

**ARLA Foods Limited
Lockerbie
Dumfries
DG11 1LW**

**Substantial Variation of Permit
Number**

**PPC/A/1003148
VAR01**

DRAFT

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1 NON TECHNICAL SUMMARY OF DETERMINATION

A permit was initially issued to ARLA Foods Limited on the 21 March 2007 for the treating and processing of milk with quantities greater than 200 tonnes per day.

This variation application has been submitted to SEPA for addition of a new AD plant, Effluent Treatment and Combined Heat & Power system to the existing installation. This will allow on-site treatment of all indigenous effluent as well as whey permeate which is currently moved off site as a waste or waste by-product. The changes will result in an energy reduction of approximately 1641 MWh per annum and the generation of biogas which will be injected as biomethane into the National gas grid.

The changes to the installation introduce three new activities under the Pollution Prevention and Control (Scotland) Regulations 2012:

- Section 1.1 Part B (d) - Burning fuel in a medium combustion plant with a net rated thermal input equal or greater than 1 megawatt.
- Section 5.4 Part A (b)(i) - Recovery or a mix of recovery and disposal of non-hazardous waste at an installation with a capacity exceeding 75 tonnes day (or 100 tonnes per day if only waste is anaerobic digestion) by biological treatment.
- Section 5.7 Part A – Independently operated treatment of wastewater not covered by the Urban Waste Water Treatment (Scotland) Regulations 1994 and discharged by an installation carrying out any other Part A activity.

The variation therefore deals with the following:

- Installation of a new 2 X 1.5 MWth input natural gas engines
- Upgrade and replacement of existing effluent treatment plant
- Installation of 2 Anaerobic Membrane Bioreactors
- Changes to the internal routing of uncontaminated surface water through the effluent and biogas treatment construction phases
- Update to description of the milk and cheese process and operating techniques to reflect current operations.

The application has addressed potential impact to the environment from the proposed changes to demonstrate no significant negative effects on the environment or human health. There are no additional point source releases proposed which may lead to pollution of soil or groundwater. The operator will continue to comply with the discharge emission limit values as currently detailed in permit with more stringent Emission Limit Values applied for compliance with FDM BRef BAT conclusions. Dispersion modelling of emissions to air, a noise assessment and an updated Site report have been submitted within the application document. The variation will include addition of emission limits for combustion gases to meet the requirements of the Medium Combustion Plant Directive.

Glossary of terms

BAT - Best Available Techniques
 CO - Coordinating Officer
 ELV - Emission Limit Value
 CC – Commercial Confidential / Commercial in Confidence
 CO – Coordinating Officer
 COMAH – Control of Major Accidents and Hazards
 ELV – Emission Limit Value
 FDM – Food, Drink & Milk
 MW– Megawatt
 NS – National Security
 OUE – European Odour Units

PPC – Pollution Prevention and Control
 SCADA – Supervisory Control and Data Acquisition
 ETP – Effluent Treatment Plant
 PRV – Pressure Relief Valve
 FDM – Food, Drink and Milk Industries Best Available Techniques Reference Document
 OMP – Odour Management Plan
 NMP – Noise Management Plan
 EMS – Environmental Management System

2 EXTERNAL CONSULTATION AND SEPA'S RESPONSE

Is Public Consultation Required - Yes

<i>Advertisements Check:</i>	<i>Date</i>	<i>Compliance with advertising requirements</i>
Edinburgh Gazette	15/7/20	Y
Annandale Herald	16/7/20	Y

Officer checking advert:

No. of responses received: Registry have checked their records, and there were no responses received.

Summary of responses and how they were taken into account during the determination: n/a

Summary of responses withheld from the public register on request and how they were taken into account during the determination: n/a

Is PPC Statutory Consultation Required –

Food Standards Agency:

The food Standard agency were consulted; no response received.

Dumfries & Galloway Health Board:

Dumfries & Galloway Health Board were consulted; no response received.

Dumfries & Galloway Local Auth:

Dumfries & Galloway Council were consulted; no response received.

Scottish Water:

Scottish Water were consulted; no response received.

Health and Safety Executive: Not consulted.

Nature Scotland (PPC Regs consultation):

The Scottish Natural Heritage were consulted; no response received.

Discretionary Consultation – No

Enhanced SEPA public consultation – No

'Off-site' Consultation – No

Transboundary Consultation – No	
Public Participation Consultation – Yes	
STATEMENT ON THE PUBLIC PARTICIPATION PROCESS The Pollution Prevention and Control (Public participation)(Scotland) Regulations 2005 requires that SEPA’s draft determination of this application be placed on SEPA’s website and public register and be subject to 28 days’ public consultation. The dates between which this consultation took place, the number of representations received and SEPA’s response to these are outlined below.	
Date SEPA notified applicant of draft determination	
Date draft determination placed on SEPA’s Website	
Details of any other ‘appropriate means’ used to advertise the draft	
Date public consultation on draft permit opened	
Date public consultation on draft permit consultation closed	
Number of representations received to the consultation	
Date final determination placed on the SEPA’s Website	
Summary of responses and how they were taken into account during the determination:	
Summary of responses withheld from the public register on request and how they were taken into account during the determination:	
Officer:	

3 ADMINISTRATIVE DETERMINATIONS
Determination of the Schedule 1 activities
The changes to the installation introduce three new activities under the Pollution Prevention and Control (Scotland) Regulations 2012: <ul style="list-style-type: none"> • Section 1.1B (d) - Burning fuel in a medium combustion plant with a net rated thermal input equal or greater than 1 megawatt. • Section 5.4 Part A (b)(i) - Recovery or a mix of recovery and disposal of non-hazardous waste at an installation with a capacity exceeding 75 tonnes day (or 100 tonnes per day if only waste is anaerobic digestion) by biological treatment. • Section 5.7 Part A – Independently operated treatment of waste water not covered by the Urban Waste Water Treatment (Scotland) Regulations 1994 and discharged by an installation carrying out any other Part A activity.
Determination of directly associated activities:

The following directly associated activities have been included in the variation:

- Biogas upgrading unit consisting of activated carbon and membrane filtration system for the removal of hydrogen sulphide and carbon dioxide.
- An enclosed multi-stage self-igniting flare.
- A containerised waste heat steam raising boiler with a thermal input of 993kW.

Determination of 'site boundary'

No change to installation boundary.

4 INTRODUCTION AND BACKGROUND

4.1 Historical Background to the activity and variation

A permit was initially issued to ARLA Foods Limited on the 21 March 2007 for the treating and processing of milk with quantities greater than 200 tonnes per day; this permit has since been varied on four occasions with the latest variation issued on the 23 June 2017.

The variation applied for is part of a larger environmental improvement plan within the ARLA Foods organisation. The applicant has been in discussions with SEPA for several years for the addition of an Anaerobic Digester and upgraded Effluent Treatment Plant. Currently the operator exports residue and other dairy process wastes off-site to various facilities. The addition of an anaerobic digestion facility, with the main feedstock being dairy process wastewater and whey permeate is identified as a way for the installation to maximise on their process waste to create gas energy; such that it can be injected into the National Grid.

In addition, the operator is installing an upgraded effluent treatment plant comprised of membrane reactors and a purpose-built aeration tank which will result in the removal of the site's current large aeration and separation lagoon. This large lagoon is currently a registered reservoir under the Reservoir Act and in the main is a redundant part of the current treatment process with only a quarter section of the lagoon being utilised for effluent treatment. The operator plans to remove the historic aeration/settlement lagoon and utilise this area for emergency drainage.

4.2 Description of activity

As described Section 3.

4.3 Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.

N/A

4.4 Identification of important and sensitive receptors

The facility is located in a largely agricultural and sparsely populated area within Lockerbie.

Within a 2km radius of the installation facility there exists approximately 50 residential properties and Castle Loch, Lochmaben which is designated Ramsar, SPA and SSSI [0.75km from installation].

The nearest water is the River Annan located on the eastern boundary of the installation.

No sensitive land uses within 500m of the installation.

5 KEY ENVIRONMENTAL ISSUES

5.1 Summary of significant environmental impacts

The predominant environmental impact posed by the varied activities would be that of odour or spillage. These points are discussed below:

The main point sources to air are to be as follows:

- Biogas engine engines – combustion emissions
- Biogas emergency flare – combustion emissions
- Emergency flare
- Biological treatment pressure relief valves

Assessment of the above emissions has been assessed with Medium Combustion Plant Directive.

No additional point sources to water are expected from the variation. Effluent will pass through an upgraded effluent treatment plant to ensure compliance with permit ELV's before discharge to the river Annan. The emission points proposed will continue to comply with the permit limits currently in place as well as additional and tighter parameters required by the Food, Drink & Milk (FDM) BRef BAT Conclusions. All effluent is monitored prior to discharge, any breaches of parameter limits would result in the effluent being recirculated through the treatment plant before a final monitoring check prior to release.

Surface water (S2) will continue to discharge to the river Annan after passing through onsite monitors which guarantee compliance with permit ELV's before discharge. Should the discharge be found to be out of range it is then rerouted to the effluent treatment plant for treatment and discharge via emission point W1.

Newly constructed kerbs and permeable surfaces are to be included. Further discussion on containment is detailed in Section 5.16 of this document.

Flash flood risk assessment from the river Annan has been included.

Initially the application did not contain a noise assessment report. A schedule 7 was issued to the applicant requesting that a report from a competent acoustician be supplied. This was duly submitted and assessed by a SEPA noise specialist who concluded that although there is a risk of increased noise only a minor increase of ~2dB at one sensitive receptor is expected and which would be unlikely to result in noise offence. The variation document will include conditions for inclusion of a Noise Management Plan (NMP).

One of the predominant environmental impacts posed by the varied activities would be that of odour. Management and control of odours produced by the anaerobic digestion process at source will be paramount against the risk of offensive odours out with the site boundary. The operator has proposed the introduction of an Odour Management Plan and a condition requiring this has been included in the variation document. A condition has also been included requiring assessment of ground level concentrations should odour emissions from the permitted activities impact sensitive receptors.

No additional releases of List I or List II substances are proposed by the additional activities.

5.2 Implications of the Variation on - Point Sources to Air

The table below identifies point source emissions to the atmosphere.

Proposed point source emissions

Emission point reference	Source	Parameter
A4	Natural gas engine	NOx,
A5	Natural gas engine	NOx,
A7	Flare	Temperature
A8	AD reactor tank PRV (T1301)	CH4, CO, NOx, VOC
A9	AD reactor tank PRV (T1311)	CH4, CO, NOx, VOC
A10	Grid entry system emergency PRV	CH4, CO2
A11	Carbon dioxide scrubber	CO2

AD biogas is subject to conditioning before being injected directly to the gas grid. Two natural gas gensets with a thermal input of 1.5MWth are to be utilised in the process. Both engines and dumped waste heat emit to emission points 4 and 5.

Emissions related to combustion activities were assessed by both the Medium Combustion Plant Directive and SEPA's Technical Guidance Note 38 (Note TG 38 was withdrawn during the determination process). These documents contain emission limit values for combustion plant depending on net thermal input rating, type of fuel feedstock and the process/function delivered which were included in the variation document.

The FDM BRef BAT conclusions do not apply ELV's for combustion plant.

In relation to Emission Point A11 Carbon dioxide scrubber; the stripping and venting of carbon dioxide is a standard process used within an anaerobic digestion activity and currently there are no limits within the regulations or guidance for this release.

The application included dispersion modelling to predict pollutant concentrations from existing and proposed combustion plant. This report was assessed by SEPA's modelling experts who concluded no concerns.

An automatic flare which has been designed to burn gas at a temperature of 1000 degrees centigrade for a minimum of 3 seconds will emit through a fully enclosed 12m stack identified as Emission point 7.

There will be a number of pressure relief valves attached to the biological treatment process installed in the event of an emergency. These valves are continuously monitored by the site SCADA system and only activated on occasion of a flare failure or where controlled venting to the flare is not available. Activation of a pressure relief valve and flare are both considered an incident and notification to SEPA will be required.

A condition has been inserted into the variation document requiring a register of vents to be maintained by the operator.

Standard conditions have also been included for operation and data handling requirements of Medium Combustion Plant emissions to air.

5.3 Implications of the Variation on - Point Source Emissions to Surface Water and Sewer

There are no changes to the point source emission locations. All new AD plant effluent and existing plant process effluent will pass through the effluent treatment plant prior to discharging to the river Annan. No increased discharge flow rates have been applied for.

FDM BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body

Parameter	BAT-AEL (1) (2) (daily average)	Included in variation notice
Chemical oxygen demand (COD)	25-100 mg/l (5) (5) The upper end of the range is: 125 mg/l for dairies.	125 mg/l
Total suspended solids (TSS)	4-50 mg/l (6)	50 mg/l
Total Nitrogen (TN)	2-20 mg/l (7) (8)	20 mg/l
Total phosphorous (TP)	0.2-2 mg/l (9) The upper end of the range is : 4 mg/l for dairies.	20 mg/l until the 3 December 2020 and 4 mg/l from 4 December 2023

BRef BAT-AELs for water emissions, do not include guidance on the use and application of lower tier and upper tier emission limits. This is a process used historically in water permitting allowing several lower tier breaches within a year dependent on the number of samples taken. There is no requirement in the FDM BRef for lower and upper tier limits. BAT supplies a compliance range to be applied for ELV's. Therefore, there will be no lower and upper-level tiers included in the varied licence as the upper limit of any permitted requirement must not exceed the relevant BAT-AEL as to do so would require a derogation under the IED. The absolute upper limit will be that which is identified in the new BATc for emissions to water (as outlined above); the historical conditions associated with these upper and lower limits have been removed from the permit.

The new effluent treatment plant must comply with the latest FDM BRef published November 2019 applying stricter emission limit values. These limits are associated with emission point W1, the final discharge point for production processing trade effluent. The limits included in the variation document are as follows:

No BAT-AEL applies for biochemical oxygen demand (BOD).

Currently the installation has a lower ELV of 20mg/l and upper ELV of 56mg/l per day. While previously aqueous emission limits were calculated by other means it is noted within this determination process that the upper limit of any permitted requirement must not exceed the relevant BAT-AEL as to do so would require a derogation under the IED. No BAT-AEL has been applied by the FDB BATC's for biological oxygen demand however the Conclusions recommend that as an indication, the yearly average level will generally be ≤ 20 mg/l. Therefore, an annual average ELV of 20 mg/l has been included in the variation document.

BAT for Chemical Oxygen Demand (COD) – 25-100mg/l [Upper Range 125mg/l for dairies]

Currently the installation has no ELV for COD; The FDM BRef BAT Conclusions provide an ELV range of 25 – 125mg/l daily average for COD for dairy processes. A daily average ELV of 125 mg/l has been included in the variation document.

BAT for Total Suspended Solids (TSS) – 4-50mg/l

Currently the installation has an ELV of 100mg/l for Total Suspended Solids. The FDM BRef BAT conclusions provide an ELV range of 4-50 mg/l daily average for Total Suspended Solids. A daily average ELV of 50 mg/l for Total Suspended Solids has been included the variation document.

BAT for Total Nitrogen – 2-20mg/l

Currently the installation has no ELV for Total Nitrogen. The FDM BRef BAT conclusions provide an ELV BAT range of 2-20 mg/l daily average for Total Nitrogen. A daily average ELV of 20mg/l has been included in the variation document.

BAT for Total Phosphorus – 0.2-2mg/l [Upper Range 4mg/l for dairies]

Currently the installation has a lower ELV of 8 mg/l and upper ELV of 20 mg/l per. As the varied activities are considered a new installation, they are obliged to meet the daily minimum BAT ELV of 4 mg/l. The applicant has stated that they expect raised phosphate levels during the commissioning period of the plant and while they accomplish efficient balancing capacity to improve performance. Although the plant is regularly meeting the proposed new phosphate limit of 4 mg/l there are still occasions when phosphate levels are higher than expected. The application identifies that phosphorus conditions are still to be demonstrated with the new ETP and will be monitored during the commissioning period of the new plant. A daily average ELV of 20 mg/l has been included in the variation document to allow effective commissioning of total phosphorous treatment; this however is time dated in that from the 4 December 2023, which is the compliance date for the FDM BAT conclusions the lower daily limit of 4 mg/l must be complied with.

The FDM BRef does not specify a reference ELV for Iron (Fe). This monitoring is included as an ELV in the current permit due to the use of ferric chloride in the treatment process. Fe within final discharge will continue to be monitored on a weekly basis for production process effluents and monthly on other effluents. The permit ELV remains unchanged in that an annual average ELV of 2 mg/l is to be included.

Surface water emissions (points S2 and W2) discharge direct to River Annan, this only includes uncontaminated surface water from roof and road run off. The current permit conditions for these discharge points remain the same. All surface water is analysed prior to discharging and where breaches are identified prior to discharge the effluent is redirected back to the treatment plant.

No BAT-AEL applies for pH

Currently the installation has an ELV of 5-9. This has not been varied.

Emission point S1 has been removed – The emission point was an effluent collection system which no longer in use. This was removed and not in use prior to the new plants being proposed, it was deemed appropriate that removal from the permit wait until this substantial variation be applied.

5.4 Implications of the Variation on - Point Source Emissions to Groundwater

There are no direct point source emissions to groundwater proposed by this application.

Further monitoring of existing boreholes with areas of relevant hazardous substances pathway will be included in the variation.

5.5 Implications of the Variation on - Fugitive Emissions to Air

The main fugitive emissions to air would be:

- Odorous compounds (refer to Section 5.7)
- Breathing points from tanks - A number of PRV's are required for safety reasons throughout the installation however design features and process controls have been implemented to control their use, under normal operation fugitive release from these sources is considered low.
- AD reactor tank pressure relief valves - automated activation of a pressure relief valve would only be undertaken in order to prevent a more significant event and gases would be flared in the first instance. The variation document contains a condition requiring pressure in the AD biogas system to be continuously monitored and where the pressure relief valves are activated this shall be treated as an incident and reported to SEPA.

Worst case scenario assumptions were assessed by SEPA's modelling department and no significant risks were identified.

Management and control of odours produced at source will be paramount against the risk of offensive odours out with the site boundary. The operator has proposed the introduction of an Odour Management Plan and a condition requiring this has been included in the variation document. A condition has also

been included requiring assessment of ground level concentrations should odour emissions from the permitted activities impact sensitive receptors.

5.6 Implications of the Variation on - Fugitive Emissions to Water

Potential sources of fugitive emissions to water would be regarding surface water discharges and any breaches of tank containment. The permit currently requires the operator to carry out an annual review of bunding, sumps, pipelines and storage areas. Upgrade conditions have been included requiring the operator to undertake an assessment for secondary containment in order to further reduce the risk of loss of containment (see Section 5.16 Implications for the variation – Accident and consequences)

Surface water from the newly constructed areas will be directed via a new pumping station, connecting to the existing surface water pipeline. Surface water (S2) discharges direct to the river Annan, after testing compliance with permit ELV's is verified. Where ELV's are breached, surface water is redirected to the effluent treatment plant and discharge at emission point (W1.)

New geomembrane is to be placed within the old lagoon base to be utilised for drainage and partial containment. This will be a sealed geomembrane to ensure no impact on ground soil/water contamination.

Traffic Control for Deliveries of both raw materials and chemicals is in place, this ensures appropriate measures and appropriate containment.

Chemicals are stored in a bunded chemical storage area; this was updated in 2019 for the increased capacity of chemical use on site.

A new CIP station has been set up removing old redundant storage vessels and implementing new drains to the existing system. In the event of an incident all surface run off and potential discharge from process activities would be directed to sealed containment drainage. The installation Spillage Plan provides the ability for all surface water and drainage systems to be isolated in the event of an incident on site.

5.7 Implications of the Variation on – Odour

The application contained dispersion modelling which also included predicted odour concentrations at nearby sensitive receptors. This was assessed by SEPA modelling specialists who concluded that a comprehensive odour assessment on impacts at sensitive receptors in the vicinity of the installation had been provided; however the report also indicated predicted odour concentrations were just below the 1.5 OU/m³ threshold for the 98%ile and thus due to the nature of the process there was a risk of odour nuisance should odour not be mitigated at source.

A Schedule 7 Notice was issued to the applicant requesting further information in the form of a supplementary report which supplied detail on what mitigation is to be provided to ensure odour emissions from the proposed AD plant storage areas will be prevented or minimised at source and in line with the principles of Best Available Technique. The operator was also asked to expand on what considerations were given to extraction of odorous emission to an abatement system and to provide clarification that all storage receptacles will be fitted with enclosures.

In response the applicant submitted an application supplementary report in the form of an "Odour Technical Note" and a draft Odour Management Plan (OMP).

The applicant also stated that the initial modelling had not taken into consideration reduction in off-site odour concentrations achieved through implementation of best practise measures and that the initial modelling had been based on worst case scenario appraisal which included the most offensive material types which have potential to generate 'most offensive' odours such as decaying animal or fish or septic effluent or sludge. While it is acknowledged that the proposed AD facility may include the processing and storage of materials which have the potential to result in 'most offensive odours' it is recognised that the proposal is in the main, related to the effluent treatment, in-house whey and other dairy process

materials. The "Odour Technical Note" indicates that this had resulted in an 'overestimation of impacts in the vicinity of the site' and that the less precautionary SEPA benchmark level of 3.0 OU/m³ criterion is more applicable to the installation given the AD activity is associated with a new effluent treatment plant.

Further modelling was also submitted as part of this report. The same input parameters were entered into the model with adjustment for containment of materials associated with both the AD and effluent treatment plant with covered tanks resulting in a 90% reduction in odour emissions and an assumption that sludge tanker filling would be undertaken for a period of 1 hour per day. This modelling provided considerably greater headroom with the 1.5 OU/m³ benchmark than predicted in the previous modelling report. SEPA concern would be that our understanding is that only tanks containing sludge and AD material are proposed to be covered and that the assumption of sludge tanker filling for 1hr/day is possibly an under estimation. Having said that, the operator has committed to implementation of an OMP which will detail methods, including monitoring and contingencies to minimise the potential of odour. While SEPA not in agreement that this extends beyond that of engineered controls such as containment, we would concur that it is extremely hard at design stage to quantify emission impact for the operational stage and given the location of the nearest sensitive receptors and their distance from the installation and based on the resubmitted modelling we are comfortable that the applicant has demonstrated that there is no significant risk to receptors from odour. In the event of odour emissions impacting sensitive receptors the variation document includes a condition requiring the operator to conduct an odour impact assessment to identify ground level concentration of odour at nearby sensitive receptors. A condition has also been included requiring implementation of an OMP and biannual systematic assessment and review of odour emissions associated with the Permitted Activities.

FDM BATC's

<p>BAT 15</p>	<p>In order to prevent or where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - A protocol containing actions and timelines. - A protocol for conducting odour monitoring. It may be complemented by measurement/estimation of odour exposure or estimation of odour impact. - A protocol for response to identified odour incidents, e.g. complaints. - An odour prevention and reduction programme designed to identify the source(s) to measure/estimate odour exposure; to characterise the contributions of the sources and to implement prevention and/or reduction measures. <p>Applicability BAT 15 is only applicable to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.</p>
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5.8 Implications of the Variation on – Management

BAT for the dairy sector is to implement and adhere to an EMS that incorporates all of the features detailed (but also specifically for the food, drink and milk sector, BAT is to also incorporate the following features in the EMS):

- (i) noise management plan (see BAT 12);
- (ii) odour management plan (see BAT 14);
- (iii) inventory of water, energy and raw materials consumption as well as of wastewater and waste gas streams (see BAT 2);
- (iv) energy efficiency plan (see BAT 6a)

A certified 140001 management system is currently in place at the installation. This will be updated to include documented operating parameters and procedures to ensure safe operation of the proposed AD and effluent treatment plant. The planned preventative maintenance schedule and the monitoring plan for key parameters for effluent discharge, energy, water waste and raw materials will also be updated to include the additional processes.

Staff will receive relevant training for their role in environmental procedures and permit responsibilities. The anaerobic digestion plant shall be overseen by an individual who has the relevant WAMITAB certification.

Given that the site has the potential to pose nuisance in the form of odour and noise along with the environmental risks associated with potential accidents on site, the applicant has stated that the current Environmental Management System will be updated and maintained to include the relevant management plans (e.g., odour, noise, and accident management plans).

The variation document also contains conditions requiring the design and implementation of an Environmentally Critical Items Register, as well as for both OMP and NMP.

5.9 Implications of the Variation on - Raw Materials

This AD plant has been designed with current dairy by-product as the main raw materials, rather than a plant dependent on sourcing external raw materials. Whilst as time progresses the installation may decide to process off-site feedstocks, these will require assessment to determine whether appropriate and to allow optimal AD efficiency.

New raw materials have been identified for use in both the AD and ETP. Most are auxiliary materials which are an essential part of the treatment process for running the new plants effectively. The storage and containment of these materials does not increase the sites immediate environmental impact, however, will require additional control and monitoring measures to ensure compliance.

5.10 Implications of the Variation on - Raw Materials Selection

The main feedstock for the proposed anaerobic digestion plant is process wastewater and indigenous feedstock in the form of whey permeate. New auxiliary materials identified for effective operation of the AD and effluent treatment plant have been identified as follows:

Ferric Chloride 40%
 Sodium Hydroxide 28% (Caustic Solution)
 Nutromex TEA 310 (Micro nutrient solution)
 Antifoam Solution
 Sodium Hydrochlorite 14%
 Ultrasil 78
 Polymer solution
 Ferric Sulphate or Chloride 40%
 Propane – Used to meet mains gas specification for sending to grid
 Odorant NB

5.11 Implications of the Variation on - Waste Minimisation Requirements

There is no additional waste generation as a result of the applied for variation and the dewatering of sludge by the centrifuge dewatering system is expected to reduce the volume of sludge removed off site for disposal.

Arla proposes predominantly utilising indigenous effluent and whey permeate from the dairy operations which will result in a significant reduction of waste generation and final disposal from the dairy activities.

Sludge generated by the anaerobic digestion system will be dewatered to achieve end state digestate and future PAS 110 certification sought in order to allow this material to be applied to land as a fertiliser.

5.12 Implications of the Variation on - Water Use

The BAT conclusions require in BAT 7 in order to reduce water consumption and the volume of wastewater discharged, BAT is to use BAT 7a and one or a combination of the techniques b to k given. No information was supplied in the application in regard to water consumption or use; however a full BAT

gap analysis will shortly be carried out for the installation as part of the Food, Drink and Milk Industries BRef review and at this time an assessment will be undertaken of water use within the installation as a whole and include the varied activities.

5.13 Implications of the Variation on - Waste Handling

Unlike other typical AD processes which source process wastes from a variety of different sources and therefore a multitude of potential waste combinations, Arla proposes predominantly utilising indigenous effluent and whey permeate from the dairy operations. These proposed types of wastes are considered low risk, uniform in composition and marked non-hazardous. This will result in a significant reduction of installation waste generation and final disposal from the installation as well as the storage of incoming waste at the installation. Conditions have been included in the variation document for waste pre-acceptance assessment, storage and conditions pertaining to permitted quantities of waste.

The applicant has confirmed that staff will be adequately trained, and the site supervised by a member of staff who holds the relevant WAMITAB certification for the operation and control of the Anaerobic Digestion facility and feedstocks. A SCADA (Supervisory Control and Data Acquisition) control system will be used to monitor and control the feeding of the digestors, with an interlock to prevent material being passed into digestors where there is insufficient capacity.

The applicant has applied for 5.4 Part A (b) of the Regulations which will allow a capacity exceeding 100 tonnes per day of anaerobic digestion treatment with the intention of future sourcing of suitable raw material out with installation product. Following discussions, the applicant confirmed that it does not intend accepting third party waste in the immediate future, however this is an option for future site operations.

EWC codes for types of waste to be processed were not supplied in the application. This information was confirmed by email after discussion with SEPA on what wastes were appropriate for the process. It is accepted that glycerol be included as a permissible waste as in small quantities this can be beneficial as a common addition to biogas plants to increase gas yield.

Should the operator wish to include off site waste addition to the AD installation going forward they will need to submit an administrative application to allow assessment of suitability and variation of Table 5.1 (Permitted Waste Types).

Wastes to be included in the permit variation:

Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing.	
EWC Code	Description
02 02 03	"Plant-tissue waste"
02 05 01	"Materials unsuitable for consumption or processing"
02 05 02	"Sludges from on-site effluent treatment" <i>Restriction: Biological sludge only</i>
02 07 01	"Wastes from washing, cleaning and mechanical reduction of raw materials"
02 07 02	"Wastes from spirits distillation" <i>Restriction: Spent grains, fruit and potato pulp; Sludge from Distilleries only</i>
02 07 04	"Materials unsuitable for consumption or processing"
02 07 99	"Wastes not otherwise specified"

	<u>Restriction:</u> <i>Malt husks, malt sprouts, malt dust; Spent grains: Hops; Yeast and like residues; Sludges from the production process only</i>
Wastes from organic chemical processes.	
EWC Code	Description
07 01 08*	"Other still bottoms and reaction residues" <u>Restriction:</u> <i>Glycerol residue from biodiesel manufacture from non-waste vegetable oils only</i>

Cross-reference has been made to the WT BREF for general information on the AD of waste and to include descriptions of raw materials, process equipment and operations specific to the FDM sector in the scope of the FDM BREF. Standard template waste conditions have been included in the variation document.

5.14 Implications of the Variation on - Waste Recovery or Disposal

See Sections 5.11 and 5.13 above. No further implications on waste recovery or disposal from the variation.

5.15 Implications of the Variation on – Energy

The facility is to be operated on the principles of inputting high calorific waste materials and generating a biogas with gas being upgraded, odourised and then directly injected into the national gas main.

Replacement of the existing aeration effluent treatment plant will result in a power consumption reduction from 461 kW to 271 kW and a total annual energy reduction of approximately 1641 MWh. The site is projecting injection of approximately 54,965 MWh of biomethane into the national gas grid.

The installation will continue to be subject to a Climate Change Agreement. The permit currently contains conditions requiring a four yearly assessment of energy efficiency and a condition which requires SEPA to be notified should it cease to be covered by a climate change agreement.

The varied permit contains a condition requiring a mass and energy balance to be held on site.

5.16 Implications of the Variation for - Accidents and their Consequences

One of the main environmental risks for this facility would be a catastrophic tank containment failure. It was SEPA's understanding when processing the application that the lined lagoon would be utilised as a bund for both the AD and ETP activities; however, following on from a site visit on 23 March 2022, it became apparent that the effluent treatment plant area of the installation is not bunded and does not have appropriate secondary containment proposed.

The operator has carried out a risk assessment which determined this part of the installation as low risk of containment failure. A number of large liquid tanks including a large capacity bioreactor feed tank, vessels and related pipework are located within this area. A bund would be considered to be the last line of defence against complete loss of containments should a primary containment tank fail.

The AD activity at the site is covered by the Waste Treatment BATc (published on 17 August 2018). This means that all aspects of the activity need to be BAT compliant. BAT conclusions 19 and 21 include elements associated with the protection of soil and ground water, including due to incidents.

(BAT 19) Emissions to Water

	Technique	Description
c.	Impermeable surface	Depending on the risks posed by the waste in terms of soil and/or water contamination, the surface of the whole waste

		treatment area (e.g. waste reception, handling, storage, treatment and dispatch areas) is made impermeable to the liquids concerned.
d.	Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels.	Depending on the risks posed by the liquids contained in tanks and vessels in terms of soil and/or water contamination, this includes techniques such as: <ul style="list-style-type: none"> - Overflow detectors; - Overflow pipes that are directed to a contained sealed drainage system (i.e. the relevant secondary containment or another vessel); - Tanks for liquids that are located in a suitable secondary containment; the volume is normally sized to accommodate the loss of containment of the largest tank within the secondary containment (e.g. closing of valves).

SEPA's ongoing position is that for all newly constructed sites, BAT should be achieved in that all tanks containing liquids whose spillage could be harmful to the environment be bunded. This should include liquids, slurrified waste and buffer tanks. Bunds should be:

- impermeable and resistant to the stored materials;
- have no outlet and drain to a blind collection point;
- have pipe work routed within bunded areas with no penetration of contained surfaces;
- be designed to catch leaks from tanks and fittings; and
- have a capacity greater than 110% of the largest tank or 25% of the total tankage, whichever is the larger;

During this determination period and commissioning of the varied activities the need for secondary containment consideration was further demonstrated by the site experiencing three spillage incidents. This resulted in volumes of liquid escaping the effluent treatment area boundary onto an adjacent non hard surfaced access track.

Following discussion with the applicant on the intention to include the upgrade conditions in the variation document further containment proposals were submitted to SEPA by the applicant to negate the upgrade condition proposals. However, after assessment, this information was found to be lacking in sufficient evidence of provision to meet the BAT requirements. The proposal included a wall around the Bioreactor and Anoxic tank at the ETP, however, to meet the requirements of BAT, containment must be capable of 110% of the largest tank or 25% of the combined storage, whichever is greater.

As discussed above secondary containment is required to provide a second line of defence for preventing, controlling or mitigating major hazard events and it is considered BAT is for all tanks containing liquids whose spillage could be harmful to the environment to be bunded. For new sites it is insufficient to be reliant on double skinned tanks as the sole containment; therefore, the variation document contains several upgrade conditions requiring the operator to undertake and submit a BAT assessment to identify additional or alternative options for secondary containment system(s).

The variation document contains the following upgrade conditions:

4.12 UPGRADE REQUIREMENTS

- 4.12.1** The operator shall undertake an assessment to identify options for secondary containment system(s) to further reduce the risk of loss of containment of any substances brought to or generated on the installation.
- 4.12.2** The operator shall propose a date for the implementation of the options assessed as a requirement of 4.12.1, or justify why it does not, in the operator's opinion, constitute the best available technique as defined in Regulation 4 of the Regulations.
- 4.12.3** By the 31 March 2023, the operator shall report the outcome of the BAT assessment required by Condition 4.12.1, and the implementation date as required by Condition 4.12.2.
- 4.12.4** By 31 October 2023, or such other date agreed in writing with SEPA, the operator shall have available and use a secondary containment system designed with a minimum capacity to contain 110% of the capacity of the largest container, or 25% of the total capacity of all the containers within the bund, whichever is the greater. In the event of any containers being connected to one another, they shall be treated as one container.

(BAT 21) Emissions from accident and incidents

	Technique	Description
b	Management of incidental/accidental emissions	Procedures are established and technical provisions are in place to manage (in terms of possible containment) emissions from accidents and incidents such as emissions from spillages, firefighting water, or safety valves.

It is considered that the requirements of BAT 21 have been met at the installation given the following:

The permit currently contains a condition requiring an annual review of bunding, sumps, pipelines, and storage areas to be reported to SEPA as well as a four yearly systematic assessment of internal floors, external yard surfaces, bunding, foul drainage system and process drains. The applicant currently maintains an installation Incident Prevention and Mitigation Plan as a requirement of the permit; this will be updated to reflect the new activities.

The Site report identifies a list of substances to be used or present at the installation. Liquid products will be contained within secure secondary containment in the form of a secure chemical store which is fitted with an impermeable surface.

The drainage system is designed to include surface water drains and kerb lines installed to manage run-off from both process and surface water run-off. Discharge of surface waters will be controlled by alarmed detection systems capable of diversion to the effluent treatment system.

In an emergency or if the gas is not fit for injection into the mains network it will be diverted for flaring; this is a preferred option to use instead of the pressure relief valves. There is the risk of a digester tank head space becoming over-pressurised with gas, should the flare be unable to accept gas quick enough for flaring; this would result in activation of the bioreactor emergency pressure relief valves. The digester system (including pressure relief valves) are continually monitored by the SCADA system and early warning of this scenario would be expected to allow modifications to the feed system or relocation of digestate material to an alternative storage tank so that gas feed to the flare can be controlled.

Initially the operator was proposing inclusion of a temporary diesel generator for emergency power supply, however this proposal was withdrawn during the determination period and SEPA were informed that emergency power was to be supplied by a UPS Battery System. The UPS battery system will include an automatic fault detection system to ensure sufficient battery level. It is expected that the installation Incident and Mitigation Plan will be updated to include the UPS System, and this shall be confirmed as part of routine inspection. The Waste Treatment BRef contains no specific techniques or BAT for the interruption of power supply with the exception of in paragraph 2.3.5.5 which states flare design should include provision to face failure of electric power. Conditions requiring Environmental

Critical Items have been included in the variation document and the battery system added to Table 3.1 (Environmentally Critical Item) in order to ensure that the installation has the capability to supply energy to the flare in the event of a power outage and thus avoid operation of bioreactor emergency pressure relief valves.

Table 3.1 – Environmentally Critical Item

Item
The biogas purification scrubber
All pressure relief valves and their mechanisms
The flare and flare stack
All monitoring devices and associated recording systems
All plant and equipment where waste may be present
Discharge Sluice Valve
Discharge bypass System
Discharge Effluent monitoring equipment
UPS Battery System, providing emergency power for flare activation.

5.17 Implications of the Variation for – Noise

Initially the application did not contain a noise assessment report. A schedule 7 was issued to the applicant requesting that a report from a competent acoustician be supplied. This was duly submitted. The report was assessed by a SEPA noise specialist who made the following comments: -

- *The acoustician has used the correct techniques and methods to determine noise from the plant; the model applied is close to the calibration readings that they got from measurements which provides confidence that their model has the right parameters and will cover the real-life situation.*
- *From the old sources the compressor inlets and outlets are clearly dominating the noise sources, so that the others probably won't factor at all, but their measurements of the other sources shows that they have confirmed and would be able to rank noise sources for any remedial actions if needed, which is a good step we don't see in all reports, though it really helps those on site if it has been done. The discussion also identifies and discusses the tonal element around 125Hz and 250Hz, which again means they can account for that and address it in the report.*
- *Agree with the calculation adding the corrections for tone that they have done, and what is good here is that they have also outlined some strategies for noise attenuation at source with the lagging of the compressor pipework and the compressor area fence (which tackle the predominant noise in this case). This is effective because if you do not deal with the biggest noise source you can only get very limited noise attenuation.*
- *The modelling shows that without the fence there is only a minor increase ~2dB at one of the nearest receptors which is barely distinguishable and would be unlikely to lead to any noise complaints, but that with the fence they are lower in all locations (and these noise levels are already very low compared to noise levels from industrial sources). The tonal element of the noise may also be reduced from this new equipment further reducing the perception of noise at the receptors.*

The specialist concluded that he believed this was a satisfactory report which covered what SEPA required and provided increased confidence that there will be no adverse impact regarding noise from the changes made to plant by the variation. There have been no recorded noise complaints in relation to the facility. A permit condition has been included in the variation requiring implementation of a Noise Management Plan.

FDM BAT

BAT 13	In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:
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- A protocol containing actions and timetables;
- A protocol for conducting noise emissions monitoring;
- A protocol for response to identified noise events, e.g., complaints.
- A noise reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures.

Applicability

BAT 13 is only applicable to cases where a noise nuisance at sensitive receptors is expected and/or has been substantiated.

5.18 Implications of the Variation for – Monitoring

Both the effluent treatment and anaerobic digestion systems will be controlled and monitored by SCADA software.

The variation document requires periodic monitoring of noise, air emissions, water and soil and groundwater monitoring. A condition has been included requiring the operator to conduct an odour impact assessment to identify ground level concentration of odour at nearby sensitive receptors should public complaints be received.

5.19 Implications of the Variation for – Closure

The installation currently has a decommissioning plan in place as a requirement of the permit; this plan is required to be reviewed every 4 years. The application states that “no changes are envisaged to the overall installation decommissioning plan”

The plan should be updated to take into account the following:

- The digestors should be run to a point that contents could be easily extracted for land spreading, and include an assessment of where in order that the volume is able to be stored such that it would not give rise to nuisance or result in additional storage costs.
- There would be associated disposal costs for contents of any tanks/interceptors and removal for off-site disposal.

No permit condition has been included in the variation document as review is currently required by the permit; this can be reviewed as part of the site’s inspection regime.

5.20 Implications of the Variation for - Site Condition Report (and where relevant the baseline report)

Dairy and creamery effluent presents significant risk to controlled waters (i.e. groundwater and surface wells). An updated site report was submitted as part of the variation application. This report was assessed by a SEPA Contaminated Land Unit; the Specialist involved made the following comments and recommendations: -

“A suitable statement of site condition has been submitted which identifies the site as greenfield up to 1975 and recognises that any impact to soil and groundwater will be attributable to the site operations. No quantifying baseline has been submitted as the site has been in operation since 1975. For >46 years. The Statement of site condition is contained in the following:

- *Site Condition report Arla Foods Limited, Lockerbie Creamery, report prepared by TRC Companies Limited reference 388818.0000.0000*
- *TRC submitted 4-page technical note dated September 2021 reference 426394.0000.0000.*

As such any contamination associated with the operation of the site should be removed upon surrender, with the assumption that baseline is at levels below method detection limit.

Soil and groundwater monitoring

The proposed existing monitoring well locations do not cover all potential points of release and are not located sufficiently either at points of potential release or down hydraulic gradient of these potential points of release. As such additional monitoring wells will be required.

The risk from the site is limited on the basis that the substances of concern are not relevant hazardous substances, but do have the potential to cause pollution, impacting the superficial aquifer and River Annan. However, it is also noted that these substances are not hazardous substances in terms of the Groundwater Daughter Directive.

The frequency of soil and groundwater monitoring has not been assessed with regards to current SEPA guidance TG42.

Given that no up to date sampling has been undertaken since 2016, groundwater monitoring will be required within 9 months of the variation being issued. This includes soil monitoring of the new borehole installations.

In order to allow the variation to be issued the monitoring locations, monitoring frequency and analytical schedule will be determined through submission of a monitoring plan to be agreed by SEPA PPC and Contaminated Land staff in advance of the works being undertaken. This will be combined with a site walkover to determine the nature of containment.

Condition 2.7.5 is included to require assessment of any bunds, sumps or drainage network on a 4 yearly cycle.

During the application process Arla have indicated they intend to undertake monitoring at a 6 monthly frequency. This is a greater frequency than we would likely require but is welcomed.

A suitable statement of site condition has been submitted which identifies the site as greenfield up to 1975 and recognises that any impact to soil and groundwater will be attributable to the site operations. No quantifying baseline has been submitted as the site has been in operation since 1975. For >46 years. The Statement of site condition is contained in the following:

- *Site Condition report Arla Foods Limited, Lockerbie Creamery, report prepared by TRC Companies Limited reference 388818.0000.0000*
- *TRC submitted 4-page technical note dated September 2021 reference 426394.0000.0000.*

As such any contamination associated with the operation of the site should be removed upon surrender, with the assumption that baseline is at levels below method detection limit.”

Groundwater and soil conditions have been included as recommended by the Contaminated Land Specialist and with the first assessment to identify groundwater and soil contamination associated with the activities to be submitted within 9 months of issue of the variation document

5.21 Implications of the Variation for - Consideration of BAT

Given the variation includes the addition of new installation, BAT must be applied as a minimum standard for these aspects of the installation.

In determining this application the author has taken into consideration the requirements of: -

Food, Drink & Milk Industries BREF, 2019

Waste Treatment Industries, 2018

SEPA Technical Guidance Note TG38 (withdrawn during the determination period)

A BAT assessment was supplied within the variation application. Conditions and limits for the permit variation have been applied in line with the requirements of both BAT conclusion documents.

6 OTHER LEGISLATION CONSIDERED

Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994

Screening distance(s) used – 2km

Are there any SPA or SAC designated areas within the area screened?

Justification: SEPA's Nature Conservation Procedure, NCP-P-01, has been developed to satisfy the statutory requirements of SEPA's regulatory responsibilities under section 15 of the Nature Conservation (Scotland) Act 2004 Act and Regulations 47-49, 50-52 and 83-85 of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended.

The first step is to undertake screening of the application based on standard screening distances given in this document. The results of this screening drive the decision about which further steps will be required.

In this instance the screening distance is defined in Annex A, Section 3 as follows:

(s6.8) The treatment of animal and vegetable matter and food industries – Parts A & B 2 km (unless captured by combustion).

Following the screening procedure identified that there were sites within the 2km screening distance:

Castle Loch, Lochmaben – Both designated as SPA and SSSI, 0.75km from installation.

Nature Scot were advised of this in an initial consultation request on first submission of the application and made no comment in response to the consultation.

Provided that the mitigation measures are adopted by means of enforceable conditions attached to the PPC Permit, then it is beyond reasonable doubt that the proposal will not adversely affect the integrity of the Castle Loch SSSI or SPA.

7 ENVIRONMENTAL IMPACT ASSESSMENT AND COMAH

How has any relevant information obtained or conclusion arrived at pursuant to Articles 5, 6 and 7 of Council Directive 85/337/EEC on the assessment of the effects certain public and private projects on the environment been taken into account?

N/A - Not a COMAH tier facility / application.

How has any information contained within a safety report within the meaning of Regulation 7 (safety report) of the Control of Major Accident Hazards Regulations 1999 been taken into account?

N/A - Not a COMAH tier facility / application.

8 DETAILS OF PERMIT

Do you propose placing any non-standard conditions in the Permit:

No non-standard conditions are to be included in the variation notice.

Do you propose making changes to existing text, tables or diagrams within the permit? Yes

Outline of change: Standard text and tables have been included in the variation document to accommodate the new activities.

Details including justification:

Detail of these additions is included within the body of this decision document.

9 EMISSION LIMIT VALUES OR EQUIVALENT TECHNICAL PARAMETERS/ MEASURES

Are you are dealing with either a permit application, or a permit variation which would involve a review of existing ELVs or equivalent technical parameters?

Yes as detailed below

Substance: Oxides of nitrogen (Natural gas engine)

Relevant emission benchmarks: Medium Combustion Plant Part 2, Table 2, ELV for new gas engine.

ELV:

95 mg/m³. Standard Temperature Pressure, with O₂ at 15%

Emission points: A4

Rationale:

The value was taken from Emissions Limit table for gas engine Part 2, Table 2 within the Medium Combustion Plant Directive for that of a new plant.

Substance: Oxides of nitrogen (Natural gas engine)

Relevant emission benchmarks: Medium Combustion Plant Part 2, Table 2, ELV for new gas engine.

ELV:

95 mg/m³. Standard Temperature Pressure, with O₂ at 15%

Emission points: A5

Rationale:

The value was taken from Emissions Limit table for gas engine Part 2, Table 2 within the Medium Combustion Plant Directive for that of a new plant.

Substance: Carbon monoxide (Natural gas engine)

Relevant emission benchmarks: SEPA's Technical Guidance Note TG38

ELV: 1000 mg/m³. Standard Temperature Pressure, O₂ at 5% therefore 375 mg/m³ at 15% O₂.

Emission point: A4

Rationale: Neither the Medium Combustion Directive nor SEPA's technical guidance contain a limit for that of Carbon monoxide, however the SEPA Technical Guidance Note 38 gives a limit in relation to biogas. The carbon monoxide limit has been included as this is a good indicator of efficient combustion

conditions. As such the value was taken from the guidance note and the value converted to that of 15% O₂ such that the O₂ value remains in line with the Medium Combustion Plant Directive reference conditions of standard Temperature Pressure, with O₂ at 15%.

Substance: Carbon monoxide (Natural gas engine)

Relevant emission benchmarks: SEPA's Technical Guidance Note TG38

ELV: 1000 mg/m³. Standard Temperature Pressure, O₂ at 5% therefore 375 mg/m³ at 15% O₂.

Emission point: A5

Rationale: Neither the Medium Combustion Directive nor SEPA's technical guidance contain a limit for that of Carbon monoxide, however the SEPA Technical Guidance Note 38 gives a limit in relation to biogas. The carbon monoxide limit has been included as this is a good indicator of efficient combustion conditions. As such the value was taken from the guidance note and the value converted to that of 15% O₂ such that the O₂ value remains in line with the Medium Combustion Plant Directive reference conditions of standard Temperature Pressure, with O₂ at 15%.

Substance: Temperature (Flare)

Relevant emission benchmarks: SEPA's Technical Guidance Note 38

ELV: 1000°C

Emission point: A7

Rationale: In order to prevent the denovo synthesis of various compounds through the combustion of the biogas, and to ensure that various chemical compounds and odorous molecules already within the biogas are destroyed, the standard requires a 1000°C temperature for the flare to be maintained.

Details of any equivalent technical parameters adopted to supplement or replace ELV's: Detailed above where relevant

Details of any derogations from the ELV's set out in the BAT conclusions:

None applicable

Has an annex been inserted to the permit containing reasons, assessment and justifications for setting the value: Not applicable

Details of any temporary derogations for the use of emerging techniques. NB Such temporary derogations do not require PPD consultation or the insertion of reasons etc. Into the permit: Not applicable

Emission limit values: Water

Substance: Total Suspended Solids (TSS)

Relevant emission benchmarks: BAT12 – BAT conclusions for Food, Drink and Milk Industries under Directive 2010/75/EU

ELV: 50mg/l

Emission point: W1

Rationale: Given this is a new effluent treatment plant, the latest BAT conclusions must be applied. The conclusions allow for a variable daily average between 4 and 50mg/l. For this installation, 50mg/l is being applied as the upper and absolute limit permitted by BAT.

Substance: Chemical Oxygen Demand (COD)

Relevant emission benchmarks: BAT12 – BAT conclusions for Food, Drink and Milk Industries under Directive 2010/75/EU

ELV: 125mg/l

Emission point: W1

Rationale: Given this is a new effluent treatment plant, the latest BAT conclusions must be applied. Currently the installation has no limit for COD, within the latest BATc, dairies are permitted up to 125mg/l upper limit. Therefore, this upper limit is being applied to the varied permit.

Substance: Total Phosphorus

Relevant emission benchmarks: BAT12 – BAT conclusions for Food, Drink and Milk Industries under Directive 2010/75/EU

ELV: 4mg/l

Emission point: W1

Rationale: Given this is a new effluent treatment plant, the latest BAT conclusions must be applied. Currently the installation has an upper limit of 20mg/l this will be reduced to the BRef BAT AEL daily average 4mg/l by the 4th December 2023.

Substance: Total Nitrogen

Relevant emission benchmarks: BAT12 – BAT conclusions for Food, Drink and Milk Industries under Directive 2010/75/EU

ELV: 20mg/l

Emission point: W1

Rationale: Given this is a new effluent treatment plant, the latest BAT conclusions must be applied. There are currently no Nitrogen limits associated with the installation, this is a new parameter. The limit of 20mg/l will be applied for the installation as outlined in the latest BAT conclusions. An upper limit of 30mg/l as a daily average can be applied if abatement efficiency is over/equal to 80% as yearly average.

Substance: Biological Oxygen Demand (BOD)

Relevant emission benchmarks: BAT12 – BAT conclusions for Food, Drink and Milk Industries under Directive 2010/75/EU

ELV: 20mg/l

Emission point: W1

Rationale: Given this is a new effluent treatment plant, the latest BAT conclusions must be applied. BAT12 does not identify a specific BAT-AEL for BOD, however, does provide an indicative emission limit. The yearly average is indicated to generally be under/equal to 20mg/l. As no specific limit is indicated, the limit of 20mg/l as a daily average will be applied as part of the varied permit. The current permit allows up to 56mg/l (Upper Limit) with a lower limit of 20mg/l.

10 PEER REVIEW

Has the determination and draft permit been Peer Reviewed? Yes

Name of Peer Reviewer and comments made: AD

Variation Document PR Comments

1. General administrative comments on wording.
2. Table 2.1 reporting table wrong condition referenced – corrected.
3. PR asked was waste reporting and other waste conditions necessary for PPC site – standard PPC waste conditions included in the variation document.

Decision document PR Comments

1. PAS110 might not be possible due to the physical component being more liquid than sludge – this is a valid point that the applicant will need to take into consideration; the applicant has stated that, if possible, they aim to achieve PAS110 accreditation.
2. Lagoon should not be included in assessment of water use – reference to lagoon removed subject to PR comments.
3. PR asked if WABITAB was relevant to this activity – it was confirmed that it was given it is a Section 5.4 activity.
4. Reference should be made to TG38 – point accepted, and reference included

11 FINAL DETERMINATION

Issue variation document – Based on the information available at the time of the determination SEPA is satisfied that

- The applicant will be the person who will have control over the operation of the installation/mobile plant,
- The applicant will ensure that the installation/mobile plant is operated to comply with the conditions of the Permit,
- The applicant is a fit and proper person (specified waste management activities only),
- Planning permission for the activity is in force (specified waste management activities only),
- That the operator is in a position to use all appropriate preventative measures against pollution, in particular through the application of best available techniques.
- That no significant pollution should be caused.

12 REFERENCES AND GUIDANCE

The Pollution Prevention and Control (Scotland) Regulations 2012

SEPA Technical Guidance Note TG38

Best Available Techniques (BAT) Reference Document for the Food, Drink and Milk Industries Industrial Emissions Directive 2019/2031

Best Available Techniques (BAT) Reference Document for Waste Treatment Emissions Directive
2018/1147

SEPA Nature Conservation Procedure for Environmental Licensing NCP-P-01

SEPA Nature Conservation Procedure for Environmental Licensing: Recording Template NCP-T-01

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