

Environment Agency

Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England & Wales) Regulations 2010 (as amended)

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

The Permit number is: EPR/BL8805IZ
The Operator is: Singleton Birch Limited
The Installation is: Melton Ross lime Works
This Variation Notice number is: EPR/BL8805IZ/V010

Consultation commences/commenced on: 3 March 2017
Consultation ends/ended on: 31 March 2017

What this document is about

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

We have reviewed the permit for this installation against the revised BAT Conclusions for the Cement, Lime and Magnesium Oxide industry sector published on 9th April 2013 in the Official Journal of the European Union. In this decision document, we set out the reasoning for the consolidated variation notice.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to the decision made by the European Commission establishing best available techniques (BAT) conclusions (BATc) for the Manufacture of Cement, Lime and Magnesium Oxide as detailed in document reference 2013/163/EU. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position. It also provides a justification for the inclusion of any specific conditions in the permit that are in addition to those included in our generic permit template.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the

consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and with other permits issued to installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document we therefore address only our determination of substantive issues relating to the new BAT Conclusions and any changes to the operation of the installation.

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

How this document is structured

1. Our proposed decision
2. How we reached our decision
3. The legal framework
4. Annex 1– Review of operating techniques within the Installation against BAT Conclusions.
5. Annex 2 – Review and assessment of derogation request(s) made by the operator in relation to BAT Conclusions which include an Associated Emission Level (AEL) value.
6. Annex 3 – Improvement Conditions
7. Annex 4 – Consultation responses
8. Annex 5 – Review and assessment of changes that are not part of the BAT Conclusions derived permit review.

1 Our decision

We are minded to issue the Variation Notice to the Operator. This will allow it to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice that updates the whole permit. The installation is an existing facility and has been permitted since 22 August 2002 and previously to that regulated under the IPC regulations.

As part of our decision we have decided to grant the Operator's request for a derogation from the requirements of BAT Conclusion 42 as identified in the production of Cement, Lime and Magnesium Oxide BAT Conclusions document. The way we assessed the Operator's requests for derogation and how we subsequently arrived at our conclusion is recorded in Annex 2 to this document.

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

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

2 How we reached our decision

2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 1 May 2014 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document. The Notice required that where the revised standards are not currently met, the operator should provide information that

- Describes the techniques that will be implemented before 9 April 2017, which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 9 April 2017, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.

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

The Regulation 60 Notice response from the Operator was received on 8 January 2015.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review but not that it necessarily contained all the information we would need to complete that determination.

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

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

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

2.3 Requests for Further Information during determination

Although we were able to consider the Regulation 60 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a further information request on 22 May 2015. A copy of the further information request was placed on our public register.

In addition to the responses to our further information requests, we received additional information during the determination from the Operator relating to the derogation and site details dated 3 November 2016, 2 November 2016, 3

July 2015. We made a copy of this information available to the public in the same way as the responses to our information requests.

3 The legal framework

The Consolidated Variation Notice will be issued, under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

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

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

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

Annex 1: decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the *production of Cement, Lime and Magnesium Oxide*, were published by the European Commission on 9 April 2013. There are 69 *conclusions included in the BATc Document* BAT Conclusions: 1-29 associated with production of cement; 30-54 associated with the production of Lime and 55-69 associated with the production of Magnesium oxide. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the Consolidated Variation Notice.

Our assessment of the overall status of compliance with the BAT conclusion is indicated in the table as:

- NA Not Applicable
- CC Currently Compliant: we have reviewed the information available to us and consider that it provides sufficient evidence to show that the operator is currently compliant with the BAT conclusion, and we have no reason to believe that this will change before the implementation date.
- FC Compliant in the future (within 4 years of publication of BAT conclusions): we have reviewed the information available to us and consider that it provide sufficient evidence to show that the operator has suitable plans in place to ensure that they will be compliant with the BAT conclusion by the implementation date.
- NC Not Compliant

BAT Conclusion No	Summary of BAT Conclusion requirement for production of Cement, Lime and Magnesium Oxide	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
3-29 55-69	BAT Conclusions that are not applicable to this installation	NA	BAT Conclusions 3 – 29 inclusive are not applicable as they apply to cement industry only. BAT Conclusions 55 – 69 inclusive are not applicable as they apply to the magnesium oxide industry only.
1	In order to improve the overall environmental performance of the plants/installations producing cement, lime and magnesium oxide, production BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the listed features.	CC	Singleton Birch have accreditation to 9001, 14000 and 18000 The scope registered with BSI is " <i>The sales, production and processing of all chalk products (calcium carbonate), quicklime(burnt lime/calcium oxide), hydrate lime (slaked lime/calcium hydroxide), natural hydraulic lime and the lime based products manufactured by Innovo Chemicals Ltd. The operation of Campwood landfill site. The hire and/or operation of contracting services at customers premises</i> ". Currently there are two visits from BSI a year with five man days spread between standards specialists. Accepted CC
2	In order to reduce/minimise noise emissions during the manufacturing processes for cement, lime and magnesium oxide, BAT is to use a combination of the listed techniques.	CC	Singleton Birch carries out both occupational and environmental noise monitoring surveys. Data collected in these surveys is used to identify potential noise sources and an improvement programme is in place to minimise noise from these sources. The BATC list 19 techniques for noise reduction and minimisation, SB has identified those methods the installation employs and stated that replacement plant takes into account BAT techniques. Accepted CC
30	In order to reduce all kiln emissions and use energy efficiently, BAT is to achieve a smooth and stable kiln process, operating close to the process parameter set points by using the listed techniques.	CC	The kilns are operated using a modern computer based control system. Kiln operations are covered by site management systems and various parameters will be taken into consideration, such as temperature and pressure, to monitor and maintain smooth and stable operations. Solid fuels are not currently used at plant Singleton Birch. Singleton Birch operates a process control and maintenance optimisation system that looks to maintain before breakdown, to ensure maximise plant availability and run times. Accepted CC
31	In order to prevent and/or reduce emissions, BAT is to carry out a careful selection and control of the raw materials entering the kiln.	CC	The main raw limestone feed is quarried from the onsite chalk deposit, which because of the length of time Singleton Birch have operated and run the site; characteristics are well known. Due consideration on operating parameters for different raw Singleton Birch stone feed (dolomite, hydraulic lime raw stone, contract burn stone) is considered before during and after use to ensure efficient operating conditions, product quality, emissions requirements are met. This raw material input monitoring allows control of emissions. Accepted CC

BAT Conclusion No	Summary of BAT Conclusion requirement for production of Cement, Lime and Magnesium Oxide	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
32	<p>BAT is to carry out monitoring and measurements of process parameters and emissions on a regular basis and to monitor emissions in accordance with the relevant EN standards or, if EN standards are not available, ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</p> <p>Particulate matter (PM) Oxides of Nitrogen (NOx) Oxides of Sulphur (SOx) Carbon monoxide (CO) Hydrogen Chloride (HCl) Hydrogen Fluoride (HF) Total organic carbon (TOC) Dioxins and Furans (PCDD/F)</p>	FC	<p>Singleton Birch Limited reviewed the 7 techniques outlined in the BATC and highlighted the key areas of compliance. An additional RFI covering point c,e,f and g were needed to show compliance with all the areas. These are summarised below:</p> <p>(c) Confirmation that particulates are measured twice per year on kilns; (e) TOC monitoring has been limited on the basis of control of the raw materials, previous testing indicated levels below the BATC. (f) Previous monitoring of PCDD/F have been required by improvement conditions only with results considered negligible. (g) 4 small sources (<10,000 Nm³) were identified for inclusion within the permit.</p> <p>BAT 32 e and f: Monitoring of TOC, PCDD/F and metals is not routinely undertaken as “there is no permit requirement to do so”. Due to the nature of the raw material and fuel, high levels of these pollutants is not likely, and this was confirmed for PCDD/F with a sampling exercise carried out after the last permit review. We are including the requirement to carry out annual periodic monitoring to ensure compliance with BAT. Refer to Key issues section 2.</p>
33	<p>In order to reduce/minimise thermal energy consumption, BAT is to use a combination of the listed techniques.</p>	CC	<p>The operator interpreted the BATC as only applicable to new installation. This is the case for cement installations but no specific exclusion applies in BATC33. As such, the BAT-associated levels for thermal energy consumption in the lime and dolime industry would apply. In this case for PFRK kilns it would be in the range 3.2 - 4.2 GJ/tonne of product. The operator claims compliance within these levels without providing specific evidence. This is considered acceptable on the basis of the nature of the process and the examples provided of energy efficiency techniques employed. Should Singleton Birch carry out a major upgrade of the kiln any cost effective opportunities to reduce energy consumption towards the BAT associated energy level will be assessed as part of the upgrade project. '</p> <ul style="list-style-type: none"> Natural Gas Fuel is metered into the kiln along with kiln feed stone to ensure process control optimisation. The size of stone feed stone is controlled and various grades are supplied to the kilns, to meet product mix requirements and efficient kiln production. <p>The company operates its own computer controlled maintenance and breakdown software to ensure maintenance and breakdown activities are maintained and controlled.' Accepted CC</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for production of Cement, Lime and Magnesium Oxide	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
34	In order to minimise electrical energy consumption, BAT is to use one or a combination of the listed techniques.	CC	To minimise electrical energy usage Singleton Birch uses process optimisation and energy management techniques to ensure an efficient process. This includes a comprehensive metering system allowing break down of electricity consumption to each plant to monitor efficiency of plant and baseline demand for energy to inform energy improvement projects. Singleton Birch also utilise optimisation of grain size and efficient grinding equipment Accepted CC
35	In order to minimise limestone consumption, BAT is to use one or a combination of the listed techniques	CC	X-ray and optical sorting techniques are examples of applying techniques which allow for operating with a wider range of grain size. Aspects of quarrying chalk as opposed to Limestone need to be considered when minimising limestone consumption – for example the length of time from blasting to processing due to moisture absorption. Accepted CC
36	In order to prevent/reduce emissions, BAT is to carry out a careful selection and control of fuels entering the kiln	CC	At present Singleton Birch only uses natural gas for kiln operation. Accepted CC
37	In order to guarantee the characteristics of waste to be used as fuel in a lime kiln, BAT is to apply the listed techniques:	NA	This is not currently applicable to the Singleton Birch limited. This is accepted as the BATC37 4.3.5.1 is for use of waste fuels and Singleton Birch do not use wastes as fuel. Not applicable
38	In order to prevent/reduce emissions occurring from the use of waste fuels into the kiln, BAT is to use the listed techniques	NA	This is not currently applicable to the Singleton Birch Limited. This is accepted as the BATC38 4.3.5.2 is for use of waste fuels and Singleton Birch Limited do not use wastes as fuel. Not applicable
39	In order to prevent accidental emissions, BAT is to use safety management for the storage, handling and feeding into the kiln of hazardous waste materials	NA	This is not currently applicable to the Singleton Birch Limited. This is accepted as the BATC39 4.3.5.1.3 is for use of waste fuels and Singleton Birch Limited do not use wastes as fuel. Not applicable
40	In order to minimise/prevent diffuse dust emissions from dusty operations, BAT is to use one or a combination of the listed techniques	CC	Singleton Birch Limited listed the techniques it employs to comply with BATC40. There were 10 techniques listed and the operator highlighted equivalent techniques currently employed. Accepted CC
41	In order to minimise/prevent diffuse dust emissions from bulk storage areas, BAT is to use one or a combination of the listed techniques	CC	Singleton Birch listed the techniques it employs to comply with BATC40 (as part of the RFI response). There were 7 techniques listed and the operator highlighted equivalent techniques or provided examples or activities currently employed. Accepted CC

BAT Conclusion No	Summary of BAT Conclusion requirement for production of Cement, Lime and Magnesium Oxide	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
42	In order to reduce channelled dust emissions from dusty operations other than those from kiln firing processes, BAT is to use one of the listed techniques and to use a maintenance management system which specifically addresses the performance of filters	CC	Fabric filters are used and are subject to both inspection and maintenance systems, regular inspections are carried out on the external aspects of the filter with an at least annual internal inspection and performance report. These inspections are used to define maintenance plans to ensure satisfactory performance of the filtration system to external environments. Replacement filters are designed to be less than 10mg/Nm ³ . The RFI response to BATC 32(g) listed the 4 emission points below 10,000Nm ³ . Accepted CC
43	In order to reduce dust emissions from the flue-gases of kiln firing processes, BAT is to use flue-gas cleaning with a filter. One or a combination of the listed techniques can be used	NC	Singleton Birch operates wet dust separators. They do not meet the <20mg/Nm ³ , (Current permit limit 50mg/Nm ³ on 1 & 100mg/Nm ³ on 3) however they have been trialling a venturi wet dust separator on kiln 3 that should be able to achieve this BATC level. Singleton Birch plan to replace the existing wet scrubbers on kilns 1, 2 and 4 to the kiln 3 type. A time limited derogation has been requested as the modifications are made in the normal kiln reline schedule, and at least one kiln will not be relined until after the 2017 deadline. The new venturi wet scrubber systems are a direct replacement for the existing wet scrubbers. To ensure the new wet scrubbers are installed correctly they are fitted as part of a kiln reline, allowing the conditions of the existing kiln parts where the joints are to be made are suitable and sufficient to be made good. A typical kiln reline is in the region of £1 to 1.5 million and a new venturi scrubber is in the region of £100 to 200 thousand pounds. It is engineering practice to link these kiln modifications with the kiln reline. The new venturi systems also require different water delivery systems which are safer and easy to install when the kiln is shut down and cool. Kiln relines only occur when required and depend on a number of factors such as product mix and refractory life. Typically the relines occur between five and seven years. It is technically feasible to change the top section of the kiln in a mini shut down but the risks of unknown conditions on the sections of kilns which cannot be seen to make the joins and other kiln infrastructure (access platforms etc.) make it an unattractive risk to carry out. Refer to Annex 2 derogation.
44	In order to reduce the emissions of gaseous compounds (i.e. NO _x , SO _x , HCl, CO, TOC/VOC, volatile metals) from the flue-gases of kiln firing processes, BAT is to use one or a combination of the listed techniques	CC	Singleton Birch burns natural gas with a well characterised chalk feed material. The kilns are fed from the onsite quarry at the Melton Ross site. This chalk material is well known and has been burnt on site for over forty years. Other raw feed materials, limestone or dolomite have been burnt as and when required. These feed materials are tested to ensure their suitability for burning in the kilns. Natural gas is the primary fuel on site, in the past propane was used for gas interruption processes. Any fuel used to replace or supplement the natural gas used will be sourced to meet current specifications or will meet other recognised standards and suitable monitoring standards as required. Accepted CC

BAT Conclusion No	Summary of BAT Conclusion requirement for production of Cement, Lime and Magnesium Oxide	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
45	In order to reduce the emissions of NOx from the flue-gases of kiln firing processes, BAT is to use one or a combination of the listed techniques	CC	Singleton Birch currently only burns natural gas, which is easy to control and as predictable combustion properties. The levels of NOx achieved are a function of the product mix, and whether burning hard lime. The current limit (V09) is 200Nmg/m ³ vs a BATC range of 100-350 mg/Nm ³ . Accepted CC
46	When SNCR is used, BAT is to achieve efficient NOx reduction, while keeping the ammonia slip as low as possible, by using the listed technique	NA	SNCR is not used at the site and thus the BATC is not applicable.
47	In order to reduce the emissions of SOx from the flue-gases of kiln firing processes, BAT is to use one or a combination of the listed techniques	CC	Singleton Birch only burns natural gas, which is easy to control and as predictable combustion properties. The levels of SOx achieved are a function of the low raw feed sulphur levels in the raw chalk and the use of low sulphur fuel natural gas. In the future other fuels maybe considered and appropriate technical measures required at time of implementation. The current limit (V09) is 50 mg/Nm ³ vs a BATC range of <50-200 mg/Nm ³ . As the current limit is within the BATC range and there are no indications of environmental impacts or non-compliances the existing limit will be maintained beyond April 2017. Accepted CC
48	In order to reduce the emissions of CO from the flue-gases of kiln firing processes, BAT is to use one or a combination of the listed techniques	CC	The chalk raw feed as very low organic matter content, but CO levels can be influenced by burning characteristics in the kiln and on product mix in production. The levels of organic matter are considered if other limestone's or hydraulic lime are burnt in the kiln. There is current limit (V09) is 50 mg/Nm ³ vs a BATC range of <500 mg/Nm ³ . As the current limit is within the BATC range and there are no indications of environmental impacts or non-compliances the existing limit will be maintained beyond April 2017. Accepted CC
49	In order to minimise the frequency of CO trips when using electrostatic precipitators, BAT is to use the listed techniques	NA	Not applicable as ESP's are not utilised.
50	In order to reduce the emissions of TOC from the flue-gases of kiln firing processes, BAT is to use one or a combination of the listed techniques	NC	The chalk raw feed as very low organic matter content, but TOC levels can be influenced by burning characteristics in the kiln and on product mix in production. The levels of organic matter are considered if other limestone's or hydraulic lime are burnt in the kiln. The kilns are PFRK and all test spot tests for TOC have been below <30mg/Nm ³ level.' Although the response is acceptable an ELV will be applied to the permit of <30mg/Nm ³ . The method of compliance needs to be clarified subject to site specific monitoring approaches.

BAT Conclusion No	Summary of BAT Conclusion requirement for production of Cement, Lime and Magnesium Oxide	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
51	In order to reduce the emissions of HCl and the emissions of HF from the flue-gas of kiln firing processes, when using waste, BAT is to use the following primary techniques	NA	This is not currently applicable to Singleton Birch Limited. This is accepted as the BATC38 4.3.5.2 is for use of waste fuels and Singleton Birch limited do not use wastes as fuel. Not applicable
52	In order to prevent or reduce the emissions of PCDD/F from the flue-gas of kiln firing processes, BAT is to use one or a combination of the listed primary techniques	NC	At the current time Singleton Birch only burns natural gas, which is easy to control and as predictable combustion properties. The levels of PCDD/F achieved are a function of the fuels used and natural gas contains low levels of chlorine and fluorine. The spot analysis that have been done on the kilns are below the <0.05-0.1 ng/Nm ³ PCDD/F level'. The BATC requires the imposition of an ELV in this case 0.1 ng/Nm ³ PCDD/F. This is a new monitoring requirement on the permit as required by the BATC. Refer to key issues section 1
53	In order to minimise the emissions of metals from the flue-gases of kiln firing processes, BAT is to use one or a combination of the listed techniques	NA	At the current time Singleton Birch only burns natural gas, which is easy to control and as predictable combustion properties. This minimises the possible emission of metals from fuels ad raw materials are monitored for metals content. There are no applicable BAT-AEL as these only apply when burning wastes. Accepted CC
54	In order to reduce the solid wastes from the lime manufacturing processes and to save raw materials, BAT is to use the listed techniques	CC	Wherever possible and within quality control restraints, kiln dust is recovered at the site. Any excess can be handled by external recovery companies for beneficial recovery purposes such as soil ph. adjustment. The use of landfill for disposal is a 'last resort' in accordance with the waste hierarchy. This should be covered as part of a routine inspection programme. Accepted CC
	Site condition report.		Singleton Birch provided information in the form of IPPC site report 2001 GWCL-30/9/2015: An improvement condition could be used to ensure a monitoring plan is in place for soil testing every 10 years and groundwater testing every 5 years unless it can be demonstrated why this is not necessary. This is in accordance with H5 guidance. All potential sources of contamination should be identified and these areas should be appropriately tested for potential contaminants of concern. Consideration could be given to using any additional monitoring points that may be installed for baseline data for ongoing monitoring purposes.

Key Issues

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

We have reviewed the limits and monitoring requirements for all emissions at the installation to ensure that they are in accordance with the requirements of the BATCs. The review includes emission points, many fairly small, not currently listed in the permit. The Operator provided a comprehensive list of all channelled dust emissions together with an indication of volumetric flow rate to enable us to assess inclusion and appropriate monitoring.

The general approach is that dust emissions >10,000 Nm³/hr are listed individually, have a dust limit applied (in accordance with the BAT-AEL for the type of abatement) with a monitoring requirement to demonstrate compliance. Dust emissions <10,000 Nm³/hr, which are deemed “small sources” by the BATCs, are included as group.

Section 1 covers emission limits and section 2 covers monitoring.

1. Emission limit changes: BATc 42, 43, 50 and 52

Changes to some emission limits and the introduction of new ones are required to ensure compliance with the BAT Conclusions. All the new and revised limits apply from 9 April 2017, the compliance date.

The following table provides an overview of emission limits within permit tables S3.1 and S3.2, with changes highlighted in bold text:

Overview of changes to emission limit values:

Parameter	ELVs (mg/m ³)		BAT-AEL mg/Nm ³
	Previously: Variation V009 (<i>superseded by this variation</i>)	New Limit: (Variation V010) Limits valid from fitting of venturi scrubbers	
Kiln emissions (permit table S3.1):			
Particulate matter (mg/Nm³)	K1-100 K2-100 K3-50 K4-100	K1-20 K2-20 K3-40* (20) K4-20	<20
NOx (mg/Nm ³)	200	200	100 – 350
SOx (mg/Nm ³)	50	50	<50 – 200
CO (mg/Nm ³)	50	50	<500
TOC (mg/Nm³)		30	<30
Dioxin & furans PCDD/F (ng/Nm³)	No previous limit	0.1	<0.05-0.1 (ng/Nm ³)

(*) Valid to December 2018 after which 20mg/Nm³ to allow optimisation of existing venturi scrubbers.

Non-kiln dust emissions (permit table S3.2):			
A5, A6 (mg/Nm³)	30	10	<10
A7-A8 (mg/Nm³)	50	10	<10
All other abated channelled dust emissions (<10,000Nm³hr)	No previous limit	10	10

CHP related emission points (permit table S3.2):			
A9, A10, A11, A12, A13, A14, A31 and A32. Stacks on CHP engines No.1 - 8 on site plan 'Phase 3 EA Layout' Issue 2 submitted 09/07/15	NOx - 500 mg/Nm ³ CO – 1,400 mg/Nm ³ SO2 – 350 mg/Nm ³ TOC – 1,000 mg/Nm ³	NOx - 500 mg/Nm ³ CO – 1,400 mg/Nm ³ SO2 – 350 mg/Nm ³ TOC – 1,000 mg/Nm ³	N/A
All other emission unchanged			

a. TOC and PCDD/F :

The BAT conclusions introduce BAT-AELs for TOC (BATC 50) and dioxins/furans (BATC 52) in kiln emissions, despite the fact that we do not expect to find these parameters in significant quantities due to the nature of the process and fuel used. A limit is now included for each parameter in line with the BAT-AEL, applied from the compliance date.

All other kiln parameters (NOx, SOx and CO) have existing limits which are within the BAT-AEL, so these limits are retained.

b. Dust:

Non kiln dust emissions are all abated by filters and hence every dust limit is reduced to 10 mg/Nm³, in line with the BAT-AEL for fabric filters set by BATC 42 and 43, non-kiln and kiln emissions. Kiln emissions are abated using venturi scrubbers with a Bat-AEL of <20 mg/Nm³. These emission points were subject to a derogation and ELVs were set appropriate to the outcome of the derogation review. Refer Annex 2.

The request is retain existing ELV's of 100mg/Nm³ while a phased fitting of venturi scrubbers to kilns 1, 2 and 4 is undertaken between 2017 and 2020. Kiln 3 has venturi scrubbers fitted since 2012 but a derogated limit of 40mg/Nm³ is requested until optimisation is completed. On fitting the scrubbers all kilns will be BAT-AEL compliant by December 2020. Derogations for all four kilns were considered together

The group “*all other channelled dust emissions abated by fabric filters*” is provided as a catch-all for non-listed “small source” emission points provided with abatement as these need a dust emission limit set in line with BATC 42. This group consists of abated emission points, mainly from silos and transfer points.

Information provided by the operator indicates that all of the points associated with lime manufacture on the site (except for kiln emissions) are below 10,000Nm³/hr. We have changed the monitoring requirements in line with the general approach (refer section 2).

2. BATC32 Frequency of monitoring

The basis for choosing a frequency and method (continuous or periodic) of monitoring of emissions included reference to the BATC, an assessment of the mass of release, potential impacts, previous compliance history and process variability. The results are summarised here and reflect the permit conditions.

Referring to BATC 32 c-g, there are no specific regulatory requirements defined in the BREF other than the statement “continuous or periodic” for the parameters dust, NOx, SOx, CO, TOC, HCl and HF. For PCDD/F and metals, it is periodic only. Each emission point has been assessed to decide if it should be monitored continuously or periodically, and if the latter, the frequency of sampling has been decided based upon risks posed. We have taken into account the history of compliance as well as the scale and impact of a potential release in setting the monitoring requirements.

a. Kiln dust, NOx, SOx and CO (BATC 32c):

The kiln releases have been monitored periodically for particulates. From the compliance date (9 April 2017), we are increasing the frequency of sampling in-line with the derogation outcomes and associated improvement condition. The dust monitoring frequency is initially set at quarterly as there have been some exceedances of the (higher) ELV, and we would like to be confident that the new limit of 20mg/Nm³ is complied with. This frequency can be reviewed once compliance with the new lower limit is demonstrated.

The frequency of periodic monitoring for NOx, SOx and CO is retained 6 monthly, however the reference period is increased from 30 minutes to 1 hour minimum, to enable more reliable, accurate results.

b. Kiln TOC, Dioxins/Furans and metals (BATC 32e, f):

The BATc description states that for periodic measurements of PCDD/F, TOC and metal emissions “*a frequency appropriate to the raw materials and fuels that are used in the process should be applied*”. Due to the nature of the raw material (high purity, washed limestone) and fuel (natural gas), we do not expect high levels of these pollutants to be emitted. This was confirmed for PCDD/F with a sampling exercise carried out after the last permit review.

IED article 14(d) requires a demonstration of compliance at least annually against permit conditions. As an ELV is being set for TOC and PCDD/F, an annual compliance check is required, so we are setting periodic monitoring at a minimum frequency – **annual**.

In the UK, dioxin monitoring trials have taken place at many different lime kilns and the highest concentration recorded was 0.017 ng I-TEQ/Nm³, which is only 17% of the relevant BAT AEL. Most results were much lower than this. UK plants use natural gas as a fuel and do not burn any waste materials, and so the chloride input and the risk of high dioxin emissions is minimal. A risk-based approach would suggest that frequent dioxin monitoring is not required at lime kilns in the UK, unless there is a significant change in fuel, raw materials or residence time in the critical 300°C to 400°C temperature window.

An alternative protocol for dioxin monitoring, taking into account the known risk factors leading to dioxin formation has been adopted:

A dioxin and furans PCDD/F test by an approved MCERTS contractor will be carried out on one kiln of each type per site. Provided the result is well below the limit of 0.1 ng/Nm³ and the fuel type (natural gas) does not change and the stone feed type does not change and there are no significant kiln process changes (e.g. new type of burner, change in physical configuration of the kiln which affects internal kiln gas flow) then that result will stand for a maximum of four years. A report will be written confirming the no change in operation and issued to the Environment Agency on an annual basis. Any changes will require a new baseline dioxin year to be established.

This protocol (a combination of a baseline measurement to prove that current emissions are well below the ELV and assessment of surrogate parameters to ensure that the risk of high dioxin concentrations remains minimal) would be adequate to demonstrate compliance with the ELV, without the cost burden of annual monitoring for each kiln.

There is no limit for emissions of metals when not burning waste, so monitoring is not required.

c. Non-kiln dust (BATC 42):

We have applied a periodic monitoring frequency appropriate to the scale of the release, process variability and environmental risk :

A5 –A8 have had a reduction in ELV and we have decided to retain 6 monthly sampling in line with the scale and nature of the releases.

For all emission sources <10,000 Nm³/hr, no periodic monitoring is set as these are regarded as “small sources” by BATC 32 which states that “*for small sources, the frequency of the measurements should be based on a maintenance management system*”. This includes the emission group “*all other channelled dust emissions*” and a maintenance management system is now required to ensure compliance.

All periodic dust monitoring has a reference period of 30 minutes (minimum). This is considered to be an appropriate period for these emissions.

Emission point	Parameter	Type of monitoring	Frequency	Reference period
A1, A2, A3, A4 (kilns)	Particulates	Periodic	Quarterly*/ 6 monthly	Min 30 min
	NOx, SOX, CO	Periodic	6 monthly	Min 30 min
	TOC	Periodic	Annually	Min 30 min
	PCDD/F	Periodic	Annually	6 – 8 hr
A5, A6, A7, A8	Particulates	Periodic	6 monthly	Min 30 min
All other abated emission points	Particulates	Maintenance schedule		
ELV and sampling frequency associated with CHP plant are unchanged				

- Subject to derogation outcomes

Monitoring - Reference conditions

The reference conditions for reporting measured emissions from non-combustion sources has been changed by the BATCs from no correction required for temperature, pressure, oxygen or water vapour content, to reporting **dry at Standard temperature and pressure (STP)** with no correction for oxygen, and for lime hydrating plants, **at STP** with no correction for oxygen or water vapour. The Schedule 6 interpretation has been updated for this change.

The length of sampling period can vary from ½ hour to 6-8 hours depending on the sampling strategy and standard used. For compliance purposes the selection of sampling period reflects the likelihood of variance, potential impacts and the frequency of sampling. In general terms smaller releases with limited potential for impact have sampling frequencies as low as ½ hour. Larger releases, or where compliance is based on infrequent sampling, have a longer sampling period to allow it to be more representative.

Annex 2: Assessment, determination and decision where an application(s) for Derogation from BAT Conclusions with associated emission levels (AEL) has been requested.

The IED enables a competent authority to allow derogations from BAT AELs stated in BAT Conclusions under specific circumstances as detailed under Article 15(4):

'By way of derogation from paragraph 3, and without prejudice to Article 18, the competent authority may, in specific cases, set less strict emission limit values. Such a derogation may apply only where an assessment shows that 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:

(a) the geographical location or the local environmental conditions of the installation concerned; or

(b) the technical characteristics of the installation concerned.

The competent authority shall document in an annex to the permit conditions the reasons for the application of the first subparagraph including the result of the assessment and the justification for the conditions imposed. '

A summary of any derogations granted is also recorded in Annex 1 of the Consolidated Variation Notice in accordance with the requirement of IED Article 15(4) as described above.

As part of their Regulation 60 Notice response, the operator has requested a derogation from compliance with the AEL values included in the following BAT Conclusion as detailed below.

Although information was provided in their response to allow us to commence assessment of the derogation request it was insufficient to enable us to complete the determination and further information was requested and subsequently supplied on the 2 and 3 November 2016.

On review and assessment of this information we have decided to grant the derogation requested by the operator in respect to the AEL values described in BAT Conclusion 43, but have included different Emission Limit Values in the Consolidated Variation Notice that will ensure suitable and achievable protection of the environment.

The way in which we have considered, assessed and determined the derogation request is detailed in the section below.

Singleton Birch limited requested a time limited derogation from BAT 43, Dust emissions from kilns firing processes as detailed in the BAT Conclusions for the manufacture of cement, lime and magnesium oxide. The derogation request was made on the basis of geographical location and technical characteristics of the installation, specifically the influence of the raw materials

(chalk) and the requirement to await the normal kiln shutdown dates to fit venturi scrubbers.

The request is to retain existing ELV's of 100mg/Nm³ while a phased fitting of venturi scrubbers to kilns 1, 2 and 4 is undertaken between 2017 and 2020. Kiln 3 has venturi scrubbers fitted since 2012 but a derogated limit of 40mg/Nm³ is requested until optimisation is completed. On fitting the scrubbers all kilns will be BAT-AEL compliant by December 2020. Derogations for all four kilns were considered together.

The request criteria is considered on technical grounds (based on awaiting kilns shutting down to fit venturi scrubbers) and the technical characteristics of the raw materials. The impact of the geographical location of the site, linked to the raw materials, was also considered, specifically the influence of the characteristics of the raw materials (chalk).

The Operator's application considered 4 options for meeting the BAT-AEL. They have proposed to implement fitting of venturi scrubbers to all kilns by 2020 to achieve the BAT-AEL limits.

The Environment Agency has reviewed the application and concluded

The operator has supplied a valid derogation request against the BAT conclusions 43. The derogation request identified a valid technical criteria linked to the date when venturi scrubbers to the kilns 1, 2, and 4 as well as the impacts of the geographical location of the installation and how it relates to the raw materials. Fitting is only viable when the kilns are shut down as part of their normal production cycle but would be completed by December 2020 when the installation will be fully compliant with the BAT-AEL. The operator has described 4 relevant options for achieving the BAT-AEL and did not screen out any options and all were taken forward to conduct a cost benefit analysis.

- The operator requested that the timescale for implementing fitting venturi scrubbers to achieve compliance with the BATAEL takes account of the planned kiln shutdown time periods. Lime kilns operate on a semi-continuous basis with significant runtimes to ensure no damage to the kiln lining. This request is considered justified under the technical criteria and expanded by DEFRA as "the practicability of interrupting the activity so as to install improved emission control upon the pollutant", the general investment cycle for a particular type of installation could also be considered. In this case all changes would be complete by December 2020.
- The operator has also highlighted that the raw material available to them is chalk as opposed to the typically used limestone. The properties of chalk, particularly its softness and moisture content, have a direct impact of the ability of the plant to meet the BAT-AEL defined under BATC43. Completely replacing local chalk with imported substitute materials would require substantial infrastructure investment and increased transport costs, as well as planning permission and is not considered viable. As the installation is constrained to use the locally available chalk, and this brings with it the technical issues leading to higher particulate releases, the combination of geographical and technical characteristics are considered relevant to allow the derogation request to proceed.

- The derogation request was to retain the current ELV's of 100mg/Nm³ for kilns 1, 2 and 4 and reduce the ELV for kiln 3 from 50 mg/Nm³ to 40mg/Nm³. The operator has stated that they will fit venturi scrubbers to kilns 1, 2 and 4 in line with normal kiln shut downs and optimise performance of the venturi scrubbers on kiln 3. All kilns will be compliant with the BAT-AEL of 20mg/m³ by December 2020.
- The Operator has addressed all the options for achieving the BAT-AEL. Centrifugal separators/cyclone are identified in the BATC as an applicable technique but they are only suitable as pre-separators and can be used to pre-clean the flue-gases from all kiln systems. On this basis they are not considered further as an independent option. If a fabric filter or ESP was considered cyclones could be introduced as part of the conditioning process.
- The operator has referred to the BAT Conclusions and addressed all reasonable options for achieving the BAT AEL. As a reduction of particulate release is not practicable by alternate raw materials, abatement methods need to be used. These abatement methods are: wet scrubbers (and the derivation-venturi scrubbers), Electrostatic Precipitators (ESP) and bag filtrations systems.

Table A Operator request and implementation dates

	BAT-AEL (from April 2017)	Current ELV	Proposed	Date when BAT-AEL will be achieved - then 20mg/Nm ³
Kiln 1	20 mg/Nm ³	100 mg/Nm ³	100 mg/Nm ³	December 2020
Kiln 2	20 mg/Nm ³	100 mg/Nm ³	100 mg/Nm ³	December 2020
Kiln 3	20 mg/Nm ³	50 mg/Nm ³	40 mg/Nm ³	December 2020
Kiln 4	20 mg/Nm ³	100 mg/Nm ³	100 mg/Nm ³	December 2020

The operator has demonstrated that the costs of achieving the BAT-AEL by April 2017 are disproportionate to the environmental benefits. The derogation request is to delay compliance with the BAT-AEL while the operator installs install venturi scrubbers on kilns 1, 2 and 4 by December 2020.

The environmental impacts (estimated at 18 tonnes PM10 over 4 years) as a result of this decision are not considered significant. The current PC of the kilns is modelled at 22% of the Short term AQS and this would drop to 12% as a result of the proposed derogation. The environmental receptors, including SSSI, are unlikely to be affected by this decision.

- Summary of the environmental consequences of allowing a derogation. There has been no significant history of pollution complaints relating to dust from this installation. However, it should be noted that particulate releases from the entire installation would include fugitive releases from quarrying and other site activities such as crushing etc. The nature of chalk quarrying is such that raw material is not left in stockpiles for any length of time as the chalk will readily absorb water. This absorption will generally reduce the risks of offsite issues compared to other lime works. A long period of very dry weather however could have the opposite effect.
- The predicted impact of derogating from the BAT-AEL on any long term or short Air Quality Standards / Environmental Assessment Levels have been based on modelling undertaken in 2001 that was still considered relevant today. The modelling included assumptions that all the particulate matter was Pm10 and that kiln 4

abatement was better than kilns 1, 2, and 3. The emission levels modelled were for 40mg/Nm³ for kilns 1, 2, 3 and 20mg/Nm³ for kiln 4. The modelling levels were set at a value that was considered representative of actual production but the limit (100mg/Nm³) was set to account for the variability.

- The modelling concluded the following: The PC from the four kilns was 22% of the short term AQS (10.9ug/m³ vs 50ug/m³) and 12% of annual standard (4.6ug/m³ vs 40ug/m³). An estimate of the impacts when all kilns operated at an ELV of 20mg/Nm³ would be a PC of 12% of the Short term AEL just above the 10% insignificance test mark and 6% of the annual AEL.
- The modelling data was used to extrapolate the impacts at the ELV of 100mg/Nm³ and concluded that at this level it would be 62% of the short term AQS and 32% of the long term annual standard. However, these values are very conservative as they include the assumption of continual releases at the ELV value, all the releases to be Pm10 and full production rate

The proposed derogation, timescale and associated ELV's have been accepted. However, as the venturi scrubbers are fitted the ELV's would move to the BAT-AEL level of 20mg/Nm³. The exception to this is kiln 3 where the ELV would be 40mg/Nm³ would be granted until December 2018. This will provide time to complete optimisation of the venturi scrubber on this kiln. An additional improvement condition has been place on the permit that increases the frequency of testing subsequent to the fitting of venturi scrubbers ELV's. This improvement condition allows for optimisation of the venturi scrubbers to increase abatement efficiency.

The Environment Agency is therefore minded to allow this derogation request subject to the following conditions

- Upon fitting of venturi scrubbers to kiln 1, 2, and 4 the ELV will be set at 20mg/Nm³
- The ELV for particulate for kiln 3 will be reduced to 20mg/Nm³ by December 2018.
- Improvement condition: - "The operator shall undertake an investigation to establish the parameters that affect the abatement performance of the venturi scrubbers. Testing will be conducted 4 times in the first year after installation of the venturi scrubber to gather additional test results. A report shall be provided to the Environment Agency summarising the findings."
- Increase sampling from twice per year to four times per year after venturi scrubbers are fitted.

Annex 3: Improvement Conditions

Based on the information in the Operator's Regulation 60 Notice response and our own records of the capability and performance of the installation at this site, we consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BAT Conclusions are achieved by the installation. These improvement conditions are set out below - justifications for them is provided at the relevant section of the decision document (Annex 1 or Annex 2).

We also consider that we need to set improvement conditions relating to changes in the permit not arising from the review of compliance with BAT conclusions. The justifications for these are provided in Annex 5 of this decision document. Use this paragraph if IC need to be set arising from other permit changes effected at the same time as the BATc permit review.

If the consolidated permit contains existing improvement conditions that are not yet complete or the opportunity has been taken to delete completed improvement conditions then the numbering in the table below will not be consecutive as these are only the improvement conditions arising from this permit variation.

Reference	Improvement Condition	Completion date
IC1	The operator shall produce and submit a project plan setting out how releases of particulates in the exhaust gases from all 4 kilns will be minimised and at least reduced to <10 mg/m ³ as daily averages for bag filters or <20 mg/m ³ as daily averages when using wet scrubbers, by the target date of 30th June 2014.. The project plan will be based on consideration of costs and benefits of all relevant options and using options appraisal methodology H1 or equivalent.	30/07/2011
IC2	The operator shall produce and submit a project plan setting out how releases of particulates from all significant non-kiln sources will be minimised and at least reduced to <10 mg/m ³ as daily averages for bag filters, by the target date of 30th June 2014. The plan will have a prioritised approach for reducing particulate releases from these sources. The project plan will be based on consideration of costs and benefits of all relevant options and using options appraisal methodology H1 or equivalent	30/07/2011

Reference	Improvement Condition	Completion date
IC3	The operator shall carry out an exercise, agreed in writing with the Environment Agency, to characterise the releases of NOx, CO, particulates and SO2 in the exhaust gases from the 4 kilns, and submit a risk based plan describing any changes to monitoring arrangements that will be taken including consideration of installing continuous monitors, or more frequent periodic monitoring as described in the Sector Guidance Note for the Lime Sector (EPR3.01b).	30/07/2011
IC4	The operator shall carry out a sampling exercise to monitor dioxins and furans from one representative lime kiln on site, and send the results of the monitoring to the Environment Agency. The results of monitoring for dioxin and furans on the kiln obtained in the previous 12 months prior to this variation may be submitted instead of carrying out this sampling exercise. The results will be used to decide whether any future monitoring is required.	30/07/2011

New Improvement conditions

The following are improvement conditions set at this permit variation:

Reference	Improvement Condition	Completion date
IC5	The operator shall submit an updated site condition report to the Environment Agency, which provides a baseline report in line with the requirements of IED article 22(2). The revised report should: <ul style="list-style-type: none"> • Include an updated Conceptual Site Model and Source Pathway Receptor assessment, provided within the PPC application site report to include an assessment of all hazardous substances present at site; • Ensure intrusive investigation and sampling includes all potential hazardous substances at the site; • Include information on the concentrations in soil and groundwater of the hazardous substances used, produced or released by the installation. 	30/11/17
IC6	The operator shall establish a programme of enhanced testing of particulate releases on kilns fitted with venturi scrubbers to establish criteria for optimal performance with the aim to minimise releases below a level of 20mg/Nm ³ . The programme shall include sampling a minimum of 4 times per year for two years.	01/06/17

The operator submitted information in response to the Regulation (60) request detailing the site condition. This has been reviewed and additional information

is considered necessary to ensure it meets the requirements 'Industrial emissions Directive EPR Guidance on Part A installations.' This has been requested through the use of an improvement condition.

IC7	The operator shall provide a report summarising an investigation into the factors affecting the uncertainty of TOC measurements from PFRK kilns. The investigation shall consider the practical application of the relevant standard when dealing with cyclical process associated with PFRK operation. Where appropriate, the operator may undertake stack sampling outside normal compliance testing to further the investigation. The final report may suggest adjustments to the method to ensure uncertainties can be minimised.	31/07/17
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Annex 4: Advertising and Consultation on the decision

This section reports on the outcome of the public consultation on our draft decision carried out between 3 March 2017 and 30 March 2017.

The draft decision record and associated draft Consolidated Variation Notice was published and made available to view on .Gov website between the dates detailed above.

Summary of responses to consultation and the way in which we have taken these into account in the determination process.

Response received from
Nil
Brief summary of issues raised
Nil
Summary of actions taken or show how this has been covered
Nil

Annex 5: Review and assessment of changes that are not part of the BAT Conclusions derived permit review.

1. Introductory Note

The installation description has been updated to provide consistency within the cement and lime sector. We have included additional information such as the installation NGR, kiln production capacity, details of process wastes and emissions to air and water, and local sensitive receptors.

2. Table S1.1 Activities

We have reviewed Table S1.1 for all CLM sector permits, to ensure these accurately reflect the activities on each site.

We have reviewed and revised the Melton Ross lime works Table S1.1, specifically:

- Amended the kiln activity description to reflect EPR Sch 1 activity wording,
- Added Directly Associated Activities (DAAs) to ensure that all activities (listed and non-listed) at the installation are included,
- Amended the Limits of Specified Activity for all activities to ensure they are clearly defined.

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1-AR4	Section 3.1 Part A(1)(b)	Producing lime on 4 parallel flow regenerative (PFRK) lime kilns with a production capacity of more than 50 tonnes per day	From kiln feed stockpile through screening and feed of limestone into kilns along with fuel, through to intermediate storage of quicklime product prior to further processing or despatch by road, and associated releases to air from stacks and process vents.
AR5	S3.1 B (c)	Slaking lime for the purpose of making calcium hydroxide or calcium magnesium hydroxide	The hydration of lime in two hydrators

Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR6	S5.4 A1 (b) (i) R13: Storage of wastes pending the operations numbered R1, R3 and D10 R3: Recycling or reclamation of organic substances that are not used as solvents R1: Use principally as a fuel or other means to generate energy.	Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 100 tonnes per day by anaerobic digestion involving biological treatment and excluding activities covered by Council Directive 91/271/EEC.	<p>Digestion of purpose grown crops</p> <p>Digestion of wastes including pasteurisation and chemical addition.</p> <p>Gas cleaning and upgrading to bio-methane.</p> <p>Gas storage and drying.</p> <p>Combustion of biogas produced in eight Combined Heat and Power Gas Engine Units developing a total of 2MWe and 2.2MWth.</p> <p>Treatment of digestate including screening to remove plastic residues, centrifuge or pressing, addition of thickening agents (polymers) and drying.</p> <p>Composting and maturation of digestate.</p> <p>The maximum throughput of animal wastes shall be no more than 10 tonnes per day [excluding manures and slurries].</p> <p>The total quantity of waste or a combination of waste and non-waste including solids and liquids accepted at the site shall not exceed 200 tonnes in any one day.</p> <p>Burning of biogas in gas engines, gas turbines, boilers and use in fuel cells.</p> <p>Use of an auxiliary flare required only for short periods of breakdown or maintenance of facility.</p> <p>Use of pressure release valves to protect the integrity of the plant. Such systems should not be used routinely to vent unburned biogas..</p>

Directly Associated Activity			
AR7	Raw materials preparation conveying and storage	Crushing and screening of chalk and its storage in hoppers and in emergency stockpile.	Crushing and screening of chalk and its storage in hoppers and in emergency stockpile.
A8	Production of microlime	The milling of lime and dolomet	The operation of two roller pendulum milling systems
A9	Production of graded lime	The milling, screening and blending of lime (including blending with paper sludge ash)	The operation of a hammer mill, rolls crusher and multi-deck screens

A10	Production of aqualime	Mixing of hydrated lime with water. Mixing of hydrated lime with landfill leachate	Mixing of hydrated lime with water. Mixing of hydrated lime with landfill leachate
AR11	Product handling	Hydrate bagging and burnt lime bagging	Hydrate bagging and burnt lime bagging
AR12	Product storage and despatch	Storage of product in silos and subsequent loading into mobile tankers.	Storage of product in silos and subsequent loading into mobile tankers
Activity reference	Description of other non-listed activities		Limits of activities
AR13	A mining waste operation for non-hazardous non-inert wastes		Permitted waste types shall conform to the description in the approved waste management plan

Activities related to AD plant are unchanged

4. Schedule 6 Interpretation

Schedule 6 has been revised to remove interpretations which are no longer relevant, and introduce new ones, such as the Industrial Emissions Directive (IED). The standard tables for TEF Schemes for dioxins and furans has been retained as monitoring for PCDD/F is now required for lime works regardless of whether a waste-derived fuel is burned.

Schedule 6 previously included an interpretation for “*management system*” which referenced the EA’s Horizontal guidance Note H6, Environmental Management systems. This guidance has now been withdrawn. The Gov.uk website provides guidelines on what a management system should cover when operating a regulated industry. <https://www.gov.uk/guidance/develop-a-management-system-environmental-permits> It is no longer considered necessary to define management system in the interpretation section and so this interpretation has been removed.

5. Other permit changes:

IED standard conditions: this variation includes the latest IED permit template conditions: 1.4.1 (waste), 3.1.4 (soil and groundwater monitoring) and 4.3.1 (notifications)

Table S3.4 Annual limits: this table is removed as is no longer relevant.