SEPA
Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

Our ref: CAR/L/1178035
Your ref:

Theresa Nelson

If telephoning ask for:

13 October 2021

Dear Madam,

THE WATER ENVIRONMENT (CONTROLLED ACTIVITIES) (SCOTLAND) REGULATIONS 2011 ("THE REGULATIONS")

NOTIFICATION OF THE PROPOSED DETERMINATION OF AN APPLICATION

APPLICATION FOR: AUTHORISATION
REFERENCE NUMBER: CAR/L/1178035
LOCATION: LITTLE CUMBRAE MARINE PEN FISH FARM

Thank you for your written representation to us regarding the above application.

We are writing to let you know that we have considered the application and are now ready to make our decision and that you now have the opportunity to object to the proposed decision, if you so wish.

SEPA now hereby gives you notice that it proposes to grant an authorisation for the operation of a marine pen fish farm subject to the conditions in the draft authorisation attached to this letter.

In reaching the decision to grant an authorisation, we considered a range of information, including the duly made written representation you submitted to us. Details of how each representation, including yours, was taken into account can be found in the Appendix to this letter.

If you object to our proposed decision to grant an authorisation, you have 21 days ("the 21-day period") from the date you receive this letter to notify the Scottish Ministers of your objection by emailing them at:

Angus Smith Building
6 Parklands Avenue, Eurocentral,
Holytown, North Lanarkshire ML1 4WQ
tel 01698 839000 fax 01698 738155
www.sepa.org.uk • customer enquiries 03000 99 66 99

EQCAT@gov.scot

Or by writing to them at the following address:

Scottish Ministers, Scottish Government, Environment and Forestry Directorate, Environmental Quality Division, Area 1-D (North), Victoria Quay, Edinburgh EH6 6QQ

If you, or anyone else, submits a notification objecting to our decision within the 21-day period, the Scottish Ministers may direct us to refer the application to them so that they can make their own determination. This is known as "calling in" an application.

Any such notification **must** also be copied to SEPA at:

registry@sepa.org.uk

If a notification is sent to the Scottish Ministers **and** copied to SEPA within the 21 day period, our proposed decision to grant a permit will be put on hold until either:

- we receive written notice from the Scottish Ministers that they do not intend to call in the application; or

- a period of 63 days, beginning with the date of service of this notice, has expired and we have received no written notice from the Scottish Ministers.

Important note, please read: In order for your objection to the Scottish Ministers to be considered by SEPA you **must** send a copy of your objection notification to us **within 21 days of the date of receipt of this letter**. If we do not receive a copy of any objection to the Scottish Ministers, we may proceed with our determination irrespective of your objection.

If you do not object to our proposal to grant an authorisation, you do not need to take any further action.

If you have any questions regarding this letter, please contact registry@sepa.org.uk, using the reference 'CAR/L/1178035 – Little Cumbrae Marine Pen Fish Farm' in the subject line.

Yours faithfully,

Karen Meade
Senior Registry Officer

Appendix to 21 Day Notice Letter re: CAR/L/1178035 – Little Cumbrae Marine Pen Fish Farm

Section 1 of this Appendix will address the issues that have been raised by representees that are under the regulatory remit of SEPA under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 or 'CAR'. Section 2 will address the issues that has been raised that do not fall under the regulatory remit of SEPA under CAR.

SECTION 1

Organic wastes and seabed impacts

Limiting the impact of organic waste deposition on the seabed in the vicinity of the fish farm is a cornerstone of SEPA's licensing approach for Marine Pen Fish Farms (MPFFs).

SEPA was involved in the development of the Depomod models which simulate the transport and deposition of particulate matter (for example fish faeces and waste feed) from MPFFs. AutoDepomod modelling was included as part of this application as was acceptable to SEPA at the time of submission. Since then, the more sophisticated NewDepomod has replaced Autodepomod as the industry standard and an application minimum requirement. As a result, SEPA has undertaken its own NewDepomod modelling of this site as part of the application determination.

The new licensing framework developed by SEPA and introduced in 2019 allows the degradation of an area of seabed around the fish farm known as a 'mixing zone'. It is equivalent to the area of the cages plus 100m in all directions, referred to as the Allowable Mixing Zone (AMZ). This degradation is measured, for example, in terms of the impact of pollution on the populations of animals in the seabed described by an index known as the Infaunal Quality Index (IQI). At the edge of the mixing zone, conditions should be returning to normal as demonstrated by the IQI score being "Good" or better. Additionally, SEPA places limits on the intensity of impacts within the mixing zone, such that even where the predicted footprint does not exceed the 100m mixing zone, the scale of operations at the site can be restricted to ensure that flora and fauna within the mixing zone are not too severely impacted.

In the case of Little Cumbrae fish farm, the AMZ would amount to approximately 160,830m^2. This would be the maximum area of seabed that would be permitted to be degraded by the operation of the fish farm. The predicted area of degraded seabed for the Little Cumbrae fish farm for the applied for biomass of 2243.8 tonnes is 178,125m^2 which is approximately 111% of the maximum mixing zone that would be permitted. As a result, SEPA has restricted the biomass to 2000t which reduces the predicted area of degraded seabed to 164,375m2 or 102% of the maximum mixing zone that would be permitted (this is within the known 5% margin of error of the model).

Water Column Nutrient Levels

In assessing water column nutrients e.g., Phosphorus and Nitrogen which could contribute to eutrophication and algal blooms, SEPA consults with Marine Scotland who undertake hydrographic modelling on our behalf. Marine Scotland's consultation response received on 25 May 2021 confirmed that their modelling of the proposal indicated the degree of nutrient enhancement in the water column is predicted to be low and no objection was received. The Firth of Clyde is an uncategorised area under the Scottish Government (Marine Scotland) Locational Guidelines.

Sea Louse Treatment Medicines

A number of concerns were raised relating to the use of sea louse bath medicines azamethiphos deltamethrin, cypermethrin and hydrogen peroxide. These included the impact on marine life in general, but in particular on commercial shellfish and fish stocks, plankton, kelp and priority marine features. There was also concern for the impacts on an oyster reintroduction program that was initiated in May 2021 at Fairlie Quay Marinas and Largs Yacht Haven.

During the determination period, SEPA informed Dawnfresh Farming Ltd (DFL) that the modelling suggested they were unlikely to get any practically useable quantity of cypermethrin. DFL confirmed on the 28 June 2021 that they wished to withdraw the application for the use of cypermethrin.

Sea louse medicine releases have the potential to negatively impact marine life in the vicinity of the fish farm. However, SEPA seeks to control and limit the extent of the harm by imposing conditions on the use of these products such that either the area or time over which they may have an impact is restricted. Environmental Quality Standards (EQS) are safe concentrations for sea louse medicines and have been set to be protective of all species in the environmental matrix where exposure is likely to be highest. For sea louse bath medicines, this is the water column where they are predicted to be likely to disperse in a plume which stays near the surface down to a maximum of 10m. Modelling to determine the fate of residues following the use of sea louse bath medicines containing azamethiphos and deltamethrin has been carried out. According to the modelling undertaken, the EQS for azamethiphos and deltamethrin will not be breached if releases are restricted to the quantities set out in the draft permit.

Concerns was raised regarding the effect sea louse treatment chemicals could have on recreational water users e.g. pleasure boaters, leisure divers, surfers, paddle boarders, kayakers, wild swimmers, or anglers. A claim was also made that azamethiphos and deltamethrin were carcinogenic and therefore a risk to recreational water users. The potential for human health impacts arising from azamethiphos, deltamethrin or hydrogen peroxide releases from fish farms is not considered as part of SEPA's determination under CAR. It is the responsibility of the Local authority to assess potential impacts of medicine releases on human health under the planning function. Planners should be advised by their own local health board, who in turn can seek assistance from the Public Health Scotland if they feel it is needed. SEPA can provide assistance in relation to relevant modelling.

Concerns were raised regarding the fate of azamethiphos and deltamethrin plumes following bath treatments. Dispersion modelling supporting the applications indicated that plumes would land and concentrate on nearby shorelines. Particle tracking technology has many advantages and disadvantages for predicting particle movement within the marine environment. One disadvantage is modelling areas where the behaviour of particles is difficult to handle, and the documents linked at the end of this paragraph show that particles near boundaries should be treated cautiously. SEPA has examined the Dawnfresh model output and concluded that low concentration plumes are unlikely to later increase in concentration, and the accumulation of particles on nearby shorelines are therefore more likely to be a model artefact because of the proximity to the land boundary. It should be noted that a non-particle solution such as advection dispersion modelling, would be less likely to show these kinds of modelling artefacts.

Assessment of the ability of hydrodynamic and particle tracking models to inform decisions on siting and management of marine finfish aquaculture facilities in British Columbia (dfo-mpo.gc.ca)

Microsoft Word - CRR 294 090423-Final.doc (noaa.gov)

A claim was made that azamethiphos does not have approval for use in Scotland. Licensing for the use of bath medicines at MPFFs in the UK is undertaken by the Veterinary Medicines Directorate under the Veterinary Medicines Regulations 2013.

Concerns were raised about the impact hydrogen peroxide releases would have on kelp. It is known that hydrogen peroxide breaks down quickly into water and oxygen in the marine environment, so the risk of residues accumulating is negligible. According to MarLIN (Marine Life Info Network), kelp has low sensitivity to synthetic compounds, heavy metals and hydrocarbon contaminations. Also,

recoverability is immediate, so if plumes of hydrogen peroxide do reach the shallow subtidal areas where the kelp is found before it has broken down, this implies no long-term damage will result.

Zinc and Copper
Concerns were raised that the leaching of Zinc (from fish feed) and Copper (from net anti foulant) would be risk to marine life and result in environmental damage. Releases of zinc and copper to the environment from MPFFs are known but the concentrations have been assessed as being unlikely to significantly adversely impact the environment out with the vicinity of the MPFF.

Antibiotics / Antimicrobials
Antibiotics used in MPFFs are licensed by the Veterinary Medicines Directorate as part of the Market Authorisation process. Environmental risk assessments are undertaken as part of this licensing process to limit environmental impacts.

Disinfectants
Disinfectant use in MPFFs has been risk assessed as part of the Permitted Substances Work Plan, and for the levels used in MPFFs the risks to marine life have been assessed as low.

Cumulative Impacts from all 3 proposed farms
Following submission of this application along with Cumbrae (CAR/L/1178037) and South Bute (CAR/L/1178014), SEPA requested Hydrodynamic Modelling from DFL to investigate the possibility of cumulative impacts in the area from all 3 sites.

Hydrodynamic Modelling has shown that organic waste deposition from the 3 sites will be limited to each of their respective mixing zones and no cumulative impacts are predicted in the wider area. Standard Equilibrium Concentration Enhancement (ECE) nutrient calculations have also been carried out and the degree of nutrient enhancement in the water column is predicted to be low at all 3 sites.

Hydrodynamic Modelling has also predicted that bath medicines will meet the EQS requirements for all 3 sites (the medicine quantities in this application have been reduced from what was applied for to ensure this). This bath medicine modelling helps form part of the risk assessment for nutrients, demonstrating that the relatively fast current speeds, and levels of dispersion in this area should be sufficient. A worst-case scenario of simultaneous bath releases from all 3 sites, was investigated and the modelling plots produced did not predict any significant interaction (e.g. accumulation) of bath plumes between the 3 farms.

Modelling and hydrographic data
A number of comments were made regarding the timing of the collection of hydrographic data and its representativeness, the use of acoustic doppler current meters and technical aspects of the modelling undertaken to estimate the impact of the fish farm upon the environment. SEPA has had discussions and correspondence with the applicant and their consultant who undertook modelling and hydrographic data collection at the site to ensure that the information used in the determination of the application is appropriate and representative of conditions at the site. SEPA is satisfied that this is the case.

Complaints were raised regarding some of the modelling input data specifically, that wind data was used from Glasgow Airport weather station and that the current meter datasets were not of sufficient length or representative of the area. The wind data from Glasgow airport was assessed and considered to be sufficient for wind fields in marine modelling. The current meter data used in this application was assessed in line with SEPAs framework and considered to be representative of the flow conditions experienced at the site.

Priority Marine Features

There are records of the following Priority Marine Features (PMFs) within 3km of the fish farm, though none are known to be of national importance, and many are mobile species:

Habitat PMFs:

- Kelp and seaweed communities on sublittoral sediment
- Burrowed mud
- Tidal swept algal communities and kelp beds
- Low or variable salinity habitats

Species PMFs:

- Basking shark
- Ocean quahog
- European spiny lobster
- Harbour seal
- Grey seal
- Sand goby
- Cod
- Saithe
- Ling
- Black guillemot

SEPA determines whether there is a likely significant risk that the operation of a fish farm will harm a PMF. In coming to a determination, SEPA uses its own expertise but also considers advice and information provided by others, for example Nature Scot.

In the case of the proposed Little Cumbrae fish farm, SEPA has concluded, that while there will be some impact to PMFs within proximity to it, the impact of the fish farm is not likely to be significant. This is because, although there are PMFs within the likely footprint of the farm, including seaweed communities and seagrass beds, the quantity and/or quality of the PMFs in the area is not substantial and even if they were lost by the impact of the fish farm, it would not represent a nationally significant issue. Furthermore, several of the PMFs are mobile species which will be able to avoid the location of the fish farm if the conditions in the vicinity of the farm are unfavourable to them.

Sites of Special Scientific Interest

The proposal's proximity to Kames Bay SSSI Ballochmartin Bay SSSI and Southannan Sands SSSI was raised as a concern on numerous occasions. It is acknowledged that Kames Bay has been a study site of marine intertidal biology, particularly of marine invertebrates, for over 100 years. However, modelling predicts any impact from solids deposition to be local to the farm and, as such, not likely to impact the integrity of any of the SSSIs. EQS are set to be protective of all species in the environmental matrix where exposure is likely to be highest. For bath medicines, this is the water column where they are likely to disperse in a plume within the top 10m. Furthermore, due to the nature of the bath treatment medicines, they are only likely to impact not-target crustacean species present in the zooplankton in the area of the plume at the time of the plume. As a result, SEPA has determined that the use of bath medicines is unlikely to impact the benthic faunal communities in Kames Bay, Ballochmartin Bay and Southannan Sands.

Closed containment

Closed containment is an approach to fish farming that reduces the impact of the farming activities on the environment by allowing the collection of particulate wastes and residues and reducing the likelihood of sea louse infestations. SEPA's licensing framework permits the operation of farms

based upon open-net technologies provided that they meet the standards set out by SEPA. The proposal for Little Cumbrae is based on open-net technology that meets required current standards.

Invasive Non Native Species Biosecurity

SEPA's role is to control impacts on the water environment with regard to a controlled activity. The specific controlled activities forming this application and considered as part of our determination are the discharge or organic solids (fish faeces and uneaten food pellets) and the discharge at the farm site of medicine residues, including from a wellboat. With respect to the latter, SEPA has included a condition in the draft permit that restricts the operator to on-site abstraction of the water needed for wellboat medicine treatments in addition to requiring the discharge from the wellboat to be made at the site, so preventing any risk of spreading any non-native species to other water bodies. Given this, SEPA consider there is no significant risk in the spread of non-native species related to the controlled activities.

REC/ECCLR SG Inquiry

SEPA took part in the inquiries run by the Rural Economy and Connectivity Committee and the Environment Climate Change and Land Reform Committees in 2016. While the committees suggested that the *status quo* was not an option for the salmon farming sector, no direct changes to the pollution control legislation relating to the sector arose from the committees' deliberations. SEPA has, however, substantially changed the regulatory framework for the sector under CAR with the introduction of a new framework during 2019. This has changed much of the way SEPA regulates the industry including changes to monitoring and modelling. The application for Little Cumbrae was handled under transitional arrangements that were in force at the time the application was made. The transitional arrangements meant AutoDepomod was accepted as part of the application and SEPA subsequently undertook NewDepomod so that the determination fulfilled all the criteria of the new framework.

Dawnfresh Farming Ltd

A concern was raised about DFL as a fish farm operator specifically "...poor historic CAS (Compliance Assessment Scheme) performance as a company." CAR requires (under Regulation 8) that SEPA should only grant an authorisation to a person or corporate body where *"it is satisfied that that person will secure…..compliance"* [with the authorisation]. SEPA is satisfied in this case, that DFL are capable of securing compliance with the authorisation for the new proposed fish farm.

SEPA's Consultation Hub & Public Advertising

Complaints were raised about the format of SEPA's Consultation Hub, specifically the lack of facility for written representations to be made, the text box format being inadequate for submissions and the ability to only attach one document to a submission.

This application was originally made during a transition period when SEPA was developing a new regulatory framework. This had implications for the form and content of the application itself but also consultation and advertising. During the determination of the application, SEPA has been subject to a cyber-attack which has disrupted normal procedures which further exacerbated the stress placed by Covid-19 upon normal business operations. The challenges posed by these circumstances meant that SEPA extended the period during which representations could be made and provided an address to which written submissions could be made. This application was live on SEPA's Consultation Hub for the public to submit representations from 22 April 2021 28 May 2021. SEPA's is content that the format of consultation is sufficient to meet its obligations. However, SEPA has taken on board the comments made and will be use them to improve and develop the Consultation Hub service.

Complaints were made that SEPA NewDepomod modelling of the application was not available for public view online. The information that is required to be advertised consists of the application

documents. The NewDepomod modelling was conducted as part of SEPA's determination of the application and therefore it was not considered appropriate for upload. The outputs from SEPA's NewDepomod modelling is/was available on request.

Complaints were made that the baseline (visual) survey supporting the application was not available for public view online. The baseline surveys were not included in the suite of application documents uploaded to the Consultation Hub as the file size of the footage was too large for the facility to cope with. Such files are usually submitted to SEPA in the form of a physical USB drive. This makes it difficult to provide a copy on request. Assessment of the visual surveys was conducted by SEPA in collaboration with Nature Scot.

It was alleged that there had been no notification in the local press of the proposal and therefore members of the community are unaware of it. On 30 April 2021, evidence was provided by DFL that the application was advertised in the local printed publication Argyll Media Ltd and the Edinburgh Gazette (as required under SEPA's published Advertising and Consultation guidance WAT-FORM-20).

SECTION 2

Marine Consultation Area

Concerns were raised about the proposal being sited within the 'Marine Consultation Area: Cumbraes'. Marine Consultation Areas (MCAs) were introduced by Scottish Natural Heritage, now Nature Scot, as deserving particular distinction in respect of the quality and sensitivity of the marine environment within them. SEPA consulted Nature Scot as part of this application, but Nature Scot did not raise the issue of the MCA as part of their response.

Wild Salmonids, Farmed Fish Escapes and Sea Lice

A number of representations raised the possibility that the operation of the fish farm at Little Cumbrae would have impacts upon wild populations of salmonids. The concerns surrounded the effects of sea lice emanating from the cages, the spread of salmonid diseases and the escape of farmed stock.

SEPA are in the process of developing a new regulatory framework for managing the interaction between sea lice and wild salmonid fish. This will be consulted on in due course. Currently sea lice and wild fish interactions will continue to be considered by local authorities during the determination of planning applications and any impacts from sea lice aren't considered as part of an application determination under CAR.

Sea louse levels, salmonid diseases, and farmed fish escapes at an MPFF is a matter currently considered and advised on by Marine Scotland, as part of its functions under the Aquatic Animal Health (Scotland) Regulations 2009 and the Aquaculture and Fisheries (Scotland) Act 2007, as amended by the Aquaculture and Fisheries (Scotland) Act 2013.

Inshore Fisheries

It is clear that the establishment of the marine fish farm at Little Cumbrae will exclude fishing operations from the area occupied by the farm cages. It is also likely that the emissions from the farm will potentially impact upon commercially important species over the benthic footprint of the farm. As discussed in Part 1 above, SEPA includes conditions in the permit for a fish farm to ensure that the extent and intensity of impacts upon the fauna on the seabed are limited. These include conditions relating to seabed enrichment and the discharges of sea louse medicines. Thus, while there will be an effect on inshore fisheries from the presence of the fish farm, this effect is limited by conditions in the permit issued by SEPA. Competition for space within inshore waters and the priority

that one sector might be given over another is more fully dealt with via the Town and Country Planning framework for which the responsibility lies with the Local Authority.

Fish Welfare Issues
Concerns were raised about general fish welfare issues involved in rearing fish in marine pens. The welfare of fish lies with the veterinarians employed by the fish farm operator. Regulation of welfare issues in farmed fish rests with the Marine Scotland Fish Health Inspectorate or the Animal and Plant Health Agency of the Scottish Government.

Impact on Marine Megafauna
SEPA's statutory regulatory remit under the provisions of CAR deals with the authorisation of discharges of polluting matter from the proposed fish farm. It does not extend to the regulation of Acoustic Deterrent Devices or the risk of entanglement or the disturbance of animals such as seals, cetaceans, otters, basking sharks, marine birds, etc. The use of these devices and questions of noise and disturbance to marine megafauna principally falls to be regulated by the Local Authority and/or Marine Scotland in regard to their respective regulatory remits.

Local Economy, Tourism and Recreation
A number of concerns were raised regarding the impact of the proposal on tourism businesses and recreation in the area e.g. charter boats, pleasure boaters, leisure divers, surfers, paddle boarders, kayakers, wild swimmers, anglers who visit the area. While the degradation of seabed caused by the discharges from the fish farm may discourage these activities close to the cages, the area of impact is restricted by conditions set in the draft permit and will be monitored by the operator or consultants working on their behalf. The competing interests including spatial disputes of different sectors in a particular area is dealt with via the Town and Country Planning framework for which the responsibility lies with the Local Authority.

Visual Amenity and Noise
SEPA's statutory regulatory remit under the provisions of CAR does not extend to consideration of impacts to the visual landscape, nuisance smells or noise associated with either the proposed site or associated ancillary operations. These issues principally fall to be regulated by the Local Authority with regard to their respective regulatory remit.

Exposed location
Concerns were raised regarding the site's exposed location and subsequently the structural integrity of the site in inclement weather. The design and ongoing structural integrity of MPFFs is not regulated by SEPA but by Marine Scotland under the Aquaculture and Fisheries (Scotland) Act 2013 which allows Ministers to adopt standards for fish farm construction. A Technical Standard for Scottish Finfish Aquaculture was published in 2015 setting out requirements for the design of fish farms. The standard sets out how engineers/designers should take account of the conditions prevailing at individual fish farms and how doing so should ensure that the integrity of the farm will be maintained in the face of local tidal and storm conditions. See: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2015/06/technical-standard-scottish-finfish-aquaculture/documents/00479005-pdf/00479005-pdf/govscot%3Adocument/00479005.pdf

Shipping hazard
The site and its ancillary equipment posing a hazard in busy shipping lane has been raised as a concern. The risk posed to shipping by a fish farm is not a consideration under CAR. This matter is dealt with as part of the licensing arrangements operated by local authorities and Marine Scotland with input from the Northern Lighthouse Board.

Military activities

The potential for conflict with military activities are similar to the issues surrounding the proposed farm being a hazard to shipping deal with above. The possibility that the establishment of the fish farm may interfere with military activities, for example a naval anchorage, would be dealt with during the determination of a planning application by the local planning authority.

No Environmental Impact Assessment completed

The Environmental Impact Assessment (EIA) process is not managed by SEPA, nor may SEPA require an EIA as part of the documentation accompanying a CAR application. The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 are regulated by local planning authorities. They are responsible, under these regulations for deciding whether an EIA is required, known as the "Screening" process and the extent of that EIA - the "Scoping" process. Whilst not the body that manages EIA, SEPA is a contributor to both the Screening and Scoping processes in its role as a consultee to the process,

General Litter and Fallen Stock

Whilst the CAR permit does not directly regulate littering and fallen stock disposal, DFL have a legal responsibility under what is known as Duty of Care legislation to appropriately dispose of any wastes generated as part of their activities. During site inspections at MPFFs, SEPA officers may routinely check for Waste Transfer Notes as evidence that the correct disposal of wastes arising from farming activities is being undertaken.

Carbon Footprint / Pollution Arising from Increased Numbers of Workboats

Some elements of environmental legislation regulated by SEPA for example the Pollution Prevention and Control (Scotland) Regulations 2012 include a consideration of issues such as fuel consumption and potential carbon footprint and impose a requirement to minimise these through a requirement to adopt the best available technologies. This is however not a requirement of CAR and therefore is not an area which is considered during the determination of an application for a new fish farm.

Fish Feed – Non Sustainable Source

Similarly, to the use of diesel and potential carbon footprint of workboat use, the sustainability of the feed ingredients is not considered under CAR and is therefore not taken into consideration as part of this determination.