SCOTTISH SALMON WATCH

CHEMICALS

Scottish Ministers: scottish.ministers@gov.scot
Scottish Environment Protection Agency: terry.ahearn@sepa.org.uk
Veterinary Medicines Directorate: postmaster@vmd.defra.gsi.gov.uk

8 June 2020

Scientific Concerns re. Imidacloprid Use in Scottish Salmon Farming

Further to Scottish Salmon Watch's FOI request dated 20 May 2020 and letter dated 17 March 2020 (both re-enclosed below for easy reference), could you please provide information on any scientific risk assessments of the ecosystem impacts of Imidacloprid (BMK08/Ectosan) in salmon farming?

Please consider this a formal request for information under the relevant FOI and Environmental Information regulations.

Scottish Salmon Watch has compiled a dossier detailing a growing body of scientific evidence reporting impacts of Imidacloprid on aquatic ecosystems - available online here

As an introductory comment, the current cloak of confidentiality is wholly unacceptable and Scottish Salmon Watch looks forward to public consultation on the use of the toxic neonicotinoid insecticide Imidacloprid in salmon farming.

As we have pointed out previously, there is a horrible history of toxic chemicals use in Scottish salmon farming in advance of proper public consultation, scientific evaluation and ecological risk assessment; namely:

- Secret trials of the shellfish-killing chemical Teflubenzuron - approved by SEPA in the 1990s and then subsequently banned in 2015 after chemical contamination of the sea-bed by Marine Harvest (re-named Mowi in 2019) and other companies.

- The ongoing sordid saga dubbed 'Slicegate' surrounding the proposed ban of the lobster-killing chemical Emamectin benzoate which SEPA planned to ban in 2016 but is still being used after intense company, industry and government lobbying (with relaxed rules published by SEPA in April 2020 allowing even more use)

- The use of the carcinogenic chemical Dichlorvos (Nuvan) which was discharged in huge quantities despite scientific evidence pointing to significant ecological risks before cancer risks led to a ban.

- Other cases studies on the use of Azamethiphos, Cypermethrin, Deltamethrin, Formaldehyde (Formalin), Ivermectin and Hydrogen Peroxide (the latter which was seen as

the most environmentally friendly chemical but recent scientific evidence has shown to have lethal and sub-lethal impacts on seaweed, shrimp and other marine species.

Read more via 'Silent Spring of the Sea' and 'Media Backgrounder: Chemically Embalmed Scottish Salmon'

The risks of Imidacloprid use in salmon farming - despite Benchmark's claim that it has "the highest score for environmental protection and sustainability" - show similar hallmarks of ecotoxicity and impact on aquatic species (unsurprising in view of the fact that Imidcloprid is classified by chemical companies as a 'Marine Pollutant' and "very toxic to aquatic life" and "hazardous to the aquatic environment".

Scottish Salmon Watch understands that Mark Ruskell MSP for the Scottish Greens wrote last month (20 May 2020) to the Cabinet Secretary for Environment, Climate Change & Land Reform "deeply concerned" at the use of Imidacloprid in salmon farming. The letter (available in full online here) included:

> I need not remind you that the European Commission previously banned the use of neonicotinoids on plants in 2018 due to its risk to bees. Imidacloprid has been classed as an 'environmental hazard by US government scientists, who have warned that it could be 'very toxic to aquatic life with long lasting effects'. I also understand that the Rivers Trust, which represents river management bodies in England, Wales and Ireland, has warned that neonicotinoids in our rivers endanger the lives of insects, birds and fish.
>
> The experience of emamectin in Scotland reinforced the importance of the precautionary principle, and ensuring that new chemicals do not have a detrimental impact on marine ecosystems or animal welfare prior to their use in Scotland's waters. Allowing wide spread use of a chemical, only to roll back on it at a later stage, does not only cause untold damage to our seas and wildlife, but also makes it extremely difficult to effectively bring about change in the industry.
>
> The global biodiversity crisis we face means it has never been more important that Scotland faces up to its responsibility to protect wildlife and habitats. If there is any evidence at all that Ectosan has a detrimental impact on our marine ecosystems, it is not acceptable for in-situ trials to take place in Scotland's waters.

The scientific dossier compiled by Scottish Salmon Watch is by no means exhaustive and is building all the time as more research is conducted, especially into marine and freshwater impacts. Have you conducted any scientific studies specific to Imidacloprid use in salmon farming in Scotland to add to this weight of evidence?

Coral Reef Organisms: Differential Sensitivities to an Agricultural Pesticide. Ocean Sciences, February 2020

Environmental pollution from pet parasiticides. Veterinary Record, January 2020

Sub-lethal Effects of Imidacloprid on Nile Tilapia (*Oreochromis niloticus*). Water, Soil & Air Pollution, January 2020

The effect of air exposure, handling stress and imidacloprid on the susceptibility of Crassostrea gigas to ostreid herpesvirus 1 (OsHV-1). Aquaculture Environment Interactions, December 2019

Neonicotinoids disrupt aquatic food webs and decrease fishery yields. Science, November 2019

Effects of insecticides, fipronil and imidacloprid, on the growth, survival, and behavior of brown shrimp *Farfantepenaeus aztecus*. PLoS One, October 2019

Acute Toxicity of Imidacloprid on the Developmental Stages of Common Carp *Cyprinus carpio*. Toxicology & Environmental Health Sciences, October 2019

A neonicotinoid insecticide reduces fueling and delays migration in songbirds. Science, September 2019

Imidacloprid Induces Adverse Effects on Fish Early Life Stages That Are More Severe in Japanese Medaka (Oryzias Latipes) Than in Zebrafish (Danio Rerio). Chemosphere, June 2019

Trends in Neonicotinoid Pesticide Residues in Food and Water in the United States, 1999-2015. Environmental Health, January 2019

Neonicotinoid insecticide mixtures: Evaluation of laboratory-based toxicity predictions under semi-controlled field conditions. Environmental Pollution, December 2018

Neonicotinoid exposure disrupts bumblebee nest behavior, social networks, and thermoregulation. Science, November 2018

Were the sharp declines of dragonfly populations in the 1990s in Japan caused by fipronil and imidacloprid? An analysis of Hill's causality for the case of *Sympetrum frequens*. Environmental Science & Pollution Research, October 2018

Chronic effects of an environmentally-relevant, short-term neonicotinoid insecticide pulse on four aquatic invertebrates. Science of the Total Environment, October 2018

Imidacloprid Poisoning: An Emerging Cause of Potentially Fatal Poisoning. Indian Journal of Critical Care Medicine, November 2017

An update of the Worldwide Integrated Assessment (WIA) on systemic insecticides. Part 2: impacts on organisms and ecosystems. Environmental Science & Pollution Research, November 2017

Neonicotinoids act like endocrine disrupting chemicals in newly-emerged bees and winter bees. Scientific Reports, September 2017

Comparative ecotoxicity of imidacloprid and dinotefuran to aquatic insects in rice mesocosms. Ecotoxicology & Environmental Safety, April 2017

Peer review of the pesticide risk assessment for the active substance imidacloprid in light of confirmatory data submitted. European Food Safety Authority, November 2016

Contamination of the Aquatic Environment with Neonicotinoids and its Implication for Ecosystems. Frontiers in Environmental Science, November 2016

Sensitivity of the Early-Life Stages of Freshwater Mollusks to Neonicotinoid and Butenolide Insecticides. Environmental Pollution, November 2016

A Screening of Multiple Classes of Pharmaceutical Compounds for Effect on Preadult Salmon Lice Lepeophtheirus Salmonis. Journal of Fish Diseases, October 2016

Neonicotinoid contamination of global surface waters and associated risk to aquatic invertebrates: A review. Environment International, January 2015

Effects of neonicotinoids and fipronil on non-target invertebrates. Environmental Science & Pollution Research, September 2014

Environmental fate and exposure; neonicotinoids and fipronil. Environmental Science & Pollution Research, August 2014

Systemic pesticide concerns extend beyond the bees. Current Biology, August 2014

Risks of large-scale use of systemic insecticides to ecosystem functioning and services. Environmental Science & Pollution Research, July 2014

A review of the direct and indirect effects of neonicotinoids and fipronil on vertebrate wildlife. Environmental Science & Pollution Research, June 2014

An overview of the environmental risks posed by neonicotinoid insecticides. Journal of Applied Ecology, June 2013

Macro-Invertebrate Decline in Surface Water Polluted with Imidacloprid. PLoS One, May 2013

The neonicotinoid imidacloprid shows high chronic toxicity to mayfly nymphs. Environmental Toxicology & Chemistry, February 2013

The Neonicotinoid Insecticide Imidacloprid Repels Pollinating Flies and Beetles at Field-Realistic Concentrations. PLoS One, January 2013

Exposure to multiple cholinergic pesticides impairs olfactory learning and memory in honeybees. Journal of Experimental Biology, 2013

Cumulative ecological impacts of two successive annual treatments of imidacloprid and fipronil on aquatic communities of paddy mesocosms. Ecotoxicology & Environmental Safety, June 2012

Effects of imidacloprid exposure on Chironomus riparius Meigen larvae: Linking acetylcholinesterase activity to behaviour. Ecotoxicology & Environmental Safety, July 2011

Behaviour and Growth of *Chironomus riparius* Meigen (Diptera: Chironomidae) under Imidacloprid Pulse and Constant Exposure Scenarios. Water, Air, & Soil Pollution, December 2010

Hazard identification of imidacloprid to aquatic environment. Chemosphere, August 2009

Acute Human Self-Poisoning With Imidacloprid Compound: A Neonicotinoid Insecticide. PloS One, April 2009

Fatal Intoxication With Imidacloprid Insecticide. American Journal of Emergency Medicine, June 2008

Acute and Chronic Toxicity of Imidacloprid to the Aquatic Invertebrates *Chironomus tentans* and *Hyalella azteca* under Constant- and Pulse-Exposure Conditions. Archives of Environmental Contamination & Toxicology, January 2008

Comparative toxicity of imidacloprid, of its commercial liquid formulation and of diazinon to a non-target arthropod, the microcrustacean Daphnia magna. Chemosphere, July 2007

Acute toxicity of imidacloprid and fipronil to a nontarget aquatic insect, Simulium vittatum Zetterstedt cytospecies IS-7. Bulletin of Environmental Contamination & Toxicology, May 2005

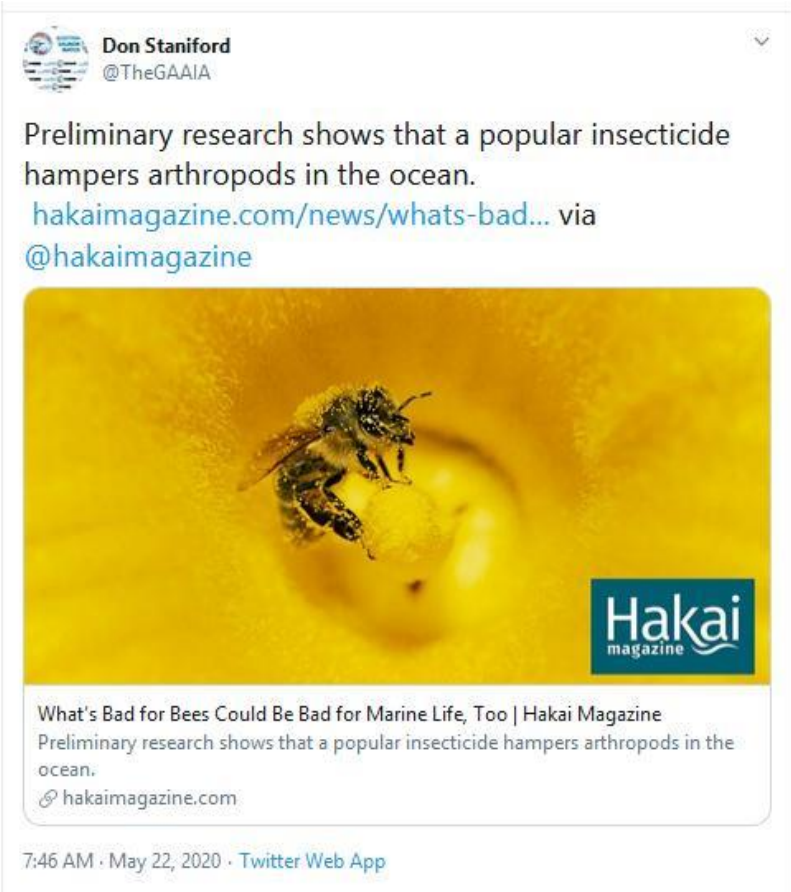
Professor David Goulson of the School of Life Sciences at the University of Sussex and author of 'A Sting in the Tale' told Scottish Salmon Watch:

"Imidacloprid has been banned from use by farmers because of the widespread environmental harm it caused, which included impacting on freshwater insects. It would be the height of foolishness to start using this potent, broad-spectrum neurotoxin in salmon farming. This proposed CleanTreat® system claims to entirely remove imidacloprid from the water returned to the sea, but this clearly needs to be tested by an independent laboratory. Imidacloprid is extremely toxic to a broad range of invertebrates, with concentrations of less than 1 part per billion enough to harm aquatic life, so even tiny traces would have major impacts on marine life."

A paper presented at Ocean Sciences 2020 in February reported:

"Neonicotinoid insecticides are an emerging contaminant of concern in areas with intensive coastal agriculture where they can be introduced into shallow marine ecosystems". "This study demonstrated differential species sensitivities to a systemic insecticide with macroalgae < sea urchin embryos < amphipods < coral," concluded the paper. "These data suggest that toxic effects of imidacloprid are seen when water concentrations reach ppm levels, but further work should be done considering the effects brought on by bioaccumulation and subsequent ingestion of imidacloprid."

Read more via Hakai magazine's "What's Bad for Bees Could Be Bad for Marine Life, Too"



A scientific paper - "Neonicotinoids disrupt aquatic food webs and decrease fishery yields" - published in *Science* in November 2019 reported that "aquatic systems are threatened by the high toxicity and persistence of neonicotinoid insecticides". "In Lake Shinji, neonicotinoids indirectly reduced fishery yields by decreasing the abundance of invertebrates that serve as food for smelt and eels," concluded the *Science* paper. "Decreased survival, growth, and reproduction of freshwater organisms, particularly aquatic insects and crustaceans, by widespread use of neonicotinoids could alter ecosystem functions related to nutrient transfer from primary producers to secondary consumers, including fish."

Read more via National Geographic's "How the world's most widely used insecticide led to a fishery collapse"

Dr. Masumi Yamamuro of the University of Tokyo in Japan (lead author of the *Science* paper) told Scottish Salmon Watch:

"As I wrote in my Science paper, imidacloprid is definitely lethal for many Arthropods. I am sure that juvenile salmon in a natural environment depends on Arthropods as foods, so imidacloprid is not recommended to use. Imidacloprid would cause various bad effects on other animals besides cultured salmon. To avoid such bad effects, I would not personally recommend using imidacloprid for salmon culture."

"There are many other papers on imidacloprid," explained Dr. Yamamuro. "I searched 'fish' and 'imidacloprid' and 76 papers were listed. I was astonished that imidacloprid may directly give bad effects on some fish species."
A scientific paper published in PLOS ONE in October 2019 showed lethal and sub-lethal effects of Imidacloprid on juvenile brown shrimp.

A scientific paper published in the journal *Water, Soil & Air Pollution* in January 2020 concluded: "Imidacloprid is very toxic to the non-target species in the aquatic ecosystem even at sub-lethal concentrations."

A scientific paper - "Neonicotinoid Contamination of Global Surface Waters and Associated Risk to Aquatic Invertebrates: A Review" - published in 2015 reported that neonicotinoids are "highly toxic to a wide range of invertebrates". "Therefore, neonicotinoids represent a significant risk to surface waters and the diverse aquatic and terrestrial fauna that these ecosystems support," stated the paper. "Imidacloprid is by far the most widely studied neonicotinoid (66% of the 214 toxicity tests reviewed) with differences in sensitivity among aquatic invertebrate species ranging several orders of magnitude."

Professor Christy Morrissey of the School of Environment and Sustainability at the University of Saskatchewan - author of the first experiment to track the effects of a neonicotinoid pesticide on birds in the wild published in *Science* in September 2019 - told Scottish Salmon Watch:

"I am not very familiar with the marine literature - but I do know there is very little on this area and certainly not enough to conclusively set regulatory limits for marine organisms. At this time, many are using the freshwater guidelines – eg. EFSA or DEFRA to extrapolate risks."

Scottish Salmon Watch's letter to SEPA dated 17 March 2020 (also enclosed below) included the following (as yet unanswered) questions:

- What scientific research has SEPA conducted on the toxicity and environmental impact of Imidacloprid?

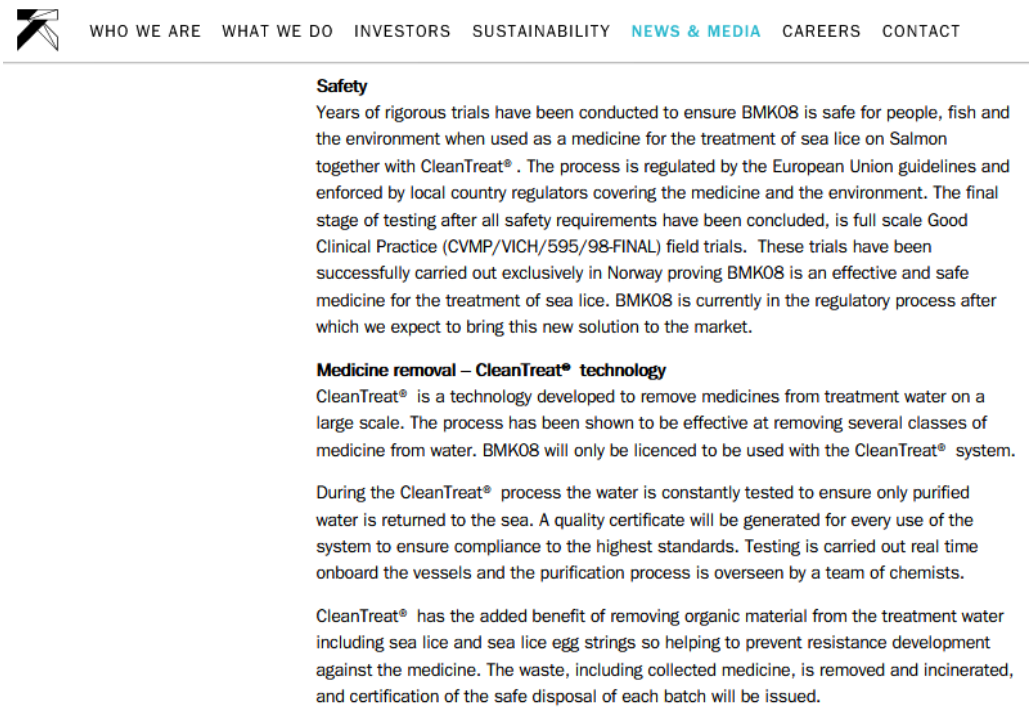
- Will SEPA be publishing a scientific dossier on environmental impacts of Imidacloprid (as SEPA has done so via Emamectin benzoate)?

- Will SEPA be conducting scientific studies and monitoring of impacts of Imidacloprid (as it has done so via Emamectin benzoate)?

- Will Bayer/Monsanto be making available to the public their 'Confidential' work on Imidacloprid (or will the chemical company behind Imidacloprid be taking the Merck behind the scenes route)?

Could the VMD and the Scottish Government (in addition to SEPA) please provide answers to the questions above?

Benchmark, who [hid Imidacloprid behind the trade names Ectosan and BMK08 before being unmasked by The Ferret in March 2020](), claim that scientific evidence shows that Imidacloprid as used via 'CleanTreat' is "safe" for the environment:



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Safety

Years of rigorous trials have been conducted to ensure BMK08 is safe for people, fish and the environment when used as a medicine for the treatment of sea lice on Salmon together with CleanTreat® . The process is regulated by the European Union guidelines and enforced by local country regulators covering the medicine and the environment. The final stage of testing after all safety requirements have been concluded, is full scale Good Clinical Practice (CVMP/VICH/595/98-FINAL) field trials. These trials have been successfully carried out exclusively in Norway proving BMK08 is an effective and safe medicine for the treatment of sea lice. BMK08 is currently in the regulatory process after which we expect to bring this new solution to the market.

Medicine removal – CleanTreat® technology

CleanTreat® is a technology developed to remove medicines from treatment water on a large scale. The process has been shown to be effective at removing several classes of medicine from water. BMK08 will only be licenced to be used with the CleanTreat® system.

During the CleanTreat® process the water is constantly tested to ensure only purified water is returned to the sea. A quality certificate will be generated for every use of the system to ensure compliance to the highest standards. Testing is carried out real time onboard the vessels and the purification process is overseen by a team of chemists.

CleanTreat® has the added benefit of removing organic material from the treatment water including sea lice and sea lice egg strings so helping to prevent resistance development against the medicine. The waste, including collected medicine, is removed and incinerated, and certification of the safe disposal of each batch will be issued.

"The treatment, Ectosan, which has been developed by the UK-based company, was delivered through the company's CleanTreat filtering system - which removes any detectable traces of medicine from treatment water before it is discharged into the sea - meaning that the treatments had no environmental impact," [reported Fish Farming Expert in December 2017]() via the headline "New lice bath '100% effective' and pollution-free".

By November 2019, Benchmark had re-branded Ectosan as BMK08 but remained silent on its secret identity as Imidacloprid [claiming in a Trading Update that its use via CleanTreat had "zero environmental impact"]().

Could you please share any information you have detailing how Benchmark can magically make Imidicloprid disappear from wastewater effluent discharges?

Scottish Salmon Watch is highly dubious and despite being a fan of Paul Daniels, David Copperfield, Criss Angel, Harry Houdini and other great magicians cannot believe how Benchmark can remove Imidacloprid completely and pollution-free from effluents.

Scottish Salmon Watch believes that an independent laboratory must test the water purity of waste effluents from 'CleanTreat'. All the scientific research shows that Imidacloprid is harmful at very low concentrations which are only detectable by very high tech LCMSMS systems (which cost many hundreds of thousands of pounds). Imidacloprid also breaks down into compounds that are just as toxic which also need testing for.

None of the publicly available literature explains how Benchmark's 'CleanTreat' purifies the water or mentions any tests undertaken to prove that it works. Without such basic information how is the public supposed to trust Benchmark's claims?

Please note that a FOI disclosure by the Scottish Government in December 2019 included a briefing for the Cabinet Secretary for Rural Economy & Connectivity in relation to a meeting in the Scottish Parliament in September 2019 (BAHL = Benchmark Animal Health):

> It is understood that BAHL was granted permissions to carry out field trials in Norway and that, under the Norwegian system, environmental effects are not considered during the granting of such permissions.

What environmental effects have been considered in relation to trials (whether proposed, aborted, in-progress or completed) in Scotland?

The FOI disclosure by the Scottish Government in December 2019 also included:

A redacted email marked 'Sensitive' dated December 2018 referred to Fergus Ewing's meeting with Benchmark and "a discussion with Benchmark on the acceptability of their CleanTreat proposal where it might involve transport from site for remote discharge of effluent water" and "the work plan element where we're tasked at looking at 'discharge zones'".

From: [Redacted]
Sent: 06 December 2018 06:54
To: [Redacted]
Cc: [Redacted]
Subject: Re: sensitive: Medicines and Licensing - Workplan - October 2018 - DRAFT (not for circulation)

Hi [redacted]

Thanks for sending this.

As you will have heard, Mr Ewing has met with benchmark which has brought some of the workplan aspects into sharp focus. [Redacted]

This is of relevance to both the discussion with benchmark on the acceptability of their CleanTreat proposal where it might involve transport from site for remote discharge of effluent water and, equally importantly, some of the aspects of the work plan element where we're tasked at looking at 'discharge zones'.

Can I ask you to consider with [redacted] if these aspects are covered by the current ask of SGLD or if this needs to be added to the request. I have avoided raising this directly with SGLD as I'm aware of the request already in train an don't want to add to SGLD burden or confuse ownership of the request.

[redacted]

What scientific research including ecological risk assessment has been conducted in relation to Imidacloprid remote discharges of effluent water in 'discharge zones'? At what concentration is Imidacloprid being measured down to?

Scottish Salmon Watch repeat our plea to make documentation publicly available. Rather than hide behind a cloak of confidentiality, surely the public have a right to know the extent of ecological impacts of Imidacloprid use in salmon farming?

The FOI disclosure by the Scottish Government in December 2019 also included:

A redacted email dated June 2019 to Marine Scotland attached a 'Confidential' document titled 'CleanTreat [redacted] Trials, Scotland 2019 Overview' (authored it appears by Benchmark's Animal Health Division in Edinburgh).

[Redacted]

From: [Redacted]
Sent: 19 June 2019 12:45
To: MS LOT Business and Operational Delivery
Subject: FW: Benchmark - Cleantreat
Attachments: Cleantreat [redacted] Trials, Scotland 2019 Overview. CONFIDENTIAL.pdf
ed]

From: [Redacted]
Sent: 14 March 2019 13:25
To: [Redacted]
Cc: [Redacted]

[Redacted]

[Redacted]

Kind Regards

[Redacted]

Animal Health Division
[Redacted]

Benchmark Animal Health

Bush House, Edinburgh Technopol, Edinburgh, EH26 0BB

Has SEPA, VMD and/or the Scottish Government conducted any modelling of environmental impacts or any ecological risk assessments of Imidacloprid use in salmon farming?

The public has a right to know the scale of ecological and environmental impacts of Imidacloprid PRIOR to its use in Scottish salmon farms. Playing a game of ecological roulette in Scottish waters is simply unacceptable and leaves a bad taste in the mouth.

Please note that a FOI disclosure by the VMD last week (4 June 2020) revealed that the VMD knew about Imidacloprid use in salmon farming as early as June 2016.

> The following sets out the timeline when Imidacloprid become first known to the VMD in the context of salmon farming.
>
> June 2016 and again in October 2017
>
> The VMD first became aware of imidacloprid in the context of salmon farming in June 2016 and again in October 2017. Please note that this interaction was not specifically in the context of Ectosan or CleanTreat but the active substance, imidacloprid. However, we can't say anything more about this as we consider that the disclosure of the information would be likely to prejudice the commercial interests of the business concerned and that Section 43 applies here. Section 43 is subject to a public interest test balance. After careful consideration we have concluded that the public interest in withholding the information strongly outweighs that for disclosure in this case. The information in question refers to the confidentiality afforded to companies when they first engage with regulators. If we identified the source and context of this information, it could in consequence prejudice the commercial interests of the business involved.

Note that Norwegian Fish Farmer reported in June 2016: "Dette er det nye lusemiddelet Salmo Pharma skal teste ut" (the article referred to a salmon farming patent for Imidacloprid dated December 2015 and D10-Aquatic Blast which is believed to be the name of Imidacloprid before it was called Ectosan in 2017 and then BMK08 in 2019). The Fish Site reported in June 2017: "Patent sought for neonicotinoid-based sea louse treatment".

Please therefore provide information on any scientific risk assessments of the ecosystem impacts of Imidacloprid (BMK08/Ectosan) in salmon farming since June 2016.

Please provide a receipt for this FOI request.

Please provide this information electronically.

If you have any questions please do not hesitate to contact Scottish Salmon Watch: salmonfarmingkills@gmail.com

Yours sincerely,

Don Staniford

Director, Scottish Salmon Watch

Cc:

Scottish Parliament's Environment, Climate Change and Land Reform Committee: ecclr.committee@parliament.scot

Scottish Natural Heritage: cathy.tilbrook@nature.scot and katie.gillham@nature.scot

SCOTTISH SALMON WATCH

CHEMICALS

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Veterinary Medicines Directorate: postmaster@vmd.defra.gsi.gov.uk

20 May 2020

FOI Request: Field Trials of Imidacloprid (Ectosan/BMK08)
& Possible Misreporting of Chemical Use in Salmon Farming Since 2017

Further to Scottish Salmon Watch's letter dated 17 March 2020, please provide details on any proposed, in progress and completed field trials of Imidacloprid (Ectosan/BMK08) by the salmon farming industry in Scotland since 2017.

This would involve documentation pertaining to any field trials - however illegal, unsanctioned, aborted, unfinished an/or still in the pipeline - in 2019 (or even earlier) as well as any field trials in Loch Ailort by Mowi and other companies at other locations in Scotland during 2020.

Please note that the following information was disclosed earlier this week (18 May 2020) by SEPA via a Formal Review of F0191735 which was handled under the reference number F0191802.

[redacted]

From: [redacted]@mowi.com>
Sent: 10 March 2020 08:42
To: [redacted] TO SEPA
Cc: [redacted] CC MOWI & SEPA
Subject: Ectosan Sea Lice treatment trial_Ardnish (Loch Ailort)
Attachments: Ectosan Trial_Ardnish.pdf

Hi [redacted], please the attached letter. I would be grateful for your advice as to how this can be carried out within CAR.

Best regards
[redacted]

[redacted]
Mowi Scotland Limited

Mobile: +44 [redacted]
DDI: +44 [redacted]
Mail: [redacted]@mowi.com

MOWI

MOWI

[redacted]

Scottish Environment Protection Agency
Angus Smith Building
6 Parklands Avenue
Eurocentral
Holytown
North Lanarkshire ML1 4WQ

10 March 2020

Dear [redacted]

THE WATER ENVIRONMENT (CONTROLLED ACTIVITIES) (SCOTLAND) REGULATIONS 2011
ECTOSAN SEALICE TREATMENT TRIAL - ARDNISH

At our recent liaison meeting with your colleagues held at our Ardnish site we discussed the possibility of carrying out a field trial at Ardnish involving the new medicine Ectosan. Trials carried out to date have demonstrated that the medicine shows very high levels of efficacy against sea lice with no adverse environmental impacts when the treatment is coupled with a proprietary purification system, which removes any detectable traces of medicinal residues prior to the release of the treatment water. It would be our intention to further support development studies by carrying out such a trial at Ardnish. This would also involve treating the treatment water in a scaled and equivalent purification system to remove any remaining medicine components prior to release.

As you are aware, sea lice treatment strategies have evolved from one which was based predominantly on medicinal control to a more balanced strategy, including the use of cleaner fish and physical removal, alongside the use of licensed medicines. Medicines however remain an important component of a balanced strategy and to maintain efficacy of treatment for each medicinal product and to prevent resistance, it is important that their use is rotated and that repeat treatments with the same active ingredient are minimised. However, the aquaculture industry currently has access to only a very limited number of medicinal treatments to treat salmon for the infestation of sea lice. It is therefore essential that innovation in new medicine development is supported including the need for their evaluation in carefully managed and controlled field trials.

We seek SEPA's support in carrying out such a trial involving Ectosan at our Ardnish site and I would request your advice as to how this can be carried out within the CAR regulatory framework.

Yours sincerely

[redacted]

Cc [redacted] (by email) CC SEPA

Mowi Scotland Limited, Farms Office, Glen Nevis Business Park, Fort William PH33 6RX
Tel: [redacted]

The Scottish Government claimed in a FOI reply dated 11 May 2020 that "there has been no release of Imidacloprid under any marine licence - as none have been issued by Marine Scotland".

REASON FOR NOT PROVIDING INFORMATION

Exception applied

Under the terms of the exception at regulation 10(4)(a) of the EIRs (Information not held), the Scottish Government is not required to provide information which it does not have. The Scottish Government does not have the information you requested as there has been no release of Imidacloprid under any marine licence - as none have been issued by Marine Scotland.

However, has Imidacloprid been used without a marine licence or via another licence such as an experimental trial licence or other authorisation via SEPA, the VMD, Marine Scotland or another agency?

Earlier this month, the Norwegian Medicines Agency (NoMA) refused to disclose information on any trials of Imidacloprid by salmon farms in Norway. "Information about clinical trials with veterinary medicinal products, performed by pharmaceutical industry, is considered to be confidential information," wrote NoMA in an email to Scottish Salmon Watch dated 29 April 2020. "According to the Norwegian act on medicinal products §30 the NoMA is not allowed to disclose information that is considered commercially sensitive. We can therefore not disclose whether permission to perform clinical trials with Imidacloprid has been granted."

Have clinical trials or any other experimental trials of Imidacloprid (Ectosan/BMK08) already taken place in salmon farming in Scotland?

When asked by Scottish Salmon Watch for a site visit to the CleanTreat operation and specific information on BMK08 (Ectosan/Imidacloprid), Benchmark replied in January 2020 that it is "commercially sensitive" and that "the CleanTreat system is demobilised until further trials are planned".

From: **Rachel Aninakwah** <rachel.aninakwah@bmkholdings.com>
Date: Thu, Jan 23, 2020 at 8:21 AM
Subject: Re: Visit to CleanTreat's operations in early 2020?
To: salmonfarmingkills@gmail.com <salmonfarmingkills@gmail.com>

Dear Don,

Many thanks for your interest in Benchmark's CleanTreat purification system.

Our new sea lice treatment, BMK08, is currently in development phase and is therefore commercially sensitive and due to regulations we are constrained about the extent to which we can provide information. The CleanTreat system is demobilised until further trials are planned so we are unable to offer a visit at this time.

We would be happy to share with you the publicly available information on CleanTreat in the meantime. The CleanTreat webpage here explains the CleanTreat process in more detail.

Kind regards,
Rachel

RACHEL ANINAKWAH
COMMUNICATIONS MANAGER

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rachel.aninakwah@bmkholdings.com
benchmarkplc.com
14 Red Lion Square, London WC1R 4QH

Such a statement suggests that field trials have already taken place - did these trials involve the use of Ectosan (publicly announced in 2017; re-branded as BMK08 in 2019 and revealed as Imidacloprid in 2020) and when and where did they take place?

Norwegian Fish Farmer magazine reported back in 2016 that an international patent had been obtained in 2015 for the use of Imidacloprid in salmon farming citing an investors presentation in 2014 calling the chemical D10 Aquatic Blast. The Inverness-based Fish Vet Group (owned by Benchmark) appear to have registered Ectosan as a patent in Norway back in 2013 (via intellectual property company Zacco Norway) under "Veterinary preparations; disinfectants; preparations for destroying vermin; pesticides".

Documents disclosed by the Scottish Government via FOI in December 2019 suggest secret trials of BMK08/Ectosan may have already taken place in Scotland without public consultation.

"You undertook to look again at the potential for trials of novel lice treatment methods and the barriers in the way of Scottish trials for the CleanTreat innovation which the developers believe has no environmental impact at sea," wrote the Chief Executive of the Scottish Salmon Producers Organisation to Terry A'Hearn, Chief Executive of SEPA in May 2019. "The novel approach has been trialled in Norway successfully and now requires field trials in Scotland....We understand that there have been discussions with the company involved though no progress has been made to take forward trials in Scotland."

A redacted email from SEPA in Lochgilphead in April 2019 asked for "a visit to the existing vessel whilst operational" which would allow SEPA "to highlight any areas of concern early so that they could potentially be addressed/mitigated as part of the design process".

From: [Redacted]
Sent: 23 April 2019 14:49
To: [Redacted]

Cc: [Redacted]
Subject: RE: Meeting - Thursday 11 April 2019 1430 - 1630h

Hi [redacted]

Thanks for your time a couple of weeks ago. On reflection given your proposals are likely to involve commissioning a new or repurposing an existing vessel, it is important that we have the opportunity to feed in to or comment on any designs (particularly in reference to any potential process controls). As raised at the meeting our current understanding of the treatment and transfer process of your operations in Norway is fairly limited, for us to provide appropriate input we really need to have a clear understanding of the existing process. I think a visit to the existing vessel whilst operational would really help us develop that understanding. This would then allow us to highlight any areas of concern early so that they could potentially be addressed/mitigated as part of the design process.

I know there was an action from the meeting, but it would be good to know if that is going to be possible and if so, when and what limit there might be in numbers?

Kind regards

[Redacted]
Scottish Environment Protection Agency, Regulatory Services North, West Highland and Argyll Team, Kilbrandon House, Manse Brae, Lochgilphead, PA31 8QX
[Redacted] web: www.sepa.org.uk

Benchmark replied in April 2019 that "we are re-starting trials next week" with a visit suggested in May 2019:

From: [Redacted]
Sent: 26 April 2019 18:50
To: [Redacted]
Cc: [Redacted]
Subject: RE: Meeting - Thursday 11 April 2019 1430 - 1630h

Hi [redacted]

Yes it will definitely be possible to visit the boat. We are re-starting trials next week and are looking at possible dates for your visit. The dates are not yet fixed as it depends on the farms and the weather. It is looking likely that a date in the week of the 20th May might work but this is not yet confirmed. I will let you know definite dates as soon as I have them but they may be at quiet short notice unfortunately. I am currently looking into maximum numbers and will get back to you asap. I am hoping we can accommodate 2 people each from SEPA, MS and VMD but I need to confirm this. We will be limited by safety issues etc.

Kind Regards

[redacted]

[Redacted]
Animal Health Division
Tel:[Redacted]
[Redacted]

Benchmark Animal Health
Bush House, Edinburgh Technopole, Edinburgh, EH26 0BB

A redacted email in February 2019 from Marine Scotland 'Re: Benchmark - CleanTreat' discussed the need for further information on "the permits required in Norway for your trial there"; "more detail on the proposed activity in the marine area (i.e. - what is proposed to be deposited in the sea") and "sensitivity of the testing to LOD etc. to understand what the output might contain".

A redacted email marked 'Sensitive' dated December 2018 referred to a meeting between Benchmark and Fergus Ewing (Cabinet Secretary for Rural Economy) and "a discussion with Benchmark on the acceptability of their CleanTreat proposal where it might involve transport from site for remote discharge of effluent water" and "the work plan element where we're tasked at looking at 'discharge zones'".

A Cabinet Briefing in September 2019 for a meeting in the Scottish Parliament between Fergus Ewing (as Cabinet Secretary for Rural Economy) and Benchmark stressed that Benchmark was invited "to ensure that such sustainable technologies, like CleanTreat, are not only developed in Scotland, but that Scotland is also an attractive place to trial such technologies".

In terms of 'next steps' the Cabinet Briefing in September 2019 stated that: "Marine Scotland is facilitating a number of meetings with BAHL [Benchmark], regulators and advisers to ensure BAHL is clear on the next steps and regulators and advisers will continue to work with BAHL, to enable them to submit the required evidence and provide the required assurances to determine an application for a trial".

In late September 2019, Benchmark invited the Scottish Government, SEPA and the Veterinary Medicines Directorate to an 'urgent' visit of the CleanTreat wellboat (understood to be docked in Leith). "This is the last opportunity ahead of any trials in the UK, as we have now completed our planned trials in Norway," wrote Benchmark in an email dated 24 September 2019.

FOI documents disclosed by the Scottish Government in December 2019 via FOI-19-01398 reveal that in April 2019, the Cabinet Secretary of Rural Economy (Fergus Ewing) met with "four key Scottish salmon producers" (six companies - all foreign controlled - comprise 99% of Scottish salmon farming production: Mowi, Scottish Sea Farms, The Scottish Salmon Company, Grieg Seafood, Cooke Aquaculture and Loch Duart) interested in the potential of 'CleanTreat'. "[Redacted] were concerned at an over-reliance on SLICE, which would inevitably lead to greater resistance to the chemical over time - there needed to be a basket of around 3 licensed anti-lice medicines in play."

The FOI documents disclosed by the Scottish Government detail heavily redacted minutes of a meeting with Benchmark in October 2018 with a document citing "field trials in Scotland".

CONFIDENTIAL

Use of [redacted] Clean Treat in the UK- Final Meeting Minutes

Meeting: 9th October 2018, 1-3.30pm, BAHL, Bush House, Edinburgh

[Redacted]

[Redacted]

Benchmark Animal Health Limited
& Cleantreat, Effective Sea Lice Treatment with Proven Prevention of Environmental Impact, for Field Trials in Scotland.

An email dated November 2018 referred to a request from Fergus Ewing (Cabinet Secretary for the Rural Economy) for information on CleanTreat stating that "the company wish to push forward with trials in Scotland (trials already happening in Norway) - and that Marine Harvest [redacted] as partner wants to get this off the ground as soon as possible.....progress with regulators was slow and that they wished to speed things up":

From: [Redacted]
Sent: 29 November 2018 10:02
To: [Redacted]
Cc: [Redacted]
Subject: Aquaculture - CleanTreat

Hi [redacted]

1. I understand [redacted] assed on Mr Ewing's request for details about outstanding CAR applications – grateful for an update please.

2. We have also had a request from Mr Ewing for information about the situation regarding the following:

"Mr Ewing would like advice from SEPA + MS LOT on the current progress of Benchmark's application for field trials of CleanTREAT + [redacted] in Scotland. For those who are not aware of the system - CleanTREAT is a system which 'cleans' the sea lice treatment chemical (in this case a new product [Redacted]) from water before the water is discharged. http://www.benchmarkplc.com/articles/cleantreat-by-benchmark/ .

[Redacted] outlined that the company wish to push forward with trials in Scotland (trials already happening in Norway) – and that Marine Harvest [Redacted] as partner wants to get this off the ground as soon as possible. It was claimed that neither SEPA nor MS LOT could confirm to the company who the regulatory lead on their application would be. [Redacted] said that progress with regulators was slow and that they wished to speed things up. Hence Mr Ewing's request for immediate advice."

Happy to discuss – by phone if appropriate

Thanks
[redacted]
[Redacted]

A redacted email dated June 2019 to Marine Scotland attached a 'Confidential' document titled 'CleanTreat [redacted] Trials, Scotland 2019 Overview' (authored it appears by Benchmark's Animal Health Division in Edinburgh on 14 March 2019).

[Redacted]

From: [Redacted]
Sent: 19 June 2019 12:45
To: MS LOT Business and Operational Delivery
Subject: FW: Benchmark - Cleantreat
Attachments: Cleantreat [redacted] Trials, Scotland 2019 Overview. CONFIDENTIAL.pdf

[Redacted]

Animal Health Division
[Redacted]

Benchmark Animal Health
Bush House, Edinburgh Technopol, Edinburgh, EH26 0BB

Finally, Scottish Salmon Watch note that it is exactly one year ago since BBC Panorama reported that Mowi was one of several salmon farming companies "under investigation for possible misreporting of chemical use".

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Salmon farming giant Mowi probed over chemical use

By Lucy Adams
BBC Panorama

20 May 2019 Share

Mowi operates numerous fish farms in Scotland

The world's biggest salmon farming company is one of a number of firms under investigation for possible misreporting of chemical use.

Please therefore provide information relating to the possible misreporting of chemical use in salmon farming since 2017.

Please include emails, letters, internal discussions, Cabinet Briefings and any other information relating to the misreporting of chemical use in salmon farming.

SEPA claimed in an email dated 6 November 2019 (disclosed via F0191629 on 12 May 2020) that:

> SEPA is already involved in discussions at a national/UK level with the Veterinary Medicine Directorate (VMD) about formalin and other chemicals used in freshwater and marine aquaculture.

Please provide information on those discussions with the VMD and other government agencies since 2017.

Finally, please note that Scottish Salmon Watch's letter to SEPA, Scottish Ministers and the VMD dated 26 June 2019 included the recommendation that a public register be established; namely:

SCOTTISH SALMON WATCH CHEMICALS

Scottish Ministers: scottish.ministers@gov.scot
Scottish Environment Protection Agency: terry.ahearn@sepa.org.uk
Veterinary Medicines Directorate: postmaster@vmd.defra.gsi.gov.uk

26 June 2019

Public Register of ALL toxic chemical use on Scottish salmon farms & Immediate Ban on Carcinogenic Formaldehyde (Formalin)

Scottish Salmon Watch asks for inter-governmental co-operation to establish a public register of ALL toxic chemicals used on Scottish salmon farms.

As far as we understand it, only data detailing use of the sea lice chemicals Azamethiphos, Cypermethrin, Deltamethrin, Emamectin Benzoate and Teflubenzuron is published via the Scotland's Aquaculture web-site (and even here the use of Azamethiphos and Deltamethrin via well boats is understand to be unreported although we believe this anomaly may soon be rectified).

Data on the use of Hydrogen Peroxide (which has sky-rocketed over the last decade - along with the use of sea lice chemicals), Antibiotics and other toxic chemicals such as the carcinogenic Formaldehyde (Formalin) is not routinely published except via Freedom of Information.

The confusion regarding the use of Formaldehyde (Formalin) as either a biocide or prescribed by a veterinarian via the 'Cascade' illustrates the need for clarity in reporting and the urgent need for a public register.

The use of Formaldehyde (Formalin) by salmon farms in Scotland is an interesting case study which warrants further investigation.

Could you please now add Imidacloprid to that list?

Please consider this a formal request for information under the relevant FOI and Environmental Information Regulations; namely:

1) Please provide details on any proposed, in progress and completed field trials of Imidacloprid (Ectosan/BMK08) by the salmon farming industry in Scotland since 2017.

2) Please provide information relating to the possible misreporting of chemical use in salmon farming since 2017.

3) Please provide information on discussions at a national/UK level with the VMD and other government agencies about Formalin and other chemicals used in freshwater and marine aquaculture since 2017.

Please include emails, letters, internal discussions, Cabinet Briefings, reports, environmental assessments and any other information relating to the above since 2017.

Please provide a receipt for this FOI request.

Please provide the information electronically.

Please note that further information in relation to the use of Imidacloprid (Ectosan/BMK08) in salmon farming has been posted earlier today via Secret Trials: Scottish Salmon Doused with Bee-Killing Insecticide Imidacloprid?

Please also note our Letter to SEPA: Please Come Clean on Imidacloprid! - this letter and our letter dated 17 March 2020 are both re-enclosed here for easy reference.

Yours sincerely,

Don Staniford

Director, Scottish Salmon Watch

Cc:

Scottish Parliament's Environment, Climate Change and Land Reform Committee: ecclr.committee@parliament.scot

Scottish Natural Heritage: cathy.tilbrook@nature.scot and katie.gillham@nature.scot

SCOTTISH SALMON WATCH

CHEMICALS

Scottish Ministers: scottish.ministers@gov.scot
Scottish Environment Protection Agency: terry.ahearn@sepa.org.uk
Veterinary Medicines Directorate: postmaster@vmd.defra.gsi.gov.uk

17 March 2020

Concerns & Questions Over Imidacloprid Use in Scottish Salmon Farming

Scottish Salmon Watch is shocked to discover that the use of the toxic neonicotinoid insecticide Imidacloprid (banned for outdoor use in terrestrial farming by the European Union in 2018 due to a growing weight of scientific evidence that it is harmful to bees and other pollinators) may have already been used in Scotland via Benchmark's 'CleanTreat' system via secret trials.

Benchmark's CleanTreat system is essential for the roll-out of its anti-lice treatment BMK08. Photo: Benchmark.

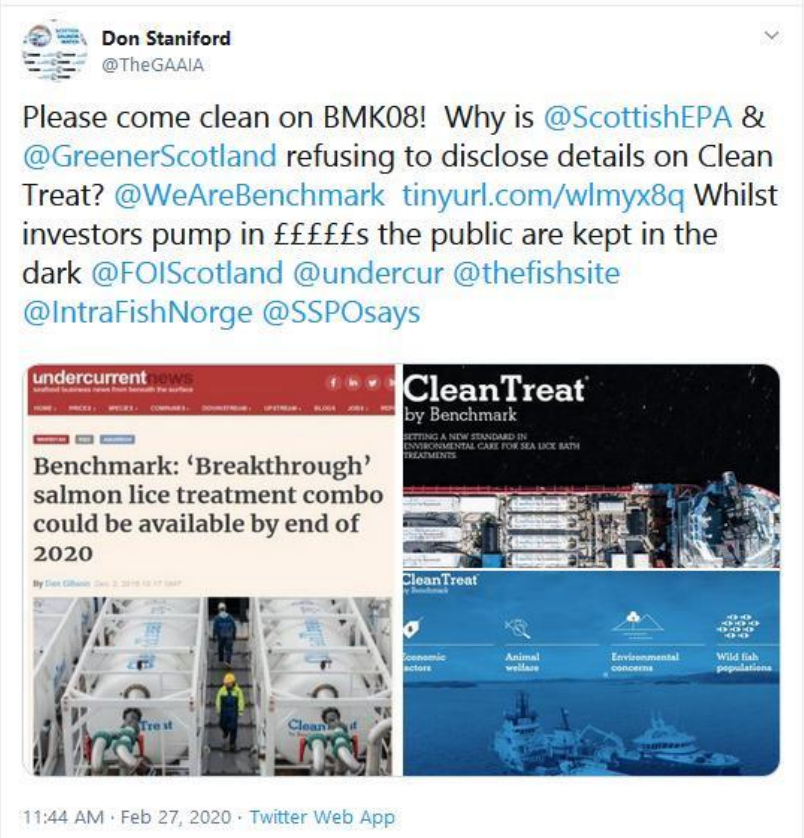
Could you please provide answers to the following questions:

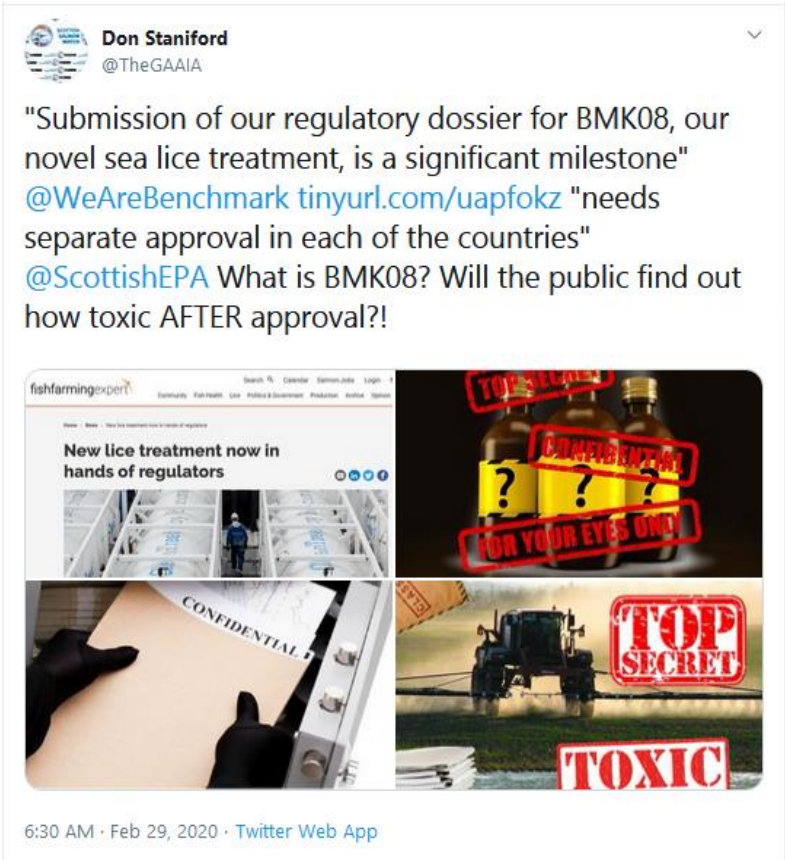
1) How much Imidacloprid (marketed as BMK08 since 2019 - and previously known as Ectosan when first launched in 2017) has already been used in Scottish salmon farming? (please indicate where and when Imidacloprid was used and by which companies).

2) Where, when and in what quantities did the discharge and/or disposal of Imidacloprid contaminated wastes take place?

Last month, Scottish Salmon Watch filed an appeal with the Scottish Information Commissioner following SEPA's refusal to disclose information on CleanTreat (including BMK08/Ectosan). Scottish Salmon Watch asked for an internal review of another FOI

refusal by SEPA in a letter dated 21 February 2020 and asked for an internal review of the Scottish Government's FOI refusal in a letter dated 21 February 2020.





In December 2019, Scottish Salmon Watch revealed:

Scottish Salmon Watch, 29 December 2019

Cleaning Tox-Sick Scottish Salmon

SCOTTISH SALMON WATCH **CHEMICALS**

- Benchmark's "game changing technology" set for launch in Scotland during 2020?
- Redacted FOI reveals Benchmark wish to push forward with trials in Scotland & Mowi "wants to get this off the ground as soon as possible" (Benchmark 're-started' trials in Scotland in May 2019 & submitted more documents in December 2019)
- Cabinet Secretary for Rural Economy lobbied to "speed things up" & offered "further support to reach a position wherby trials could be started in Scotland"
- FOI reveals toxic chemicals discharged by wellboats at salmon farms around Scotland including illegal discharge by The Scottish Salmon Company in Loch Roag
- 'CleanTreat' used alongside the top secret BMK08 (perhaps also called Ectosan), Azamethiphos & Deltamethrin but not toxic Hydrogen Peroxide
- SEPA refuse FOI but concedes it met with Benchmark five times since October 2018
- VMD refuse FOI on BMK08 citing commercial confidentiality
- CleanTreat may involve "remote discharge of effluent water" in so-called 'discharge zones' (Benchmark claims that chemical wastes are collected & then incinerated)
- SEPA yet to publish Scottish Pollutant Release Inventory data on wellboat use in 2018
- Ten-fold increase in toxic chemicals used on salmon farms from 2006 to 2016

In June 2019, Scottish Salmon Watch wrote to Scottish Ministers calling for a public register of ALL toxic chemicals used on Scottish salmon farms.

SCOTTISH SALMON WATCH **CHEMICALS**

Scottish Ministers: scottish.ministers@gov.scot
Scottish Environment Protection Agency: terry.ahearn@sepa.org.uk
Veterinary Medicines Directorate: postmaster@vmd.defra.gsi.gov.uk

26 June 2019

Public Register of ALL toxic chemical use on Scottish salmon farms
& Immediate Ban on Carcinogenic Formaldehyde (Formalin)

Scottish Salmon Watch asks for inter-governmental co-operation to establish a public register of ALL toxic chemicals used on Scottish salmon farms.

As far as we understand it, only data detailing use of the sea lice chemicals Azamethiphos, Cypermethrin, Deltamethrin, Emamectin Benzoate and Teflubenzuron is published via the Scotland's Aquaculture web-site (and even here the use of Azamethiphos and Deltamethrin via well boats is understand to be unreported although we believe this anomaly may soon be rectified).

Data on the use of Hydrogen Peroxide (which has sky-rocketed over the last decade - along with the use of sea lice chemicals), Antibiotics and other toxic chemicals such as the carcinogenic Formaldehyde (Formalin) is not routinely published except via Freedom of Information.

The outstanding question is: has Imidacloprid already been used without public consultation or notification by the salmon farming industry in Scotland?

"So far, the breakthrough sea lice treatment system, which cleanses treatment water after delousing in well boats, has only been trialled in Norway," reported Fish Farmer in August 2019. "It has successfully treated more than 30,000 tonnes of fish, according to John Marshall, head of Animal Health at Benchmark, which has developed the innovation over a 10-year period....However, there is some impatience among Scottish salmon farmers over bottlenecks in the regulatory system that have so far prevented them from trialling CleanTreat in Scotland. Marshall said his company had been approached by all the Scottish producers, interested in deploying CleanTreat at their farms, and he hoped there would be Scottish trials soon. 'The target was for the end of this year but, realistically, it will be next year,' he told Fish Farmer."

The CleanTreat vessel alongside a wellboat off the coast of Norway

"It's not a case of having to have new regulation," continued John Marshall, head of Animal Health at Benchmark. "I think there is regulation in Scotland to deal with it but, of course, regulations are interpreted and it's about the interpretation of how you use the current regulation along with CleanTreat....We obviously don't want Scotland to lose out, but we will work where there is opportunity, demand and less resistance. Scotland has to get its act together but I believe they are doing that."

Documents disclosed to Scottish Salmon Watch by the Scottish Government via FOI on 19 December 2019 (FOI-19-02443) shed some light on Benchmark's 'CleanTreat' and the Scottish Government's support for trials in Scotland.

Benchmark wrote to the Cabinet Secretary for Rural Economy (Fergus Ewing) in a letter dated June 2019 thanking him for "your continued support for our work with the CleanTreat innovation to remove medicines from treatment water before it is discharged back into the environment".

A Cabinet Briefing in September 2019 for a meeting in the Scottish Parliament between Fergus Ewing (as Cabinet Secretary for Rural Economy) and Benchmark stressed that Benchmark was invited "to ensure that such sustainable technologies, like CleanTreat, are not only developed in Scotland, but that Scotland is also an attractive place to trial such technologies".

In terms of 'next steps' the Cabinet Briefing in September 2019 stated that: "Marine Scotland is facilitating a number of meetings with BAHL [Benchmark], regulators and advisers to ensure BAHL is clear on the next steps and regulators and advisers will continue to work with BAHL, to enable them to submit the required evidence and provide the required assurances to determine an application for a trial".

"Benchmark were content with the meeting on 20th September and the information requirements made clear," continued the Cabinet Briefing in September 2019. "Benchmark agreed to provide the required information by December which will allow a full application to be submitted to Marine Scotland."

In late September 2019, Benchmark invited the Scottish Government, SEPA and the Veterinary Medicines Directorate to an 'urgent' visit of the CleanTreat wellboat (understood to be docked in Leith). "This is the last opportunity ahead of any trials in the UK, as we have now completed our planned trials in Norway," wrote Benchmark in an email dated 24 September 2019.

FOI-19-02443 disclosed 11 PDF files including:

#1: Letter from the SSPO to SEPA copied to Scottish Ministers

SEPA was lobbied by the Scottish Salmon Producers Organisation (SSPO) to conduct field trials of CleanTreat in Scotland after being "trialled successfully in Norway":

"You undertook to look again at the potential for trials of novel lice treatment methods and the barriers in the way of Scottish trials for the CleanTreat innovation which the developers believe has no environmental impact at sea," wrote the Chief Executive of the Scottish Salmon Producers Organisation to the Terry A'Hearn, Chief Executive of SEPA in May 2019. "The novel approach has been trialled in Norway successfully and now requires field trials in Scotland....We understand that there have been discussions with the company involved though no progress has been made to take forward trials in Scotland."

Scottish Salmon
PRODUCERS ORGANISATION

30 May 2019

Mr T A'Hearn
SEPA
Strathallan House
Castle Business Park
Stirling
FK9 4TZ

By Email

Dear Terry,

[Redacted]

Scottish Salmon
PRODUCERS ORGANISATION

In this context, you undertook to look again at the potential for trials of novel lice treatment methods and the barriers in the way of Scottish trials for the CleanTreat innovation which the developers believe has no environmental impact at sea. The novel approach has been trialled in Norway successfully and now requires field trials in Scotland. It has the potential to reduce other medicinal treatment methods for lice significantly and reduce environmental impact from farms. We understand that there have been discussions with the company involved though no progress has been made to take forward trials in Scotland. If you required further information on the detail of the issue, we can provide it, though your team have worked with [Redacted] at Marine Scotland and the company involved directly already.

[Redacted]

I am copying this letter to Roseanna Cunningham, Cabinet Secretary for Cabinet Secretary for Environment, Climate Change and Land Reform and Fergus Ewing, Cabinet Secretary for the Rural Economy.

I look forward to your early response.

Yours sincerely,

[Redacted]

Julie Hesketh-Laird
Chief Executive

c.c. Roseanna.Cunningham.msp@parliament.scot
Fergus.Ewing.msp@parliament.scot

Scottish Salmon Producers Organisation
83 Princes Street, Edinburgh, EH2 2ER
enquiries@scottishsalmon.co.uk
www.scottishsalmon.co.uk @SSPOsays
Reg. No. SC152347

#5: Letter from the Cabinet Secretary for Rural Economy (Fergus Ewing) to the Head of CleanTreat (Neil Robertson) dated August 2019 stating that "Scotland is open for business" and that he is "keen to see early trials in Scotland"

Cabinet Secretary for the Rural Economy
Fergus Ewing MSP

F/T: [Redacted]
E: scottish.ministers@gov.scot

Scottish Government
Riaghaltas na h-Alba
gov.scot

Neil Robertson
Head of Cleantreat
G1 Bush House Edinburgh Technopole
Penicuik
EH26 0BB

By email; [Redacted] @bmkanimalhealth.com

26 August 2019

Dear Mr Robertson,

I would like to once again congratulate you and the team at Benchmark Animal Health for winning the 2019 Innovation Award at AquaNor's 40th anniversary for the development of CleanTreat technology. Scotland is proud of its innovative sector which has won two consecutive innovation awards at the world's largest aquaculture technology exhibition and is leading the way in sustainable aquaculture. The success and opportunity of Scotland's aquaculture industry was clear to see at the Scottish Aquaculture Supply Chain Seminar. Put simply, Scotland is open for business.

During the seminar I noted the request from Scottish producers that CleanTreat trials begin in Scotland as soon as possible. As you will be aware, the environmental impacts of salmon farming in Scotland were thoroughly discussed during the recent Scottish Parliament Inquiries. I am therefore keen to see early trials in Scotland and I would like to meet you at your offices in Edinburgh at the earliest opportunity to discuss progress since my meeting with [Redacted] in November of last year. I would be grateful if you could get in touch with my private office to arrange a suitable date at your earliest convenience [CabSecRE@gov.scot].

I look forward to our meeting

Yours sincerely,

FERGUS EWING

St Andrew's House, Regent Road, Edinburgh EH1 3DG
www.gov.scot

#7: Redacted briefing for the Cabinet Secretary for Rural Economy (Fergus Ewing) for a meeting with Benchmark on 25 September 2019 in the Scottish Parliament "to discuss the potential trial of the technology in Scotland"

BRIEFING FOR FERGUS EWING, CABINET SECRETARY FOR RURAL ECONOMY AND CONNECTIVITY

MEETING WITH NEIL ROBERTSON AND JOHN MARSHALL: BMK HOLDINGS AQUACULTURE: WEDNESDAY 25 SEPTEMBER NOVEMBER, 11:30-12:30, T305, SCOTTISH PARLIAMENT

Date and time of engagement	• **Wednesday 25 September 2019** • **11:30 – 12:30pm**
Where	• T305, The Scottish Parliament
Key messages	• SG supports the sustainable growth of the aquaculture sector. It currently employs more than 12,000 people and is worth around £620M of added value to the economy but if not correctly regulated could have unacceptable impacts on the environment • As a government, we continue to invest significantly in science, research and innovation to underpin and drive forward the sustainability of the sector. • Life Sciences is a key growth sector of the Scottish Economy. Turnover stood at £5.2 billion and Gross Value Added (GVA) stood at £2.4 billion employing almost 40,000 people across 770 organisations.
Who	• Meeting with Neil Robertson, Head of CleanTreat and John Marshall, Director of Benchmark Animal Health
Why	An opportunity to congratulate Benchmark on winning this year's Aquaculture Innovation award at AquaNOR and discuss the potential trial of the technology in Scotland.
Supporting official	• [Redacted] • [Redacted]
Attached documents	• Purpose of Meeting and Top Lines • Company Profile & Biographies: Annex A • Background Information on CleanTreat Scotland Trials; B

Purpose of Meeting

Benchmark's CleanTreat system won this year's Aquaculture Innovation Award at AquaNOR. Mr Ewing attended AquaNOR and participated in a panel with Neil Robertson, Head of CleanTreat, to promote the Scottish supply chain to potential investors.

Given the environmental benefits and sustainability credentials of the CleanTreat system, and huge potential for improvements in fish health, we would like to offer further support to reach a position whereby trials could be started in Scotland.

1. CleanTreat - sea lice treatment technology

- [Redacted]

  [Redacted]

Top Lines

- **Congratulations on winning this year's innovation award at AquaNOR.** I am proud that the award has been won by a Scottish company for two consecutive years.
- You will be aware of the recent Scottish Parliamentary Inquiries in Scotland, parts of which focussed on the environmental impacts of salmon farming. That is why I have invited you here today – to ensure that such sustainable technologies, like CleanTreat, are not only developed in Scotland, but that Scotland is also an attractive place to trial such technologies.
- **Grateful to hear about your experiences in Scotland** in progressing to trials of the CleanTreat system and how we can support you
- I understand you have recently met with SEPA, MS-LOT and the VMD, to progress the assessment of a future application for a trial, **please continue to actively engage with that process.**
- There is absolutely no doubt that aquaculture is important for the Scottish economy, contributing £620 million per year in GVA and supporting over 12,000 jobs.
- I am an avid supporter of the industry in Scotland and regularly attend the Aquaculture Industry Leadership Group which is looking to sustainability grow and double the value of aquaculture production in Scotland.
- **Sea lice management, and the tools to do so, are essential to support a thriving Scottish fish farming industry**, that is why Scottish Government published Scotland's 10 Year Farmed Fish Health Framework this year, a Programme for Government commitment in 17/18.
- The industry reported that sea lice levels in 2018 were at their lowest level for 6 years, however we are not complacent and **we have recently strengthened the sea lice regulatory framework, and are committed lowering the sea lice intervention thresholds further in 2021.**
- In order to do so, we must continue to innovate and explore new management methods, particularly those with reduced environmental impacts such as CleanTreat.
- **I commend your commitment that this technology will be open for all** – which will have huge benefits for fish health across the salmon farming nations.

BACKGROUND INFORMATION ON CLEANTREAT TRIAL PROGRESS IN SCOTLAND **ANNEX C**

- The CleanTreat system is proposed to be installed on a stand-alone vessel to clean effluent following transfer of that effluent from a wellboat which conducted treatment of salmon for sea lice. Regulators and advisers are widely supportive of technological solutions to reduce the amount of sealice medicines being discharged to the water environment.

- [Redacted]

- [Redacted]

Since then a number of meetings have been held with BAHL and advice has been provided (SEPA has met with BAHL to further the advice on the required assessments in May and June).

- The regulators and SEPA have responded quickly to BAHL, taking the initiative to set up meetings to provide prompt feedback on information provided.

- [Redacted]

- It is understood that BAHL was granted permissions to carry out field trials in Norway and that, under the Norwegian system, environmental effects are not considered during the granting of such permissions.

- The Rural Economy and Connectivity Committee's Salmon farming in Scotland report calls for enhanced and effective regulatory standards to ensure that fish

health issues are properly managed and the impact on the environment is kept to an absolute minimum.

Legislative Framework

- MS-LOT is the licensing authority under the Marine (Scotland) Act 2010 for wellboat discharges and SEPA is a statutory consultee to that process.
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

Current position

- [Redacted]
- [Redacted]

Next Steps

- Marine Scotland is facilitating a number of meetings with BAHL, regulators and advisers to ensure BAHL is clear on the next steps and regulators and advisers will continue to work with BAHL, to enable them to submit the required evidence and provide the required assurances to determine an application for a trial.
- [Redacted]
- Benchmark were content with the meeting on 20th September and the information requirements made clear. Benchmark agreed to provide the required information by December which will allow a full application to be submitted to Marine Scotland.

[#10: Email in October 2019 from Marine Scotland referring to a "very informative" tour around the vessel and "the need for some written responses to SEPA"]

From: [Redacted] (MARLAB)
Sent: 11 October 2019 13:45
To: [Redacted]
Cc: [Redacted] (MARLAB)
Subject: RE: Progress

Hi [Redacted]

Thanks, it was good to get a tour around the vessel, very informative.

I've relayed the need for some written responses to SEPA and am awaiting a response from them on the aspects we've already discussed [Redacted] . I hope to have something from them soon and we will be in touch.

I'm off for the next two weeks. If you have any queries, please get in touch with [Redacted] (both copied).

Kind regards

[Redacted]

From: [Redacted] @bmkanimalhealth.com>
Sent: 09 October 2019 14:56
To: [Redacted] (MARLAB) [Redacted] gov.scot>
Subject: Progress

Hi [Redacted]

Really appreciated your visit last week and I hope it was of some use.

[Redacted]

Look forward to your feedback

Best regards

[Redacted]

[Redacted]

Benchmark Animal Health

Benchmark Animal Health
Mobile : [Redacted]
Email: [Redacted] @bmkanimalhealth.com

#11: Emails dated September 2019 discussing an 'Urgent' opportunity to visit the CleanTreat wellboat (understood to be docked in Leith) - described as "the last opportunity ahead of any trials in the UK, as we have now completed our planned trials in Norway"

From: [Redacted] @bmkanimalhealth.com>
Sent: 24 September 2019 18:12
To: [Redacted] vmd.defra.gsi.gov.uk>; [Redacted] @gov.scot; [Redacted]
[Redacted] @SEPA.org.uk>
Cc: [Redacted] @bmkanimalhealth.com>; [Redacted]
[Redacted] @bmkanimalhealth.com>
Subject: URGENT- Clean Treat visit opportunity
Importance: High

Hi Everyone,

My apologies for the short notice of this but I have just heard the Clean Treat boat is coming back to [redacted] this weekend. If you wish to see Clean Treat on the deck of the boat there is an opportunity **at 9am on Monday morning** (30th) at [redacted] This invitation is limited to the recipients of this email as we have H&S restrictions and cannot manage a large party of people. The Clean Treat system will be removed from the deck from lunchtime onwards. This is the last opportunity ahead of any trials in the UK, as we have now completed our planned trials in Norway. The Clean Treat system and lab will be in a warehouse after this date so could be viewed then. Please note that the tour would be given by some of our Clean Treat team but there will be no chemist available.

I you would like to visit please could you let me know by tomorrow at 5pm.

Again, sorry for the short notice.

Kind Regards

[Redacted]

[Redacted]
Animal Health Division
Tel: [Redacted]
Mob: [Redacted]
Benchmark Animal Health
Bush House, Edinburgh Technopole, Edinburgh, EH26 0BB

[Redacted]

From: [Redacted] (MARLAB)
Sent: 26 September 2019 09:45
To: [Redacted]
Cc: [Redacted]
Subject: RE: URGENT- Clean Treat visit opportunity

Thanks [Redacted]

Confirming I'll be there and I'm shoe size [Redacted]

Thanks

[Redacted]

From [Redacted] @bmkanimalhealth.com>
Sent: 25 September 2019 16:35
To: [Redacted] @SEPA.org.uk>; [Redacted] (MARLAB) [Redacted] @gov.scot>
Cc: [Redacted] @bmkanimalhealth.com>; [Redacted] [Redacted] @bmkanimalhealth.com>; [Redacted] @bmkanimalhealth.com>
Subject: RE: URGENT- Clean Treat visit opportunity

Dear [Redacted]

Yes we would be happy for [redacted] to visit the boat if she is comfortable with accessing the ship via the gangway. It is not a flat walk, there is a slight camber to it. We will clear a path so she can move to the lab to see inside on the deck of the boat. A couple of points to note for you all;

The address is; [Redacted] for approx. 08:45am

- Please bring photo ID with you to access the port
- On arrival at the port, please wait at the entrance are. Call [redacted] on [Redacted] and he will come to meet you and escort you to [Redacted] – 08:55am
- Personal Protective Equipment will be provided for you to wear. This will be a high vis jacket, hard hat and safety wellingtons. **Please send me you shoe size, and that of** [redacted] asap so we can provide appropriately sized boots. Enter security shelter to change into PPE – 09:00am
- You will receive a safety briefing from the [redacted] and our [Redacted] for clean treat (10 minutes)
- Access will be limited to the deck of the boat only and inside of the lab
- Commence tour of CleanTreat equipment approx. 09:10am up to 09.50am – access to lab included.
- Return to Security Shelter 09:55am to return PPE, assigned driver will show the way back to security entrance or drop off where appropriate

- Please note that the lab will not be operational and will be packed for transport
- Similarly Clean Treat will not be operational. Some of the piping will have been removed to allow easier access to sections of the deck.

Kind Regards

[Redacted]

[Redacted]
Animal Health Division
Tel: [Redacted]
Mob: [Redacted]
Benchmark Animal Health
Bush House, Edinburgh Technopole, Edinburgh, EH26 0BB

From: [Redacted] @SEPA.org.uk>
Sent: 25 September 2019 11:53
To: [Redacted] @bmkanimalhealth.com>; [Redacted] @vmd.defra.gsi.gov.uk>; [Redacted] @gov.scot
Cc: [Redacted] @bmkanimalhealth.com>; [Redacted] [Redacted] @bmkanimalhealth.com>
Subject: RE: URGENT- Clean Treat visit opportunity

Morning [Redacted]

I can make 9am on Monday, I think it is important to flag a couple of points. We would expect to follow this up with a visit to the warehouse with relevant staff (our chemists), however having spoken to [redacted] whilst a visit to the lab in a warehouse would be worthwhile it would obviously be much better to see the lab in situ on the vessel.

Given the above and the fact that [redacted] can no longer make it, would it be possible to include [redacted] on the visit? We understand that a chemist won't be available on the day, but still think [redacted] seeing the lab in situ would be of benefit.

Thanks

[Redacted]

[Redacted]
Scottish Environment Protection Agency, Regulatory Services North, West Highland and Argyll Team, Kilbrandon House, Manse Brae, Lochgilphead, PA31 8QX
t: [Redacted] m: [Redacted] e: [Redacted] @sepa.org.uk web: www.sepa.org.uk

In November 2019, SEPA denied a FOI request (F0191091) concluding after a review in December 2019 that "SEPA considers that the release of the correspondence and documentation would cause substantial prejudice to the commercial undertaking and economic interest". "It was confirmed that details of the specified treatment were not publicly available and that they were commercial in nature," explained SEPA on 13 December 2019. "Feedback had been sought from the third party who confirmed that disclosure of information would cause substantial prejudice to their commercial interest".

However, SEPA's FOI refusal letter dated 11 November 2019 admitted that it had attended five meetings with Benchmark over the last year (9 October 2018; 11 April 2019; 30 May 2019; 20 September 2019 and 30 September 2019).

[6.] *Please include any information relating to CleanTreat and the treatment of well boats discharges including details of any meetings and correspondence with Benchmark and other companies. Please include information relating to "high level talks to facilitate trials of the [CleanTreat] system in Scotland".*

SEPA holds a small amount of correspondence. This information is excepted under Regulation 10(5)(f) of the EIRs. The text of which is reproduced below;
(5) A Scottish public authority may refuse a request to make environmental information available to the extent that its disclosure would, or would likely to prejudice substantially-
(f) the interests of the person who provided the information where that person-
(i) was not under, and could not have been put under, any legal obligation to supply the information;
(ii) did not supply it in circumstances such that it could, apart from these Regulations, be made available; and
(iii) has not consented to its disclosure
The release of the information in question would be likely to prejudice substantially the third party. The Public Interest Test was carried out in relation to the information to be withheld under Regulation 10(5)(f) of the EIRs. In this case, we recognise that Regulation 10(2)(b) requires SEPA to apply a presumption favour of disclosure. The public interest in favour of disclosure is outweighed by that in favour of withholding. Requests for such information are considered by SEPA on a case by case basis. In this case, it was determined that the public interest would not be served by the release of the information at this time.

We confirm that SEPA has attended meetings with Benchmark on 9 October 2018, 11 April 2019, 30 May 2019, 20 September 2019 and 30 September 2019

Fish Farmer reported in August 2019: "The team behind the Scottish invention CleanTreat, which won the much prized Aqua Nor Innovation Award this week, have held high level talks to facilitate trials of the system in Scotland" (reporting that Benchmark was "encouraged by discussions at Aqua Nor with [Fergus] Ewing and Graham Black, director of Marine Scotland").

Documents disclosed to Scottish Salmon Watch by the Scottish Government via FOI-19-01398 in July 2019 reveal that Benchmark lobbied the Cabinet Secretary for Rural Economy (Fergus Ewing) in September 2018 writing in an email that "we are now ready to apply for trials in Scotland for our CleanTreat system for salmon health" and "would like to brief you on these proposals".

The FOI documents disclosed by the Scottish Government detail heavily redacted minutes of a meeting with Benchmark in October 2018 with a document citing "field trials in Scotland".

CONFIDENTIAL

Use of [redacted] [redacted] Clean Treat in the UK- Final Meeting Minutes

Meeting: 9th October 2018, 1-3.30pm, BAHL, Bush House, Edinburgh

[Redacted]

[Redacted]

Benchmark Animal Health Limited
& Cleantreat, Effective Sea Lice Treatment with Proven Prevention of Environmental Impact, for Field Trials in Scotland.

An email dated November 2018 referred to a request from Fergus Ewing (Cabinet Secretary for the Rural Economy) for information on CleanTreat stating that "the company wish to push forward with trials in Scotland (trials already happening in Norway) - and that Marine Harvest [redacted] as partner wants to get this off the ground as soon as possible.....progress with regulators was slow and that they wished to speed things up":

From: [Redacted]
Sent: 29 November 2018 10:02
To: [Redacted]
Cc: [Redacted]
Subject: Aquaculture - CleanTreat

Hi [redacted]

1. I understand [redacted] assed on Mr Ewing's request for details about outstanding CAR applications – grateful for an update please.

2. We have also had a request from Mr Ewing for information about the situation regarding the following:

"Mr Ewing would like advice from SEPA + MS LOT on the current progress of Benchmark's application for field trials of CleanTREAT + [redacted] in Scotland. For those who are not aware of the system - CleanTREAT is a system which 'cleans' the sea lice treatment chemical (in this case a new product [Redacted]) from water before the water is discharged. http://www.benchmarkplc.com/articles/cleantreat-by-benchmark/ .

[Redacted] outlined that the company wish to push forward with trials in Scotland (trials already happening in Norway) – and that Marine Harvest [Redacted] as partner wants to get this off the ground as soon as possible. It was claimed that neither SEPA nor MS LOT could confirm to the company who the regulatory lead on their application would be. [Redacted] said that progress with regulators was slow and that they wished to speed things up. Hence Mr Ewing's request for immediate advice."

Happy to discuss – by phone if appropriate

Thanks
[redacted]
[Redacted]

A redacted email dated June 2019 to Marine Scotland attached a 'Confidential' document titled 'CleanTreat [redacted] Trials, Scotland 2019 Overview' (authored it appears by Benchmark's Animal Health Division in Edinburgh).

[Redacted]

From: [Redacted]
Sent: 19 June 2019 12:45
To: MS LOT Business and Operational Delivery
Subject: FW: Benchmark - Cleantreat
Attachments: Cleantreat [redacted]ed] Trials, Scotland 2019 Overview. CONFIDENTIAL.pdf

From: [Redacted]
Sent: 14 March 2019 13:25
To: [Redacted]
Cc: [Redacted]

[Redacted]

[Redacted]

Kind Regards

[Redacted]

Animal Health Division
[Redacted]

Benchmark Animal Health

Bush House, Edinburgh Technopol, Edinburgh, EH26 0BB

A redacted email from SEPA in April 2019 asked for "a visit to the existing vessel whilst operational" which would allow SEPA "to highlight any areas of concern early so that they could potentially be addressed/mitigated as part of the design process".

From: [Redacted]
Sent: 23 April 2019 14:49
To: [Redacted]

Cc: [Redacted]
Subject: RE: Meeting - Thursday 11 April 2019 1430 - 1630h

Hi [redacted]

Thanks for your time a couple of weeks ago. On reflection given your proposals are likely to involve commissioning a new or repurposing an existing vessel, it is important that we have the opportunity to feed in to or comment on any designs (particularly in reference to any potential process controls). As raised at the meeting our current understanding of the treatment and transfer process of your operations in Norway is fairly limited, for us to provide appropriate input we really need to have a clear understanding of the existing process. I think a visit to the existing vessel whilst operational would really help us develop that understanding. This would then allow us to highlight any areas of concern early so that they could potentially be addressed/mitigated as part of the design process.

I know there was an action from the meeting, but it would be good to know if that is going to be possible and if so, when and what limit there might be in numbers?

Kind regards

[Redacted]
Scottish Environment Protection Agency, Regulatory Services North, West Highland and Argyll Team, Kilbrandon House, Manse Brae, Lochgilphead, PA31 8QX
[Redacted] web: www.sepa.org.uk

Benchmark replied in April 2019 that "we are re-starting trials next week":

From: [Redacted]
Sent: 26 April 2019 18:50
To: [Redacted]

Cc: [Redacted]
Subject: RE: Meeting - Thursday 11 April 2019 1430 - 1630h

Hi [redacted]

Yes it will definitely be possible to visit the boat. We are re-starting trials next week and are looking at possible dates for your visit. The dates are not yet fixed as it depends on the farms and the weather. It is looking likely that a date in the week of the 20th May might work but this is not yet confirmed. I will let you know definite dates as soon as I have them but they may be at quiet short notice unfortunately. I am currently looking into maximum numbers and will get back to you asap. I am hoping we can accommodate 2 people each from SEPA, MS and VMD but I need to confirm this. We will be limited by safety issues etc.

Kind Regards

[redacted]

[Redacted]
Animal Health Division
Tel: [Redacted]
[Redacted]
Benchmark Animal Health
Bush House, Edinburgh Technopole, Edinburgh, EH26 0BB

Read more via CleanTreat FOI Disclosures by the Scottish Government to Scottish Salmon Watch

Secondly, if Imidacloprid has been already used by the salmon farming industry in Scotland, where has it been discharged and/or disposed of?

Documents disclosed to Scottish Salmon Watch by the Scottish Government via FOI-19-01398 in July 2019 included:

A redacted email marked 'Sensitive' dated December 2018 referred to Fergus Ewing's meeting with Benchmark and "a discussion with Benchmark on the acceptability of their CleanTreat proposal where it might involve transport from site for remote discharge of effluent water" and "the work plan element where we're tasked at looking at 'discharge zones'".

From: [Redacted]
Sent: 06 December 2018 06:54
To: [Redacted]
Cc: [Redacted]
Subject: Re: sensitive: Medicines and Licensing - Workplan - October 2018 - DRAFT (not for circulation)

Hi [redacted]

Thanks for sending this.

As you will have heard, Mr Ewing has met with benchmark which has brought some of the workplan aspects into sharp focus. [Redacted] [redacted]

This is of relevance to both the discussion with benchmark on the acceptability of their CleanTreat proposal where it might involve transport from site for remote discharge of effluent water and, equally importantly, some of the aspects of the work plan element where we're tasked at looking at 'discharge zones'.

Can I ask you to consider with [redacted] if these aspects are covered by the current ask of SGLD or if this needs to be added to the request. I have avoided raising this directly with SGLD as I'm aware of the request already in train an don't want to add to SGLD burden or confuse ownership of the request.

[redacted]

Regards

[redacted]

Sent from my BlackBerry 10 smartphone.

A redacted email in February 2019 from Marine Scotland referred to a meeting being arranged "with SEPA and policy officials". It stressed the need for further information on the permits required for Benchmark's trials in Norway and "more detail on the proposed activity in the marine area (i.e. - what is proposed to be deposited in the sea").

From: [Redacted]
Sent: 08 February 2019 17:57
To: [Redacted]
Subject: RE: Benchmark - Cleantreat

Thanks for the discussion [redacted]

I mentioned that we (MS-LOT) would arrange a meeting with SEPA and policy officials. I shall set this up in due course.

In order to better inform the process, we discussed the need for some further info namely:

1. The permits required in Norway for your trial there
2. More detail on the modelling you have carried out to date.
3. More detail on the proposed activity in the marine area (i.e.- what is proposed to be deposited in the sea?)
4. Sensitivity of the testing to LOD etc. to understand what the output might contain.

[Redacted]

I look forward to hearing from you and I shall look to set up a meeting soon.

Kindest regards

[redacted]

Notes from May 2018 referred to the prospect of using presently unlicensed chemicals "as the environmental impact is too great" via the CleanTreat system "as there would be no discharge".

Notes from Presentations at Aquaculture Conference - May 2018

[Redacted] _[Redacted]

[Redacted]

CleanTreat _[Redacted]

- As all product can be removed by the system it should be futureproof for new medicines
- Some medicines are not licensed as the environmental impact is too great, but they have a good efficacy and are not harmful to the fish. This system would allow these medicines to be used as there would be no discharge

[Redacted]

A redacted email dated December 2018 reports that Benchmark is aware that "discharges from wellboats need marine licences" (currently issued by Marine Scotland but soon to be moved to SEPA).

From: [Redacted]
Sent: 05 December 2018 14:48
To: [Redacted]
Cc: [Redacted]

1

[redacted]

Subject: RE: For information only - Outcome of meetings on 28 November - mortality disposal + Benchmark cleantreat

[redacted],

I have begun to draft something and have had a brief discussion with [Redacted] at SEPA.

We understand that benchmark is in discussions with the VMD.

I have gone back to benchmark to clarify that discharges from wellboats need marine licences currently, and that this might change in the future to CAR. [Redacted]

[Redacted]

[redacted]

Benchmark claimed in 2018 that CleanTreat is "suitable for all currently available bath treatments used against sea lice, other than hydrogen peroxide" and "has been trialled with a number of sea lice treatments compounds including pyrethroids, deltamethrin, azamethiphos, and Benchmark's new trial bath treatment". It "uses a unique purification system to compound and solidify the chemicals used in the treatments" and "these solids can then be incinerated at one of the world's three specialist processing plants for these operations," said John Marshall, head of Benchmark Animal Health. "There are at least two new products it could bring to market and I think it could open the door to other products not yet considered – perhaps from other areas, depending on regulations," he said.

Answers to the two questions outlined above would be much appreciated. Scottish Salmon Watch is extremely concerned at the direction the salmon farming industry is headed, especially with the SSPO's attempts to exploit the Coronavirus crisis by exceeding maximum permitted biomass limits. The palatability of Scottish salmon - to both consumers and investors - will surely be tested to the limit by the shocking revelation regarding the toxic neonicotinoid insecticide Imidacloprid. It is even more alarming that both SEPA and the Scottish Government have acted to bury the bad news - something which Scottish Salmon Watch is seeking the Scottish Information Commissioner to overturn.

Yours sincerely,

Don Staniford

Director, Scottish Salmon Watch

Cc:
Scottish Natural Heritage
Scottish Green Party
Scottish Environment LINK

SCOTTISH SALMON WATCH

CHEMICALS

Terry A'Hearn
Chief Executive
Scottish Environment Protection Agency
Strathallan House
Castle Business Park
Stirling
FK9 4TZ

17 March 2020

Dear Sir,

Neonicotinoid insecticide Imidacloprid use in Scottish salmon farming via Benchmark's BMK08 (Ectosan) & CleanTreat

Further to Scottish Salmon Watch's renewed FOI request earlier today on discharges and disposal of Imidacloprid, BMK08, Ectosan and CleanTreat and our appeal filed last month with the Scottish Information Commissioner, could you please re-consider SEPA's refusal to disclose basic information on the use of this highly toxic Neonicotinoid insecticide by the salmon farming industry in Scotland?

The news that Ectosan - first publicised by Benchmark in 2017 and re-branded as BMK08 in 2019 although it first surfaced as D10 Aquatic Blast in 2014 - is the toxic chemical Imidacloprid (banned in the UK in 2018 or use in terrestrial agriculture) is shocking.

Read more via: Revealed: Toxic Neonicotinoid Insecticide Used to 'CleanTreat' Lousy Scottish Salmon

Why has SEPA met privately with Benchmark at least five times in the last 18 months and discussed secret trials with industry yet has failed to notify the public or issue a public consultation?

In November 2019, SEPA refused another FOI request on CleanTreat but conceded:

> We confirm that SEPA has attended meetings with Benchmark on 9 October 2018, 11 April 2019, 30 May 2019, 20 September 2019 and 30 September 2019

Documents disclosed to Scottish Salmon Watch by the Scottish Government via FOI-19-02443 in December 2019 included:

#1: Letter from the SSPO to SEPA copied to Scottish Ministers

Scottish Salmon
PRODUCERS ORGANISATION

30 May 2019

Mr T A'Hearn
SEPA
Strathallan House
Castle Business Park
Stirling
FK9 4TZ

By Email

Dear Terry,

[Redacted]

Scottish Salmon
PRODUCERS ORGANISATION

In this context, you undertook to look again at the potential for trials of novel lice treatment methods and the barriers in the way of Scottish trials for the CleanTreat innovation which the developers believe has no environmental impact at sea. The novel approach has been trialled in Norway successfully and now requires field trials in Scotland. It has the potential to reduce other medicinal treatment methods for lice significantly and reduce environmental impact from farms. We understand that there have been discussions with the company involved though no progress has been made to take forward trials in Scotland. If you required further information on the detail of the issue, we can provide it, though your team have worked with [Redacted] at Marine Scotland and the company involved directly already.

[Redacted]

I am copying this letter to Roseanna Cunningham, Cabinet Secretary for Cabinet Secretary for Environment, Climate Change and Land Reform and Fergus Ewing, Cabinet Secretary for the Rural Economy.

I look forward to your early response.

Yours sincerely,

[Redacted]

Julie Hesketh-Laird
Chief Executive

c.c. Roseanna.Cunningham.msp@parliament.scot
Fergus.Ewing.msp@parliament.scot

Last month, Scottish Salmon Watch filed an appeal with the Scottish Information Commissioner following SEPA's refusal to disclose information on CleanTreat (including BMK08/Ectosan).

Appeal by Scottish Salmon Watch re. SEPA's F0191198

Scottish Salmon Watch's appeal dated 21 February 2020 included:

> Scottish Salmon Watch argues that SEPA's review refusal dated 13 December 2019 wrongly concluded that commercial confidentiality took precedence over public disclosure:
>
> > B. - *Commercial interests – Regulation 10(5)(e) of the EIRs – Question 6*
> >
> > Regulation 10(5)(e) states that a Scottish public authority may refuse to make environmental information available to the extent that its disclosure would, or would be likely to, prejudice substantially the confidentiality of commercial or industrial information where such confidentiality is provided for by law to protect a legitimate economic interest.
>
> Scottish Salmon Watch believes that there is a clear public interest in disclosure as well as a growing public interest in this issue. For example, The Sunday Times reported on 29 December 2019: "Official fears revealed over toxic threat of salmon trade".
>
> Scottish Salmon Watch considers such a refusal by SEPA is unreasonable and does not see an overriding public interest in protecting commercial or industrial information. The public interest is surely served best by disclosing specific details on CleanTreat (including the active ingredients in BMK08 & Ectosan - the subject of another FOI to SEPA and the Scottish Government which have been refused). Secret trials took place two decades ago in Scotland in relation to Calicide (Teflubenzuron) and that did not end well.
>
> The public case for disclosure is much stronger than the case for protecting commercial confidentiality. It is obvious that Benchmark (as the manufacturer of the CleanTreat system) is a company which wants to maximise investment, profit and economic returns by delaying disclosure.
>
> However, SEPA's duty is not to the shareholders of Benchmark but to the Scottish environment and the Scottish public whose livelihoods may be impacted by the Norwegian and other foreign investors controlling Benchmark.

Scottish Salmon Watch asked for an internal review of another FOI refusal by SEPA in a letter dated 21 February 2020:

21 February 2020

Review re. F0191311 re. BMK08 & Ectosan

Please consider this a formal request for a review of SEPA's refusal dated 7 January 2020 (via F0191311) to Scottish Salmon Watch's FOI request dated 5 December 2019 (received by SEPA on 10 December 2019). For easy reference please find enclosed below the Appendix the FOI request and refusal.

Scottish Salmon Watch strongly objects to SEPA's refusal which cited commercial confidentiality; namely:

Response
SEPA holds a small amount of correspondence which falls into the scope of the request.

This information is excepted under Regulation 10(5)(e) of the EIRs. The text of which is reproduced below;

(5) A Scottish public authority may refuse to make environmental information available to the extent that its disclosure would, or would be likely to, prejudice substantially:-

(e) the confidentiality of commercial or industrial information where such confidentiality is provided for by law to protect a legitimate economic interest;

Feedback had been sought from the third party who confirmed that disclosure of information would cause substantial prejudice to their commercial interests. We recognise that Regulation 10(2)(b) requires SEPA to apply a presumption favour of disclosure. In the specific circumstances of this request, SEPA considers that the release of the correspondence and documentation would cause a substantial prejudice to the commercial undertaking and economic interest. SEPA therefore contends that the public interest in the release of the information is outweighed by the public interest in maintaining the exception under the terms of Regulation 10(5)(e) of the EIRs

Scottish Salmon Watch's review letter to SEPA concluded:

The public interest is surely better served by disclosure rather than the dubious excuse of protecting commercial interests.

Surely SEPA should be placing environmental protection ahead of the protection of economic interests?

It seems that SEPA, by aiding and abetting privacy, are effectively promoting rogue/insider trading. Benchmark, by failing to publicly disclose basic information on BMK08 & Ectosan, are guilty of potentially misleading investors and the public alike.

Surely the public has a right to know what BMK08 actually is; how it is going to be used and how it is going to be discharged in Scotland? Only then, with full disclosure, can investors and the public make a wholly informed decision as to the acceptability of BMK08 & Ectosan. SEPA has no jurisdiction blocking public scrutiny.

SEPA should also be aware that later today Scottish Salmon Watch will be filing an appeal in relation to F0191198 on CleanTreat with the Scottish Information Commissioner. Scottish Salmon Watch looks forward to taking a similar case in relation to F0191311.

Fish Farming Expert [reported (28 February 2020)] that BMK08 was "in the hands of regulators" but the public (including investors) are still in the dark.

fishfarmingexpert

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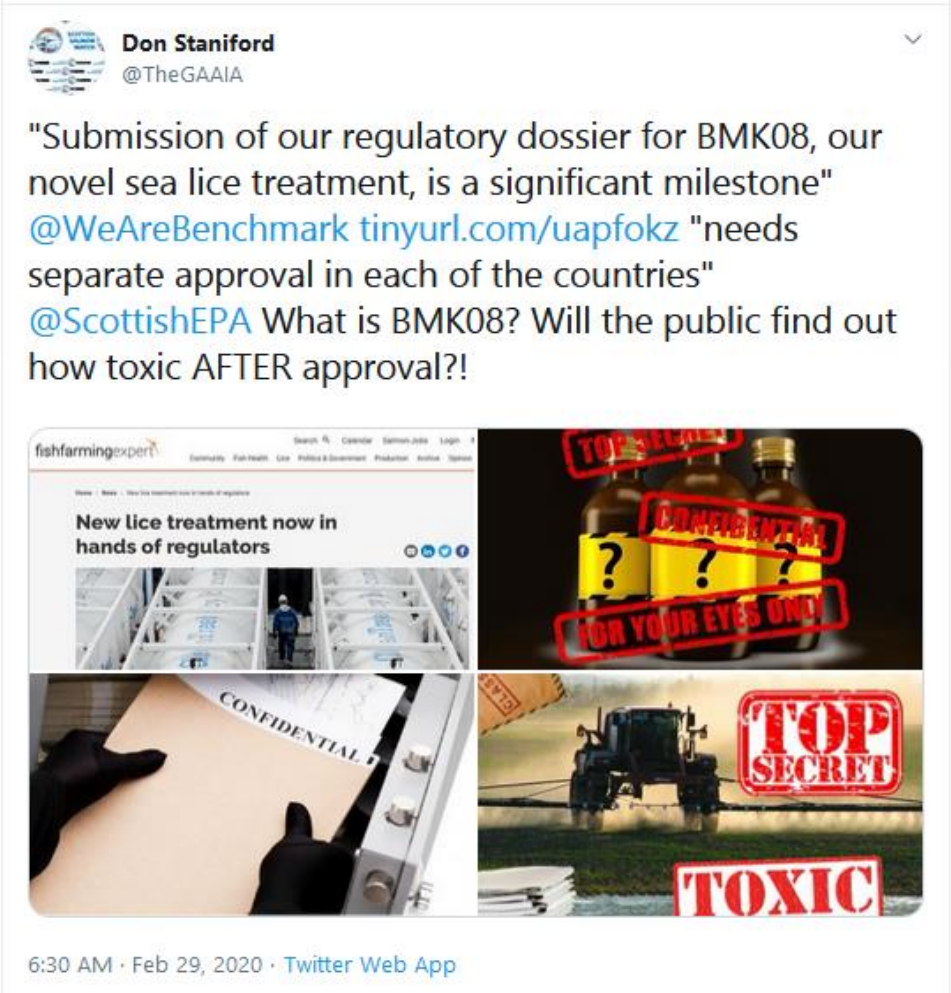
Home › News › New lice treatment now in hands of regulators

New lice treatment now in hands of regulators

BMK08 is designed to be used in conjunction with CleanTreat, which removes chemical and lice residues from treatment water. Photo: Benchmark.



Don Staniford
@TheGAAIA

"Submission of our regulatory dossier for BMK08, our novel sea lice treatment, is a significant milestone" @WeAreBenchmark tinyurl.com/uapfokz "needs separate approval in each of the countries" @ScottishEPA What is BMK08? Will the public find out how toxic AFTER approval?!

6:30 AM · Feb 29, 2020 · Twitter Web App

What scientific research has SEPA conducted on the toxicity and environmental impact of Imidacloprid?

Imidacloprid is classified as an 'Environmental Hazard' with the warning that it is "very toxic to aquatic life with long lasting effects" and "hazardous to the aquatic environment, long-term hazard".

PubChem Imidacloprid (Compound)

12 Safety and Hazards

12.1 Hazards Identification

12.1.1 GHS Classification

Showing 1 of 4 View More

Pictogram(s)	 Irritant Environmental Hazard
Signal	Warning
GHS Hazard Statements	H302: Harmful if swallowed [Warning Acute toxicity, oral] H400: Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard] H410: Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

The Scottish Wildlife Trusts called for a ban on pesticides containing Imidacloprid back in 2012.

In April 2018, the European Commission (following an assessment by the European Food Safety Authority) banned Imidacloprid for use on outdoor crops due to risks to bees. "Unless the scientific evidence changes, the government will maintain these increased restrictions post-Brexit," stated DEFRA in a press release in April 2018.

The weight of scientific evidence on the toxicity of Imidacloprid especially in the aquatic environment is increasingly clear and alarming.

In December 2017, the Rivers Trust reported that "Aquatic insects are just as vulnerable to neonicotinoid insecticides as bees and flying insects..... 88% of sites in Britain were contaminated with neonicotinoids, eight rivers in England exceeded recommended chronic pollution limits, and two were acutely polluted."

Imidacloprid, according to the Material Safety Data Sheet of one of the insecticide formulations on the market, is "highly toxic to aquatic invertebrates" and the chemical company warns users "do not apply directly to water" and "do not contaminate water when disposing of equipment washwaters".

MATERIAL SAFETY DATA SHEET
Quali-Pro® Imidacloprid 2F Turf & Ornamental

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: This product is highly toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Another Imidacloprid formulation warns:

Kohinor 350 SC

Synonyms Imidacloprid 350 SC

Signal word	Warning
Hazard Statements	H410 - Very toxic to aquatic life with long lasting effects
Precautionary Statements	P102 - Keep out of reach of children P501 - Dispose of contents/ container to an approved waste disposal plant

A scientific paper - "Acute Toxicity of Imidacloprid on the Developmental Stages of Common Carp *Cyprinus carpio*" - published in October 2019 concluded: "The results suggest that the minimum concentration of 10 µg/L imidacloprid in the aquatic environment may have adverse effects on the embryonic and larval stages of common carp".

A scientific paper - "Effects of insecticides, fipronil and imidacloprid, on the growth, survival, and behavior of brown shrimp *Farfantepenaeus aztecus*" - published in PLOS One in October 2019 reported: "Under imidacloprid, survivorship decreased from 100% in the control to 33.33% in the 320.0 µg/L treatment..... We conclude that, at the corresponding EPA benchmark concentrations, fipronil had more lethal effects than imidacloprid, and imidacloprid had more sub-lethal effects than fipronil. Both effects are of serious concern, and we suggest monitoring is necessary in estuaries."

Marine Environment Research [reported in October 2019](#):

ELSEVIER

Marine Environmental Research

Volume 151, October 2019, 104765

Imidacloprid and formulated product impacts the fatty acids and enzymatic activities in tissues of Sydney rock oysters, *Saccostrea glomerata*

Endurance E. Ewere [a, b], Amanda Reichelt-Brushett [a], Kirsten Benkendorff [a]

Highlights

- Imidacloprid (IMI) accumulates in the tissues of Sydney rock oysters (SRO) exposed to formulated or pure IMI.

Abstract

The use of imidacloprid (IMI) and its formulated products in agriculture is a risk to aquatic organisms due to deposition into waterways from runoff and aerial spraying. However, there is limited information on the potential effects of this pesticide on commercially important shellfish, such as oysters. We investigated the impacts of IMI and Spectrum 200SC (IMI formulation) on the activity of the enzymes Glutathione-S-transferase (GST), Catalase (CAT) and Acetylcholinesterase (AChE), in different oyster tissues including the gill, adductor muscle and digestive gland. We also investigated the condition index and fatty acid composition of the flesh of oysters after 2 weeks exposure. The concentrations of IMI in the different tissues was assessed using Liquid Chromatography-Mass Spectrometry (LC-MS) after QuEChERS extraction. Higher concentrations of IMI residues were detected in the adductor muscle of the oysters, followed by the gills and with the lowest amounts recovered from the digestive gland across all the concentrations tested. IMI and Spectrum 200SC significantly affected the gill AChE activity at 2 mg/L, but digestive gland CAT, and gill and digestive gland GST were impacted at environmentally relevant concentrations (0.01 and 0.05 mg/L). In the whole oyster, 2 weeks exposure to IMI (≥0.01 mg/L) resulted in a proportional increase in saturated fatty acids (SFA), altered the polyunsaturated fatty acid (PUFA) to SFA ratio and altered the omega 3 fatty acids (*n*-3) to omega 6 fatty acids (*n*-6) ratio, but there were no effects on the condition index of the oyster. Although the oysters responded differently to the formulated product, there was no consistent difference in the sublethal effects of analytical IMI and Spectrum 200SC. This study showed that exposure to IMI and Spectrum 200SC can significantly affect the biochemical processes and metabolites in oysters, with implications for food quality and safety.

The use of Imidacloprid in aquatic environments and in aquaculture is environmentally hazardous. North America Aquaculture reported in April 2018:

Aquaculture North America

MENU NEWS FEATURES PRODUCTS OPINION EVENTS ENEWS MAGAZINE

Pesticide banned in oyster farming

The Washington Department of Ecology has banned a pesticide that was approved two years ago for oyster growers to kill burrowing shrimp.

The department said it made the decision after a lengthy evaluation of the environmental impacts of the pesticide, imidacloprid. The pesticide belongs to a class of chemicals called the neonicotinoids, which act on the central nervous system of insects.

The state announced Monday that it is too harmful to the ecosystem and decided to deny a request for its approval.

"The science around imidacloprid is rapidly evolving and we can't ignore it. New findings make it clear that this pesticide is simply too risky and harmful to be used in Washington's waters and estuaries," state Ecology Director Maia Bellon said in a press release.

The Associated Press reported in December 2019:

Oyster growers abandon push to use imidacloprid, a controversial insecticide

| Associated Press
Updated 2:46 AM EST Dec 13, 2019

LONG BEACH, Wash. (AP) — A southwest Washington oyster growers association has abandoned a drive to use a controversial insecticide that combats burrowing shrimp, a creature that can make tidelands unfit for shellfish farming.

The Seattle Times reports that in a settlement reached last week, the Willapa Grays Harbor Growers Association agreed to accept a 2018 state Ecology Department denial of the proposed use of imidacloprid and drop an appeal to the state Pollution Control Hearings Board.

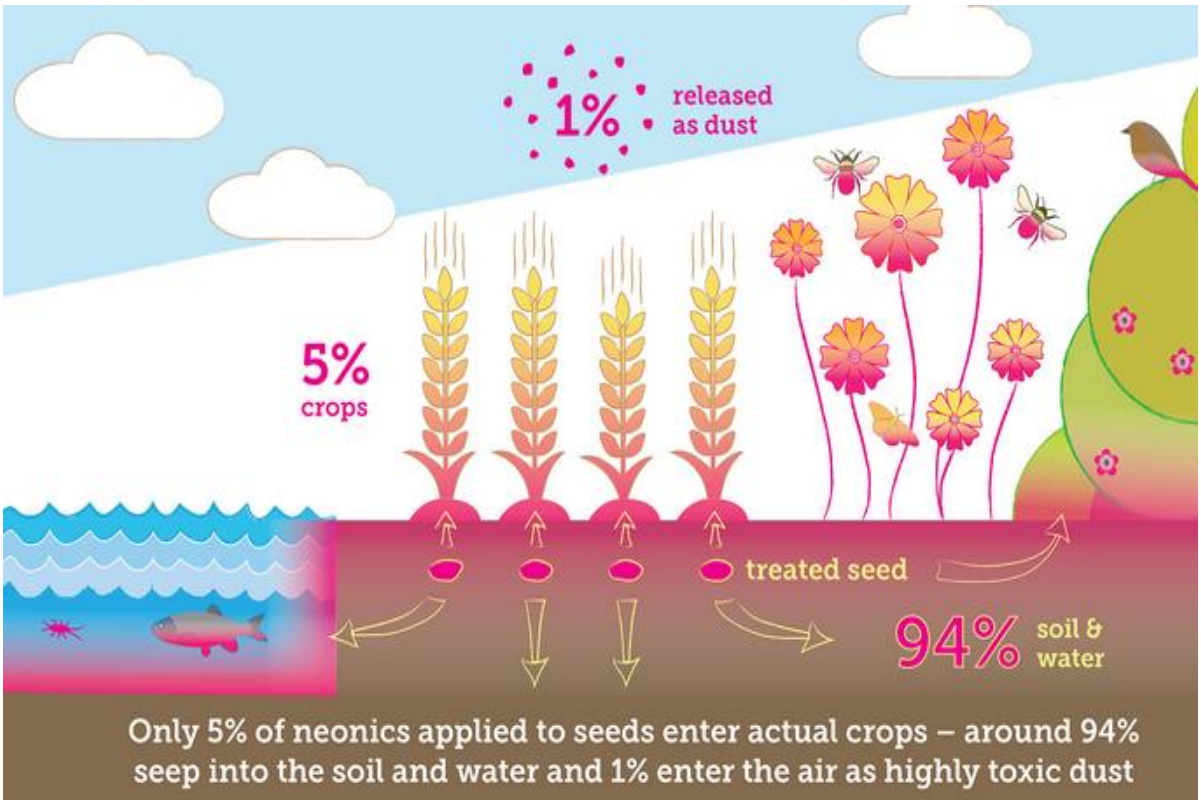
The growers wanted to use the insecticide to spray up to 500 annually of the more than 12,000 acres of tidelands used for shellfish cultivation in Willapa Bay and Grays Harbor. Without the spray, the growers say they lose productive tidelands to the shrimp, which churn up sediment and can cause oysters, as well as clams, to suffocate in the muck.

Read more on the toxicity of Imidacloprid via:

"Contamination of the Aquatic Environment with Neonicotinoids and its Implication for Ecosystems" (Frontiers in Environmental Science, November 2016)

"Effects of neonicotinoids and fipronil on non-target invertebrates" (Environ. Sci. Pollu. Res. Int., September 2015)

The Soil Association (which certify salmon farms in Scotland as 'organic') are vehemently opposed to the use of Imidacloprid and other neonicotinoids.



So why is SEPA protecting commercial confidentiality and industrial secrets rather than protecting the environment?

SEPA's case history with Emamectin benzoate (Slice) hardly inspires confidence that it has everything under control regarding Imidacloprid.

For example, why is no data publicly available for the use of Imidacloprid (and other chemicals such as Azamethiphos and Deltamethrin) at Benchmark's FAI Aquaculture laboratory at Ardtoe where CleanTreat has been developed over the last decade?

Scottish Salmon Watch cannot find any data posted via SEPA's Scottish Pollutant Release Inventory or the Scotland's Aquaculture web-site.

Could you please publish details of the use of Imidacloprid by the salmon farming industry in Scotland (I don't see Imidacloprid listed via SPRI at all)?

SEPA seem to have forgotten the sobering lesson of Teflubenzuron. As 'Silent Spring of the Sea' (a chapter in the 2004 book 'A Stain Upon the Sea') detailed:

Teflubenzuron (Calicide)—A hazardous, wasteful and persistent marine pollutant

Teflubenzuron is a highly hazardous marine pollutant, lethal to shellfish in tiny doses, extremely persistent in the sediment under salmon cages and in the flesh of farmed salmon, and a suspected carcinogen. Hardly a suitable candidate for use on sea cage salmon farms, yet that is what salmon farmers reached for when they needed to replace dichlorvos and azamethiphos.

Teflubenzuron is a benzoylphenyl urea insecticide, initially introduced in 1984 to protect fruit, vegetables and cotton. By the 1990s, though, chemical resistance was already being reported in land-based pests,[173] so Nutreco (owners of Marine Harvest), in conjunction with the US chemical giant American Cynamid, developed teflubenzuron (trade name Calicide) for aquaculture. Sea cage fish farming is in danger of becoming a dumping ground for chemicals which are past their sell by date on land.

Speaking to the *West Highland Free Press* in August 2000, scallop farmer David Oakes said: "Why was no work done on the effects of the chemical on scallops? The chemical affects the shells of the sea lice and it is likely it will affect shellfish as well, especially in the larval stages. There is evidence to show that the chemical is still to be found in the seabed six months after it was used."[190] Oakes gained this inside knowledge in 1999 when he was approached by a scientist working at a university in Scotland. The scientist had damning evidence concerning teflubenzuron, but wanted to remain anonymous. "Deep Trout" accused the Scottish government of failing to protect the marine environment and the shellfish farming industry.

Deep Trout's "Calicide Critique," widely circulated on the internet and submitted officially to the Scottish government and Nutreco, stated: "The prima facie evidence is that teflubenzuron will be highly toxic to shellfish. SEPA are therefore grossly ignorant of the range of species that will be directly affected by teflubenzuron. The lethal effects are: by prevention of growth in the Arthropoda; prevention of movement in the Annelida and death by starvation and internal damage in the Mollusca. There have been no studies of long term ecological effects of the use of teflubenzuron. They could be immense but have not been considered in its proposed use as Calicide."[191]

Deep Trout made a big splash in the Sunday papers. The *Sunday Herald* reported: "David Oakes, who requested the 'Deep Trout' report, has been denied access to the scientific evidence which led SEPA to accept that Calicide

was safe. He was told that Trouw's (a subsidiary of Nutreco) commercial interests overrode the need for openness."[192] SEPA's pollution control specialist Andy Rosie told the *Sunday Herald* that "the claims made by Deep Trout are taken seriously." He admitted that SEPA's case was weakened by the fact that studies commissioned by Nutreco were still not available for peer-review. "At the very least the papers we have cited should be available. We will be negotiating with Nutreco to say that these papers should be in the public domain."

SEPA finally persuaded Nutreco to make some of the documents available for public inspection in February 2001, but they came in a straitjacket. In a letter to David Oakes, SEPA explained: "Nutreco retains copyright and intellectual property rights to most of these documents so SEPA is not able to provide you with copies. If you do wish to obtain a copy of any particular document, once you have viewed these, I would recommend you contact Nutreco directly."[193]

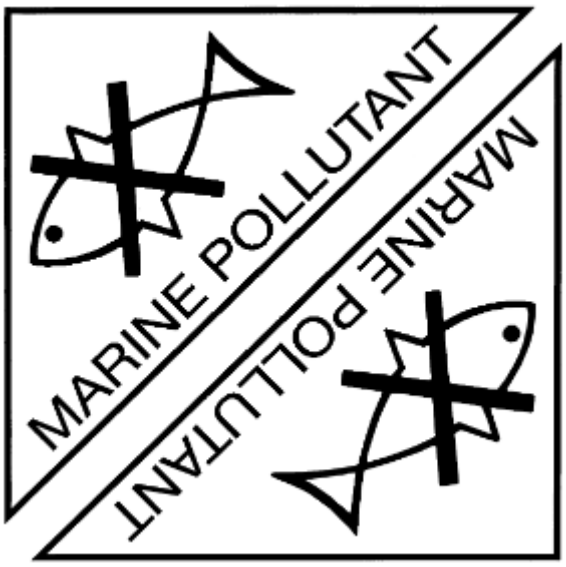
Subsequently, I visited SEPA offices to view a mountain of documents marked "Private and Confidential." I was given only a short time to peruse the material and was not allowed to make photocopies, but it soon became obvious why Nutreco might want to keep a lid firmly shut on these ecotoxicological studies. Different reports showed that teflubenzuron can persist in sediment for nearly two years at distances up to one kilometre away from the salmon cages; it can have "significant lethal effect on lobster juveniles fed salmon pellets containing as little as 0.5g feed additive per kg pellets"; 90 to 95 percent of the compound was excreted into the environment via feces"; "the highest concentrations were found 408 days after treatment"; teflubenzuron was still present 654 days after treatment; and it could bioaccumulate up through the food chain via filter-feeders such as scallops and mussels.[194]

The day after I viewed these documents, Nutreco's PR adviser Colin Ley rang me up. "How was your visit to SEPA yesterday?" he asked. "If there are any specific queries, please let us know—it would be much better to talk things through with us first before you make any public comments." Needless to say Nutreco read about the reports in the weekend's Sunday papers. "A controversial pesticide approved for use on 61 salmon farms in Scotland is classed as a highly toxic marine pollutant and can still be found in sediment on the sea bed nearly two years after use, according to documents revealed this week," reported the *Sunday Herald*.[195]

SEPA's role in authorizing teflubenzuron is typical of the manner in which governments in Norway, Canada, Chile and Ireland have allowed private profit to outweigh the public interest. SEPA's current policy on tefluben-

zuron was published in July 1999 and is based almost exclusively on Nutreco's unpublished private and confidential reports. The impact of teflubenzuron on crustacea such as lobsters is of primary concern, and SEPA's policy admits that teflubenzuron "is potentially highly toxic to any species which undergo moulting in their life cycle." As SEPA points out in the "environmental risk assessment": "This will therefore include some commercially important marine animals such as lobster, crab, shrimp and some zooplankton species."[196] In spite of this, SEPA began handing out licences to use teflubenzuron in 2000 and by March 2004 had issued 212.[197]

Meanwhile, the case against teflubenzuron is building all the time.[198] Little wonder then that salmon farmers want to bury the evidence. When a secret trial on its environmental impact was conducted in 1996 in the waters around the Isle of Skye, the first the locals knew about it was when their shellfish started dying. "We were unaware of the use of teflubenzuron until massive crab, prawn, squat lobster, and sea urchin deaths were observed in Lochbay," claims Aileen Robertson, who runs a diving centre in the area. "Scallop divers had to move to another sea loch, and the creel fisherman had to stop fishing. Even staff at the fish farm were alarmed to hear what was going on and gave us labels for the medicated food they had been given to use. We got the safety data, worked it out, and called the Scottish Environment Protection Agency. They had given consent for its sea trial with no public notification or advertisement. How do they get away with it?!"(Aileen Robertson, pers. comm.)



The Guardian [reported in 2013]():

Fish company investigated after salmon farm pollutes Scottish loch

Marine Harvest, one of the largest fish-farming companies, is under investigation after polluting loch with pesticide

Severin Carrell, *Scotland correspondent*

@severincarrell

Fri 10 May 2013 12.08 BST

34

▲ Caged Scottish Salmon. Photograph: Alamy

Marine Harvest, one of the world's largest fish-farming companies, is under investigation after its salmon farms polluted a Scottish loch with toxic pesticide residues hundreds of times above environmental limits.

Sampling tests around salmon cages on Loch Shell in the Outer Hebrides by the Scottish Environment Protection Agency (Sepa) found that levels of Teflubenzuron, used to kill sea lice parasites which affect hundreds of thousands of caged fish each year, were up to 450 times higher than recommended levels.

The agency could now cut back Marine Harvest's operations on Loch Shell where the firm has three fish farms, including one which was already under Sepa investigation, after it launched a review of its operations there.

The Sunday Herald [reported in 2015]():

Salmon farm drug that kills wildlife to be withdrawn from market

from **Sunday Herald, 10 May 2015**

A toxic drug fed to caged salmon in Scotland is due to be withdrawn from the market after scientists found that that it can leak into lochs and kill crabs, shrimps and lobsters.

Food pellets laced with a chemical called teflubenzuron have long been given to farmed salmon around the coast in order to control sea lice infestations. The lice eat salmon, killing them or stunting their growth, and can cause multi-million-pound losses for fish farmers.

But salmon excrete the chemical, which then pollutes the seabed around fish farms at levels than can be lethal to marine wildlife. Shellfish are poisoned and prevented from making new shells to protect them as they grow.

Now the **Scottish Environment Protection Agency (Sepa)** says it has persuaded the company that markets the drug to withdraw it. Campaigners, however, warn that replacement drugs could do just as much harm, and are demanding a much broader legal ban.

The Sunday Herald [reported in 2017]():

THE 45 CONTAMINATED LOCHS

Inner Sound, Highland	Kilbrannan Sound, Argyll and Bute	Lax Firth, Shetland
Loch a Chairn Bhain, Highland	Loch Craignish, Argyll and Bute	Off Lunnaness, Shetland
Loch Alsh, Highland	Loch Creran, Argyll and Bute	Olnafirth, Shetland
Loch Bracadale, Highland	Loch Fyne, Argyll and Bute	Ronas Voe, Shetland
Loch Broom, Highland	Loch Spelve, Argyll and Bute	Swarbacks Minn, Shetland
Loch Duich, Highland	Loch Tuath, Argyll and Bute	The Deeps, Shetland
Loch Ewe, Highland	Shuna Sound, Argyll and Bute	East Loch Tarbert, Eilean Siar
Loch Kishorn, Highland	Sound of Gigha, Argyll and Bute	Loch Boisdale, Eilean Siar
Loch Laxford, Highland	Sound of Jura, Argyll and Bute	Loch Erisort, Eilean Siar
Loch Linnhe, Highland	Sound of Mull, Argyll and Bute	Loch Roag, Eilean Siar
Loch Nevis, Highland	Cat Firth, Shetland	Loch Seaforth, Eilean Siar
Loch Sunart, Highland	Clift Sound, Shetland	Loch Shell, Eilean Siar
Loch Torridon, Highland	Clousta Voe, Shetland	Loch Skipport, Eilean Siar
Sound of Raasay. Highland	Colla Firth, Shetland	Lamlash Bay, North Ayrshire
Firth of Lorn, Argyll and Bute	Dury Voe, Shetland	*Source: Scottish Environment Protection Agency*

So will SEPA be presiding over a similar case study in secrecy and toxicity with Imidacloprid?

Will SEPA be publishing a scientific dossier on environmental impacts of Imidacloprid (as SEPA has done so via Emamectin benzoate)?

Will SEPA be conducting scientific studies and monitoring of impacts of Imidacloprid (as it has done so via Emamectin benzoate)?

Will Bayer/Monsanto be making available to the public their 'Confidential' work on Imidacloprid (or will the chemical company behind Imidacloprid be taking the Merck behind the scenes route)?

Indeed, does SEPA currently even have the power or jurisdiction to regulate the use of Imidacloprid via well boats?

A redacted email dated May 2019 obtained from the Scottish Government in July 2019 via FOI-19-01398 referred to Benchmark's "need to satisfy SEPA's concerns as part of any marine licence application prior to the handover of the licensing role to SEPA":

From: [Redacted] MARLAB)
Sent: 29 May 2019 11:42
To: [Redacted]
Subject: RE: Benchmark CleanTreat

Hi [redacted],

Back in the office now!

We met with Benchmark a few weeks ago. SEPA and the VMD were also in attendance.

The position was that they would need to satisfy sepa's concerns as part of any marine licence application prior to the handover of the licensing role to SEPA. After which it seems likely to be SEPA's process entirely. They do seem to be in discussion with SEPA still. [Redacted]

[Redacted] As part of the meeting, Benchmark advised they would draft a 'white paper' to help explain what their plans were [Redacted] This has not yet been received and we will be writing to benchmark, finalising the meeting minutes and reminding them of their offer of the white paper, probably today.

Hope this helps,

[redacted]
[Redacted]

The move of licensing wellboat discharges from Marine Scotland to SEPA "may well be seized on" concedes a redacted email dated December 2018:

From: [Redacted]
Sent: 07 December 2018 11:28
To: [Redacted]
Cc: [Redacted]

Subject: RE: For information only - Outcome of meetings on 28 November - mortality disposal + Benchmark cleantreat
Attachments: Cab Sec brief - benchmark - Dec 2018.docx

[redacted] – thanks. Happy in large part, but I've suggested downplaying the references to wellboat discharge licensing moving to SEPA as it shouldn't affect consideration of this proposal under the current system (and any suggestion that it might may well be seized on).

Regards, [redacted]

The move of licensing wellboat discharges to SEPA (recommended back in 2016 by the Aquaculture Industry Leadership Group but still not completed as far as Scottish Salmon Watch understands) has "raised some challenges but it still under active consideration and we are hopeful to a conclusion" [states another redacted email dated December 2018](#).

From: [Redacted]
Sent: 06 December 2018 09:00
To: [Redacted]
Cc: [Redacted]
Subject: RE: For information only - Outcome of meetings on 28 November - mortality disposal + Benchmark cleantreat

[redacted]

Many thanks for sharing.

I agree it would be worth referencing both the report and the focus on medicine use (see below) but also that the REC report said 'The Committee recognises the need to ensure that the licensing regime for medicines is fit for purpose and sufficiently robust to prevent environmental damage or impact on other species. It notes and welcomes the Fish Health Framework workstream which is dedicated to the licensing of fish treatment.'

RECOMMENDATION 32 The publication of this research leaves the Committee in no doubt that effective regulation of medicine used by the farmed salmon industry is a requirement. In this regard, it welcomes the action by SEPA to the UK Technical Advisory Group (UK TAG) to make recommendations to the Scottish Government on new environmental standards for Emamectin Benzoate. It also calls on SEPA and the Scottish Government to similarly consider the environmental impact of other medicines by the industry. (see paragraph 293)

For now the key issue is around the text at your para 8 and I have offered a few suggested changes below.

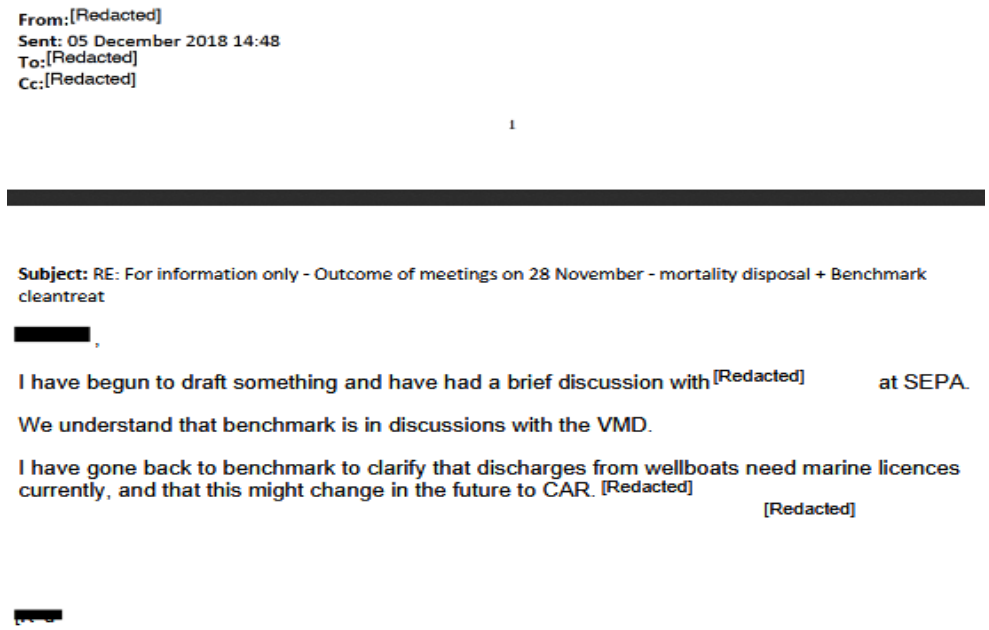
'Legislative Framework – BAHL raised with the Cabinet Secretary that they were unclear of applicable legislation following the call. However the position for now is very clear. MS has been the licensing authority for wellboat discharges for the last 8 years. However, and as the Cabinet Secretary will be aware from the discussions at the Aquaculture Industry Leadership Group, Marine Scotland have been actively looking at moving forward on the recommendation from the 2016 'Independent review of Aquaculture Consents', which looked at the licensing role for wellboat discharge moving to SEPA. That recommendation has raised some challenges but is still under active consideration and we are hopeful close to a conclusion. The legislative framework has subsequently been clarified to BAHL by MS and an offer has been made to further discuss if they are not clear.'

I am not sure of the wider benefits of a presentation to the sub group and what expectations that might bring with it, but that is just an observation.

I suggest you address to both Cab Secs.

Regards

A redacted email dated December 2018 reports that Benchmark is aware that "discharges from wellboats need marine licences" (currently issued by Marine Scotland but well overdue to be transferred to SEPA).



From: [Redacted]
Sent: 05 December 2018 14:48
To: [Redacted]
Cc: [Redacted]

1

Subject: RE: For information only - Outcome of meetings on 28 November - mortality disposal + Benchmark cleantreat

[redacted],

I have begun to draft something and have had a brief discussion with [Redacted] at SEPA.

We understand that benchmark is in discussions with the VMD.

I have gone back to benchmark to clarify that discharges from wellboats need marine licences currently, and that this might change in the future to CAR. [Redacted]

[Redacted]

[redacted]

Documents published by Scottish Salmon Watch in December 2019 via "CleanTreat: FOI Disclosures by the Scottish Government to Scottish Salmon Watch".

Scottish Salmon Watch reported in October 2018:

Legislative & Licence Background:

A letter dated 17 April 2018 from the Director of Marine Scotland to the Scottish Parliament's Environment, Climate Change & Land Reform Committee included:

'Wellboat licences'

Wellboat licences are issued by MS-LOT to fish farm operators to permit the discharge of chemotherapeutants following treatment for sealice in a vessel (a wellboat). Such licences are only issued where a valid Controlled Activity Regulations (CAR) licence has been issued to the relevant fish farm site for discharge of chemotherapeutants following in-cage treatments by SEPA following its consideration of the environmental effects. The volumes permitted for discharge are the same as the CAR volumes and Marine and CAR licences are conditioned to prohibit the release of chemotherapeutant under one regime at the same time as the other, thereby avoiding cumulative effects.

Wellboat licences are issued for three (3) years.

MCA and NLB have confirmed they will not provide routine comment on the applications for 'wellboat licences' as there is not a navigational element.

SEPA has provided standing advice that it has no objection to 'wellboat applications' provided the type and amount of chemical used and discharged will not exceed that specified in the respective CAR licence. An agreed condition is added to licences which prevents the simultaneous discharge from bath treatments.

SNH is consulted where such activity takes place in a European site, and advise of the likely significant effects. SNH directs MS-LOT to advice given by SNH during the CAR licensing process. MS-LOT would look to adopt the 'appropriate assessment' carried out by the SEPA as the competent authority under The Conservation (Natural Habitats, &c.) Regulations 1994. Again, a similar process occurs where SNH advise that an activity may affect the feature of a Marine Protected Area (MPA).

In May 2018 the Scottish Aquaculture Industry Leadership Group reported:

Scottish Aquaculture Industry Leadership Group

Meeting 22nd May 2018 Agenda and Actions Note

CW summarised findings of research commissioned by HIE on behalf of the AILG on future skills requirements for the industry including supply chain. Next steps will include drafting of a skills action plan. AILG members repeated previous requests for Marine Scotland to provide site specific advice on sea lice. MP reported on progress across the 8 'quick wins' arising from the consenting review (http://www.gov.scot/Resource/0052/00525256.pdf). Aside from the transfer of wellboat discharge licensing from Marine Scotland to SEPA, these had all been completed or were well on track for completion (a workshop would be held in June to finalise the work on the EIA template and the Working Arrangements Document, with a view to sign off by July 2018.) On the transfer of wellboat licensing from Marine Scotland to SEPA, there continued to be legal questions requiring clarification but it was hoped a positive resolution of the legal issues could be reached within a few weeks.	

The Scottish Aquaculture Industry Leadership Group noted in February 2018:

> MP updated on progress with the ICR recommendations. Detailed at http://www.gov.scot/Resource/0052/00525256.pdf All projects were progressing well or had been completed. It was noted that on the integration of wellboat marine licences into the CAR regime the process was necessarily complex and would take time to work through. . would shortly be updated on the current state of play.

In January 2018, the Farmed Fish Health Framework Working Group noted:

Farmed Fish Health Framework Working Group (FFHFWG)
Meeting 2
30 January 2018
Note and Actions

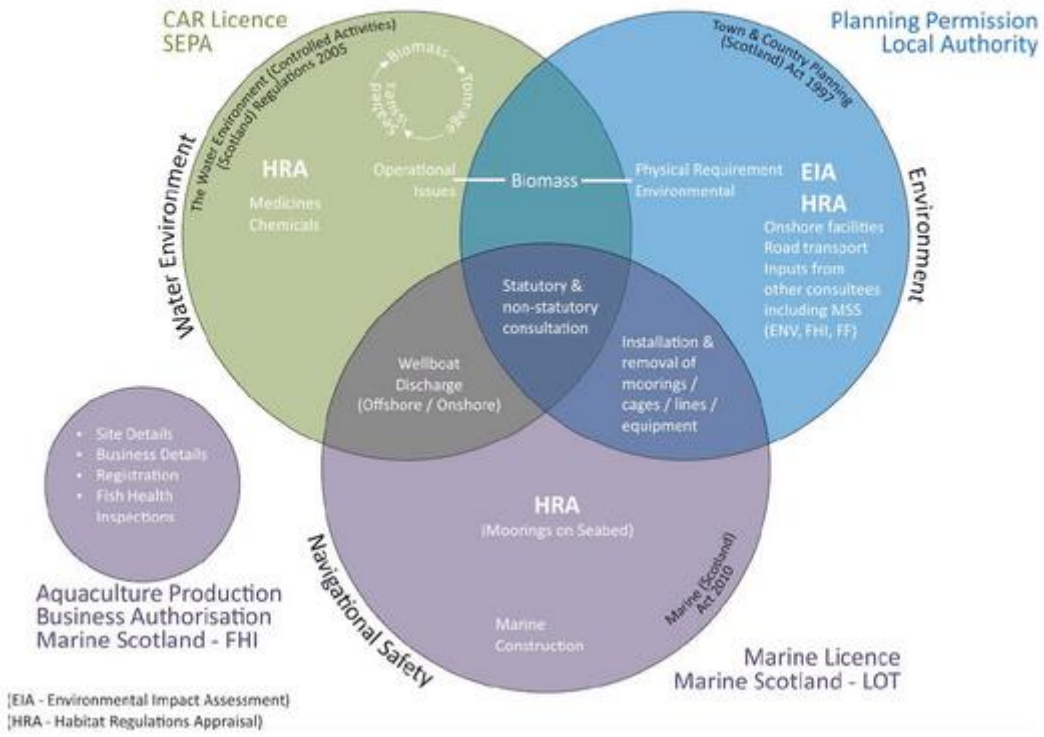
- It was noted the independent consenting review (ICR) recommendation on wellboat discharge licenses was outstanding.
- SG confirmed that an update would be provided at the next aquaculture industry leadership group and would be relayed to the farmed fish health working group at the next meeting.

Action: SG to keep FFHWG updated with ICR wellboat discharge licence recommendation.

Marine Scotland
Secretariat
February 2018

An 'Independent Review of Scottish Aquaculture Consenting' published by the Scottish Government in July 2016 identified "wellboat discharge" as overlapping in the consenting area for SEPA and Marine Scotland:

Figure 4.11: Venn diagram illustrating overlap in consenting areas for key regulators



The report included (p13):

A Ministerial Group on Aquaculture (MGA) was established in 2009 to oversee implementation of A Fresh Start, through six working groups. The MGA has since been replaced by the Ministerial Group for Sustainable Aquaculture (MGSA), which was established in 2013 to continue the work of the MGA and to support Scotland's aquaculture industry to achieve the 2020 growth targets. This includes the following working groups:

- Wellboats Working Group: considers standards for wellboats - tracking position, valve status & sea lice filtration.

And (p30):

4.2.4 Marine Licence

With respect to finfish and shellfish aquaculture, three types of activities require a marine licence(s):

- Equipment – including mussel lines, fish farm cages, walkways/pontoon;
- Moorings (i.e. deposits on the seabed); and
- Discharge of sea lice treatments from wellboats.

In relation to equipment and moorings, the marine licence focuses only on potential hazards to navigation and conditions may require appropriate markers and lighting. A separate marine licence for 'discharge of treatment agents' is also required for discharging from a wellboat. This is not focused on navigational safety and is not specifically needed to gain consent for a fish farm, but will be applied for during the operational phase, if required.

And (p53):

Table 6.1: Recommended quick wins

No.	Action	Responsibility
QW4	**Integrate wellboat Marine Licence into the CAR Licence** • It is understood that this would require one additional sentence to be added to the CAR Licence. • It is assumed that this would cover all wellboat discharges. • It is noted that SEPA and the finfish industry support this consolidation of licences.	SEPA MS-LOT

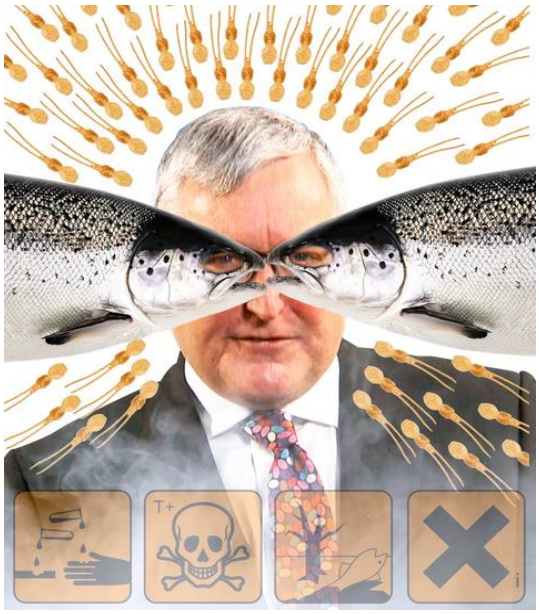
And (p74):

Table 7.1: Summary of recommendations

No.	Actions
Quick WIns	
QW	1. Strengthen the pre-application process 2. Introduce consistent format for co-ordinates, site name and summary information 3. Update of Working Arrangements document 4. Integrate wellboat Marine Licence into the CAR Licence 5. Update Scottish Aquaculture portal

Read more via "[All is Not Well With Sick Scottish Salmon: Unreported Use of Toxic Chemicals Via Wellboats Slips Net]"

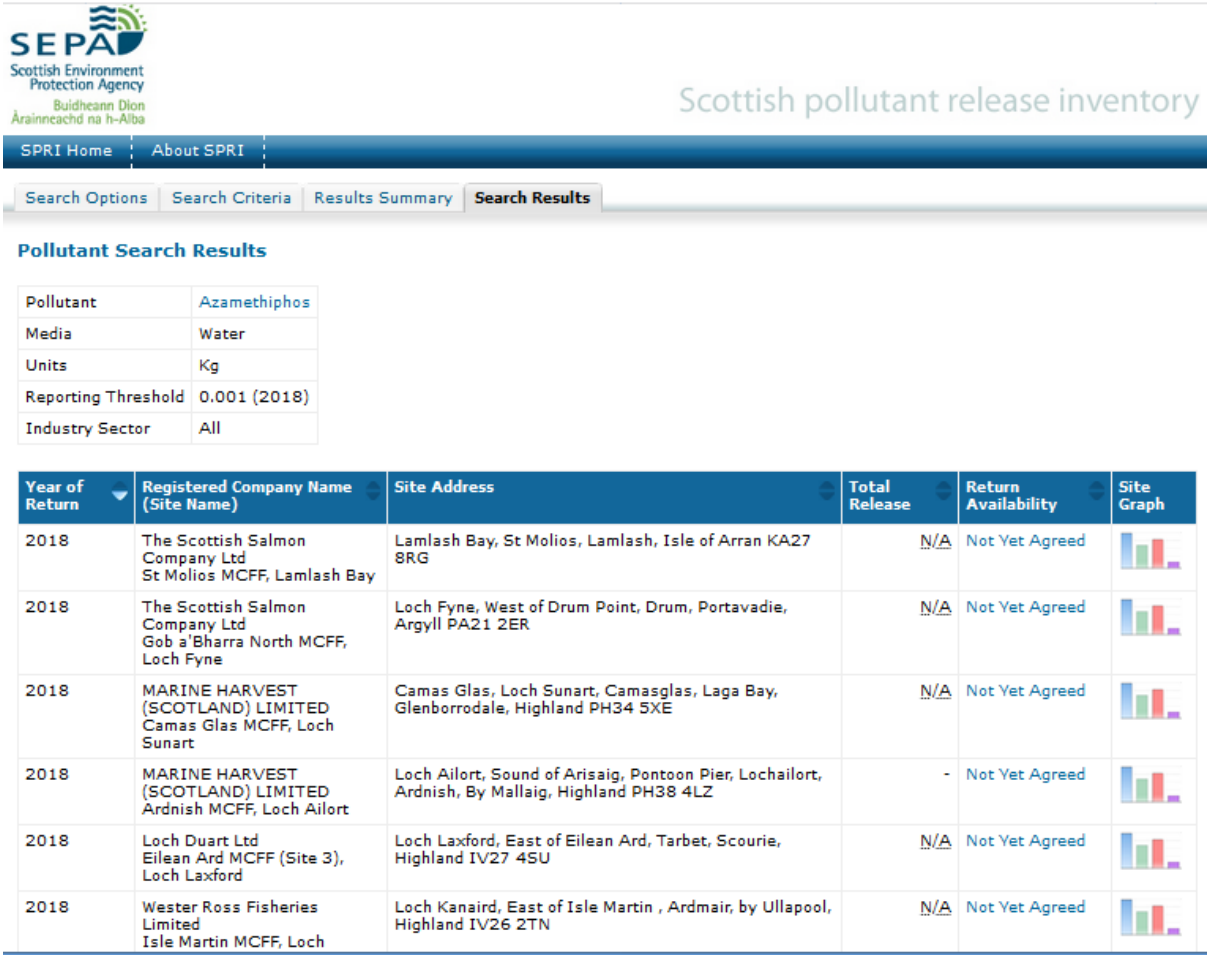
Is Fergus Ewing's secret plan to rush through approvals for well boat use of Imidacloprid via licensing by Marine Scotland before the transfer of powers to SEPA? Certainly, it is well known that Fergus Ewing is a huge supporter of CleanTreat and toxic chemicals such as Acetamprid - an insecticide similar to Imidacloprid - even bullying colleagues over attempts to ban them.



Finally, when will SEPA publish data on well boat use of toxic chemicals used by the salmon farming industry (including any use of Imidacloprid) via the Scottish Pollutant Release Inventory?

Scotland's Aquaculture web-site states that: "This dataset does not include treatments carried out on wellboats. The full annual SPRI data returns inclusive of wellboat information can be found here".

It is shameful that data for 2018 is still not publicly available.



2017 SPRI data for Deltamethrin use (which is understood to include use via well boats) is at least available with the worst users identified here:

Year	Registered Company Name (Site Name)	Total Release
2017	MARINE HARVEST (SCOTLAND) LIMITED. Soay Sound MCFF West Loch Tarbert	0.263
2017	The Scottish Salmon Company Ltd. Greanamul MCFF Isle of Benbecula	0.24
2017	Kames Fish Farming Limited. Castle Bay MCFF Shuna	0.174
2017	MARINE HARVEST (SCOTLAND) LIMITED. Carradale (North) MCFF Carradale	0.15
2017	MARINE HARVEST (SCOTLAND) LIMITED. Maol Ban East MCFF Caol Mor Isle of Skye	0.148
2017	Grieg Seafood Shetland Limited. Easter Score Holm MCFF Haddock Sands	0.14
2017	MARINE HARVEST (SCOTLAND) LIMITED. Sron MCFF Loch Alsh	0.135
2017	MARINE HARVEST (SCOTLAND) LIMITED. Cairidh MCFF Moll Isle Of Skye	0.125
2017	MARINE HARVEST (SCOTLAND) LIMITED. Carradale (South) MCFF Carradale	0.12
2017	MARINE HARVEST (SCOTLAND) LIMITED. Ardgour MCFF Loch Linnhe	0.12
2017	MARINE HARVEST (SCOTLAND) LIMITED. Colonsay MCFF Isle of Colonsay	0.12
2017	The Scottish Salmon Company Ltd. Sgeir Dughall Outer Loch Torridon	0.1
2017	MARINE HARVEST (SCOTLAND) LIMITED. Camas Glas MCFF Loch Sunart	0.1
2017	MARINE HARVEST (SCOTLAND) LIMITED. Noster MCFF Loch Seaforth Isle of Harris	0.094
2017	The Scottish Salmon Company Ltd. Maragay Mor MCFF Benbecula	0.09
2017	Dawnfresh Farming Ltd. Aird's Point MCFF Loch Etive	0.081
2017	Grieg Seafood Shetland Limited. Cole Deep MCFF Cole Deep	0.078
2017	The Scottish Salmon Company Ltd. Druimyeon Bay MCFF Isle of Gigha	0.076
2017	MARINE HARVEST (SCOTLAND) LIMITED. Marulaig Bay MCFF Loch Boisdale South Uis	0.075
2017	Skelda Salmon Farms Limited. Spoose Holm MCFF The Deeps	0.075
2017	Grieg Seafood Shetland Limited. East of Papa Little MCFF Shetland	0.069
2017	MARINE HARVEST (SCOTLAND) LIMITED. Bagh Dail nan Ceann MCFF	0.065
2017	Kames Fish Farming Limited. Kames Bay MCFF Loch Melfort	0.054
2017	Grieg Seafood Shetland Limited. Burwick West MCFF Bur Wick	0.052

Perhaps the general public will be able to access data on the use of Imidacloprid in 2023 and a public consultation will be rolled out by SEPA just before it is banned in 2028?

Yours sincerely,

Don Staniford

Director, Scottish Salmon Watch