 Turbo Blower House Boiler 5 Outlet Duct	Power Plant Boilers	
A203/6 Turbo Blower House Boiler 6 Outlet Duct	Power Plant Boilers	
No release point has been allocated reference A204 – 300		
Coke Oven Batteries Dawes Lane (DLCO) & Appleby (ACO)		
A301 Dawes Lane Coke Oven 1 – 3 Stack	Dawes Lane Coke Oven	SE92061191
A302 Appleby Coke Oven 1 & 2 Stack	Appleby Coke Oven	SE91591087
A303 Appleby Coke Oven 3 & 4 Stack	Appleby Coke Oven	SE91721108
A304 Dawes Lane Coke Oven 1 – 3 Bleeders (6)	Dawes Lane Coke Oven	SE92081180
A305 Appleby Coke Oven 1 – 4 Bleeders (8)	Appleby Coke Oven	SE91641095
A306 Dawes Lane Coke Oven gas Flare Stack	Dawes Lane Coke Oven	SE91891172
A307 Appleby Coke Oven gas Flare Stack	Appleby Coke Oven	SE91771082
A315 Dawes Lane coke Quenching Tower	Dawes Lane Coke Oven	SE91971172
A324 Appleby coke Quenching Tower for Battery 1-2	Appleby Coke Oven	SE92201167
A325 Appleby coke Quenching Tower for Battery 3-4	Appleby Coke Oven	SE92221162
Dawes Lane By-Products		
A308 Ammonia Incinerator Stack	Dawes Lane Coke Oven	SE92251160
A309 Ammonia Plant	Dawes Lane Coke Oven	SE92201162

Table S3.0 Emission points		
Emission point description	**Source**	**Location**
A310 Tanker Loading Operations	Dawes Lane Coke Oven	SE92201162
A311 Benzole Plant	Dawes Lane Coke Oven	SE91971172
A312 Tar Liquor System	Dawes Lane Coke Oven	SE92201167
A313 Storage Tank Farm	Dawes Lane Coke Oven	SE92221162
A314 Gas Holder and associated Plant	Dawes Lane Coke Oven	SE91821171
Appleby By-Products		
A316 Ammonium Sulphate Drier Stack	Appleby Coke Oven	SE91641087
A317 Saturators	Appleby Coke Oven	SE91641087
A318 Exhausters	Appleby Coke Oven	SE91681091
A319 Primary Coolers	Appleby Coke Oven	SE91711095
A320 Decant System	Appleby Coke Oven	SE91711095
A321 Benzole Plant	Appleby Coke Oven	SE91711095
A322 Storage Tank Farm	Appleby Coke Oven	SE91721088
A323 Gas Holder and associated Plant	Appleby Coke Oven	SE91691080

Schedule 3(a) – Emissions and Monitoring

Emission Limits apply until 8th March 2016

Table S3.1 Point source emissions to air – emission limits and monitoring requirements Iron Ore Sintering and Associated Processes						
Emission point ref	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1	Sinter Plant Main Stack	Dioxins and Furans I – TEQ	2 ng/m^3	Average of all extractive samples carried our during a single calendar year	6 monthly	BS EN1948: Parts 1,2 and 3
		Sulphur dioxide (SO_2)	500 mg/m^3	Daily mean	Continuous measurement	BS EN 14181
		Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500 mg/m^3	Daily mean	Continuous measurement	BS EN 14181
		Particulate matter	115 mg/m^3 Note1	Daily mean	Continuous measurement	BS EN 14181
		Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	No limit set	Periodic Sample	6 monthly unless otherwise agreed in writing by the Agency	BS ISO 11338 -1&2
A2	Sinter Plant Dedust Note (1)	Particulate matter	75 mg/m^3	Daily mean	Continuous measurement	BS EN 14181
A3	Coal preparation plant main stack (1)	Particulate matter	50 mg/m^3	Spot	Annual	BS EN 13284-1
A9	Coal preparation plant main stack (2)	Particulate matter	50 mg/m^3	Spot	Annual	BS EN 13284-1

Note[1] No limit applies for the hourly periods that coincide with a 30 minute period before a shutdown or a 120 minute period after a start-up. Interruptions to start ups shall be included in the 120 minute period. Shutdown periods are also excluded

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency** **Note (1)**	**Monitoring standard or method**
Dawes Lane Coke Ovens	Coke Oven Battery DLCO 1-3	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		PEF(Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		MEF (Mass Emission Factor)	0.35 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			1.0 (max)	Weekly mean		
Dawes Lane Coke Ovens	Coke Oven Battery DLCO 1	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
	Coke Oven Battery DLCO 2	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency** Note (1)	**Monitoring standard or method**
	Coke Oven Battery DLCO 3	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
Appleby Coke Ovens	Coke Oven Battery ACO 1-2	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Three days / week, at least one day between monitoring days	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		PEF(Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		MEF (Mass Emission Factor)	0.35 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			1.0 (max)	Weekly mean		
Appleby Coke Ovens	Coke Oven Battery ACO 3-4	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Three days / week, at least one day between monitoring days	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency** **Note (1)**	**Monitoring standard or method**
		PEF (Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		MEF (Mass Emission Factor)	0.35 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			1.0 (max)	Weekly mean		
	Coke oven Battery ACO 1	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Three days / week, at least one day between monitoring days	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
	Coke oven Battery ACO 2	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Three days / week, at least one day between monitoring days	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
	Coke oven Battery ACO 3	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Three days / week, at least one day between monitoring days	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency** **Note (1)**	**Monitoring standard or method**
	Coke oven Battery ACO 4	DLCF (Door Leakage Control Factor)	98.0% (min)	Monthly mean	Three days / week, at least one day between monitoring days	BCRA; Agreed Uniform Technique of assessment of smoke leakage
		TLCF (Top Leakage Control Factor)	99.0% (min)	Monthly mean	Weekly	BCRA; Agreed Uniform Technique of assessment of smoke leakage
A301	DLCO Battery 1-3 Stack	Visible smoke as Obscuration	50% ELV does not apply for valid monitoring days during planned shutdown >24 hours of the Benzole scrubbers and/or Benzole distillation plant(s)	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	Ringlemann Shade numbers for visible smoke emissions Note (2)
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2)	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	
		Oxides of Nitrogen (NO and NO_2 expressed as NO_2) with a 3% oxygen (dry) correction (Schedule 6)	2200 mg/m	Periodic	Six monthly (minimum of 2 months between monitoring)	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency** **Note (1)**	**Monitoring standard or method**
A302	ACO Battery 1&2 Stack	Obscuration	50% ELV does not apply for valid monitoring days during planned shutdown >24 hours of the Benzole scrubbers and/or Benzole distillation plant(s)	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	Ringlemann Shade numbers for visible smoke emissions Note (2)
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2)	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	
		Oxides of Nitrogen (NO and NO_2 expressed as NO_2) with a 3% oxygen (dry) correction (Schedule 6)	450 mg/m^3 Average concentration based on incorporating three oven firing reversals.	Periodic	Six monthly (minimum of 2 months between monitoring)	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A303	ACO Battery 3&4 Stack	Obscuration	50% ELV does not apply for valid monitoring days during planned shutdown >24 hours of the Benzole scrubbers and/or Benzole distillation plant(s)	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	Ringlemann Shade numbers for visible smoke emissions Note (2)

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency** **Note (1)**	**Monitoring standard or method**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2)	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal			
		Oxides of Nitrogen (NO and NO_2 expressed as NO_2) with a 3% oxygen (dry) correction (Schedule 6)	450 mg/m^3 Average concentration based on incorporating three oven firing reversals.	Periodic	Six monthly (minimum of 2 months between monitoring)	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A304 to A307	DLCO 1-3 Bleeders (6), ACO 1-4 Bleeders (8), DLCO Flare Stack, ACO Flare Stack	Coke Oven Gas vented or flared	No limit set			
A308	Ammonia incinerator stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	140 mg/m^3	Periodic	Quarterly	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency** **Note (1)**	**Monitoring standard or method**
		Sulphur oxides (SOx) expressed as the sum of sulphur dioxide (SO_2)	800 mg/m^3 ELV does not apply when the Ammonia plant De-acidifier has planned shutdown.	Periodic	Quarterly avoiding Ammonia plant De-acidifier planned shutdown	BS EN 14791
A316	Ammonium Sulphate Drier Stack	Particulate matter	No limit set	Instantaneous	Continuous	Internal standard based on BS EN 13284
A315	Dawes Lane coke Quenching Tower	Particulate matter	No limit set			
A324	Appleby coke Quenching Tower for Battery 1-2	Particulate matter	No limit set			
A325	Appleby coke Quenching Tower for Battery 3-4	Particulate matter	No limit set			

Notes
(1) All operating ovens shall be monitored at least once in every quarter for DLCFs, TLCFs, MEFs and PEFs unless carbonising times prevent daylight assessment. If the results indicate exceedance of a limit then efforts shall be made to monitor that same oven at the next opportunity and thereafter until compliance is attained. The assessment of both PEF and MEF shall be based on a minimum of 10 oven observations for DLCO and 20 oven observations for ACO, at random across the batteries on a representative day, each week.
(2) A calibration check of the continuous obscuration monitors shall be made at least once a year and records maintained, unless otherwise agreed in writing by the Agency. Unless these instrument specific calibration checks show otherwise, 20% obscuration is deemed to be equivalent to Ringlemann shade 1, 40% obscuration is deemed to be equivalent to Ringlemann shade 2 and 60% obscuration is deemed to be equivalent to Ringlemann shade 3.

Table S3.3 Point source emissions to air – emission limits and monitoring requirements for the Blast Furnaces						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A18	QA Hot Blast Stoves 3 & 4	sulphur dioxide (SO_2)	250 mg/m^3	Periodic	Annually	BS EN 14791
		Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	25 mg/m^3	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Particulate matter	10 mg/m^3	Periodic	Annually	BS EN 13284-1
A19	QV Hot Blast Stoves 1 & 2	sulphur dioxide (SO_2)	250 mg/m^3	Periodic	Annually	BS EN 14791
		Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	25 mg/m^3	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Particulate matter	10 mg/m^3	Periodic	Annually	BS EN 13284-1
A46	Cast House Ventilation – bag filter stack	Particulate matter	20 mg/m^3	Daily mean	Continuous measurement	BS EN 14181
A47	Cast House Ventilation – bag filter stack	Particulate matter	20 mg/m^3	Daily mean	Continuous measurement	BS EN 14181
A48	QA/QV slag granulator	Particulate matter	150 mg/m^3	Periodic	Annually	BS EN 13284-1
A48b	QB Slag granulator	No parameter set	No limit set	-	-	-

Table S3.4 Point source emissions to air – emission limits and monitoring requirements for Basic oxygen steelmaking and casting						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A49	Raw materials handling dust plant 1	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A50	Raw materials handling dust plant 2	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A51	Hot metal pour (east)*	Particulate matter	115 mg/m^3	Periodic	Annually	BS EN 13284-1
A54	BOS primary gas cleaning (OG) Number 1	Particulate matter	115 mg/m^3	No monitoring required	No monitoring required	No monitoring required
A55	BOS primary gas cleaning (OG) Number 2	Particulate matter	115 mg/m^3	No monitoring required	No monitoring required	No monitoring required
A56	BOS primary gas cleaning (OG) Number 3	Particulate matter	115 mg/m^3	No monitoring required	No monitoring required	No monitoring required
A57/1-4	Secondary fume extraction (ESP Zone A) (4 vents)	Particulate matter	20 mg/m^3	Monthly Average	Continuous measurement	BS EN 14181
A57/5-8	Secondary fume extraction (ESP Zone B) (4 vents)	Particulate matter	20 mg/m^3	Monthly Average	Continuous measurement	BS EN 14181
A58	Secondary ventilation (wet)	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A59	Ladle arc furnaces LAF 1 & 2	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A61	Hot metal pour / desulphurisation	Particulate matter	20 mg/m^3	Periodic	Annually	BS EN 13284-1
A78	Steel/slag ladle decant	Particulate matter	5 mg/m^3	Monthly Average	Continuous measurement	BS EN 14181
A81	Ladle Arc Furnace, LAF3	Particulate matter	25 mg/m^3	Periodic	Annually	BS EN 13284-1
Concast						
A70	Leaded steel plant	Particulate matter	5 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID

Table S3.4 Point source emissions to air – emission limits and monitoring requirements for Basic oxygen steelmaking and casting						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Lead	2 mg/m^3	Periodic	Annually	BS EN 14385
A83	Leaded Steel (5th caster)	Particulate matter	5 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
		Lead	2 mg/m^3	Periodic	Annually	BS EN 14385
A84	Slab scarfer	Particulate matter	20 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
*To be used as an emergency backup or by prior agreement with the Environment Agency (EA), emergency use to be notified to the EA as soon as practicable.						

Table S3.5 Point source emissions to air– emission limits and monitoring requirements for the Rolling Mills						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A77	SRM No 5 Grinder	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
A129	SPM Reheater Furnace J	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A130	SPM Reheater Furnace K	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A131	SPM Normaliser N3	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	650 mg/m^3)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A132	SRM Tunnel Furnace	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	650 mg/m^3)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A137	SRSM Walking Beam Reheat Furnace 3	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Table S3.5 Point source emissions to air– emission limits and monitoring requirements for the Rolling Mills						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A138	SRM Reheat Walking Beam Furnace	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
Notes (a) Applies to release from furnaces with air preheat temperatures < 400^{O}C (b) Applies to release from furnaces with air preheat temperatures 400 - 600^{O}C (c) Applies to release from furnaces with air preheat temperatures 600 -1000^{O}C (d) Applies to release from furnaces with air preheat temperatures >1000^{O}C						

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Sulphur dioxide (SO_2)	500 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			700 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			1000 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			420 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Dust	40 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			56 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			80 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Sulphur dioxide(SO_2)	500 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			605 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			1000 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			363 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Dust	40 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			56 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			80 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP343 A203/5-6	Turbo Blower House Boiler 5 - 6 Outlet Ducts 5-6	Sulphur dioxide (SO_2)	500 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			605 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			1000 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP343 A203/5-6	Turbo Blower House Boiler 5 - 6 Outlet Ducts 5-6	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			363 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP343 A203/5-6	Turbo Blower House Boilers 5-6 6 Outlet Ducts 5-6	Dust	40 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			56 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			80 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.7 Energy Generation LCP Annual limits (Excluding start up and shut down except where otherwise stated)				
Substance	**Medium**	**Limit (including unit)**		**Emission Points**
Dust, Sulphur dioxide and Oxides of nitrogen	Air	Assessment year	LCP NERP Limit	A201 (Central Power Station, LCP341) A202 (Turbo Blower House Boilers 1 – 4, LCP342) & A203 (Turbo Blower House Boilers 5 & 6, LCP343).
		01/01/08-31/12/08 and subsequent years until 31/12/15	Emission allowance figure shown in the NERP Register as at 30 April the following year	
Dust, Sulphur dioxide and Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	A201 (Central Power Station, LCP341) A202 (Turbo Blower House Boilers 1 – 4, LCP342) & A203 (Turbo Blower House Boilers 5 & 6, LCP343).
		01/01/2016 and subsequent years until 30/06/2020	Emission allowance figure shown in the TNP Register as at 30 April the following year	

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W1 on site plan in Drawing No. 5530/32.01/033; Emission to the Brumby Beck	Blast Furnace, BOS, Caparo Merchant Bar, Rod Mill, Turbo Blower House and Central Power Station process water with local site drainage to and from the Seraphim Lagoon.	Flow	18800 m^3/d	24-hour total	Continuous	MCERTS Standards scheme: 'Minimum requirements for the self-monitoring of effluent flow'
		Total Organic Carbon TOC)	20.0 mg/l (BOD_5 analysis to be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Weekly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		pH	5.0 – 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Suspended solids	30.0 mg/l	Random sample	Monthly	BS EN 872
		Ammoniacal Nitrogen (expressed as N)	4.0 mg/l	Random Sample	Monthly	BS EN ISO 11732
		Mercury and its compounds, expressed as mercury (Total Hg)	0.0006 mg/l	Random sample or qualified random sample	Quarterly	BS EN ISO 17852
		Cadmium and its compounds, expressed as cadmium (Total Cd)	0.002 mg/l	Random sample or qualified random sample	Quarterly	BS EN ISO 5961
		Copper	0.025 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Total Chromium	0.05 mg/l	Random sample or qualified random sample	Monthly	BS EN 1233
		Nickel	0.1 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Lead	0.08 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	0.7 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2
W2 on site plan in Drawing No. 5530/32.01/033; Emission to the Bottesford Beck	Local site drainage from north area Scunthorpe Rail Section Mill and ex Bloom and Billet Mill (BBM);	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis to be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended solids	30.0 mg/l	Random Sample	Quarterly	BS EN 872
		pH	>5.0	Random Sample	Monthly	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W3 on site plan in Drawing No. 5530/32.01/033; Emission to the Bottesford Beck	Scunthorpe Rail Section Mill (SRSM) process water. Local site drainage from SRSM middle + south ends, south end of ex BBM and ore blending area.	Suspended solids	30.0 mg/l	Random Sample	Quarterly	BS EN 872
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2
W4 on site plan in Drawing No. 5530/32.01/033 Emission to Bottesford Beck	Concast process water and local site drainage with Concast water softener unit and regeneration waste water	Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3
		Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
W5 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Emergency Discharge only. BOS and Concast plant site drainage Recycled surface water to BOS plant. Emergency discharge only	Suspended solids	50.0 mg/l	Random Sample	During any discharge	BS EN 872
		Total Hydrocarbons	5.0 mg/l	Random Sample	During any discharge	BS EN ISO 9377-2
W6 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Concast 4 process water and site drainage. Site drainage from the soaking pits, material off-loading	Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
	area and the Briquetting plant area	Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Total Hydrocarbons	<5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3
W7 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Site drainage from the area of the former Redbourn works and north end Scunthorpe Plate Mill (SPM) to and from 'Goosehole' (ground water lagoon)	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biochemical Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872
		pH	5.0 – 9.0	Continuous	Continuous emission monitor	BS ISO 10523

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Copper	0.025 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Chromium	0.08 mg/l	Random sample	Monthly	BS EN 1233
		Nickel	0.1 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Lead	0.08 mg/l	Random sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	0.7 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Random sample	Monthly	BS 6068-2.18
		Phenols as Phenol Index (reported as mg/l phenol)	3.0 mg/l	Random sample	Monthly	BS EN ISO 14402
W8 on site plan in Drawing No. 5530/32.01/033 Emission to Bottesford Beck	Site drainage from Dawes Lane Coke Oven Stores area	Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W9 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Site drainage from part of the Rail Service Centre, Heavy Section Mill, the Structural Workshops and local Iron Foundry facility areas	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872
		pH	5.0 - 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Random sample	Monthly	BS 6068-2.18
		Phenols as Phenol Index (reported as mg/l phenol)	3.0 mg/l	Random sample	Monthly	BS EN ISO 14402
W10 on site plan in Drawing No. BL3838 0823 Emission to River Trent	Biological Effluent Treatment Plant (BETP) treated effluent from Coke making and contaminated ground water.	Flow	5000 m^3/d	24-hour total	Continuous	MCERTS Standards scheme: 'Minimum requirements for the self-monitoring of effluent flow'
		Biological Oxygen Demand for 5 days (BOD_5)	100.0 mg/l	Random sample	Weekly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended Solids	150.0 mg/l	Random sample	Weekly	BS EN 872

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		pH	5.0 - 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Ammoniacal Nitrogen (as N)	200.0 mg/l	Continuous	Continuous emission monitor	BS EN ISO 11732
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random sample	Weekly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.3 mg/l	Random sample	Weekly	BS 6068-2.18
		Phenols as Phenol Index (reported as mg/l phenol)	5.0 mg/l	Random sample	Weekly	BS EN ISO 14402
		Thiocyanate (as CNS)	10.0 mg/l	Random sample	Weekly	BS EN ISO 10304-3

Schedule 3 (b) – Emission Limits and monitoring requirements

Emissions Limits from 8th of March 2016

Table S3.1 Point source emissions to air – emission limits and monitoring requirements Iron Ore Sintering and Associated Processes						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1	Sinter Plant Main Stack	Dioxins as polychlorinated dibenzodioxins/furans (PCDD/F) Dioxins I – TEQ	0.4 ng I-TEQ/Nm^3	periodic over minimum 6 hours, maximum 8 hour period	Quarterly Note 1	BS EN1948: Parts 1,2 and 3
		Sulphur Dioxide (SO_2)	500 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Nitrogen oxides NOx expressed as the sum of nitrogen oxide (NO) and nitrogen dioxide (NO_2)	500 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Particulate matter Note 2	40 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Mercury	0.05 mg/Nm^3	Periodic Sample	Annual	BS EN 13211
		PAH (poly-cyclic aromatic hydrocarbons) in respect to emissions into air as specified in Schedule 6.	No limit set	Periodic Sample	6 monthly unless otherwise agreed in writing by the Agency	BS ISO 11338-1,2.
A2	Sinter Plant Dedust	Particulate matter	30 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A3	Coal preparation plant main stack (1)	Particulate matter	20 mg/Nm^3	Periodic Sample	Annual	BS EN 13284-1

Table S3.1 Point source emissions to air – emission limits and monitoring requirements Iron Ore Sintering and Associated Processes						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A9	Coal preparation plant main stack (2)	Particulate matter	20 mg/Nm^3	Periodic Sample	Annual	BS EN 13284-1
Notes 1 - Quarterly in the first year of operation on variation issue and thereafter 6 monthly. 2 - No limit applies for the hourly periods that coincide with a 30 minute period before a shutdown or a 120 minute period after a start up. Interruptions to start ups shall be included in the 120 minute period. Shutdown periods are also excluded.						

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Dawes Lane Coke Ovens	Coke Oven Battery DLCO 1-3	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		PEF (Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		Coke Pushing **Note 6**	10 mg/Nm^3	Periodic samples for at least half an hour	Six monthly (minimum of 2 months between monitoring)	BS EN 13284-1
		MEF (Mass Emission Factor)	Note 1	Note 1	Note 1	Note 1

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
	Coke Oven Battery DLCO 1	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke Oven Battery DLCO 2	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke Oven Battery DLCO 3	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
Appleby Coke Ovens	Coke Oven Battery ACO 1-2	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		PEF (Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		Coke Pushing **Note 6**	10 mg/Nm^3	Periodic samples for at least half an hour	Six monthly (minimum of 2 months between monitoring)	BS EN 13284-1

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		MEF (Mass Emission Factor)	Note 1	Note 1	Note 1	Note 1
	Coke Oven Battery ACO 3-4	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		PEF(Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		Coke Pushing **Note 6**	10 mg/Nm^3	Periodic samples for at least half an hour	Six monthly (minimum of 2 months between monitoring)	BS EN 13284-1
		MEF (Mass Emission Factor)	Note 1	Note 1	Note 1	Note 1
	Coke oven Battery ACO 1	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke oven Battery ACO 2	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
	Coke oven Battery ACO 3	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke oven Battery ACO 4	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
A301	DLCO 1-3 Battery Stack	Visible smoke as Obscuration	50% **Note 3** ELV does not apply for valid monitoring days during planned shutdown of the Benzole scrubbers and/or Benzole distillation plant(s) including start-up and shutdown.	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	BS2742:2009 and **Note 3**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) until the derogation for BATc 48 (Desulphurisation of coke oven gas) expires	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	-

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) with a 5% oxygen (dry) correction (Schedule 6) **Note 5**	500 mg/Nm^3 **Note 4**	Daily mean	Continuous measurement	Subject to improvement condition IC2
		Nitrogen oxides NOx expressed as nitrogen dioxide (NO_2) with a 3% oxygen (dry) correction (Schedule 6)	2200 mg/m^3 Average concentration based on incorporating three oven firing reversals.	Periodic	Six monthly (minimum of 2 months between monitoring)	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Particulate matter until the derogation for BATc 49 (Under-firing emissions) expires	No limit set	Periodic	Annual	BS EN 13284-1
		Particulate matter **Note 5**	20mg/Nm^3 with a 5% oxygen (dry) correction (Schedule 6)	Daily mean	Continuous Measurement	BS EN 13284-2 calibration of particulate CEMs, used in the ongoing quality assurance following the principles of EN 14181 (i.e. QAL2/AST and QAL3). Subject to improvement condition IC3

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A302	ACO 1&2 Battery Stack	Obscuration	50% **Note 3** ELV does not apply for valid monitoring days during planned shutdown of the Benzole scrubbers and/or Benzole distillation plant(s) including start-up and shutdown.	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	BS2742:1969 and **Note 3**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) until the derogation for BATc 48 (desulphurisation of coke oven gas) expires	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	-
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) with a 5% oxygen (dry) correction (Schedule 6) **Note 4**	500 mg/Nm^3	Daily mean	Continuous measurement	Subject to improvement condition IC2
		Nitrogen oxides NOx expressed as nitrogen dioxide (NO_2) with a 5% oxygen (dry) correction (Schedule 6)	650 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Particulate matter until the derogation for BATc 49 (Under-firing emissions) expires	No limit set	Periodic	Annually	BS EN 13284-1
		Particulate matter **Note 5**	20mg/Nm^3 with a 5% oxygen (dry) correction (Schedule 6)	Daily mean	Continuous Measurement	BS EN 13284-2 calibration of particulate CEMs, used in the ongoing quality assurance following the principles of EN 14181 (i.e. QAL2/AST and QAL3). Subject to improvement condition IC 8
A303	ACO Battery 3&4 Stack	Obscuration	50% **Note 3** ELV does not apply for valid monitoring days during planned shutdown of the Benzole scrubbers and/or Benzole distillation plant(s) including start-up and shutdown.	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	BS2742:1969 and **Note 3**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) until the derogation for BATc 48 (desulphurisation of coke oven gas) expires	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	-

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) with a 5% oxygen (dry) correction (Schedule 6) **Note 4**	500 mg/Nm^3	Daily mean	Continuous measurement	Subject to improvement condition IC2
		Nitrogen oxides NOx expressed as nitrogen dioxide (NO_2) with a 5% oxygen (dry) correction (Schedule 6)	650 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Particulate matter until the derogation for BATc 49 (Under-firing emissions) expires	No limit set	Periodic	Annually	BS EN 13284-1
		Particulate matter **Note 5**	20 mg/Nm^3 with a 5% oxygen (dry) correction (Schedule 6)	Daily mean	Continuous Measurement	BS EN 13284-2 calibration of particulate CEMs, used in the ongoing quality assurance following the principles of EN 14181 (i.e. QAL2/AST and QAL3). Subject to improvement condition IC3
A304-A307	DLCO 1-3 Bleeders (6), ACO 1-4 Bleeders (8), DLCO Flare Stack, ACO Flare Stack	Coke Oven Gas vented or flared	No limit set	-	-	-

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A308	Ammonia incinerator stack	Nitrogen oxides NOx expressed as the sum of nitrogen oxide (NO) and nitrogen dioxide (NO_2)	140 mg/m^3	Periodic	Quarterly	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Sulphur oxides (SOx) expressed as the sum of sulphur dioxide (SO_2)	800 mg/m^3 ELV does not apply when the Ammonia plant De-acidifier has planned shutdown.	Periodic	Quarterly	BS EN 14791
A316	Ammonium Sulphate Drier Stack	Particulate matter	No limit set	Instantaneous	Continuous	Internal standard based on BS EN 13284
A315	Dawes Lane Coke Quenching Tower	Particulate matter	25 g/t coke Note 7	Average over the sampling period	Note 7	Mohrhauer methods (non-iso-kinetic former VDI 2303 or iso-kinetic VDI 2066)
A324	Appleby Coke Quenching Tower for Battery 1-2	Particulate matter	25 g/t coke Note 7	Average over the sampling period	Note 7	Mohrhauer methods (non-iso-kinetic former VDI 2303 or iso-kinetic VDI 2066)
A325	Appleby Coke Quenching Tower for Battery 3-4	Particulate matter	25 g/t coke Note 7	Average over the sampling period	Note 7	Mohrhauer methods (non-iso-kinetic former VDI 2303 or iso-kinetic VDI 2066)

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**

Notes

1 As agreed in response to improvement condition IC4.

2 All operating ovens shall be monitored at least once in every quarter for DLCFs, TLCFs, MEFs and PEFs unless carbonising times prevent daylight assessment. If the results indicate exceedence of a limit then efforts shall be made to monitor that same oven at the next opportunity and thereafter until compliance is attained. The assessment of both PEF and MEF shall be based on a minimum of 10 oven observations for DLCO and 20 oven observations for ACO, at random across the batteries on a representative day, each week.

3 A calibration check of the continuous obscuration monitors shall be made at least once a year, unless otherwise agreed in writing by the Agency. Unless these instrument specific calibration checks show otherwise, 20% obscuration is deemed to be equivalent to Ringlemann shade 1, 40% obscuration is deemed to be equivalent to Ringlemann shade 2 and 60% obscuration is deemed to be equivalent to Ringlemann shade 3.

4 For sulphur oxides, only applies when the derogation for BATc 48 (Desulphurisation of CO Gas) expires. Existing limit as specified and associate monitoring requirements apply in the interim.

5 For particulate matter, only applies when the derogation for BATc 49 (Under-firing emissions) expires. Existing limits as specified and associate monitoring requirements apply in the interim.

6 For particulate emissions, only applies when the derogation for BATc 50 (Coke pushing) expires. Existing limits as specified and associate monitoring requirements apply in the interim.

7 Only applies when the derogation for BATc 51 (Coke Quenching) expires. Monitoring frequency and monitoring standard to be agreed in writing with the Environment Agency prior to commissioning.

Table S3.3 Point source emissions to air – emission limits and monitoring requirements for the Blast Furnaces						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A18	QA Hot Blast Stoves 3 & 4	Sulphur oxides (SO_x) expressed as sulphur dioxide (SO_2)	200 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	100 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Particulate matter	10 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181

Table S3.3 Point source emissions to air – emission limits and monitoring requirements for the Blast Furnaces						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A19	QV Hot Blast Stoves 1 & 2	Sulphur oxides (SO_x) expressed as sulphur dioxide (SO_2)	200 mg/Nm3	Daily mean	Continuous measurement	BS EN 14181
		Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	100 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Particulate matter	10 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A46	Cast House Ventilation – bag filter stack	Particulate matter	15 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A47	Cast House Ventilation – bag filter stack	Particulate matter	15 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A48	QA/QV slag granulator	Particulate matter	150 mg/m^3	Periodic	Annually	BS EN 13284-1
A48b	QB Slag granulator	No parameter set-	No limit set	-	-	-

Table S3.4 Point source emissions to air – emission limits and monitoring requirements for Basic oxygen steelmaking and casting						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A49	Raw materials handling dust plant 1	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A50	Raw materials handling dust plant 2	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A51	Hot metal pour (east)*	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A54	BOS primary gas cleaning (OG) Number 1	Particulate matter	50 mg/Nm^3			
A55	BOS primary gas cleaning (OG) Number 2	Particulate matter	50 mg/Nm^3			
A56	BOS primary gas cleaning (OG) Number 3	Particulate matter	50 mg/Nm^3			
A57/1-4	Secondary fume extraction (ESP Zone A) (4 vents)	Particulate matter	20 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A57/5-8	Secondary fume extraction (ESP Zone B) (4 vents)	Particulate matter	20 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A58	Secondary ventilation (wet)	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A59	Ladle arc furnaces LAF 1 & 2	Particulate matter	10 mg/m^3	Periodic	Annually	BS EN 13284-1
A61	Hot metal pour/desulphurisation	Particulate matter	15 mg/m^3	Periodic	Annually	BS EN 13284-1
A78	Steel/slag ladle decant	Particulate matter	10 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A81	Ladle Arc Furnace, LAF3	Particulate matter	10 mg/m^3	Periodic	Annually	BS EN 13284-1
Concast						
A70	Leaded steel plant	Particulate matter	5 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
		Lead	2 mg/m^3	Periodic	Annually	BS EN 14385
A83	Leaded Steel (5th caster)	Particulate matter	5 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
		Lead	2 mg/m^3	Periodic	Annually	BS EN 14385
A84	Slab scarfer	Particulate matter	20 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
*To be used as an emergency backup or by prior agreement with the Environment Agency (EA). Emergency use to be notified to the EA as soon as practicable.						

Table S3.5 Point source emissions to air – emission limits and monitoring requirements for Rolling Mills						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A77	No 5 Grinder	Particulate	50 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
A129	Reheater Furnace J	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A130	Reheater Furnace K	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A131	Normaliser N3	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A132	Tunnel Furnace	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A137	Walking Beam Reheat Furnace 3	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A138	Reheat Walking Beam Furnace	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Notes

(a) Applies to release from furnaces with air preheat temperatures < $400^{O}C$

(b) Applies to release from furnaces with air preheat temperatures 400 - $600^{O}C$

(c) Applies to release from furnaces with air preheat temperatures 600 -$1000^{O}C$

(d) Applies to release from furnaces with air preheat temperatures >$1000^{O}C$

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Sulphur dioxide (SO_2)	500 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			700 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			1000 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			420 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Dust	40 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			56 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			80 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Sulphur dioxide(SO_2)	500 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			605 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			1000 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			363 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Dust	40 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			56 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			80 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP343 A203/5-6	Turbo Blower House Boiler 5 - 6 Outlet Ducts 5-6	Sulphur dioxide (SO_2)	500 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			605 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			1000 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP343 A203/5-6	Turbo Blower House Boiler 5 - 6 Outlet Ducts 5-6	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			363 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP343 A203/5-6	Turbo Blower House Boilers 5-6 6 Outlet Ducts 5-6	Dust	40 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			56 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			80 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.7 Energy Generation LCP Annual limits (Excluding start up and shut down except where otherwise stated)				
Substance	**Medium**	**Limit (including unit)**		**Emission Points**
Dust, Sulphur dioxide and Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	A201 (Central Power Station, LCP341) A202 (Turbo Blower House Boilers 1 – 4, LCP342) A203 (Turbo Blower House Boilers 5 & 6, LCP343).
		01/01/16 and subsequent years until 31/12/19 01/06/2020-30/06/2020	Emission allowance figure shown in the TNP Register as at 30 April the following year	

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W1 on site plan in Drawing No. 5530/32.01/033; Emission to the Brumby Beck	Blast Furnace and BOS, Caparo Merchant Bar, Rod Mill, Turbo Blower House and Central Power Station process water with local site drainage to and from the Seraphim Lagoon.	Flow	18800 m^3/d	24-hour total	Continuous	MCERTS Standards scheme: 'Minimum requirements for the self-monitoring of effluent flow'
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis to be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Weekly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		pH	5.0 – 9.0	Continuous	Continuous emission monitor	BS ISO 10523

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Suspended solids	30.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN 872
		Ammoniacal Nitrogen (expressed as N)	3.5 mg/	Random Sample	Monthly	BS EN ISO 11732
		Mercury and its compounds, expressed as mercury (Total Hg)	0.0006 mg/l	Random sample or qualified random sample	Quarterly	BS EN ISO 17852
		Cadmium and its compounds, expressed as cadmium (Total Cd)	0.002 mg/l	Random sample or qualified random sample	Quarterly	BS EN ISO 5961
		Copper	0.025 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Chromium	0.05 mg/l	Random sample or qualified random sample	Monthly	BS EN 1233
		Nickel	0.1 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Lead	0.08 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	0.7 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Iron	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Cyanide (CN^-); easily released	0.4 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS 6068-2.18
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2
W2 on site plan in Drawing No. 5530/32.01/033; Emission to the Bottesford Beck	Local site drainage from the North area of Scunthorpe Steel Rail Section Mill and ex Bloom & Billet Mill (BBM)	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis to be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended solids	30.0 mg/l	Random Sample	Quarterly	BS EN 872
		pH	>5.0	Random Sample	Monthly	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2
		Suspended solids	30.0 mg/l	Random Sample	Quarterly	BS EN 872

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W3 on site plan in Drawing No. 5530/32.01/033; Emission to the Bottesford Beck	Scunthorpe Rail Section Mill (SRSM) process water. Local site drainage from SRSM middle + south ends, south end of ex BBM and ore blending area.	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2
W4 on site plan in Drawing No. 5530/32.01/033 Emission to Bottesford Beck	Concast process water and local site drainage with Concast water softener unit and regeneration waste water	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended solids	20.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Quarterly	BS EN 872
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3
		Total Hydrocarbons	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN ISO 9377-2
		Iron	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	2.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Nickel	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total chromium	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN 1233
W5 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Emergency Discharge only. BOS and Concast plant site drainage Recycled surface water to BOS plant. Emergency discharge only	Total Hydrocarbons	5.0 mg/l	Random Sample	During any discharge	BS EN ISO 9377-2
		Suspended solids	50.0 mg/l	Random Sample	During any discharge	BS EN 872
W6 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Concast 4 process water and site drainage. Site drainage from the soaking pits, material off-loading area and the Briquetting plant area	Suspended solids	20.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Quarterly	BS EN 872
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN ISO 9377-2
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3
		Iron	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	2.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Nickel	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total chromium	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN 1233

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W7 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Site drainage from the area of the former Redbourn works and north end Scunthorpe Plate Mill (SPM) to and from 'Goosehole' (ground water lagoon)	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biochemical Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872
		pH	5.0 – 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Copper	0.025 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Chromium	0.08 mg/l	Random sample	Monthly	BS EN 1233
		Nickel	0.1 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Lead	0.08 mg/l	Random sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	0.7 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Random sample	Monthly	BS 6068-2.18
		Phenols as Phenol Index (reported as mg/l phenol)	3.0 mg/l	Random sample	Monthly	BS EN ISO 14402
		No visible oil entering Bottesford Beck	-	-	Monthly	Visible oil assessment
W8 on site plan in Drawing No. 5530/32.01/033 Emission to Bottesford Beck	Site drainage from Dawes Lane Coke Oven Stores area	Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
		No visible oil entering Bottesford Beck	-	-	Monthly	Visible oil assessment
W9 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Site drainage from part of the Rail Service Centre, Heavy Section Mill, the Structural Workshops and local Iron Foundry facility areas	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		pH	5.0 - 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Random sample	Monthly	BS 6068-2.18
		Phenols as Phenol Index (reported as mg/l phenol)	3.0 mg/l	Random sample	Monthly	BS EN ISO 14402
W10 on site plan in Drawing No. BL3838 0823 Emission to River Trent	Biological Effluent Treatment Plant (BETP) treated effluent from Coke making and contaminated ground water.	Flow	5000 m^3/d	24-hour total	Continuous	MCERTS Standards scheme: 'Minimum requirements for the self-monitoring of effluent flow'
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Chemical Oxygen Demand (COD)	220.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS 6068-2.34 (same as ISO 6060) BS ISO 15705
		Suspended Solids	150.0 mg/l	Random sample	Weekly	BS EN 872
		pH	5.0 - 9.0	Continuous	Continuous emission monitor	BS ISO 10523

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Sum of Ammonia-nitrogen (NH_4^+ -as N), Nitrate-nitrogen (NO_3^- - as N) and Nitrite-nitrogen (NO_2^- - as N)	50.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN ISO 11732
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random sample	Weekly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS 6068-2.18
		PAH (poly-cyclic aromatic hydrocarbons) in respect to emissions into water as specified in Schedule 6	0.05 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN ISO 17993
		Phenols as Phenol Index (reported as mg/l phenol)	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN ISO 14402
		Sulphides, easily released	0.1 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	Ref 228 (Blue book) or DIN38105 D 27
		Thiocyanate (as CNS)	4.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN ISO 10304-3

Schedule 3 (c) – Emission Limits and monitoring requirements

Emissions Limits from 1st July 2020

Table S3.1 Point source emissions to air – emission limits and monitoring requirements Iron Ore Sintering and Associated Processes						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1	Sinter Plant Main Stack	Dioxins as polychlorinated dibenzodioxins/furans (PCDD/F) Dioxins I – TEQ	0.4 ng I-TEQ/Nm^3	periodic over minimum 6 hours, maximum 8 hour period	Quarterly Note 1	BS EN1948: Parts 1,2 and 3
		Sulphur Dioxide (SO_2)	500 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Nitrogen oxides NOx expressed as the sum of nitrogen oxide (NO) and nitrogen dioxide (NO_2)	500 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Particulate matter Note 2	40 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Mercury	0.05 mg/Nm^3	Periodic Sample	Annual	BS EN 13211
		PAH (poly-cyclic aromatic hydrocarbons) in respect to emissions into air as specified in Schedule 6.	No limit set	Periodic Sample	6 monthly unless otherwise agreed in writing by the Agency	BS ISO 11338-1,2.
A2	Sinter Plant Dedust	Particulate matter	30 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A3	Coal preparation plant main stack (1)	Particulate matter	20 mg/Nm^3	Periodic Sample	Annual	BS EN 13284-1

Table S3.1 Point source emissions to air – emission limits and monitoring requirements Iron Ore Sintering and Associated Processes						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A9	Coal preparation plant main stack (2)	Particulate matter	20 mg/Nm^3	Periodic Sample	Annual	BS EN 13284-1
Notes 1 - Quarterly in the first year on issue of the variation and thereafter 6 monthly. 2 - No limit applies for the hourly periods that coincide with a 30 minute period before a shutdown or a 120 minute period after a start up. Interruptions to start ups shall be included in the 120 minute period. Shutdown periods are also excluded.						

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Dawes Lane Coke Ovens	Coke Oven Battery DLCO 1-3	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		PEF (Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		Coke Pushing **Note 6**	10 mg/Nm^3	Periodic samples for at least half an hour	Six monthly (minimum of 2 months between monitoring)	BS EN 13284-1
		MEF (Mass Emission Factor)	Note 1	Note 1	Note 1	Note 1

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Dawes Lane Coke Ovens	Coke Oven Battery DLCO 1	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke Oven Battery DLCO 2	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke Oven Battery DLCO 3	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
Appleby Coke Ovens	Coke Oven Battery ACO 1-2	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		PEF (Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		Coke Pushing **Note 6**	10 mg/Nm^3	Periodic samples for at least half an hour	Six monthly (minimum of 2 months between monitoring)	BS EN 13284-1

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		MEF (Mass Emission Factor)	Note 1	Note 1	Note 1	Note 1
	Coke Oven Battery ACO 3-4	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		PEF(Pushing Emission Factor)	0.2 (max)	Quarterly (13 week) reporting period mean	Weekly	BCRA; Agreed Uniform Technique of assessment of fugitive emissions
			0.6 (max)	Weekly mean		
		Coke Pushing **Note 6**	10 mg/Nm^3	Periodic samples for at least half an hour	Six monthly (minimum of 2 months between monitoring)	BS EN 13284-1
		MEF (Mass Emission Factor)	Note 1	Note 1	Note 1	Note 1
	Coke oven Battery ACO 1	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke oven Battery ACO 2	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
	Coke oven Battery ACO 3	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
	Coke oven Battery ACO 4	DLCF (Door Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
		TLCF (Top Leakage Control Factor)	Note 1	Note 1	Note 1	Note 1
A301	DLCO 1-3 Battery Stack	Visible smoke as Obscuration	50% **Note 3** ELV does not apply for valid monitoring days during planned shutdown of the Benzole scrubbers and/or Benzole distillation plant(s) including start-up and shutdown.	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	BS2742:2009 and **Note 3**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) until the derogation for BATc 48 (Desulphurisation of coke oven gas) expires	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	-

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) with a 5% oxygen (dry) correction (Schedule 6) **Note 5**	500 mg/Nm^3 **Note 4**	Daily mean	Continuous measurement	Subject to improvement condition IC2
		Nitrogen oxides NOx expressed as nitrogen dioxide (NO_2) with a 3% oxygen (dry) correction (Schedule 6)	2200 mg/m^3 Average concentration based on incorporating three oven firing reversals.	Periodic	Six monthly (minimum of 2 months between monitoring)	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Particulate matter until the derogation for BATc 49 (Under-firing emissions) expires	No limit set	Periodic	Annual	BS EN 13284-1
		Particulate matter **Note 5**	20mg/Nm^3 with a 5% oxygen (dry) correction (Schedule 6)	Daily mean	Continuous Measurement	BS EN 13284-2 calibration of particulate CEMs, used in the ongoing quality assurance following the principles of EN 14181 (i.e. QAL2/AST and QAL3). Subject to improvement condition IC3

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A302	ACO 1&2 Battery Stack	Obscuration	50% **Note 3** ELV does not apply for valid monitoring days during planned shutdown of the Benzole scrubbers and/or Benzole distillation plant(s) including start-up and shutdown.	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	BS2742:1969 and **Note 3**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) until the derogation for BATc 48 (desulphurisation of coke oven gas) expires	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	-
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) with a 5% oxygen (dry) correction (Schedule 6) **Note 4**	500 mg/Nm^3	Daily mean	Continuous measurement	Subject to improvement condition IC2
		Nitrogen oxides NOx expressed as nitrogen dioxide (NO_2) with a 5% oxygen (dry) correction (Schedule 6)	650 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Particulate matter until the derogation for BATc 49 (Under-firing emissions) expires	No limit set	Periodic	Annually	BS EN 13284-1
		Particulate matter **Note 5**	20mg/Nm^3 with a 5% oxygen (dry) correction (Schedule 6)	Daily mean	Continuous Measurement	BS EN 13284-2 calibration of particulate CEMs, used in the ongoing quality assurance following the principles of EN 14181 (i.e. QAL2/AST and QAL3). Subject to improvement condition IC
A303	ACO Battery 3&4 Stack	Obscuration	50% **Note 3** ELV does not apply for valid monitoring days during planned shutdown of the Benzole scrubbers and/or Benzole distillation plant(s) including start-up and shutdown.	Daily mean obscuration (discrete 24 hour period, 06.00 hours to 06.00 hours)	Continuous measurement	BS2742:1969 and **Note 3**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) until the derogation for BATc 48 (desulphurisation of coke oven gas) expires	No limit as controlled by hydrogen sulphide in coke oven gas and the maximum sulphur content of the blended coal	-	-	-

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		Sulphur oxides (SOx) expressed as sulphur dioxide (SO_2) with a 5% oxygen (dry) correction (Schedule 6) **Note 4**	500 mg/Nm^3	Daily mean	Continuous measurement	Subject to improvement condition IC2
		Nitrogen oxides NOx expressed as nitrogen dioxide (NO_2) with a 5% oxygen (dry) correction (Schedule 6)	650 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Particulate matter until the derogation for BATc 49 (Under-firing emissions) expires	No limit set	Periodic	Annually	BS EN 13284-1
		Particulate matter **Note 5**	20 mg/Nm^3 with a 5% oxygen (dry) correction (Schedule 6)	Daily mean	Continuous Measurement	BS EN 13284-2 calibration of particulate CEMs, used in the ongoing quality assurance following the principles of EN 14181 (i.e. QAL2/AST and QAL3). Subject to improvement condition IC3
A304-A307	DLCO 1-3 Bleeders (6), ACO 1-4 Bleeders (8), DLCO Flare Stack, ACO Flare Stack	Coke Oven Gas vented or flared	No limit set	-	-	-

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A308	Ammonia incinerator stack	Nitrogen oxides NOx expressed as the sum of nitrogen oxide (NO) and nitrogen dioxide (NO_2)	140 mg/m^3	Periodic	Quarterly	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
		Sulphur oxides (SOx) expressed as the sum of sulphur dioxide (SO_2)	800 mg/m^3 ELV does not apply when the Ammonia plant De-acidifier has planned shutdown.	Periodic	Quarterly	BS EN 14791
A316	Ammonium Sulphate Drier Stack	Particulate matter	No limit set	Instantaneous	Continuous	Internal standard based on BS EN 13284
A315	Dawes Lane coke Quenching Tower	Particulate matter	25 g/t coke Note 7	Average over the sampling period	Note 7	Mohrhauer methods (non-iso-kinetic former VDI 2303 or iso-kinetic VDI 2066)
A324	Appleby Coke Quenching Tower for Battery 1-2	Particulate matter	25 g/t coke Note 7	Average over the sampling period	Note 7	Mohrhauer methods (non-iso-kinetic former VDI 2303 or iso-kinetic VDI 2066)

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for the coke oven plants applies						
Emission point ref. & location	**Source**	**Parameter: Note 2**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A325	Appleby Coke Quenching Tower for Battery 3-4	Particulate matter	25 g/t coke Note 7	Average over the sampling period	Note 7	Mohrhauer methods (non-iso-kinetic former VDI 2303 or iso-kinetic VDI 2066)

Notes

1 As agreed in response to improvement condition IC4.

2 All operating ovens shall be monitored at least once in every quarter for DLCFs, TLCFs, MEFs and PEFs unless carbonising times prevent daylight assessment. If the results indicate exceedence of a limit then efforts shall be made to monitor that same oven at the next opportunity and thereafter until compliance is attained. The assessment of both PEF and MEF shall be based on a minimum of 10 oven observations for DLCO and 20 oven observations for ACO, at random across the batteries on a representative day, each week.

3 A calibration check of the continuous obscuration monitors shall be made at least once a year, unless otherwise agreed in writing by the Agency. Unless these instrument specific calibration checks show otherwise, 20% obscuration is deemed to be equivalent to Ringlemann shade 1, 40% obscuration is deemed to be equivalent to Ringlemann shade 2 and 60% obscuration is deemed to be equivalent to Ringlemann shade 3.

4 For sulphur oxides, only applies when the derogation for BATc 48 (Desulphurisation of CO Gas) expires. Existing limit as specified and associate monitoring requirements apply in the interim.

5 For particulate matter, only applies when the derogation for BATc 49 (Under-firing emissions) expires. Existing limits as specified and associate monitoring requirements apply in the interim.

6 For particulate emissions, only applies when the derogation for BATc 50 (Coke pushing) expires. Existing limits as specified and associate monitoring requirements apply in the interim.

7 Only applies when the derogation for BATc 51 (Coke Quenching) expires. Monitoring frequency and monitoring standard to be agreed in writing with the Environment Agency prior to commissioning.

Table S3.3 Point source emissions to air – emission limits and monitoring requirements for the Blast Furnaces						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A18	QA Hot Blast Stoves 3 & 4	Sulphur oxides (SO_x) expressed as sulphur dioxide (SO_2)	200 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	100 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Particulate matter	10 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A19	QV Hot Blast Stoves 1 & 2	Sulphur oxides (SO_x) expressed as sulphur dioxide (SO_2)	200 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	100 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
		Particulate matter	10 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A46	Cast House Ventilation – bag filter stack	Particulate matter	15 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A47	Cast House Ventilation – bag filter stack	Particulate matter	15 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A48	QA/QV slag granulator	Particulate matter	150 mg/m^3	Periodic	Annually	BS EN 13284-1
A48b	QB Slag granulator	No parameter set-	No limit set	-	-	-

Table S3.4 Point source emissions to air – emission limits and monitoring requirements for Basic oxygen steelmaking and casting						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A49	Raw materials handling dust plant 1	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A50	Raw materials handling dust plant 2	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A51	Hot metal pour (east)*	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A54	BOS primary gas cleaning (OG) Number 1	Particulate matter	50 mg/Nm^3			
A55	BOS primary gas cleaning (OG) Number 2	Particulate matter	50 mg/Nm^3			
A56	BOS primary gas cleaning (OG) Number 3	Particulate matter	50 mg/Nm^3			
A57/1-4	Secondary fume extraction (ESP Zone A) (4 vents)	Particulate matter	20 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A57/5-8	Secondary fume extraction (ESP Zone B) (4 vents)	Particulate matter	20 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A58	Secondary ventilation (wet)	Particulate matter	50 mg/m^3	Periodic	Annually	BS EN 13284-1
A59	Ladle arc furnaces LAF 1 & 2	Particulate matter	10 mg/m^3	Periodic	Annually	BS EN 13284-1
A61	Hot metal pour/desulphurisation	Particulate matter	15 mg/m^3	Periodic	Annually	BS EN 13284-1
A78	Steel/slag ladle decant	Particulate matter	10 mg/Nm^3	Daily mean	Continuous measurement	BS EN 14181
A81	Ladle Arc Furnace, LAF3	Particulate matter	10 mg/m^3	Periodic	Annually	BS EN 13284-1
Concast						
A70	Leaded steel plant	Particulate matter	5 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
		Lead	2 mg/m^3	Periodic	6 monthly if leaded steel/slag is processed (otherwise annual)	BS EN 14385
A83	Leaded Steel (5th caster)	Particulate matter	5 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
		Lead	2 mg/m^3	Periodic	Annually	BS EN 14385

Table S3.4 Point source emissions to air – emission limits and monitoring requirements for Basic oxygen steelmaking and casting						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A84	Slab scarfer	Particulate matter	20 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
*To be used as an emergency backup or by prior agreement with the Environment Agency (EA). Emergency use to be notified to the EA as soon as practicable.						

Table S3.5 Point source emissions to air – emission limits and monitoring requirements for Rolling Mills						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A77	No 5 Grinder	Particulate	50 mg/m^3	Periodic	Annually	BS EN 13284-1 and MID
A129	Reheater Furnace J	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A130	Reheater Furnace K	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A131	Normaliser N3	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A132	Tunnel Furnace	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Table S3.5 Point source emissions to air – emission limits and monitoring requirements for Rolling Mills						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A137	Walking Beam Reheat Furnace 3	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)
A138	Reheat Walking Beam Furnace	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	650 mg/m^3 (a) 900 mg/m^3 (b) 1800 mg/m^3 (c) 3000 mg/m^3 (d)	Periodic	Annually	BS EN 14792 or AM for BS EN 14792* or TGN M22 (Extractive Sampling and FTIR analyser)

Notes

(a) Applies to release from furnaces with air preheat temperatures < $400^{O}C$

(b) Applies to release from furnaces with air preheat temperatures 400 - $600^{O}C$

(c) Applies to release from furnaces with air preheat temperatures 600 -$1000^{O}C$

(d) Applies to release from furnaces with air preheat temperatures >$1000^{O}C$

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Sulphur dioxide (SO_2)	400 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			440 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			800mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			363 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP341 A201/1-3	Central Power Station Boiler 1-3 Outlet Duct 1-3	Dust	30 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			33 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			60 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Sulphur dioxide(SO_2)	400 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			440mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			800 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			363 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP342 A202/1-4	Turbo Blower House Boilers 1-4 Outlet Ducts 1-4	Dust	30 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			33 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			60 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP343 A203/5-6	Turbo Blower House Boiler 5 - 6 Outlet Ducts 5-6	Sulphur dioxide (SO_2)	400 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			440 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			800mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.6 Point source emissions to air – emission limits and monitoring requirements for Energy Generation						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP343 A203/5-6	Turbo Blower House Boiler 5 - 6 Outlet Ducts 5-6	Nitrogen oxides (NO_x), expressed as nitrogen dioxide (NO_2)	300 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			363 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			600 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181
LCP343 A203/5-6	Turbo Blower House Boilers 5-6 6 Outlet Ducts 5-6	Dust	30 mg/m^3	Monthly mean	Continuous Measurement	BS EN 14181
			33 mg/m^3	95% of validated daily means within a calendar year	Continuous Measurement	BS EN 14181
			60 mg/m^3	95% of validated hourly averages within a calendar year	Continuous Measurement	BS EN 14181

Table S3.7 Energy Generation LCP Annual limits (Excluding start up and shut down except where otherwise stated)			
Substance	**Medium**	**Limit (including unit)**	**Emission Points**
Dust, Sulphur dioxide and Oxides of nitrogen	Air	No annual limits set	A201 (Central Power Station, LCP341) A202 (Turbo Blower House Boilers 1 – 4, LCP342) A203 (Turbo Blower House Boilers 5 & 6, LCP343).

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W1 on site plan in Drawing No. 5530/32.01/033; Emission to the Brumby Beck	Blast Furnace and BOS, Caparo Merchant Bar, Rod Mill, Turbo Blower House and Central Power Station process water with local site drainage to and from the Seraphim Lagoon.	Flow	18800 m^3/d	24-hour total	Continuous	MCERTS Standards scheme: 'Minimum requirements for the self-monitoring of effluent flow'
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis to be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Weekly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		pH	5.0 – 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Suspended solids	30.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN 872
		Ammoniacal Nitrogen (expressed as N)	3.5 mg/	Random Sample	Monthly	BS EN ISO 11732
		Mercury and its compounds, expressed as mercury (Total Hg)	0.0006 mg/l	Random sample or qualified random sample	Quarterly	BS EN ISO 17852
		Cadmium and its compounds, expressed as cadmium (Total Cd)	0.002 mg/l	Random sample or qualified random sample	Quarterly	BS EN ISO 5961
		Copper	0.025 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Chromium	0.05 mg/l	Random sample or qualified random sample	Monthly	BS EN 1233
		Nickel	0.1 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Lead	0.08 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Zinc	0.7 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Iron	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Cyanide (CN^-); easily released	0.4 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS 6068-2.18
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample or qualified random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2
W2 on site plan in Drawing No. 5530/32.01/033; Emission to the Bottesford Beck	Local site drainage from the North area of Scunthorpe Steel Rail Section Mill and ex Bloom & Billet Mill (BBM)	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis to be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended solids	30.0 mg/l	Random Sample	Quarterly	BS EN 872
		pH	>5.0	Random Sample	Monthly	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Suspended solids	30.0 mg/l	Random Sample	Quarterly	BS EN 872
W3 on site plan in Drawing No. 5530/32.01/033; Emission to the Bottesford Beck	Scunthorpe Rail Section Mill (SRSM) process water. Local site drainage from SRSM middle + south ends, south end of ex BBM and ore blending area.	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3
		Total Hydrocarbons	5.0 mg/l	Random Sample	Monthly	BS EN ISO 9377-2

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W4 on site plan in Drawing No. 5530/32.01/033 Emission to Bottesford Beck	Concast process water and local site drainage with Concast water softener unit and regeneration waste water	Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random Sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random Sample	Monthly	BS EN 1484
		Suspended solids	20.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Quarterly	BS EN 872
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Total Hydrocarbons	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN ISO 9377-2
		Iron	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	2.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Nickel	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total chromium	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN 1233
		Suspended solids	50.0 mg/l	Random Sample	During any discharge	BS EN 872
W5 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Emergency Discharge only. BOS and Concast plant site drainage Recycled surface water to BOS plant. Emergency discharge only	Total Hydrocarbons	5.0 mg/l	Random Sample	During any discharge	BS EN ISO 9377-2

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W6 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Concast 4 process water and site drainage. Site drainage from the soaking pits, material off-loading area and the Briquetting plant area	Suspended solids	20.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Quarterly	BS EN 872
		Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		pH	5.0 – 10.0	Continuous	Continuous emission monitor	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN ISO 9377-2
		Chlorine (free chlorine and total chlorine)	0.5 mg/l	24-hour mean	Continuous emission monitor	MCerts; 'Performance standards and test procedures for continuous water monitoring equipment'. Check or calibration random samples to BS EN ISO 7393- part 1, 2 or 3

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Iron	5.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	2.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Nickel	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total chromium	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN 1233
W7 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Site drainage from the area of the former Redbourn works and north end Scunthorpe Plate Mill (SPM) to and from 'Goosehole' (ground water lagoon)	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biochemical Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872
		pH	5.0 – 9.0	Continuous	Continuous emission monitor	BS ISO 10523

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Copper	0.025 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Chromium	0.08 mg/l	Random sample	Monthly	BS EN 1233
		Nickel	0.1 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Lead	0.08 mg/l	Random sample)	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Zinc	0.7 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Random sample	Monthly	BS 6068-2.18
		Phenols as Phenol Index (reported as mg/l phenol)	3.0 mg/l	Random sample	Monthly	BS EN ISO 14402
W8 on site plan in Drawing No. 5530/32.01/033 Emission to Bottesford Beck	Site drainage from Dawes Lane Coke Oven Stores area	No visible oil entering Bottesford Beck	-	-	Monthly	Visible oil assessment

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
W9 on site plan in Drawing No. 5530/32.01/033 Emission to the Bottesford Beck	Site drainage from part of the Rail Service Centre, Heavy Section Mill, the Structural Workshops and local Iron Foundry facility areas	Total Organic Carbon (TOC)	20.0 mg/l (BOD_5 analysis should be carried out on all samples determined to have a TOC >20 mg/l)	Random sample	Monthly	BS EN 1484
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Random sample	Quarterly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Suspended Solids	30.0 mg/l	Random sample	Quarterly	BS EN 872
		pH	5.0 - 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Total Hydrocarbons	5.0 mg/l	Random sample	Monthly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Random sample	Monthly	BS 6068-2.18
		Phenols as Phenol Index (reported as mg/l phenol)	3.0 mg/l	Random sample	Monthly	BS EN ISO 14402
W10 on site plan in Drawing No. BL3838 0823 Emission to River Trent	Biological Effluent Treatment Plant (BETP) treated effluent from Coke making and contaminated ground water.	Flow	5000 m^3/d	24-hour total	Continuous	MCERTS Standards scheme: 'Minimum requirements for the self-monitoring of effluent flow'

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Biological Oxygen Demand for 5 days (BOD_5)	20.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN 1899-1 BS EN 1899-2 BS EN 25814:1992
		Chemical Oxygen Demand (COD)	220.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS 6068-2.34 (same as ISO 6060) BS ISO 15705
		Suspended Solids	150.0 mg/l	Random sample	Weekly	BS EN 872
		pH	5.0 - 9.0	Continuous	Continuous emission monitor	BS ISO 10523
		Sum of Ammonia-nitrogen (NH_4^+-as N), Nitrate-nitrogen (NO_3^- - as N) and Nitrite-nitrogen (NO_2^- - as N)	50.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN ISO 11732
		Heavy Metals as the sum of As, Cd, Cr, Cu, Hg, Ni, Pb, Zn and their compounds expressed as metal.	1.0 mg/l	Random sample	Monthly	BS ISO 17294-1 BS EN ISO 17294- 2 BS EN ISO 15586
		Total Hydrocarbons	5.0 mg/l	Random sample	Weekly	BS EN ISO 9377-2
		Cyanide (CN^-); easily released	0.1 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS 6068-2.18
		PAH (poly-cyclic aromatic hydrocarbons) in respect to emissions into water as specified in Schedule 6	0.05 mg/l	Qualified random sample (or a 24-hour composite sample)	Monthly	BS EN ISO 17993

Table S3.8 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period or as agreed with the Environment Agency**	**Monitoring frequency**	**Monitoring standard or method**
		Phenols as Phenol Index (reported as mg/l phenol)	0.5 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN ISO 14402
		Sulphides, easily released	0.1 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	Ref 228 (Blue book) or DIN38105 D 27
		Thiocyanate (as CNS)	4.0 mg/l	Qualified random sample (or a 24-hour composite sample)	Weekly	BS EN ISO 10304-3

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 as required by condition 3.5.1.	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air (Iron Ore Sintering and Associated Processes) - Particulates	A1, A2, A3 and A9	Every 3 months	1 January, 1 April, 1 July, 1 October
Dioxins and PAH's	A1	Every 6 months	1 January, 1 July
Mercury	A1	Annual	1 January
Emissions to air (Coke Oven batteries)	DLCO 1-3, ACO 1-2, ACO 3-4; DLCO 1, 2 and 3; ACO 1, 2, 3 and 4; A301, A302 and A303; A308, A316	Every 3 months	1 January, 1 April, 1 July, 1 October
Emissions to air (Coke Ovens) - Sulphur Oxides	A301, A302 and A303	Every 6 months	1 January, 1 July
Emissions to air (Coke Ovens) - particulates	A301, A302 and A303; A315, A324, A325	Annual	1 January
Emissions to air (Blast Furnaces)	A46 & A47	Every 3 months	1 January, 1 April, 1 July, 1 October
Emissions to air (Blast Furnaces)	A18, A19, A48	Annual	1 January
Emissions to air (Basic Oxygen steel making and casting) Furnaces)	A57/1-4, A57/5-8, A78	Every 3 months	1 January, 1 April, 1 July, 1 October
	A49, A50, A51, A57/1-4, A57/5-8, A58, A59, A61, A70, A78, A83, A84	Annual	1 January
Emissions to air (Rolling Mills)	A77, A129, A130, A131, A132, A137, A138	Annual	1 January
Emissions to air (LCP Energy Generation)	A201/1-3 (LCP341), A202/1-4 (LCP342), A203/5-6 (LCP343)	Every 3 months	1 January, 1 April, 1 July, 1 October
Emissions to water	W1, W2, W3, W4, W5, W6, W7, W8,W9, W10	Every 3 months	1 January, 1 April, 1 July, 1 October

Table S4.2 Annual production/treatment	
Parameter	**Units**
Sinter production	tonnes
Coke produced	tonnes
Liquid Iron Produced	tonnes
Liquid Steel produced (BOS)	tonnes
Steel products produced	tonnes

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Water usage (potable water)	Annually	tonnes
Total Effluent discharges and by each emission point	Annually	m^3
Natural Gas usage	Annually	MJ
HFO usage	Annually	tonnes
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	tJ
Total Emissions to Air of dust for each LCP	Annually	t
Total Emissions to Air of SO_2 for each LCP	Annually	t
Total Emissions to Air of NOx for each LCP	Annually	t
Operating Hours for each LCP	Annually	h
Energy efficiency	Annually	%

Table S4.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring assessment period /frequency**	**Monitoring standard or method**	**Other specifications**
Sinter plant				
Sinter strand stoppages in excess of 15 minutes, the duration thereof, whether planned or unplanned and reason(s) for stoppage	Time	Quarterly	-	Table S4.5 Reporting forms
A1	Exhaust gas oxygen content	Continuous	BS EN 15267-3 BS EN 14181	
Coke Oven (CO) plants				
CO Battery venting raw coke oven gas from the flare bleeders for more than 15 minutes, the duration thereof, whether planned or unplanned, the reason(s) why ignition was not achieved and the measures to prevent or minimise emissions	Time	Monthly	-	Table S4.5 Reporting forms
CO Battery flaring raw coke oven gas from the flare bleeders for more than 1 hour, the time of ignition since opening, the duration thereof, whether planned or unplanned and reason(s)	Time	Monthly	-	Table S4.5 Reporting forms

Table S4.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring assessment period /frequency**	**Monitoring standard or method**	**Other specifications**
Mass of raw CO gas flared or vented from the CO batteries	Mass	Monthly	-	Table S4.5 Reporting forms
CO gas holder flare stack operations, the duration and mass thereof, whether planned or unplanned and reason(s)	Time and mass	Quarterly	-	Table S4.5 Reporting forms
CO gas under-firing; mass releases of SOx and NOx from release points A301, A302 and A303. SOx by calculation from the mean continuous monitoring of hydrogen sulphide in CO fuel gas and NOx by monitoring	Mass	Quarterly		Table S4.5 Reporting forms
CO gas desulphurisation plant performance for each plant after completion of BAT Conclusion 48	Residual hydrogen sulphide <1000 mg/Nm^3 daily mean average BAT-AEL	6 monthly	EPA method 11	Table S4.5 Reporting forms
A316 Ammonium Sulphate Drier Stack policing continuous emission monitor for measuring abatement performance to target <50mg/m^3; the monthly maximum.	Particulate matter	Monthly	-	Table S4.5 Reporting forms
A301, A302 and A303 battery under-firing visible emissions monitoring	Number of invalid monitoring days due to planned shutdown of the Benzole scrubbers and/or Benzole distillation plant(s) including start-up and shutdown.	Monthly	-	Table S4.5 Reporting forms
Blast Furnace (BF) plant				
BF secondary ventilation system non-operation, the duration thereof, whether planned or unplanned and reason(s)	Time	Quarterly	-	Table S4.5 Reporting forms

Table S4.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring assessment period /frequency**	**Monitoring standard or method**	**Other specifications**
BF gas holder flare stack operations, the duration and mass thereof, whether planned or unplanned and reason(s)	Time and mass	Quarterly	-	Table S4.5 Reporting forms
BF Slag granulated as a percentage of total BF slag production.	Percentage	Monthly	-	Table S4.5 Reporting forms
Blast Furnace bleeders openings for greater than 120 seconds, the duration thereof, whether planned or unplanned and reason(s)	Time	Monthly	-	Table S4.5 Reporting forms
Iron plating operations and reasons for.	Tonnage	Monthly	-	Table S4.5 Reporting forms
Basic Oxygen Steelmaking (BOS) plants				
BOS secondary vent system non-operation, the duration thereof, whether planned or unplanned and reason(s)	Time	Quarterly	-	Table S4.5 Reporting forms
All BOS gas venting (or flaring) operations, which does not include that released from the initial and final blowing stages; the duration and mass thereof, whether planned or unplanned and reason(s)	Time and mass	Quarterly	-	Table S4.5 Reporting forms
BOS gas production (make), which does not include that produced from the initial and final blowing stages, venting and export.	Mass	Quarterly	-	Table S4.5 Reporting forms
BOS gas holder flare stack operations, the duration and mass thereof, whether planned or unplanned and reason(s)	Time and mass	Quarterly	-	Table S4.5 Reporting forms
Installation process operations				
Environmental/operational parameters related to throughput.	-	Quarterly		Table S4.5 Reporting forms
LCPD operational and fuel dependant parameters	-	Quarterly		Table S4.5 Reporting forms

Table S4.5 Reporting requirements		
Media/parameter	**Reporting format**	**Date of form**
Air [2]	Form air 1 to 50 or other forms as agreed in writing by the Environment Agency	DD/MM/YY
Air [1]	Form IED RTA1 – NERP quarterly emissions summary log for period 01/01/2015 to 31/12/2015	31/12/15
Air [1]	Form IED RTA1 –TNP quarterly emissions summary log	31/12/15
LCP [1]	Form IED HR1 – operating hours	31/12/15
Air [1]	Form IED CON2 – continuous monitoring	31/12/15
CEMs [1]	Form IED CEM – Invalidation Log	31/12/15
Water	Forms water 1-6 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Water usage	Form water usage or other form as agreed in writing by the Environment Agency	DD/MM/YY
Waste Return	Form R1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY
performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	DD/MM/YY

Note [1]: Forms relating to LCP operation; these are standardised forms and not all parameters may be applicable to this permit.

Note [2]: Forms relating to non-LCP operation.

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 operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment	
To be notified immediately	
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) Notification requirements for the breach of any permit condition	
To be notified immediately	
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.

“Air Quality Risk Assessment” has the meaning given in Annex D of IED Compliance Protocol for Utility Boilers and Gas Turbines

“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.

“BFG” means Blast Furnace Gas.

“BOS” means Basic Oxygen Steelmaking.

“breakdown” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“Carbonising time” means the time between coal being charged into an oven and the time when coke is then discharged from the same oven;

“CEN” means Commité Européen de Normalisation

“combustion technical guidance note” means IPPC Sector guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by The Environment Agency.

“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.

“DLN” means dry, low NOx burners.

“DLCF” and “BCRA: Agreed Uniform Technique of assessment of smoke leakage” means; Door Leakage Control Factor which is a relative measure of the visible fugitive releases from around the seal on the coke oven doors and is used to assess fugitive releases from the coke oven doors. This assessment technique is described in the Agreed Uniform Technique, British Carbonisation Research Association (BCRA) Special Publication No.19 April 1977.

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

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

“Industrial Emissions Directive” means Directive 2010/75/EU of The European Parliament and of The Council of 24 November 2010 on industrial emissions.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MWth or more, based on gross calorific value.

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

“low polluting fuels” means biomass or coal with an average as-received sulphur content of less than 0.4% by mass as described in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines

“malfunction” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines

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

“MEF” and “BCRA; Agreed Uniform Technique of assessment of fugitive emissions”; means; the Mass Emission Factor that is used to assess releases from charging coal into coke ovens and is a relative measure of the fugitive releases from this operation. This assessment technique is described in the Agreed Uniform Technique, British Carbonisation Research association (BCRA).

“MEG” means Mixed Enhance Gas; combustion fuel.

“mcr” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“National Emission Reduction Plan” (NERP) is the plan issued by Defra in accordance with Article 4.6 of the Large Combustion Plants Directive and associated guidance.

“ncv” means net calorific value.

“PAH in respect to emissions into air” means Anthracene, Fluorene, Napthalene, Phenanthrene, Benzo[ghi]perylene, Acenaphthylene, Acenaphthene, Fluoranthene, Pyrene, Chrysene, Benz[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Dibenz[ah]anthracene, Indeno [1,2,3-cd] pyrene in any combination or singly, expressed as Benzo[a]pyrene.

“PAH in respect to emissions into water” means the sum of Fluoranthene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Indeno[1,2,3-cd]pyrene and Benzo[g,h,i]perylene).

“PEF” and “BCRA; Agreed Uniform Technique of assessment of fugitive emissions” means; the Pushing Emission Factor that is used to assess releases to air from emptying (pushing) a coke oven and is a relative measure of the visible fugitive releases that may occur while coke is being pushed out of an oven into the coke car and taken to be quenched. This assessment technique is described in the Agreed Uniform Technique, British Carbonisation Research Association (BCRA).

“operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“operational hours” of an LCP is the time spent between start up and shut down of the LCP.

“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.

“Ringlemann Shade numbers for visible smoke emissions” means reference to an assessment made with either the Ringlemann Chart or associated miniature smoke charts, in accordance with BS 2742:2009, as amended (previously BS2742:1969). These charts compare the darkness of smoke with standard shades of grey placed in a suitable position. The charts are placed at such a distance from the observer that the black lines merge into the white background and produce for each shade a uniform grey. The numbers of the shades (the Ringelmann numbers) ranged from 0 (white) to 5 (black), the stages being by changes of 20% in obscuration of the background.

“SI” means Site Inspector

“Standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of the Large Combustion Plants (Transitional National Plan) Regulations 2015 SI2015 No.1973

“TLCF” and “BCRA; Agreed Uniform Technique of assessment of smoke leakage” means; the Top Leakage Control Factor which is a relative measure of the visible fugitive releases from all potential release points on top of the coke oven battery and is used to assess fugitive releases from the coke oven battery charging lids. This assessment technique is described in the Agreed Uniform Technique, British Carbonisation Research association (BCRA) Special Publication No. 19 April 1977.

“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

“year” means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit.

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

a. 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

b. 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

c. 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

d. 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% for blast furnace hot blast stoves and 5% for coke oven underfiring.

e. “BS EN 14181” will include the requirements of BS EN 15267-3 through QAL1. MCERTS certification for the appropriate ranges and determinands is a way of demonstrating of compliance with the requirements of BS EN 15267-3.

When the following terms appear in the waste code list in Schedule 2, table 2.2 and 2.3 for those tables they have the meaning given below:

‘hazardous substance’ means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008

‘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

‘PCBs’ means

- polychlorinated biphenyls
- polychlorinated terphenyls
- monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyldibromo-diphenyl methane
- any mixture containing any of the above mentioned substances in a total of more than 0,005 %by weight

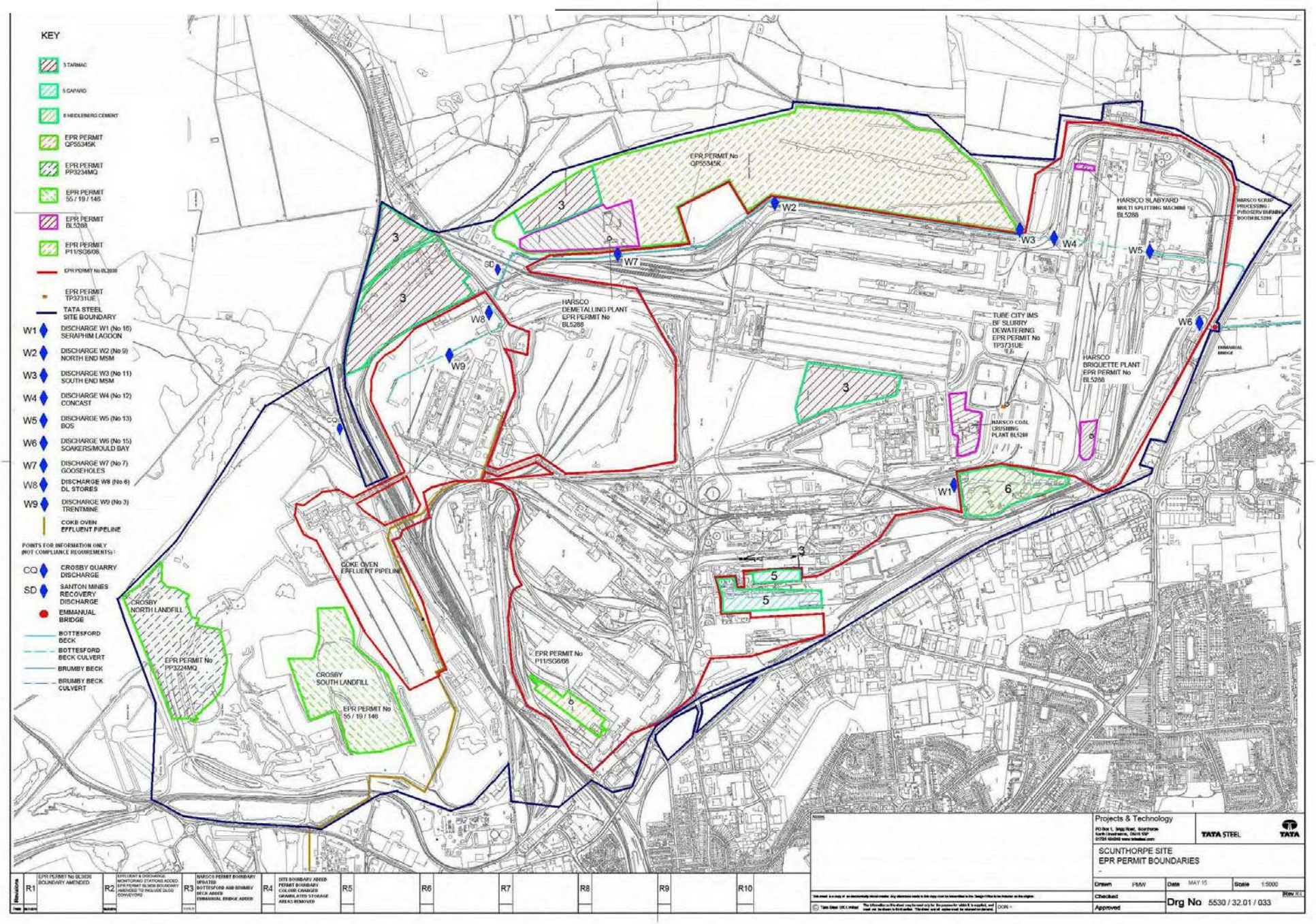
‘transition metals’ means any of the following metals: any compound of scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum and tantalum, as well as these materials in metallic form, as far as these are classified as hazardous substances

‘stabilisation’ means processes which change the hazardousness of the constituents in the waste and transform hazardous waste into non-hazardous waste

‘solidification’ means processes which only change the physical state of the waste by using additives without changing the chemical properties of the waste

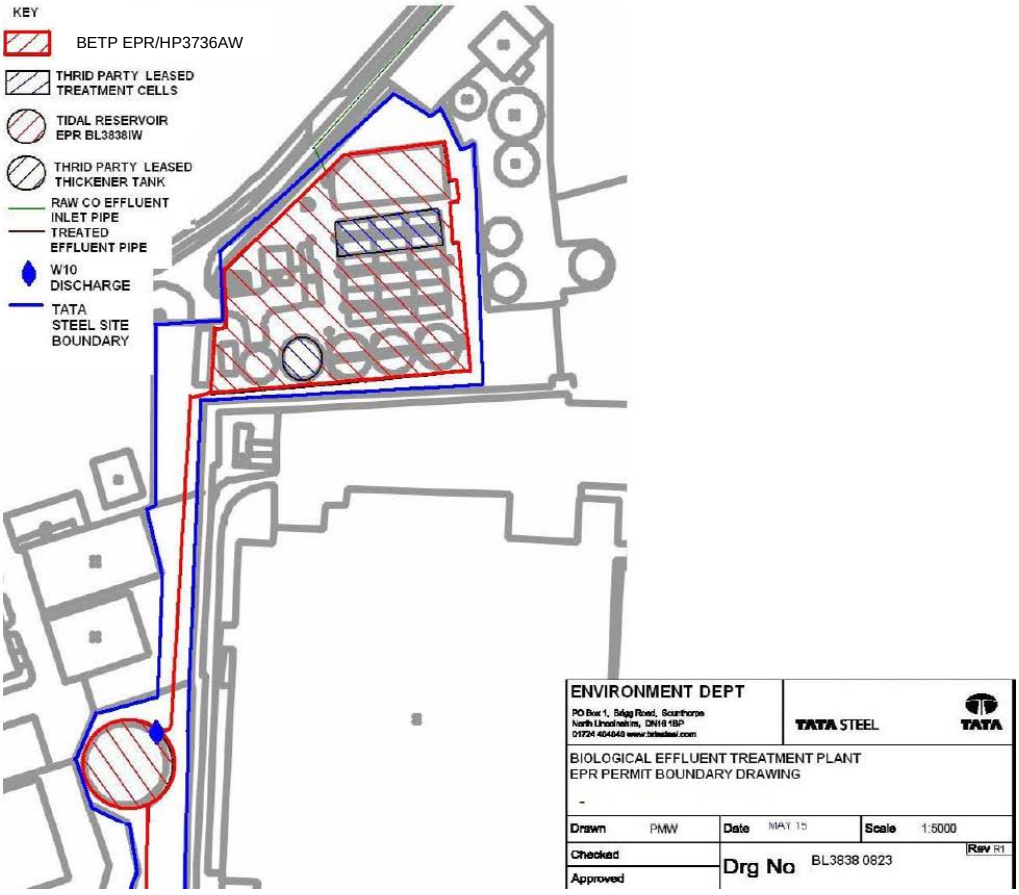
‘partly stabilised wastes’ means wastes containing, after the stabilisation process, hazardous constituents which have not been changed completely into non-hazardous constituents and could be released into the environment in the short, middle or long term

Schedule 7 – reduced image of drawing 5530/32.01/033



Scunthorpe Steelworks, Coke Making Effluent Pipeline

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk



END OF PERMIT

Annex to conditions – Derogation under Industrial Emissions Directive

Derogation under Article 15(4) of Industrial Emissions Directive

DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

Operating techniques	We have considered the Operator's proposed techniques and its comparison against other relevant techniques 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 published on 8th March 2012. Our full reasoning is given in our decision document that accompanies the permit determination. The proposed techniques will result in emissions for which the appropriate emission limits are less stringent than those associated with the best available techniques as described in BAT conclusions. We have considered the operators justification for departure from the guidance and accept it in the following respects and for the following reasons; (1) The technical characteristic of the coke ovens and "the practicability .... of interrupting the activity so as to install improved emission control upon the pollutant(s)" which is highlighted as an example of a technical characteristic in Defra guidance[i] (2) We have assessed the costs of meeting BAT-AELs by 2016 and agree that they are significantly higher than the benefits that could be achieved. Our sensitivity analysis showed that a positive NPV would only occur under a particular combination of assumptions: the operating costs of the new ovens being lower than those of the existing ovens; lower cost of capital and using the higher damage cost estimate (i.e. from Eunomia (2010)). These are independent variables so we consider it unrealistic for all 3 to change at the same time. (3) The current emissions of SO_2 and dust (including PM_{10} and $PM_{2.5}$) from the coke ovens have a negligible impact on local air quality and there is no risk that they will cause a breach of the Environmental Quality Standards (EQS) and objectives. There are currently no emission limits for PAHs in the permit. Local environmental monitoring has shown high levels of PAHs, which are associated with leakage from the ovens during coke formation, rather than releases associated with pushing and quenching of finished coke. Improvements to reduce leakage as described in BAT 49 (I and II) are expected to result in a significant reduction in PAH emissions. We consider this to be an appropriate approach and that it does not substantially affect the calculation of cost and benefits for the derogation request. (4) The current emission limit values will be maintained throughout the period of the derogations. These have been set to ensure protection of the environment and human health. The achievement of emission levels associated with the best available techniques as described in BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to the technical characteristics of the installation concerned.

	BAT conclusion	Associated BAT-AEL	Derogation until	ELV during derogation period
	48	1000mg/Nm^3 For hydrogen sulphide (H_2S) (process gas not emitted to air)	March 2019 for the installation of a COGD unit on Dawes Lane Coke Ovens (DLCO) January 2022 for the installation of COGD unit on Appleby Coke Ovens (ACO)	At DLCO's 4500 mg/m^3 and ACO's 5000 mg/m^3
	49	500 mg/Nm^3 for sulphur oxides (SO_X) expressed as sulphur dioxide (SO_2)		Limit set for H_2S as above
	49	<20mg/Nm^3 dust emissions arising from underfiring	March 2024	100 mg/m^3
	50	<10 mg/Nm^3 of dust from coke pushing	March 2024	No ELV set controlled via pushing factor
	51	< 25g/t coke emissions controlled by wet quenching	March 2024	No ELV set

[i] Defra and Welsh Government Guidance on Industrial emissions directive EPR for Part A installations (Section 4) http://www.defra.gov.uk/publications/files/pb13898-epr-guidance-part-a-130222.pdf