DRAFT Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Breedon Cement Limited

Hope Cement Works
Hope
Hope Valley
Derbyshire
S33 6RP

Variation number

EPR/BP3731VJ/V006

Permit number

EPR/BP3731VJ

Hope Cement Works
Permit number EPR/BP3731VJ

Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2010 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Brief description of the changes introduced by this variation notice:

This variation permits an extension (additional time limited derogation to the existing time limited derogation granted under notice EPR/BP3731VJ/V004) from BATc21 relating to sulphur dioxide emissions from the flue-gases of kiln firing and/or preheating/pre-calcining processes.

The derogation (from meeting the BAT-AEL value of 400 mg/Nm³) includes a further emission reduction for sulphur dioxide to 695 mg/Nm³ [from previous emission limit value of 850 mg/Nm^3] and expires on 31st March 2022. After this date the operator will be required to meet the BAT-AEL value.

During this period the operator will expand upon the range of ARMs (alternative raw materials) used as displacement for on-site shale reserves (of high sulphur content). This expansion has been required following a decline in market availability of 'Run of Station' (ROS) Pulverised Fuel Ash (PFA), and will utilise alternative raw materials such as PFA, shale, and slate.

Brief description of the process:

Hope Cement Works (the Installation) is operated by Breedon Cement Limited and is located near Castleton in Hope Valley, Derbyshire, at grid reference SK16498245, and within the Peak District National Park.

The main activity taking place at the installation is the production of cement which is a listed activity under 'The Environmental Permitting (England and Wales) Regulations 2010':

Section 3.1 part A(1)(a) Producing cement clinker in rotary kilns with a production capacity exceeding 500 tonnes per day.

Cement clinker production capacity of the works is around 1.45 million tonnes per annum. Clinker is produced continuously, 24 hours per day, seven days per week, using two kilns.

The installation includes:

- The quarries and associated activities except drilling and blasting;
- All raw material handling and raw meal preparation operations;
- All associated fuel handling and storage operations;
- All clinker manufacturing, handling, grinding, storage, import and export operations;
- All cement handling and storage operations.

Raw Materials and Materials Handling
Limestone from the local quarry is transported to the primary crusher where it is crushed down to around 250 mm. Secondary and tertiary crushers reduce the size to around 18 mm. Crushed limestone and shale are then stored within the stone store until required within the process.

From the stone store, crushed raw materials are extracted, weighed and conveyed to the raw mills along with other raw materials, one for each kiln, where they are ground and dried by the reuse of heat from the kilns' exhaust gases. These gases are then released to air via the kiln's bag filters.

Cement Clinker Production
Raw meal is transported to blending silos for homogenisation then pneumatically conveyed to storage silos for intermediate storage prior to feeding into the kilns. The raw meal is fed into the top of the four-stage pre-heater tower at a temperature around 200°C. It descends through the pre-heaters whilst absorbing heat from the counter-current-flow of kiln gases, to improve the energy efficiency of the process, to a final temperature of about 900°C when it enters the back of the kiln.

The pre-heated raw meal passes slowly through the inclined rotary kiln, reaching a final temperature of about 1450°C at the front combustion zone, by which point the materials are converted into clinker. The rated production capacity of each kiln is 2250 tonnes of clinker per day.

Fossil fuels and non-hazardous waste-derived fuels (WDFs) are used to heat the kilns. The fossil fuels are pulverised in the coal mills and dried by re-using heat from the kilns exhaust gases (additional energy recovery). Pulverised fossil fuels and WDFs are blown into the front end of the kiln producing a flame temperature of about 2000°C. WDFs are also fired into the back end of the kiln via stage four of the pre-heater tower.

The hot clinker exits the kiln and is rapidly cooled in the clinker coolers using air, some of which is then used as pre-heated combustion air in the kilns, with the remainder being released to air via dust abatement. Cooled clinker is then transported for intermediate storage to the clinker store prior to being conveyed to the cement mill reception silos. Clinker can also be dispatched directly (without milling operations) for processing at other cement works. Clinker may also be imported to the site.

Cement Production
Cooled clinker is milled with gypsum, limestone and alternative raw materials to produce cement. Each of the two cement mills is capable of producing up to 150 tonnes of cement per hour.

Finished cement is pneumatically transported to storage silos which vent to atmosphere via fabric filters. Cement is dispatched in bulk by road and rail tankers.

Emissions

Emissions to air: the main air emissions produced are oxides of nitrogen (NOx), sulphur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM), hydrogen chloride (HCl), total organic carbon (TOC) and ammonia (NH_3). Emission monitors continuously measure the concentrations of these parameters from each kiln prior to release from the main 132m high stack. A Selective Non-Catalytic Reduction (SNCR) abatement system, which uses aqueous ammonia, is used to reduce NOx emissions from the main stack. Bag filters are used to abate PM from the main kiln stacks, coal and cement mills, and electrostatic precipitators (ESPs) are used on the clinker coolers.

Emissions to water: site surface water is released via three water discharge points. Two discharges to Bradwell Brook, which flows into the River Noe, are from the works lagoons, which take drainage from the plant area and shale quarry. The lagoons provide settlement, storage, balancing and passive pH correction, and enable reuse of some water. The third discharge is the railway drainage via Peakshole water to the River Noe. No process effluent is generated.

Process waste materials are sent off site for further recovery/recycling. The works does not produce waste dusts, such as cement kiln dust (CKD) or bypass dust (BPD).

There are a number of sensitive ecological receptors close to the installation, with two Special Areas of Conservation (SAC) and one Special Protection Area (SPA) sites within 10km, and 5 Sites of Special Scientific Interest (SSSI) within 2km. The western half of the installation, including the limestone quarry, overlies a principal aquifer, while the remaining area which includes the kilns and shale quarry, overlies a secondary aquifer.

The installation operates a documented Business Management System, which is certified as conforming to ISO14001.

The cement kilns are deemed waste co-incineration plants under chapter IV of the Industrial Emission Directive (IED) due to the use of waste-derived fuels. IED requirements are applied through this permit.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	**Date**	**Comments**
Application BK9539IW (EPR/BK9539IW/A001)	Duly made 21/08/01	Application for PPC permit BK9539IW
Additional Information	Received 27/02/02	Response to Schedule 4 Notice issued 18/12/01
	Received August 2002	Additional information received: Tyre chip burning report, for inclusion in IPPC application.
Permit determined BK9539IW EPR/BK9539IW	Effective 31/03/03	Permit issued to **Lafarge Cement UK Limited**
Application for Variation EPR/BK9539IW/V002	Duly made 17/06/04	Direct Firing of Fuel.
Variation EPR/BK9539IW/V002 determined	Effective 31/12/04	
Application for Variation EPR/BK9539IW/V003	Duly made 28/02/05	Use of MBM as a waste derived fuel.
Additional Information	Received 10/05/05	Response to Schedule 4 Notice issued 21/04/05
Variation EPR/BK9539IW/V003 determined	Effective 02/09/05	
Application for Variation EPR/BK9539IW/V004	Duly made 15/03/05	Implementing Waste Incineration Directive requirements.
Additional Information	Received 07/07/05	Response to Schedule 4 Notice issued16/05/05
Variation EPR/BK9539IW/V004 determined	Effective 29/11/05	
Variation EPR/BK9539IW/V005	Duly made 08/11/05	To use RFO as a waste derived fuel.
Additional Information	Received 29/09/06	Letter withdrawing request to burn RFO, but retaining request to amend and consolidate permit.
Variation EPR/BK9539IW/V005 determined	Effective 12/12/06	Consolidation of permit and few minor changes to permit.
Environment Agency Variation EPR/BK9539IW/V006	Effective 30/06/08	Agency initiated variation to meet the requirements of the Habitats Regulations.
Application for variation EPR/BK9539IW/V007	Duly Made 08/04/10	To allow use of Processed Sewage Pellets as a waste derived fuel.
Variation EPR/BK9539IW/V007 determined	Effective 18/06/10	
Environment Agency Variation EPR/BK9539IW/V008	Effective 09/09/10	Agency initiated variation following the Cement and Lime Sector permit review 2010
Application for variation EPR/BK9539IW/V009	Duly made 26/05/11	To install and operate PSP handling systems.
Variation EPR/BK9539IW/V009 determined	Effective 05/07/11	
Application for variation EPR/BK9539IW/V010	Duly made 09/06/11	Use of shredded rubber conveyor belts as a waste derived fuel.
Variation EPR/BK9539IW/V010 determined	Effective 18/08/11	
Application for Variation EPR/BK9539IW/V011	Duly made 17/10/11	Variation requesting permission to use tyre fluff as a waste derived fuel

Status log of the permit		
Description	**Date**	**Comments**
Additional Information	Received 01/01/11	Email of hazard study and confirmation that PSP and tyre fluff will not be burnt together.
Variation EPR/BK9539IW/V011 determined	Effective 14/11/11	
Application for variation EPR/BK9539IW/V012	Duly made 11/06/12	Variation requesting permission to use Solid Recovered Fuel as a waste derived fuel
Additional Information	Received 24/08/12	Response to Schedule 5 Notice issued 24/07/12
Variation EPR/BK9539IW/V012 determined	Effective 09/10/12	
Application for Transfer EPR/PP3735ZP/T001	Duly Made 06/12/12	
Transfer EPR/PP3735ZP/T001 determined	Effective 14/12/12	Permit transferred from Lafarge Cement UK Limited to **Hope Cement Limited**.
Application for Transfer EPR/BP3731VJ/T001	Duly made 23/05/14	
Transfer EPR/BP3731VJ/T001 determined	Effective 03/06/14	Permit transferred from Hope Cement Limited to **Hope Construction Materials Limited**
Environment Agency Variation EPR/BP3731VJ/V002	Effective 23/06/14	Environment Agency initiated variation to implement chapter IV of the Industrial Emissions Directive; reduction of NO_x limit.
Application for Variation EPR/BP3731VJ/V003	Duly Made 01/10/14	MPA Code of Practice: To add list of waste codes suitable in principle, remove Group III metals specification in fuels and consolidate waste derived fuels naming.
Variation EPR/BP3731VJ/V003 determined	Effective 19/11/14	
Regulation 60 Notice	Issued 30/04/14	Notice issued to Hope Construction Materials Limited
Response to Regulation 60 Notice	Received 08/01/15	Additional information received on 06/05/16, 09/06/16, 15/12/16, 01/02/17; Derogation information received on 15/07/15 and 01/10/15;
Additional information	Received 28/07/16	Change of company name and registered address
Environment Agency Variation and consolidation EPR/BP3731VJ/V004 determined (PAS billing reference NP3837WB)	Effective 05/04/17	Environment Agency initiated variation and consolidation following the Cement and Lime Sector permit review. Company name changed to **Hope Cement Limited.**
Notified of change of company name	Received 02/08/17	Name changed to Breedon Cement Limited
Variation issued EPR/BP3731VJ/V005	Issued 14/08/17	Varied permit issued to Breedon Cement Limited
Application for variation EPR/BP3731VJ/V006	Received 16/11/2018, Duly made 11/01/2019	Application for Derogation (extension) to BATc21.
Draft notice for consultation	20/10/2020	
Variation notice EPR/BP3731VJ/V006 issued (PAS Billing ref: LP3235QB)	Issued XX/XX/XX	Varied permit issued to Breedon Cement Limited

End of introductory note

DRAFT 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/BP3731VJ

Issued to

Breedon Cement Limited ("the operator")

whose registered office is

Pinnacle House, Breedon Quarry
Main Street
Breedon on the Hill
Derby
DE73 8AP

company registration number 08284549

to operate a regulated facility at

Hope Cement Works
Hope
Hope Valley
Derbyshire
S33 6RP

to the extent set out in the schedules.

The notice shall take effect from XX/XX/XXXX

Name	Date
	XX/XX/XXXX

Authorised on behalf of the Environment Agency

Schedule 1

The following conditions are added as a result of the application made by the operator.

- We have amended table S1.2 to include reference to application EPR/BP3731VJ/V006.

- We have amended existing improvement condition IC16 which relates to progress in meeting BATc21. This has been updated to reflect the Derogation granted by this variation:-

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP16	The operator shall submit a report to the Environment Agency (for approval in writing) detailing progress towards compliance with BAT conclusion 21, which sets a BAT-AEL for cement kiln oxides of sulphur (SOx) emissions of <50-400mg/Nm^3 (daily average), for which a derogation has been requested and granted. The report shall include, but not be limited to, the following: 1. current performance against the BAT-AEL; 2. progress towards achieving planning permission and installing the necessary infrastructure for increasing shale substitution by utilising a range of Alternative Raw Materials (ARMs); 3. any alterations to the initial plan, together with proposals for amended timescales; 4. the level of substitution of ARMs (as total and by type) achieved at the time of report submission.	Progress reports by: 30/10/2020 30/04/2021 29/10/2021

- We have amended table S3.1 to reflect the new emission limit for SO_2 (as approved by Derogation by this variation).

Table S3.1 Point source emissions to air – emission limits and monitoring requirements for kiln exhaust(s)						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 and A2	Kilns L1, L2 main stack bag filters	Sulphur dioxide	Until 01/04/2022 695 mg/Nm^3 From 01/04/2022 400 mg/Nm^3	Daily average	Continuous measurement	BS EN 14181

Schedule 2 – conditions to be amended

The following conditions are amended as detailed by Environment Agency initiated changes.

- We have amended table S1.3 relating to expired timescales / completed improvements.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP13	The operator shall submit a report to the Environment Agency proposing an Ammonia Emission Limit Value (ELV) for each kiln, for written approval by the Environment Agency. The report shall include the following, as a minimum: • Assessment of ambient (background) ammonia levels. • Assessments of ammonia slip emissions arising from the use of SNCR (selective non-catalytic reduction) operations and at varying operational conditions. • Assessment of impacts (Predicted Environmental Concentrations) at the proposed ELV. The assessment of impacts shall be undertaken using emission rates without confidence correction applied (IED ch IV), and shall be calculated at the maximum production capacity, or any future maximum capacity, if a further increase is planned (in order to ensure that worst case scenario is covered). The assessment shall consider the impacts at discrete receptors, including non-statutory sites such as Local Wildlife sites and SSSIs within 2km and European sites within 10km of the installation. Following the completion of this condition, the Environment Agency will set an ELV for inclusion within table S3.1.	Complete
IP14	The Operator shall submit a report to the Environment Agency, for approval in writing, detailing the findings of an assessment of predicted impacts for emissions to air of all parameters listed in table S3.1. The assessment shall use emission rates which: • Are calculated without confidence correction applied (IED ch IV), • Are based upon maximum clinker production rates (as stated within the introductory note to this notice) or any future maximum capacity, if a further increase is planned. The report shall consider impacts at both peak concentration and discrete receptors, including non-statutory sites such as Local Wildlife sites and SSSIs within 2km and European sites within 10km of the installation, and shall consider nitrogen and acid deposition in addition to the Predicted Environmental Concentrations. Where the impact assessment concludes a likely significant effect, the Operator shall carry out an In Combination assessment. The Environment Agency will use the data produced for an appropriate assessment, for agreement with Natural England, and may change ELVs within table S3.1 and/or impose annual limits following completion of this condition.	Complete
IP15	The operator shall submit a report to the Environment Agency demonstrating how the temperature and residence time requirements of Article 50(2) of the IED chapter IV are met while operating at either the current maximum capacity, or any planned future maximum capacity, and under the most unfavourable conditions.	Complete

- We have amended tables S3.1 and S3.2 relating to expired emission limit values.

Table S3.1 Point source emissions to air – emission limits and monitoring requirements for kiln exhaust(s)						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 and A2	Kilns L1, L2 main stack bag filters	Particulate matter	10 mg/Nm^3	Daily average	Continuous measurement	BS EN 14181
		Oxides of nitrogen (NO and NO_2 expressed as NO_2)	500 mg/Nm^3			
		Carbon monoxide	2,200 mg/Nm^3			
		Sulphur dioxide	Until 01/04/2022 695 mg/Nm^3			
			From 01/04/2022 400 mg/Nm^3			
		Total ammonia	110 mg/Nm^3			
		Total Organic Carbon (TOC)	120 mg/Nm^3			
		Hydrogen chloride	10 mg/Nm3			
		Hydrogen fluoride	1 mg/Nm3	Periodic over minimum 1-hour period	6 monthly	ISO 15713
		Cadmium & thallium and their compounds (total)	0.05 mg/Nm^3	Average value over minimum 30 minute, maximum 8 hour period		BS EN 14385
		Mercury and its compounds	0.05 mg/Nm^3			BS EN 13211
		Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/Nm^3			BS EN 14385
		Dioxins / furans (I-TEQ)	0.1 ng/Nm^3	Average value over sample period of between 6 and 8 hours		BS EN 1948 Parts 1, 2 & 3
		Dioxins / furans (WHO-TEQ Humans/ mammals/fish/birds)	No limit set			
		PCBs [Dioxin-like PCBs (WHO-TEQ Humans /Mammals/fish/birds)]	No limit set	Average value over sample period of between 6 and 8 hours	6 monthly	BS EN/TS 1948 part 4
		PAHs Specific individual poly-cyclic aromatic hydrocarbons				BS ISO 11338 parts 1, 2

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for non-kiln sources						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method** Note 1
A3 and A4	Clinker coolers (Electrostatic precipitators)	Particulate matter	20 mg/Nm^3	Daily average	Continuous	BS EN 15267-3
A5 and A6	Cement Mills CM1 and CM2 (Bag filters)		10 mg/Nm^3	Average value over minimum 30 minute period	Quarterly	BS EN 13284-1
A7 and A8	Coal mills (Bag filters)				Six monthly	
All other channelled dust emissions abated by filters	Dusty operations such as crushing, conveyors, material handling, silos			-	In accordance with a maintenance management system	Permanent sampling access not required
Vents on ammonia system	Ammonia storage	No parameters set	No Limit set	-	-	

Note 1: certification to the MCERTS performance standards indicates compliance with BS EN 15267-3

- We have amended table S3.5 relating to expired timescales (for emission points A5 – A8).

Table S3.5 Process monitoring requirements				
Emission point ref. & location	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Kiln L1 and L2	Fuels usage	Monthly	As agreed in writing with the EA	
	Waste-derived fuels usage			
	Relative thermal input of Waste-derived fuels			
	Ammonia usage	Continuous		
	Cyclone 4 inlet duct temperature (°C)		Traceable to National Standards	
	Raw meal feed rate (t/hr)			
	Fuels feed rate (t/hr)			
A1, A2	Temperature		Traceable to National Standards	
	Pressure			
	Oxygen		BS EN 14181	
	Water vapour			
A5, A6, A7, A8	Particulates	Continuous	Indicative	

Schedule 3 – consolidated permit

Consolidated permit issued as a separate document.

DRAFT Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/BP3731VJ

This is the consolidated permit referred to in the variation and consolidation notice for Environment Agency led variation EPR/BP3731VJ/V006 authorising,

Breedon Cement Limited ("the operator"),

whose registered office is

Pinnacle House,
Breedon Quarry
Main Street
Breedon on the Hill
Derby
DE73 8AP

company registration number **08284549**

to operate an installation at

Hope Cement Works
Hope
Hope Valley
Derbyshire
S33 6RP

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

Name	Date
	XX/XX/XXXX

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.

1.1.4 The operator shall comply with the MPA Code of Practice dated October 2014.

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is recovered with a high level of energy efficiency and energy is used efficiently in the activities;

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

(c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan , and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

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

2.3.4 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2 table S2.1;

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

(c) it having been separately collected for recycling, it is subsequently unsuitable for recovery by recycling.

2.3.5 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

2.3.6 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.3.7 All waste derived fuels used at the installation are subject to the following conditions:

(a) No radioactive materials or radioactive wastes (as defined by sections 1 and 2 of the Radioactive Substances Act 1993) shall be included.

(b) No substances with PCB concentrations greater than 10mg/kg shall be included.

(c) No substances with PCP concentrations greater than 100mg/kg shall be included.

(d) No pharmaceutical products, pesticide products, biocide products and iodine compounds shall be included except as constituents of other materials and at levels that are minimised as far as reasonably practicable.

(e) No dioxins or furans shall be included except as constituents of other materials and at levels that are minimised as far as reasonably practicable.

(f) No medical/clinical waste shall be included.

2.3.8 The operator shall obtain prior written approval from the Environment Agency for each feasibility trial of a Waste Derived Fuel (WDF) not listed in Table S2.1. Any such feasibility trials will be limited to a maximum of 100 tonnes of the fuel and a maximum duration of 14 days.

2.3.9 Waste materials, not listed in table S2.1, shall not be used as raw materials in the process except with the prior written approval of the Environment Agency, and shall be subject to the specification in table S2.1 of schedule 2 or otherwise agreed in writing with the Environment Agency.

2.3.10 The operator shall ensure that prior to accepting waste derived fuels subject to condition 2.3.3 at the site, it has obtained sufficient information about the wastes to be burned as fuel to demonstrate compliance with the characteristics described in condition 2.3.3.

2.3.11 The operator shall take representative samples of all waste derived fuels delivered to the site unless otherwise agreed in writing with the Environment Agency and test a representative selection of these samples to verify conformity with the information obtained as required by condition 2.3.10. These samples shall be retained for inspection by the Environment Agency for a period of at least 1 month after the material is burned and results of any analysis made of such samples will be retained for at least 2 years after the material is burned.

2.3.12 For activities AR1 and AR2 (schedule 1, table S1.1) waste derived fuels shall not be burned, or shall cease to be burned, if:

(a) the kiln is in start up (as agreed in writing with the Environment Agency); or

(b) the kiln is in the process of shutting down (as agreed in writing with the Environment Agency); or

(c) the kiln raw meal feed rate is less than 100 tonnes/hr or as agreed in writing by the Environment Agency; or

(d) the cyclone 4 inlet duct temperature is below or falls below 810°C when using non-hazardous waste, or hazardous waste where the content of halogenated organic substances (as chlorine) does not exceed 1%; or

(e) any continuous emission limit value in schedule 3 table S3.1 is exceeded due to disturbances or failures of the abatement systems, other than under “Chapter IV abnormal operating conditions”; or

(f) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3, table S3.1 are unavailable other than under “Chapter IV abnormal operating conditions”.

2.3.13 The operator shall record the beginning and end of each period of “Chapter IV abnormal operating conditions”, and shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.

2.3.14 Where, during “Chapter IV abnormal operating conditions”, any of the following situations arise, the operator shall, as soon as is practicable, cease the burning of waste derived fuels until normal operation can be restored:

(a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 due to disturbances or failures of the abatement systems, or continuous emission monitor(s) for a total of four hours uninterrupted duration;

(b) the cumulative duration of “Chapter IV abnormal operating conditions” periods over one calendar year exceeds 60 hours on each kiln.

2.3.15 The operator shall interpret the end of the period of “Chapter IV abnormal operating conditions” as the earliest of the following:

(a) when the failed equipment is repaired and brought back into normal operation;

(b) when the operator initiates a shut down of the waste derived fuels, as described in the application or as agreed in writing with the Environment Agency;

(c) when a period of four hours has elapsed from the start of the “Chapter IV abnormal operating conditions”;

(d) when, in any calendar year, an aggregated period of 60 hours “Chapter IV abnormal operating conditions” has been reached for a given kiln.

2.3.16 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.

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.

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

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

3.1.4 Total annual emissions from the emission points set out in schedule 3 tables S3.1, S3.2 and S3.3 of a substance listed in schedule 3 table S3.4 shall not exceed the relevant limit in table S3.4.

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 to this permit:

(a) point source emissions specified in tables S3.1, S3.2, and S3.3

(b) process monitoring specified in table S3.5;

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 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2, and S3.3 unless otherwise agreed in writing by the Environment Agency.

3.5.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1; the Continuous Emission Monitors shall be used such that;

(a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages:

- Ammonia 40 %
- Carbon monoxide 10%
- Sulphur dioxide 20%
- Oxides of nitrogen (NO & NO2 expressed as NO2) 20%
- Particulate matter 30%
- Total organic carbon (TOC) 30%
- Hydrogen chloride 40%

(b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.5.5 (a);

(c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour period. The number of half-hourly averages so validated shall not exceed 5 per day;

(d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;

(e) no more than ten daily average values per year shall be determined not to be valid.

3.5.6 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1:

(a) a QAL2 test as specified in BS EN 14181 shall be performed at least every three years or whenever there are significant changes to either the process, the fuel used or to the CEMs themselves;

(b) an Annual Surveillance Test (AST) shall be performed at least annually, as specified within BS EN 14181;

(c) the operator shall have a procedure to apply the QAL3 requirements of BS EN 14181.

3.6. Fire prevention

3.6.1. The operator shall take all appropriate measures to prevent fires on site and minimise the risk of pollution from them including, but not limited to, those specified in any approved fire prevention plan.

3.6.2. The operator shall:

a) if notified by the Environment Agency that the activities are giving rise to a risk of fire, submit to the Environment Agency for approval within the period specified, a fire prevention plan which prevents fires and minimises the risk of pollution from fires;

b) implement the fire prevention plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

(b) the annual production /treatment data set out in schedule 4 table S4.2; and

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

(d) the functioning and monitoring of the plant involved with the burning of waste derived fuels, in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

(a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

(b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and

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

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

4.2.5 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 1 month of the end of each quarter, the operator shall submit to the Environment Agency, using the form specified by the Environment Agency for the purpose, the information specified on the form, relating to the types of waste Alternative Raw Materials and waste-derived fuels that the Operator has used in that quarter.

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.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

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

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

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

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

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1, AR2	Section 3.1 Part A(1)(a)	Producing cement clinker in rotary kilns with a production capacity exceeding 500 tonnes per day or in other kilns with a production capacity exceeding 50 tonnes per day.	Kilns L1 and L2 From the transport of raw materials and fuels from bulk storage, the preparation (including blending of raw materials listed in table S2.1, in order to produce raw meal) and feeding of all materials into the kiln systems L1 and L2, through to discharge of cooled clinker to the clinker store, and emissions to air from the main stack and other process vents.
AR3	Section 3.1 Part A(2)(a)	Grinding cement clinker	Cement mills CM1 and CM2 The transport of clinker, including imported clinker, from the clinker store and handling of raw materials from bulk storage, through milling in two mills CM1 and CM2, and blending to storage of cement, including emissions to air from the mill stacks and other process vents.
AR4	Section 3.1 Part B(a)	Storing, loading or unloading cement or cement clinker in bulk prior to further transportation in bulk.	Storage and dispatch of cement clinker and cement in bulk by road or rail.
	Directly Associated Activity		
AR5	Raw materials storage and handling	Raw materials receipt, transport, preliminary preparation and bulk storage	From the recovery of raw materials from the quarry floors, the crushing, screening and other preparations, and the receipt on site of other raw materials, including alternative raw materials, through to bulk storage.
AR6	Fuels storage and handling	Delivery and bulk storage of fuels	Offloading of waste-derived and fossil fuels, and transfer to bulk storage
AR7	Clinker import	Bulk import of cement clinker by road and rail	Offloading of cement clinker imported to site by road and rail and transfer to the clinker stores.
AR8	Waste storage and handling	Waste storage and handling	From waste generation, storage and monitoring through to dispatch off site.
AR9	Water discharge to controlled waters	Management of site drainage and process water	Collection of surface water drainage, including reuse in site activities, through to discharge to controlled waters.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application BK9539IW	All management and control techniques described in the application	21/08/01
Response to Schedule 4 Notice	All management and control techniques described in the response	27/02/02
Application for variation for direct firing of fuel EPR/BK9539IW/V002	All management and control techniques described in the application	09/06/04
Application for MBM variation EPR/BK9539IW/V003	All management and control techniques described in the application	10/02/05
Response to Schedule 4 Notice	All management and control techniques described in the response	10/05/05
Application for WID variation EPR/BK9539IW/V004	All management and control techniques described in the application	15/03/05
Response to Schedule 4 Notice	All management and control techniques described in the response	07/07/05
Application for PSP variation EPR/BK9539IW/V007	All management and control techniques described in the application	Duly Made 08/04/10
Application for variation for PSP handling systems EPR/BK9539IW/V009	All management and control techniques described in the application	Duly made 26/05/11
Application for variation to burn shredded rubber conveyor belts EPR/BK9539IW/V010	All management and control techniques described in the application	Duly Made 09/06/11
Application for tyre fluff variation EPR/BK9539IW/V011	Response to question 3 in Application form C3, and covering letter to application	Duly made 17/10/11
Additional information	Operating techniques described in email and in attached hazard study	01/11/11
Application for variation EPR/BK9539IW/V012	Document SRF 12/5 – Application to use Solid Waste Derived Fuel as a partial replacement for existing kiln fossil fuel	11/06/12
Response to Schedule 5 Notice issued 24/07/12	Response to questions 3 and 4 of Schedule 5 Notice	24/08/12
Application for Code of Practice variation EPR/BP3731VJ/V003	All parts, including changes to the Environmental Management System (EMS) for the introduction of Alternative Raw Materials and Waste-Derived Fuels.	01/10/14
Response to Regulation 60(1) Notice dated 30/04/14 requiring information	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 1 – 29 [excluding responses to BATCs 6, 8, 9, 21]	08/01/15
	In relation to the IED Best Available techniques, the details submitted against CLM BAT conclusion numbers 5, 8, 9, 10, 13, 16, 20, 21, 27, 28.	09/06/16
Application (EPR-BP3731VJ-V006) for Derogation	All parts, including document reference BCSVR18/19	Duly made 11/01/2019

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP13	The operator shall submit a report to the Environment Agency proposing an Ammonia Emission Limit Value (ELV) for each kiln, for written approval by the Environment Agency. The report shall include the following, as a minimum: • Assessment of ambient (background) ammonia levels. • Assessments of ammonia slip emissions arising from the use of SNCR (selective non-catalytic reduction) operations and at varying operational conditions. • Assessment of impacts (Predicted Environmental Concentrations) at the proposed ELV. The assessment of impacts shall be undertaken using emission rates without confidence correction applied (IED ch IV), and shall be calculated at the maximum production capacity, or any future maximum capacity, if a further increase is planned (in order to ensure that worst case scenario is covered). The assessment shall consider the impacts at discrete receptors, including non-statutory sites such as Local Wildlife sites and SSSIs within 2km and European sites within 10km of the installation. Following the completion of this condition, the Environment Agency will set an ELV for inclusion within table S3.1.	Complete
IP14	The Operator shall submit a report to the Environment Agency, for approval in writing, detailing the findings of an assessment of predicted impacts for emissions to air of all parameters listed in table S3.1. The assessment shall use emission rates which: • Are calculated without confidence correction applied (IED ch IV), • Are based upon maximum clinker production rates (as stated within the introductory note to this notice) or any future maximum capacity, if a further increase is planned. The report shall consider impacts at both peak concentration and discrete receptors, including non-statutory sites such as Local Wildlife sites and SSSIs within 2km and European sites within 10km of the installation, and shall consider nitrogen and acid deposition in addition to the Predicted Environmental Concentrations. Where the impact assessment concludes a likely significant effect, the Operator shall carry out an In Combination assessment. The Environment Agency will use the data produced for an appropriate assessment, for agreement with Natural England, and may change ELVs within table S3.1 and/or impose annual limits following completion of this condition.	Complete
IP15	The operator shall submit a report to the Environment Agency demonstrating how the temperature and residence time requirements of Article 50(2) of the IED chapter IV are met while operating at either the current maximum capacity, or any planned future maximum capacity, and under the most unfavourable conditions.	Complete
IP16	The operator shall submit a report to the Environment Agency (for approval in writing) detailing progress towards compliance with BAT conclusion 21, which sets a BAT-AEL for cement kiln oxides of sulphur (SOx) emissions of <50-400mg/Nm^3 (daily average), for which a derogation has been requested and granted. The report shall include, but not be limited to, the following: 1. current performance against the BAT-AEL; 2. progress towards achieving planning permission and installing the necessary infrastructure for increasing shale substitution by utilising a range of Alternative Raw Materials (ARMs); 3. any alterations to the initial plan, together with proposals for amended timescales; 4. the level of substitution of ARMs (as total and by type) achieved at the time of report submission.	Progress reports by: 30/10/2020 30/04/2021 29/10/2021

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels			
Raw materials and fuel description			
Alternative Raw Materials			
Wastes used as raw materials (not as fuels)	Minimum Mineral Content	At least 80% dry weight (w/w)	
	Organic Materials	Organic Materials as measured by net CV should be <10MJ/kg	
	Mercury	≤ 2 ppm	
	TOC/VOC	≤ 5000 mg/kg as organic hydrocarbon	
	No materials which are defined as carcinogens for the purposes of the COSHH Regulations 2002 (as amended) shall be used.		
EWC Numbers (excluding domestic municipal wastes)			
01 Wastes resulting from exploration, mining, quarrying, physical and chemical treatment of minerals	wastes from mineral metalliferous excavation		01 01 01
	wastes from mineral non-metalliferous excavation		01 01 02
	waste gravel and crushed rocks other than those mentioned in 01 04 07		01 04 08
	waste sand and clays		01 04 09
	wastes from stone cutting and sawing other than those mentioned in 01 04 07		01 04 13
02 Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	soil from cleaning and washing beet		02 04 01
	off-specification calcium carbonate		02 04 02
03 Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	lime mud waste		03 03 09
04 Wastes from the leather, fur and textile industries	liming waste		04 01 02
06 Wastes from inorganic chemical processes	Other bases		06 02 05*
	calcium-based reaction wastes other than those mentioned in 06 09 03		06 09 04
	calcium-based reaction wastes from titanium dioxide production		06 11 01
10 Wastes from thermal processes	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)		10 01 01
	Coal fly ash		10 01 02
	fly ash from peat and untreated wood		10 01 03
	calcium-based reaction wastes from flue-gas desulphurisation in solid form		10 01 05
	calcium-based reaction wastes from flue-gas desulphurisation in sludge form		10 01 07

Table S2.1 Raw materials and fuels		
Raw materials and fuel description		
	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14	10 01 15
	fly ash from co-incineration containing hazardous substances	10 01 16*
	Fly ash from co-incineration other than those mentioned in 10 01 16	10 01 17
	Mill scales	10 02 10
	sludges and filter cakes from gas treatment containing hazardous substances.	10 02 13*
	casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05	10 09 06
	Casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07	10 09 08
	casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05	10 10 06
	casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07	10 10 08
	Waste glass-based fibrous materials	10 11 03
	Discarded moulds	10 12 06
	waste ceramics, bricks, tiles and construction products (after thermal processing)	10 12 08
	waste preparation mixture before thermal processing	10 13 01
	wastes from calcination and hydration of lime	10 13 04
	Particulates and dust (except 10 13 12 and 10 13 13)	10 13 06
	Wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10	10 13 11
	Solid wastes from gas treatment containing hazardous substances	10 13 12*
	Solid wastes from gas treatment other than those mentioned in 10 13 12	10 13 13
	Waste concrete and concrete sludge	10 13 14
16 Wastes not otherwise specified in the list	Inorganic wastes other than those mentioned in 16 03 03	16 03 04
	Spent catalysts containing transition metals or transition metal compounds not otherwise specified	16 08 03
	Spent fluid catalytic cracking catalysts (except 16 08 07)	16 08 04
	spent catalysts contaminated with hazardous substances	16 08 07*
17 Construction and demolition wastes (including excavated soil from contaminated sites)	concrete	17 01 01
	bricks	17 01 02
	tiles and ceramics	17 01 03

Table S2.1 Raw materials and fuels		
Raw materials and fuel description		
	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06*.	17 01 07
	soil and stones other than those mentioned in 17 05 03	17 05 04
	dredging spoil other than those mentioned in 17 05 05	17 05 06
	track ballast other than those mentioned in 17 05 07	17 05 08
	Gypsum-based construction materials other than those mentioned in 17 08 01	17 08 02
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	Aqueous liquid wastes from gas treatment and other aqueous liquid wastes	19 01 06*
	Fly ash containing hazardous substances	19 01 13*
	Premixed wastes composed only of non-hazardous wastes	19 02 03
	Premixed wastes composed of at least one hazardous waste	19 02 04*
	Sludges from treatment of urban waste water	19 08 05
	Sludges from water clarification	19 09 02
	minerals (for example sand, stones)	19 12 09
	Other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances	19 12 11*
	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	19 12 12
Fuels (including Waste Derived Fuels)		
Gas oil	Sulphur Content 0.1%	
Coal	Sulphur Content 5%	
Petcoke	Sulphur Content 6%	
Waste generated on-site in connection with the handling and storing of waste derived fuels	Burnt with chipped tyres at a rate that constitutes less than 1.0% by mass of the chipped tyre feed rate.	
New waste derived fuel for feasibility trials	Specification to be agreed in writing with the Environment Agency.	
Chipped Tyres or End of life tyres	EWC Number	16 01 03
	Gross CV	15 – 40 MJ/kg
	Sulphur	≤2.0%
Meat & Bone Meal (MBM)	EWC Number	02 02 03
	Gross CV	10 – 40 MJ/kg
	Sulphur	≤2.0%
	Chlorine	≤2.0%

Table S2.1 Raw materials and fuels		
Raw materials and fuel description		
Solid Recovered Fuel (SRF)	Gross CV	10 – 40 MJ/kg
	Sulphur	≤2.0%
	Chlorine	≤2.0%
	Total Fluorine, Bromine & Iodine	≤1.5%
	Mercury	≤10 mg/kg
	Total Group II Metals (Cd + TI)	≤30 mg/kg
Waste Liquid Fuels (WLF)	Gross CV	10 – 42 MJ/kg
	Sulphur	≤2.0%
	Chlorine	≤2.0%
	Total Fluorine, Bromine & Iodine	≤1.5%
	Mercury	≤20 mg/kg
	Total Group II Metals (Cd + TI)	≤40 mg/kg
Processed Sewage Pellets (PSP)	Gross CV	10 – 40 MJ/kg
	Sulphur	≤2.0%
	Chlorine	≤2.0%
	Mercury	≤10 mg/kg
	Total Group II Metals (Cd + TI)	≤30 mg/kg
Recovered Fuel Oil (RFO)	Gross CV	30 – 48 MJ/kg
	Sulphur	≤2.0%
	Chlorine	≤2.0%
	Mercury	≤10 mg/kg
	Total Group II Metals (Cd + TI)	≤40 mg/kg
Wood	Gross CV	10 – 40 MJ/kg
	Sulphur	≤2.0%
	Chlorine	≤2.0%
	Total Fluorine, Bromine & Iodine	≤1.5%
	Mercury	≤10 mg/kg
	Total Group II Metals (Cd + TI)	≤30 mg/kg
EWC Numbers (excluding domestic municipal wastes)		
02 Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	Waste plastics (except packaging)	02 01 04
	Wastes from forestry	02 01 07
	materials unsuitable for consumption or processing	02 02 03

Table S2.1 Raw materials and fuels		
Raw materials and fuel description		
03 Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	Waste bark and cork	03 01 01
	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04	03 01 05
	Waste bark and wood	03 03 01
	De-inking sludges from paper recycling	03 03 05
	Mechanically separated rejects from pulping of waste paper and cardboard	03 03 07
	Wastes from sorting of paper and cardboard destined for recycling	03 03 08
	Fibre rejects, fibre-, filler- and coating-sludges from mechanical separation	03 03 10
04 Wastes from the leather, fur and textile industries	Wastes from dressing and finishing	04 01 09
	Wastes from composite materials (impregnated textile, elastomer, plastomer)	04 02 09
	Wastes from unprocessed textile fibres	04 02 21
	Wastes from processed textile fibres	04 02 22
07 Wastes from organic chemical processes	Waste plastic.	07 02 13
09 Wastes from the photographic industry	Photographic film and paper free of silver or silver compounds	09 01 08
12 Wastes from shaping and physical and mechanical surface treatment of metals and plastics	Plastic shavings and turnings	12 01 05
13 Oil wastes and wastes of liquid fuels (except edible oils, 05 and 12)	Fuel oil and diesel	13 07 01*
15 Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	Paper and cardboard packaging	15 01 01
	Plastic packaging	15 01 02
	Wooden packaging	15 01 03
	Composite packaging	15 01 05
	Mixed packaging	15 01 06
	Textile packaging	15 01 09
16 Wastes not otherwise specified in the list	End-of-Life Tyres	16 01 03
	Plastic	16 01 19
17 Construction and demolition wastes (including excavated soil from contaminated sites)	Wood	17 02 01
	Plastic	17 02 03
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	Combustible waste other than those in 19 02 08* and 19 02 09*	19 02 10
	Sludges from treatment of urban waste water	19 08 05
	Paper and cardboard	19 12 01
	Plastic and rubber	19 12 04
	Wood other than mentioned in 19 12 06	19 12 07

Table S2.1 Raw materials and fuels		
Raw materials and fuel description		
	Textiles	19 12 08
	Combustible waste (refuse-derived fuel)	19 12 10
	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	19 12 12
20 Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	Paper and cardboard	20 01 01
	Clothes	20 01 10
	Textiles	20 01 11
	Wood other than that mentioned in 20 01 37	20 01 38
	Plastics	20 01 39

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements for kiln exhaust(s)						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 and A2	Kilns L1, L2 main stack bag filters	Particulate matter	10 mg/Nm^3	Daily average	Continuous measurement	BS EN 14181
		Oxides of nitrogen (NO and NO_2 expressed as NO_2)	500 mg/Nm^3			
		Carbon monoxide	2,200 mg/Nm^3			
		Sulphur dioxide	Until 01/04/2022 695 mg/Nm^3			
			From 01/04/2022 400 mg/Nm^3			
		Total ammonia	110 mg/Nm^3			
		Total Organic Carbon (TOC)	120 mg/Nm^3			
		Hydrogen chloride	10 mg/Nm3			
		Hydrogen fluoride	1 mg/Nm3	Periodic over minimum 1-hour period	6 monthly	ISO 15713
		Cadmium & thallium and their compounds (total)	0.05 mg/Nm^3	Average value over minimum 30 minute, maximum 8 hour period		BS EN 14385
		Mercury and its compounds	0.05 mg/Nm^3			BS EN 13211
		Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/Nm^3			BS EN 14385
		Dioxins / furans (I-TEQ)	0.1 ng/Nm^3	Average value over sample period of between 6 and 8 hours		BS EN 1948 Parts 1, 2 & 3
		Dioxins / furans (WHO-TEQ Humans/ mammals/fish/birds)	No limit set			
		PCBs [Dioxin-like PCBs (WHO-TEQ Humans /Mammals/fish/birds)]	No limit set	Average value over sample period of between 6 and 8 hours	6 monthly	BS EN/TS 1948 part 4
		PAHs Specific individual poly-cyclic aromatic hydrocarbons				BS ISO 11338 parts 1, 2

Table S3.2 Point source emissions to air – emission limits and monitoring requirements for non-kiln sources						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method** Note 1
A3 and A4	Clinker coolers (Electrostatic precipitators)	Particulate matter	20 mg/Nm^3	Daily average	Continuous	BS EN 15267-3
A5 and A6	Cement Mills CM1 and CM2 (Bag filters)		10 mg/Nm^3	Average value over minimum 30 minute period	Quarterly	BS EN 13284-1
A7 and A8	Coal mills (Bag filters)				Six monthly	
All other channelled dust emissions abated by filters	Dusty operations such as crushing, conveyors, material handling, silos			-	In accordance with a maintenance management system	Permanent sampling access not required
Vents on ammonia system	Ammonia storage	No parameters set	No Limit set	-	-	Permanent sampling access not required

Note 1: certification to the MCERTS performance standards indicates compliance with BS EN 15267-3

Table S3.3 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. Unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 (SK1744082319) W 2 (SK1763982308) Releases to Bradwell Brook leading to R. Noe	Ponds 3 and 4	Suspended Solids	20 mg/l	Spot sample	Monthly	BS EN 872
		Oil or Grease	None Visible			Visual check
		pH	6 – 9			BS EN ISO 10523:2012
Railway drainage to Peakshole water leading to the River Noe SK1654483167	No parameters set	-	-	-	-	Permanent sampling access not required

Table S3.4 Annual limits		
Substance	**Medium**	**Limit (including unit)**
-	-	-

Table S3.5 Process monitoring requirements				
Emission point ref. & location	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Kiln L1 and L2	Fuels usage	Monthly	As agreed in writing with the EA	
	Waste-derived fuels usage			
	Relative thermal input of Waste-derived fuels			
	Ammonia usage	Continuous		
	Cyclone 4 inlet duct temperature (°C)		Traceable to National Standards	
	Raw meal feed rate (t/hr)			
	Fuels feed rate (t/hr)			
A1, A2	Temperature		Traceable to National Standards	
	Pressure			
	Oxygen		BS EN 14181	
	Water vapour			
A5, A6, A7, A8	Particulates	Continuous	Indicative	

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air Parameters as required by condition 3.5.1.	A1, A2, A3, A4	Monthly summary of continuous monitoring reported quarterly	1 January, 1 April, 1 July, 1 October
	A5, A6	Quarterly periodic monitoring reported every 6 months	1 January , 1 July
	A1, A2, A7, A8	6 monthly periodic monitoring reported every 6 months	1 January , 1 July
Emissions to water Parameters as required by condition 3.5.1	W1, W2	Monthly spot sampling reported every 6 months	1 January
Process monitoring Parameters as required by condition 3.5.1	Fuels usage	Quarterly	1 January
	Waste-derived fuels usage		
	Relative thermal input of Waste-derived fuels		
Alternative Raw Materials and Waste Derived Fuel usage As required by condition 4.2.6	A1, A2	Quarterly	1 January
Functioning and monitoring of the plant involved in the burning of waste derived fuels, as required by condition 4.2.2		Every 12 months	1 January

Table S4.2: Annual production/treatment	
Parameter	**Units**
-	-

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
-	-	-

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Air	Forms air 1 – Air 10 or other form as agreed in writing by the Environment Agency	April 2017
Water	Form water1 or other form as agreed in writing by the Environment Agency	
Fuels usage summary and relative thermal input	Form Fuel Usage or other form as agreed in writing by the Environment Agency	
Alternative Raw Materials usage	Form ARM usage1 or other form as agreed in writing by the Environment Agency	
Waste Derived fuels usage	Form WDF usage1 or other form as agreed in writing by the Environment Agency	

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

Part A

Permit Number	**EPR/BP3731VJ**
Name of operator	**Breedon Cement Limited**
Location of Facility	**Hope cement works**
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

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

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

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

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

"abatement equipment" means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

"*accident*" means an accident that may result in pollution.

"*annual average*" means the average of all daily averages in a calendar year.

"annually" means once every year.

"*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.

"*CEM"* means Continuous Emission Monitor.

"Chapter IV abnormal operating conditions" means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices, during which the concentrations in the discharges into air of the regulated substances may exceed the normal emission limit values, as required by the IED.

"Chipped tyres" means both chipped and granulate tyre or rubber conveyor belt derived material.

"*Climate Change Agreement*" means an agreement made between the Secretary of State and the operator, either directly or through the offices of any association of which he is a member, in which he agrees to secure energy efficiency improvements as set out in a plan agreed with the Secretary of State in that agreement in return for a discount from the amount he would otherwise pay as a Climate Change Levy.

"*CO trip"* means a de-energisation of electrical precipitators following detection of carbon monoxide in the kiln gases above a pre-determined concentration. This is a safety system.

"*Commissioning*" relates to the period after construction has been completed or when a modification has been made to the plant or the raw materials when the Permitted installation process is being tested and modified to operate according to its design.

"*COSHH Regulations 2002 (as amended)*" means the Control of Substances Hazardous to Human Health Regulations 2002 (as amended) (SI 2002 No.2677).

"*daily*" means a 24 hour period commencing at 12:00 hrs (either midday or midnight, as agreed in writing with the EA).

"*daily average"* for releases of substances to air means the average of valid half-hourly averages over consecutive discrete period of 24 hours commencing at a time agreed in writing with the Environment Agency during normal operation.

"*dioxin and furans"* means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans, listed in the table below.

"*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.

"ELV" means emission limit value.

"*emissions to land*" includes emissions to groundwater.

"*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.

"*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.

"*EWC code"* means the code number from the European Waste Catalogue.

"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.

"*Group I metals*" means mercury (Hg).

"Group II Metals" means Cadmium (Cd) and Thallium (Tl).

"Group III Metals" means Antimony (Sb), Arsenic (As), Chromium (Cr), Cobalt (Co), Copper (Cu), Lead (Pb), Manganese (Mn), Nickel (Ni), & Vanadium (V).

"*half-hour or half-hourly*" means a 30 minute period commencing on the hour or at half past the hour.

"*hazardous property*" has the meaning in Annex III of the Waste Framework Directive.

"*hazardous waste*" has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

"*hourly*" means a 60 minute period commencing on the hour.

"*Industrial Emissions Directive*" or "*IED*" means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

"ISO" means International Standards Organisation.

"Kiln flush" refers to kiln upset due to a surge of feed material into the kiln which passes through without reacting fully.

"*Kiln shut down*"

Cement

Shutdown is defined as when the plant is being returned to a non-operational state and no waste is being burned, or as otherwise agreed in writing with the Environment Agency. Emission limit values do not apply during shutdown once the feed rate is below 100 tonne per hour.

'Kiln Start Up'

Cement

This means, from the time when raw meal is introduced into the kiln to the time the feed rate has reached 100 tonne per hour and the kiln is stable. Or as otherwise agreed in writing by the Agency.

On commencing kiln operation, the first continuous monitoring daily average can be calculated from the 24 hour period starting from the time that kiln start up has completed. Subsequent daily averages will be based on a 24 hour period commencing 12 noon.

"List of Wastes" means the list of waste established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of waste 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.

"MBM" means Meat and Bone Meal. MBM is classified as a non-hazardous waste by the EWC Code 02 02 03, defined as "Wastes from the preparation and processing of meat, fish and other foods of animal origin" and the sub-clause "Materials unsuitable for consumption or processing". MBM cannot contain raw or unprocessed meat, bones or animal parts, or any other waste of agricultural, horticultural or industrial origin.

"*MCERTS*" means the Environment Agency's Monitoring Certification Scheme.

"monitoring" includes the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys.

"*MPA Code of Practice*" means the MPA Code of Practice for the use of waste materials in Cement and Dolomitic Lime Manufacture – dated October 2014

"*oxides of nitrogen (NO_x)*" means nitric oxide (NO) plus nitrogen dioxide (NO_2) expressed as NO_2

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

"PCB" means Polychlorinated Biphenyl. Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below,

"PCP" means Pentachlorophenol,

"permitted installation" means the activities and the limits to those activities described in Table S1.1 of this Permit.

"*PFA*" means pulverised fuel ash and is the fine ash recovered from the gas stream from the combustion of pulverised coal in coal-fired power stations

"*quarter*" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"quarterly" for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

"*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.

"six monthly periodic monitoring" means periodic monitoring in each 6 month period (January-June & July – December) with at least 4 months between sampling dates.

"*SSSI*" means a site of special scientific interest designated under the Wildlife and Countryside Act 1981 being a site in the UK which is of particular importance because of its geology, topography, or ecology.

"*thermal input"* refers to the combined kiln fuel inputs at the main burner and back end of the kiln via stage four of the pre-heater tower.

"TOC" means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC.

"*Waste code*" means the six digit code referable to a type of waste in accordance with the List of Wastes 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 shall mean that the parameter shall not be less than that limit.

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

(a) in relation to emissions from cement kilns, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 10% dry for all fuels; and

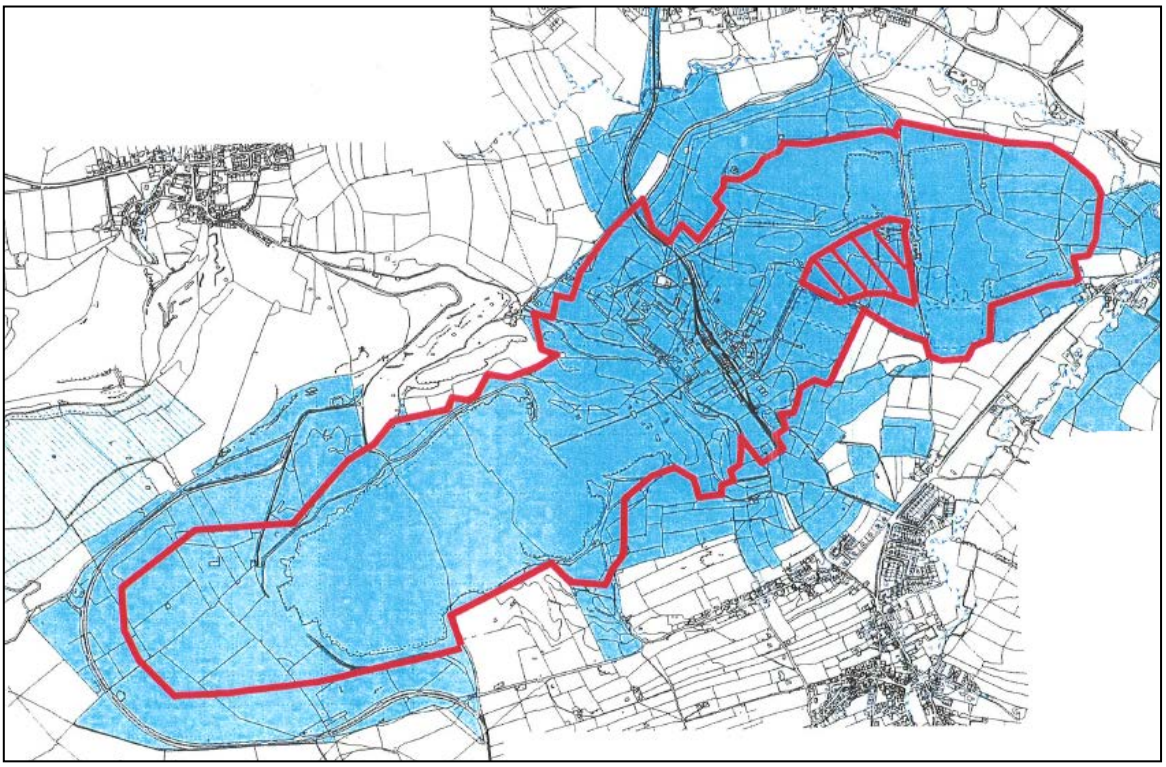
(b) in relation to emissions from non-combustion sources, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with no correction required for oxygen.

For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing.

TEF schemes for dioxins and furans				
Congener	**I-TEF**	**WHO-TEF**		
	1990	**2005**	**1997/8**	
		Humans / Mammals	**Fish**	**Birds**
Dioxins				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0003	-	-
Furans				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.3	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8_HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0003	0.0001	0.0001

TEF schemes for dioxin-like PCBs			
Congener	**WHO-TEF**		
	2005	**1997/8**	
	Humans / mammals	**Fish**	**Birds**
Non-ortho PCBs			
3,4,4',5-TCB (81)	0.0001	0.0005	0.1
3,3',4,4'-TCB (77)	0.0003	0.0001	0.05
3,3',4,4',5 - PeCB (126)	0.1	0.005	0.1
3,3',4,4',5,5'-HxCB(169)	0.03	0.00005	0.001
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	0.00003	<0.000005	0.0001
2,3,4,4',5-PeCB (114)	0.00003	<0.000005	0.0001
2,3',4,4',5-PeCB (118)	0.00003	<0.000005	0.00001
2',3,4,4',5-PeCB (123)	0.00003	<0.000005	0.00001
2,3,3',4,4',5-HxCB (156)	0.00003	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)	0.00003	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)	0.00003	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)	0.00003	<0.000005	0.00001

Schedule 7 – Site plan



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 as described in best available techniques (BAT) conclusions (BATc) for the production of cement, lime and magnesium oxide and detailed in document reference 2013/163/EU. Our full reasoning is given in our decision document that accompanies the permit determination.

The operator has been granted one derogation; from BAT 21 which sets a BAT-AEL for cement kiln oxides of sulphur (SOx) emissions of <50 - 400mg/Nm^3 (daily average). The derogation is time limited, to 31st March 2022, five years beyond the compliance date.

BAT conclusion	Associated BAT-AEL	Derogation until	ELV during derogation period	Previous ELV
21	<50 – 400 mg/Nm^3	31 March 2022	695 mg/Nm^3	850 mg/Nm^3

The proposed techniques will result in emissions for which the appropriate emission limit is less stringent than that associated with the best available techniques as described in BAT conclusions. The achievement of BAT emission levels by April 2017 would lead to disproportionately higher costs compared to the environmental benefits due to the 'technical characteristics', the 'local environmental conditions' and 'geographical location' of this installation.

We have considered the operators justification for departure from the guidance and accept it in the following respects and for the following reasons;

1) Breedon Cement Limited have demonstrated that their derogation is based on technical characteristics, local environmental conditions and the geographical location of their Installation. Their local shale supply is high in pyritic sulphur, leading to high SOx emissions from the kilns, however the shale quarry has limited reserves. They are the only cement producer located in a National Park which gives them unique constraints on their operations and increases the time taken to implement new developments.

2) Breedon Cement Limited are part-way through implementing a plan to partially replace shale with imported shale substitutes. Because the substitutes have a lower sulphur content, using them to replace the locally quarried shale reduces SOx emissions. We accept their argument that increased shale substitution will achieve compliance with the BAT-AEL. They have been granted a further derogation for 3 years (in addition to the previous 2 year derogation) to give them additional time to obtain planning permission and install the equipment needed to transport and store increased quantities (and ranges) of shale substitutes.

3) We have considered all of the techniques for meeting the BAT-AEL that are described in the BAT Conclusions. Granting the derogation is the best option with the highest NPV and we consider the costs of the other options to be disproportionate to the environmental benefits.

4) Air dispersion modelling has confirmed that the current level of SO_x emissions do not cause any exceedances of Air Quality Standards set for the protection of human health and the environment. These emission levels will be maintained throughout the 3 year derogation period then emissions will fall to below the BAT-AEL from April 2022.

We have ensured that no significant pollution is caused by allowing this derogation, and that a high level of protection of the environment as a whole is achieved.